LLYN BRIANNE ACID WATERS PROJECT
SUMMARY OF 1987 DATA

I. G. Littlewood, E. Vaughan and P. G. Whitehead
Institute of Hydrology

S. J. Brown and A. Ranson
Welsh Water

R.P.D. Walsh
University College, Swansea

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INTRODUCTION

This report is a summary of 1987 data from the Llyn Brianne Project which have been pre-processed by Welsh Water and collated by the Institute of Hydrology in ORACLE databases. The format of the report is similar to the summary report for the 1986 data, with data and information being presented in tables and plots to indicate the range of data types and to give some examples of how they can be presented.

The data were checked for obvious errors and anomalies during pre-processing by Welsh Water and archiving at the Institute of Hydrology but they were not subjected to quality control during compilation of this report.

Data are presented in 8 Sections as follows:-

Section 1 The availability of 'continuous' (15-minute interval) stage, pH, electrical conductivity and stream temperature for each site is given on a quarterly basis. Minima, maxima and average values for 1987 for stream pH, conductivity and temperature are tabulated. Monthly plots of continuous stage, pH, electrical conductivity and stream temperature are presented for control (C) and treatment (T) catchments LI1(C), LI2(T), LI4(T), CI3(T), CI4(T), CI5X(T) and CI6(C).

Section 2 Monthly summary statistics for the eight variables recorded by the automatic weather station at Trawsnant (on loan from IH) are tabulated. Monthly plots of hourly values for the eight weather variables are presented.

Section 3 Stage discharge equations

Section 4 Bulk deposition chemistry at UC4, Trawsnant (RCS, bulk; WDS, wet only) and Cymystwyth (CWM) (situated about 25 km north of Llyn Brianne dam).

Section 5 The dates and numbers of auto-samples taken at each site during 1987 are listed. The corresponding chemistry data can be retrieved in a format suitable for inclusion in reports, as shown by the example of major determinands in auto-samples from each site during June and July 1987.

Section 6 Quarterly statistics (number of samples, mean, maximum, minimum and standard deviation) for spot-sampled stream chemistry at each site are given.

Section 7 Annual plots of pH and stage are given and pH-duration curves

(based on a percentage of available data as shown in the title for each pH-duration curve plot).

Section 8 A table shows the availability of hourly rainfall data from the network of auto-sampler trigger tipping bucket raingauges. A program has been prepared to list the hourly rainfall from all (or any combination) of these gauges between any two times - an example of the output from this program is given.

Section 1

'Continuous' data

'Continuous' (15-minute interval) data capture

(%)

Period	Conductivity	Temperature	pH	Stage
Jan - Mar	66	62	66	49
Apr - Jun	74	75	75	55
Jul - Sep	81	80	81	53
Oct - Dec	76	76	73	58

Stream pH summary 1987

Site	Min	Max	Avg	n
LI1	3.82	6.07	5.04	21574
LI2	3.46	6.00	4.97	27313
LI3	3.98	6.34	5.38	10979
LI4	4.44	6.78	4.96	30638
LI6	6.75	7.37	7.20	2341
LI8	1.93	6.27	5.15	31951
CI2	4.06	6.31	5.14	29527
CI3	3.92	6.07	5.21	30698
CI4	4.46	7.21	5.54	27100
CI5	4.65	5.77	5.19	3060
C5X	4.10	7.28	5.61	31438
CI6	3.91	6.32	5.46	33290
GI1	5.82	6.29	6.08	6554
UC4	4.49	6.86	5.92	27660
BI1	4.38	7.19	6.24	16208
BI2	5.32	7.15	6.39	6232

Stream conductivity summary 1987
($\mu S.cm^{-1}$)

Site	Min	Max	Avg	n
LI1	41.0	84.4	52.6	21823
LI2	23.1	73.4	57.1	27012
LI3	25.9	62.8	53.5	13799
LI4	32.5	79.2	49.6	30769
LI6	36.0	72.0	59.2	1245
LI8	16.9	72.8	40.9	32399
CI2	22.3	58.8	34.2	31323
CI3	27.4	63.2	41.1	30526
CI4	27.7	60.5	37.3	26835
CI5	35.9	59.5	41.7	3060
C5X	28.2	63.0	41.7	31108
CI6	22.2	48.6	35.8	31900
GI1	40.2	55.8	49.4	6560
UC4	24.3	54.2	40.4	27625
BI1	25.4	77.3	49.2	16183
BI2	30.3	68.5	48.7	6027

Stream temperature summary 1987
(^{o}C)

Site	Min	Max	Avg	n
LI1	.0	17.2	8.4	22673
LI2	.3	21.5	8.4	22595
LI3	.0	17.1	4.8	11041
LI4	.9	12.6	6.5	30785
LI6	.0	6.2	1.8	2341
LI8	.0	17.4	7.5	32409
CI2	.0	23.3	7.3	31323
CI3	.0	23.7	7.9	29743
CI4	1.4	21.8	9.6	27113
CI5	.1	6.1	2.7	3060
C5X	.0	18.3	7.7	31640
CI6	.0	21.1	7.5	33325
GI1	.0	10.0	4.0	6565
UC4	.0	21.1	9.0	27665
BI1	.0	19.6	9.6	16213
BI2	.1	13.6	6.3	6558

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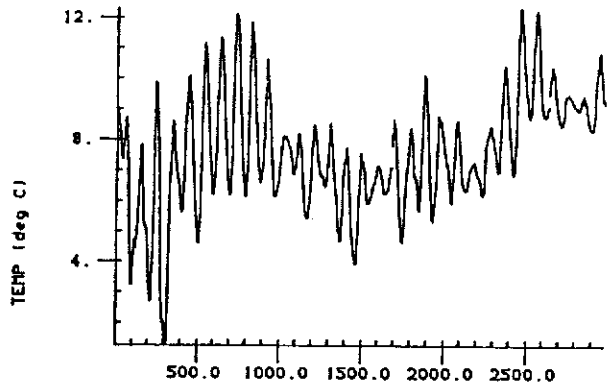

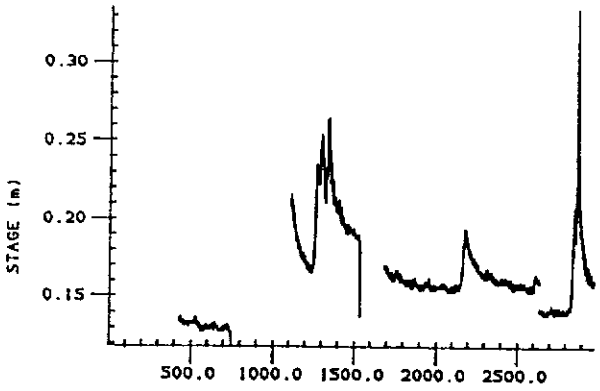

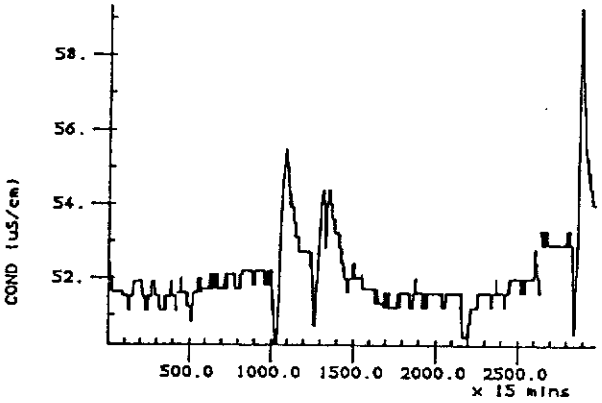

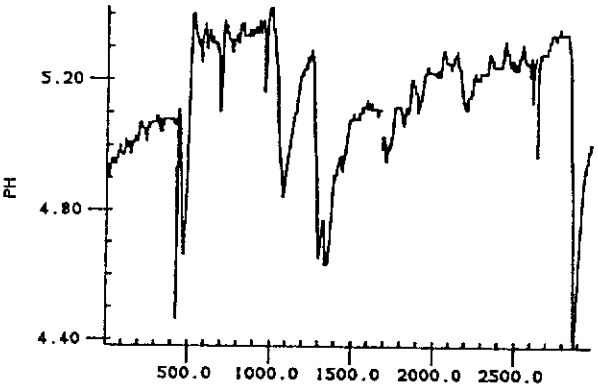

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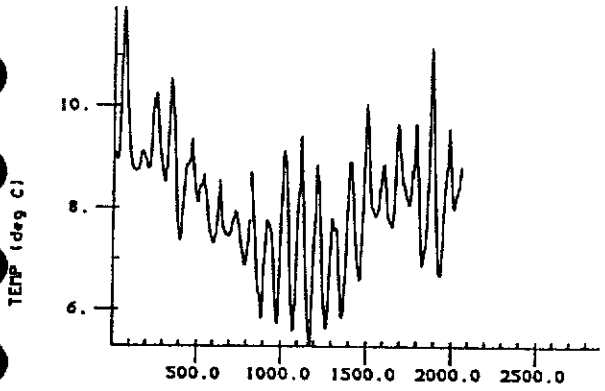

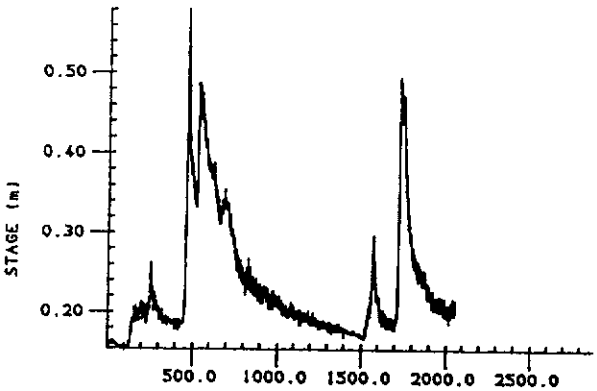

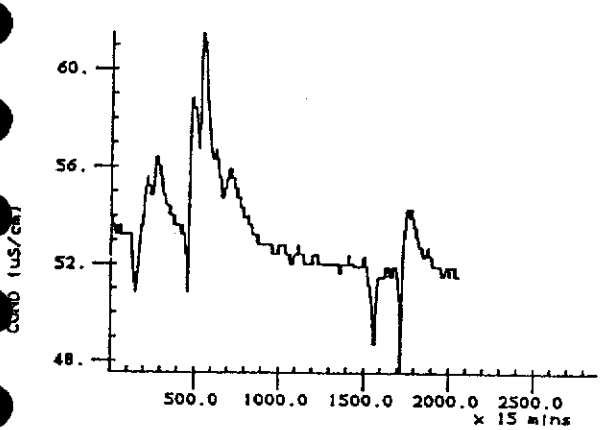

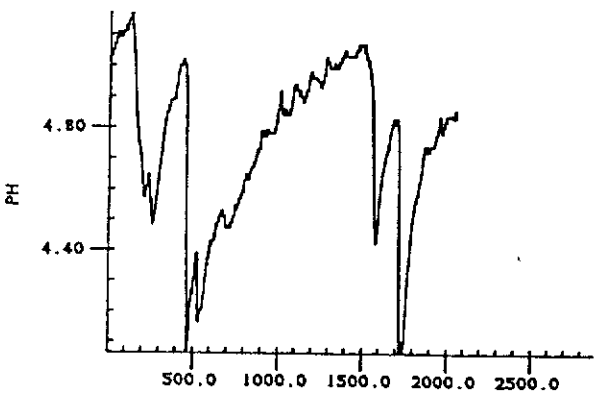

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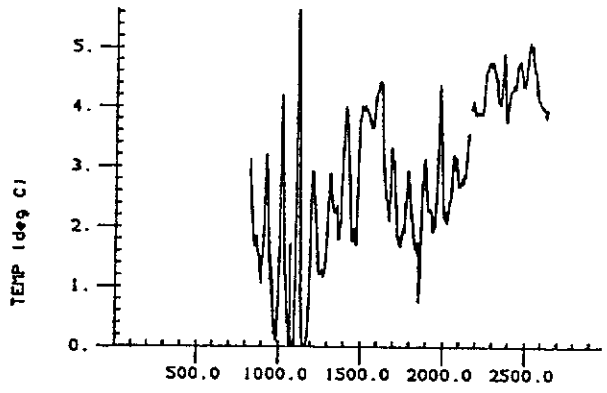

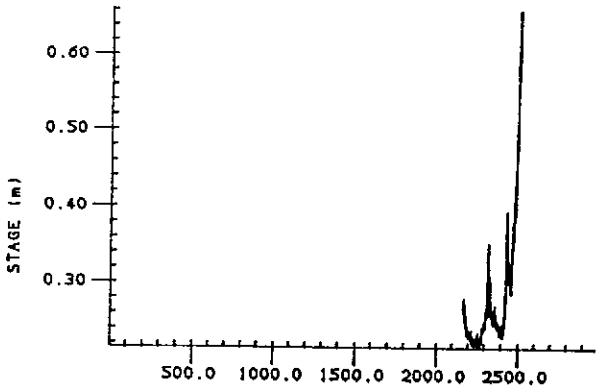

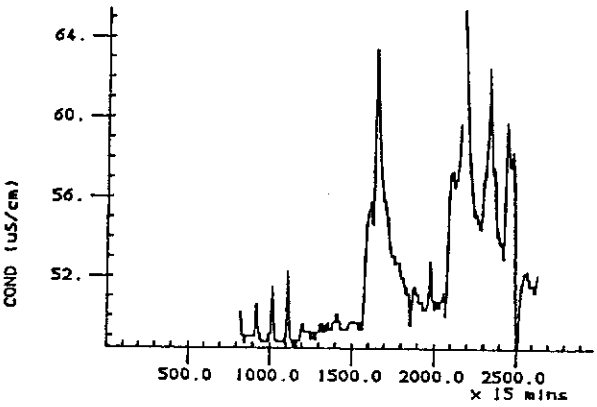

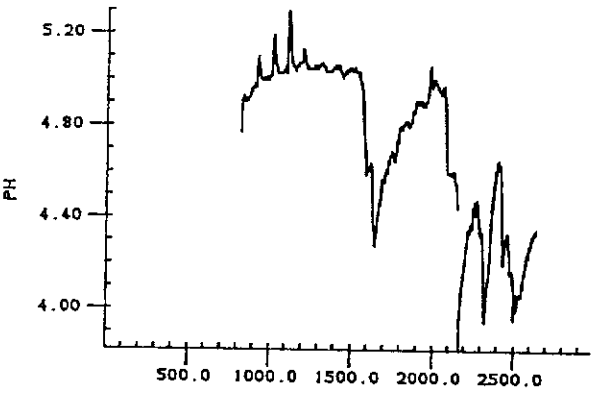

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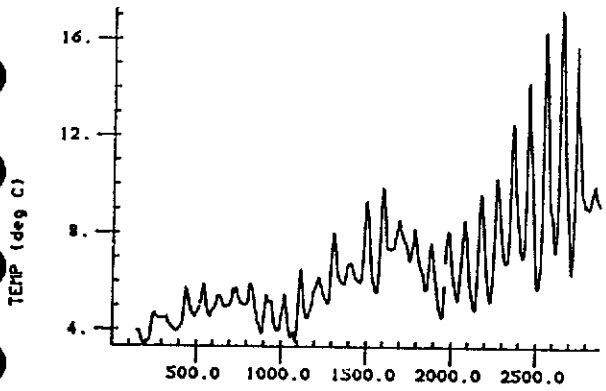

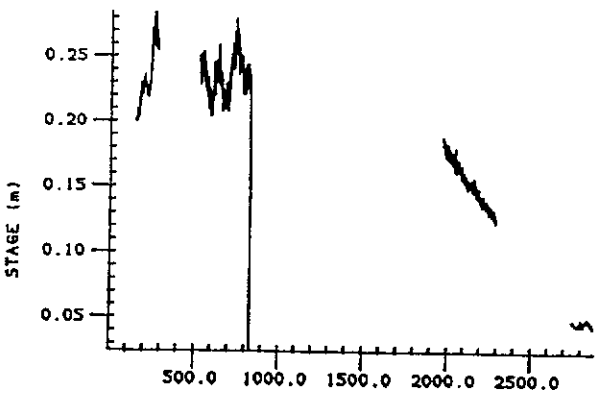

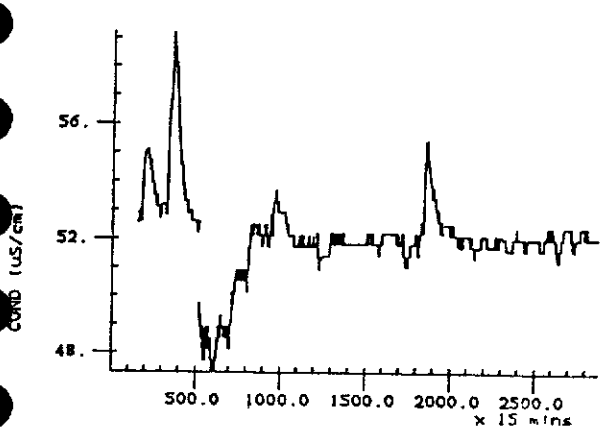

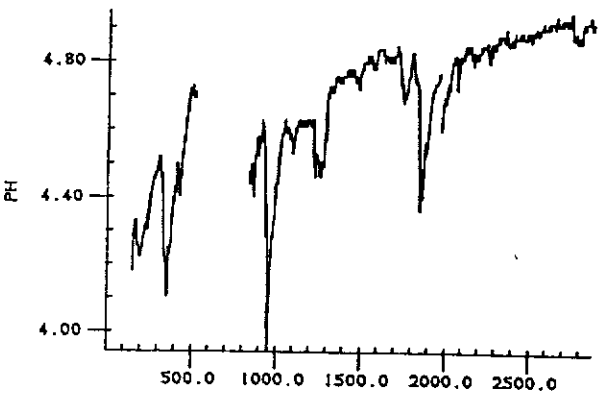

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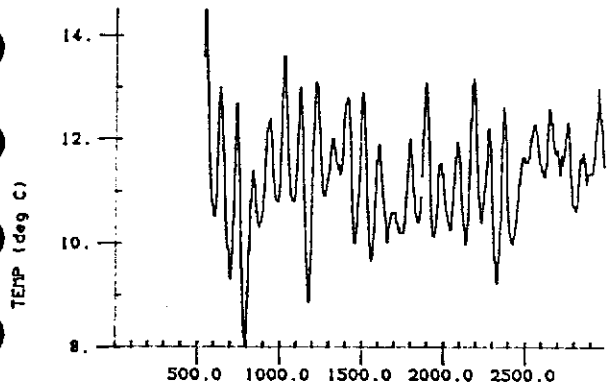

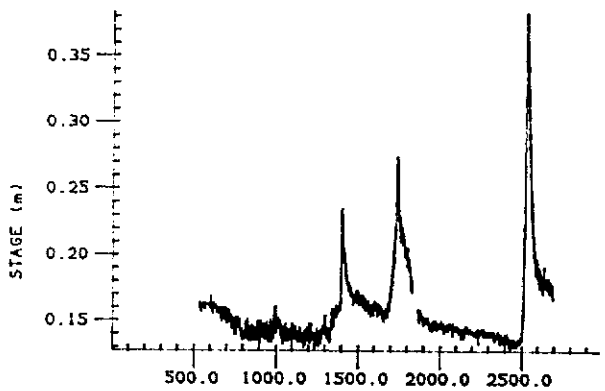

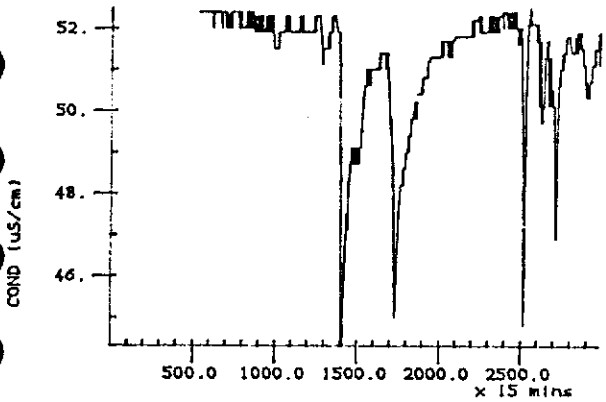

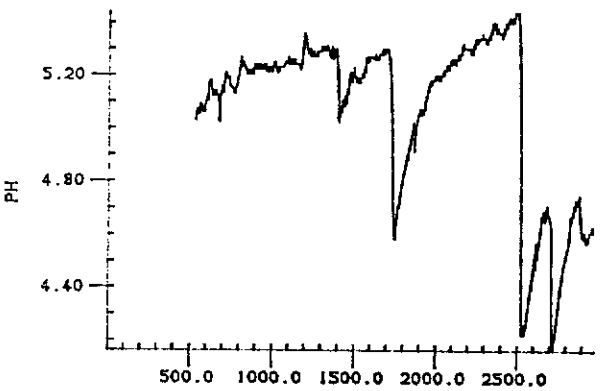

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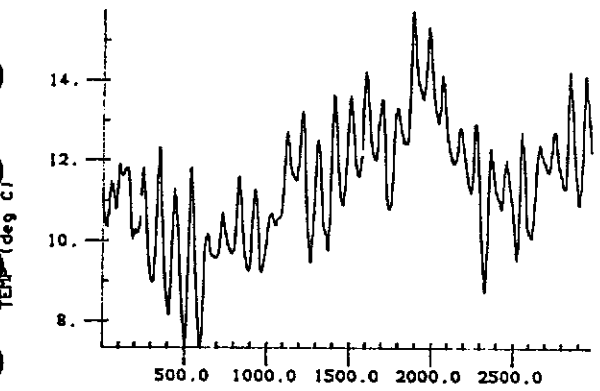

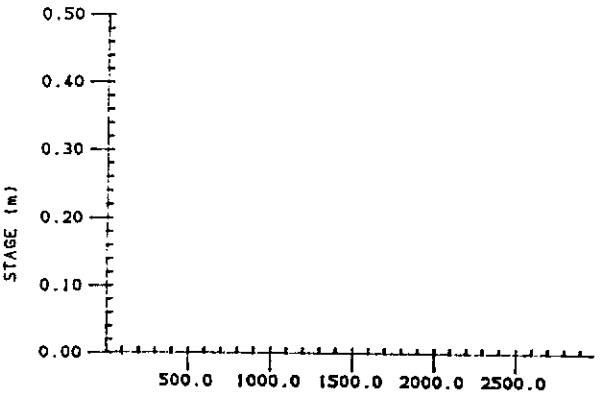

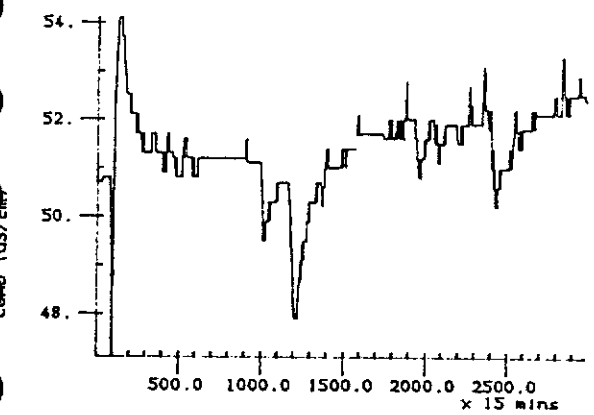

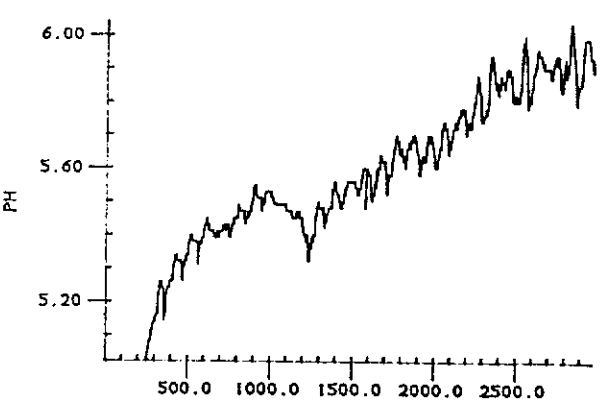

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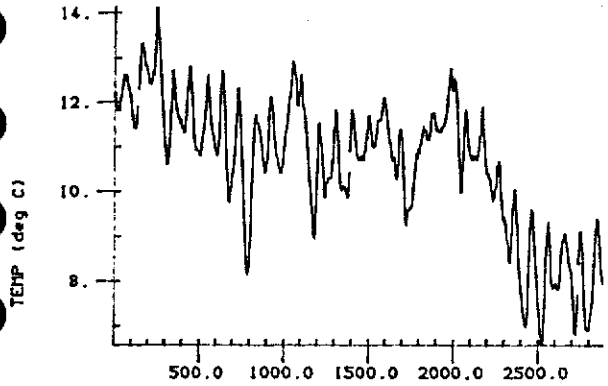

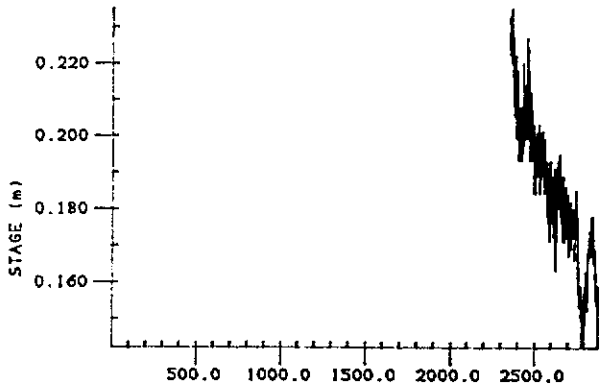

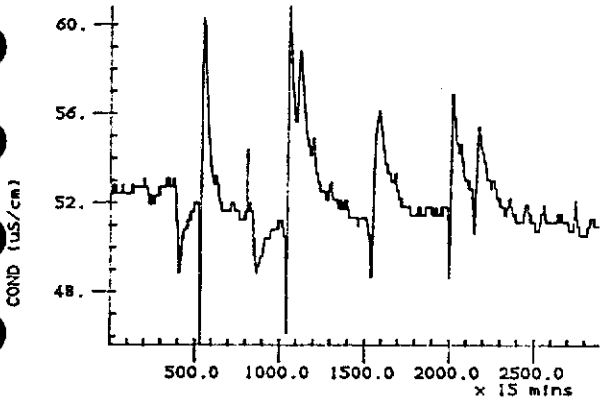

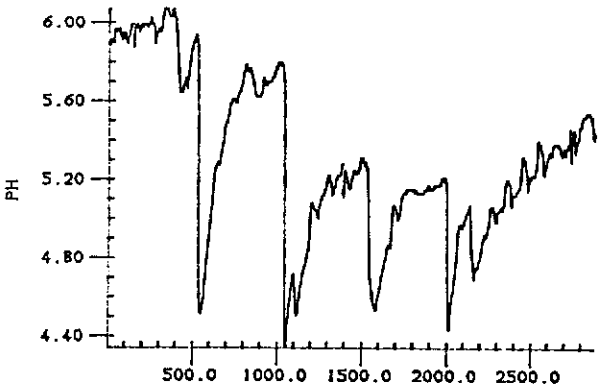

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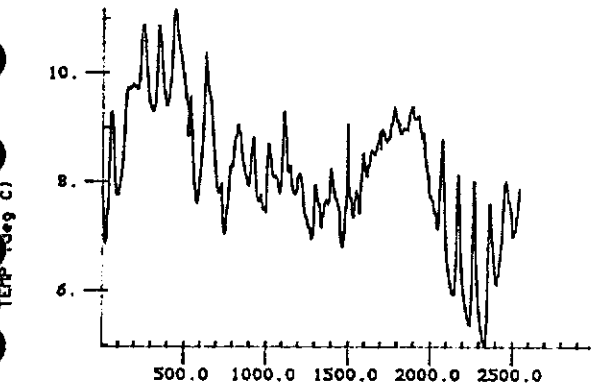

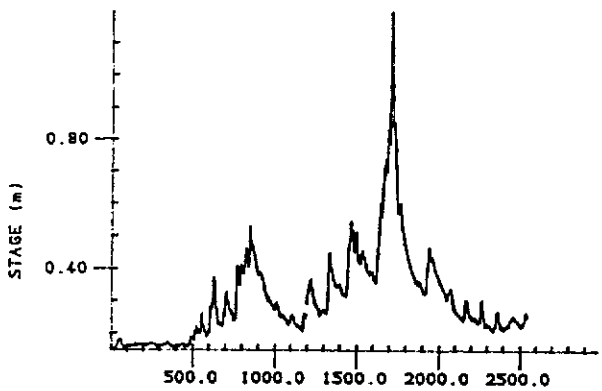

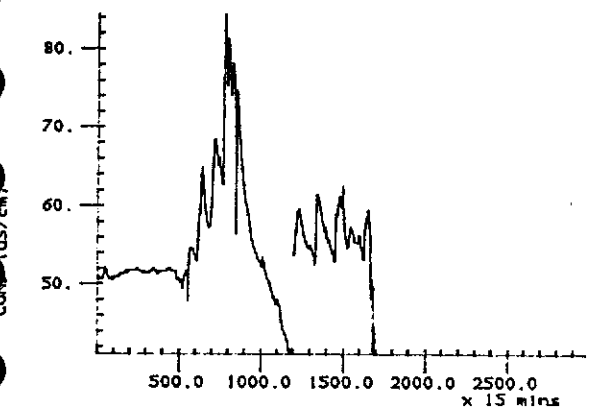

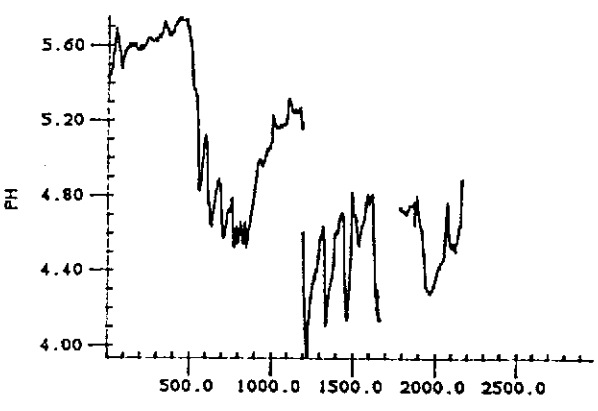

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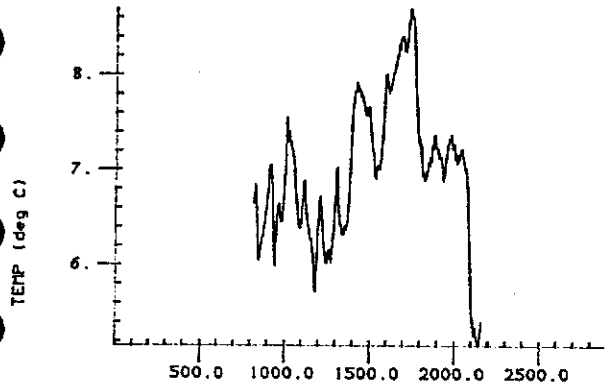

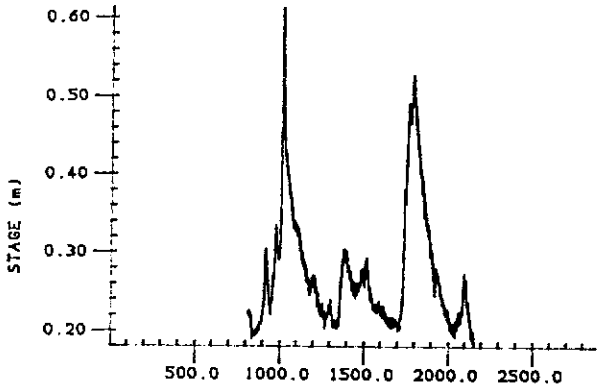

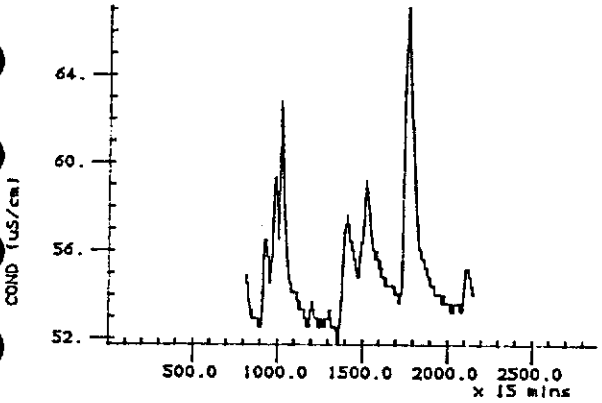

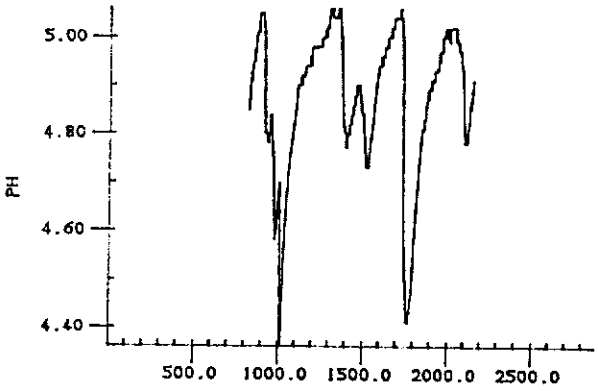

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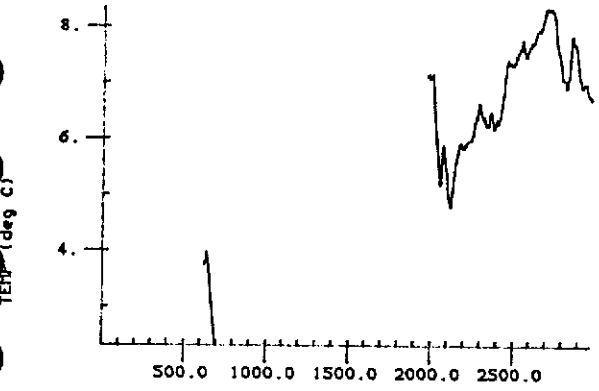

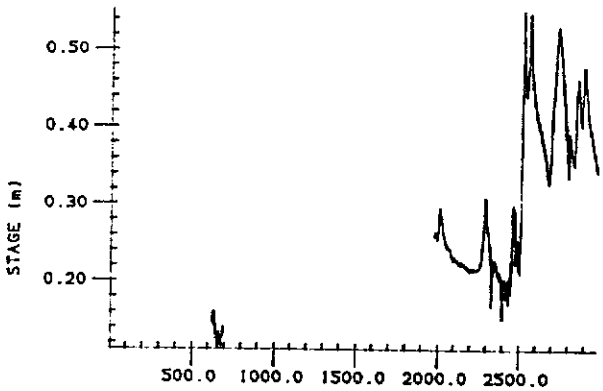

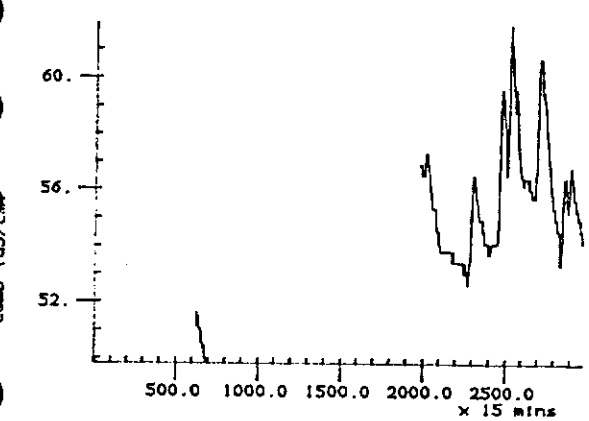

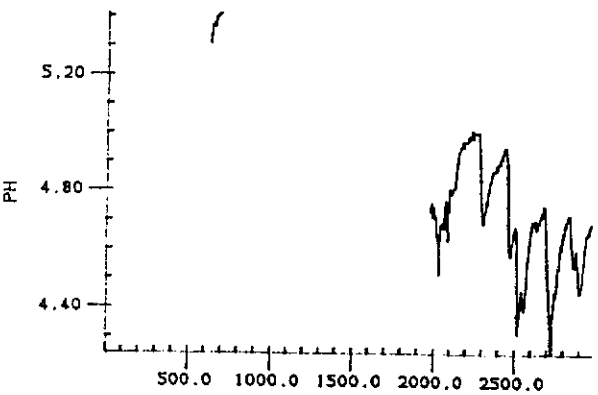

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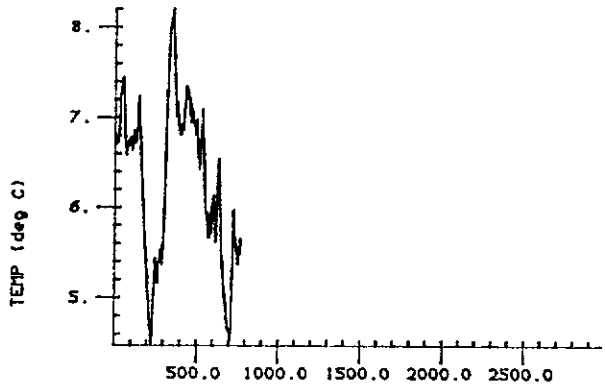

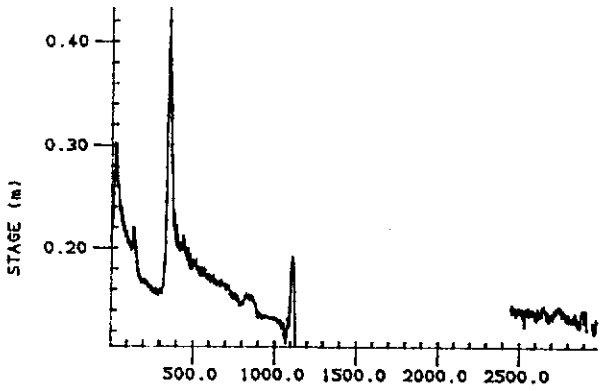

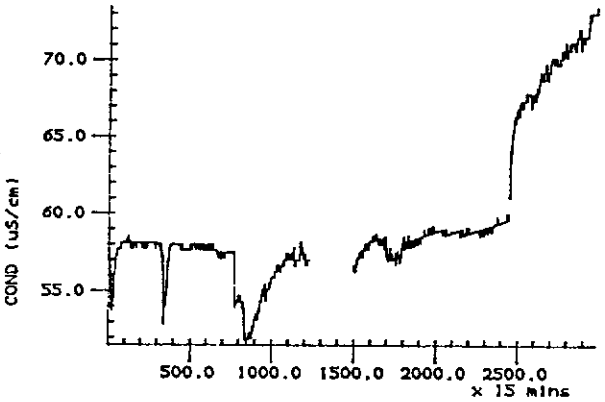

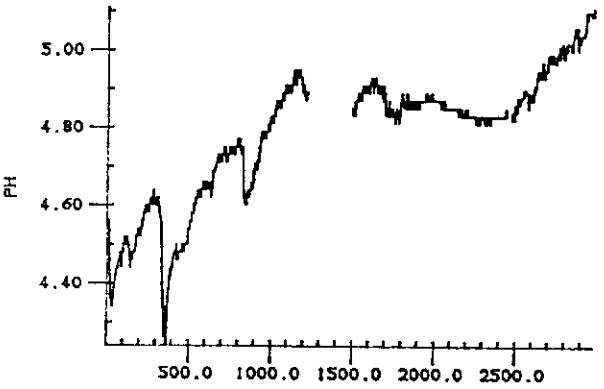

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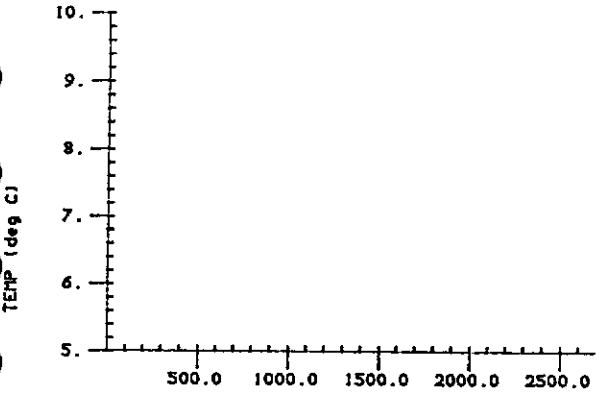

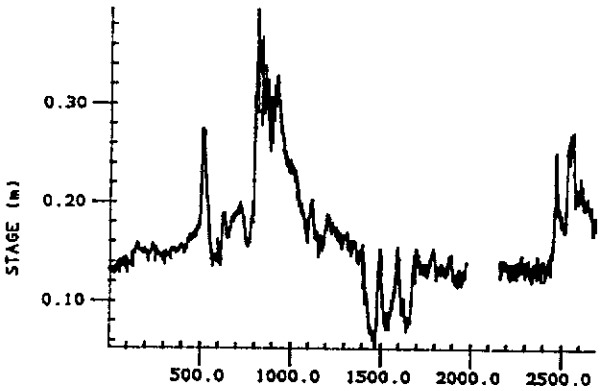

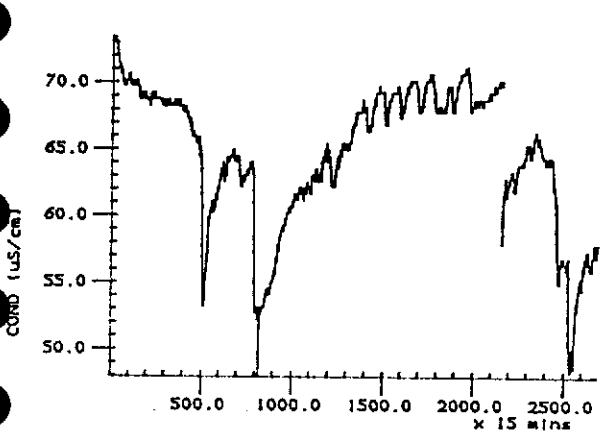

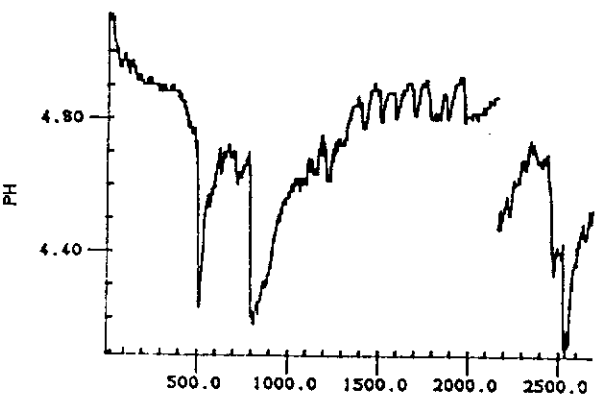

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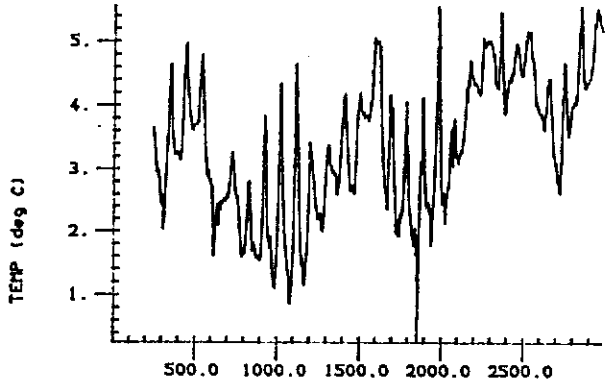

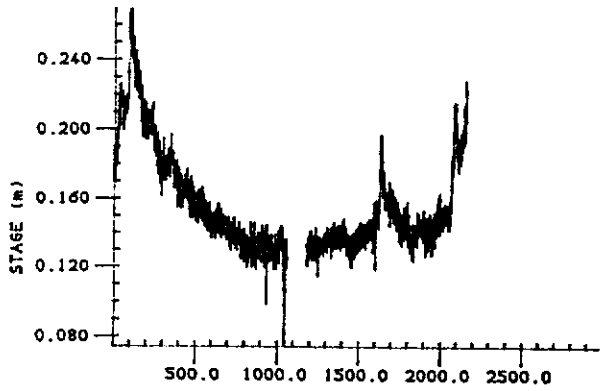

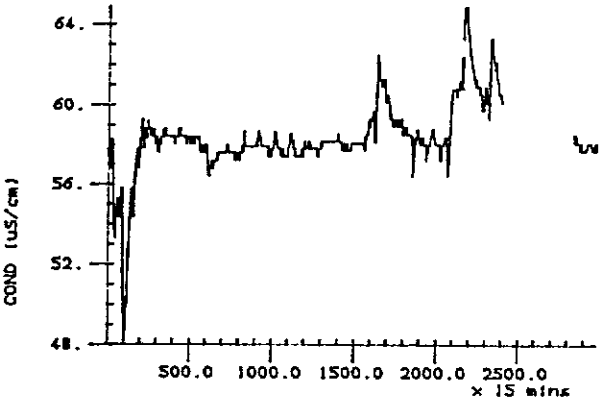

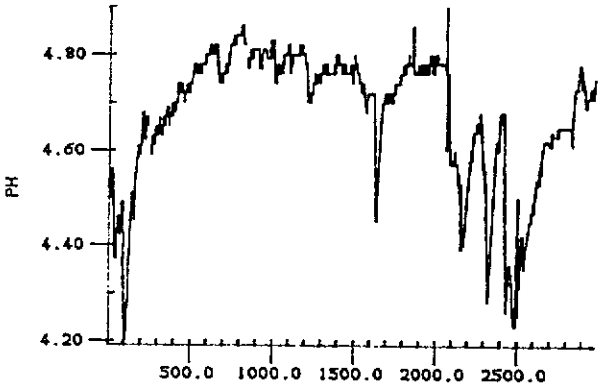

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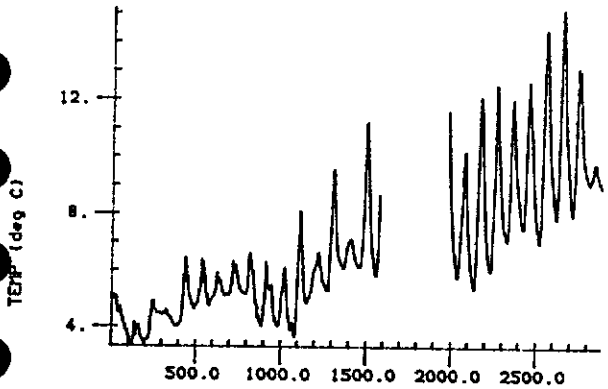

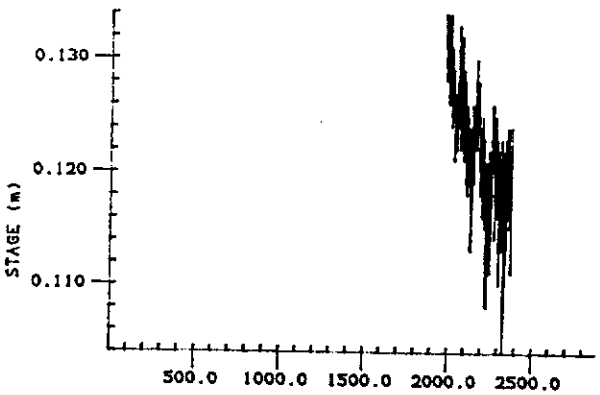

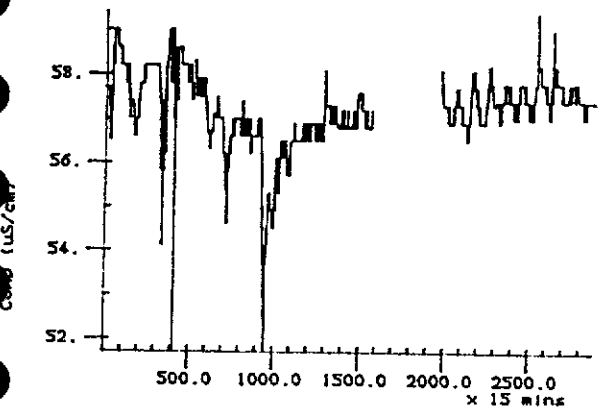

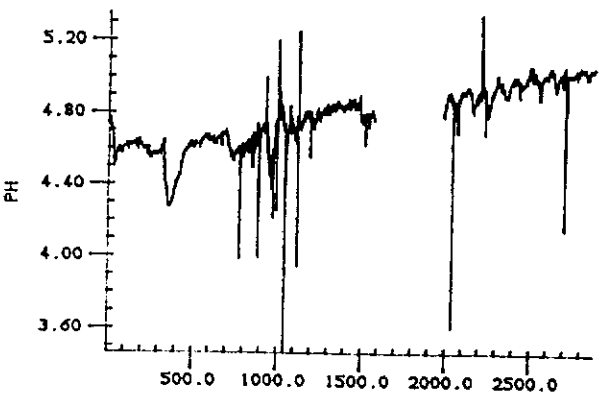

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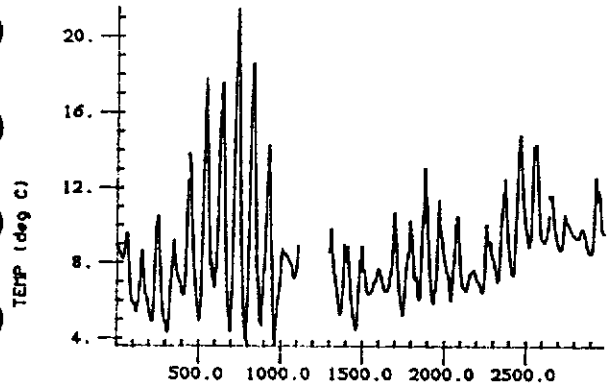

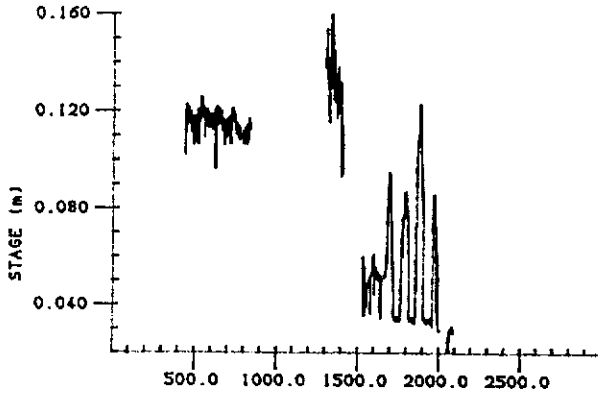

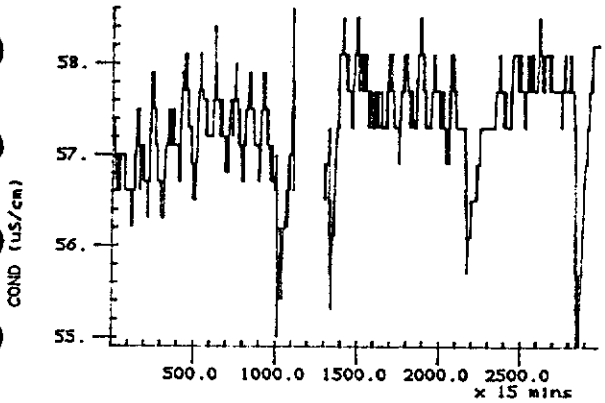

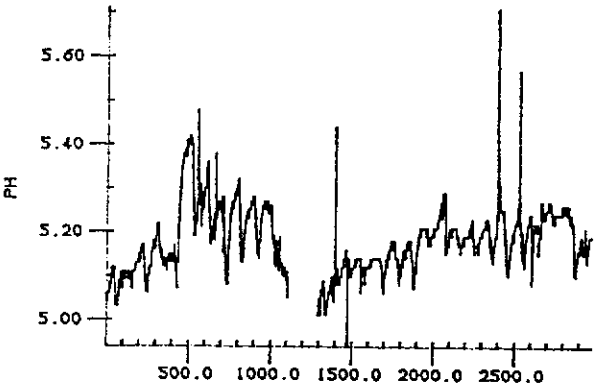

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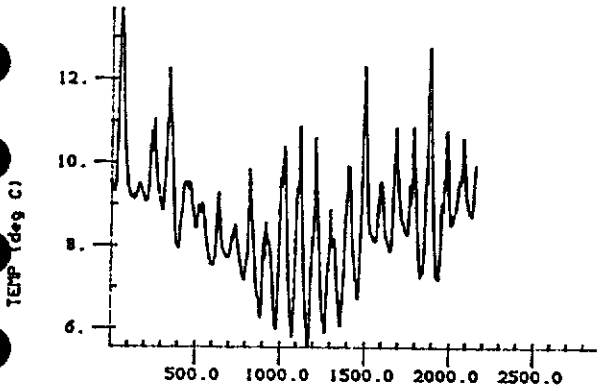

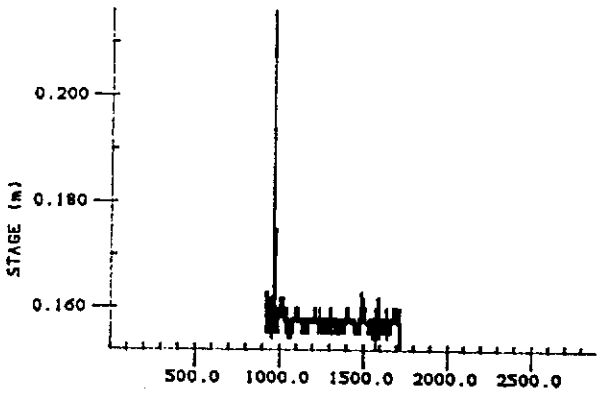

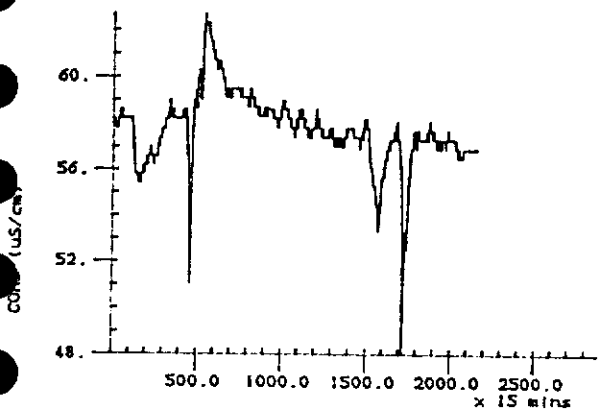

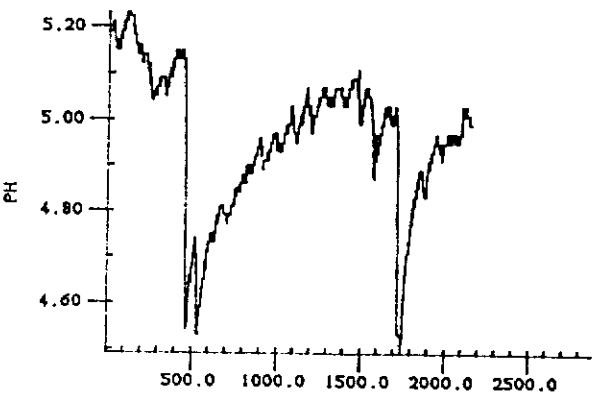

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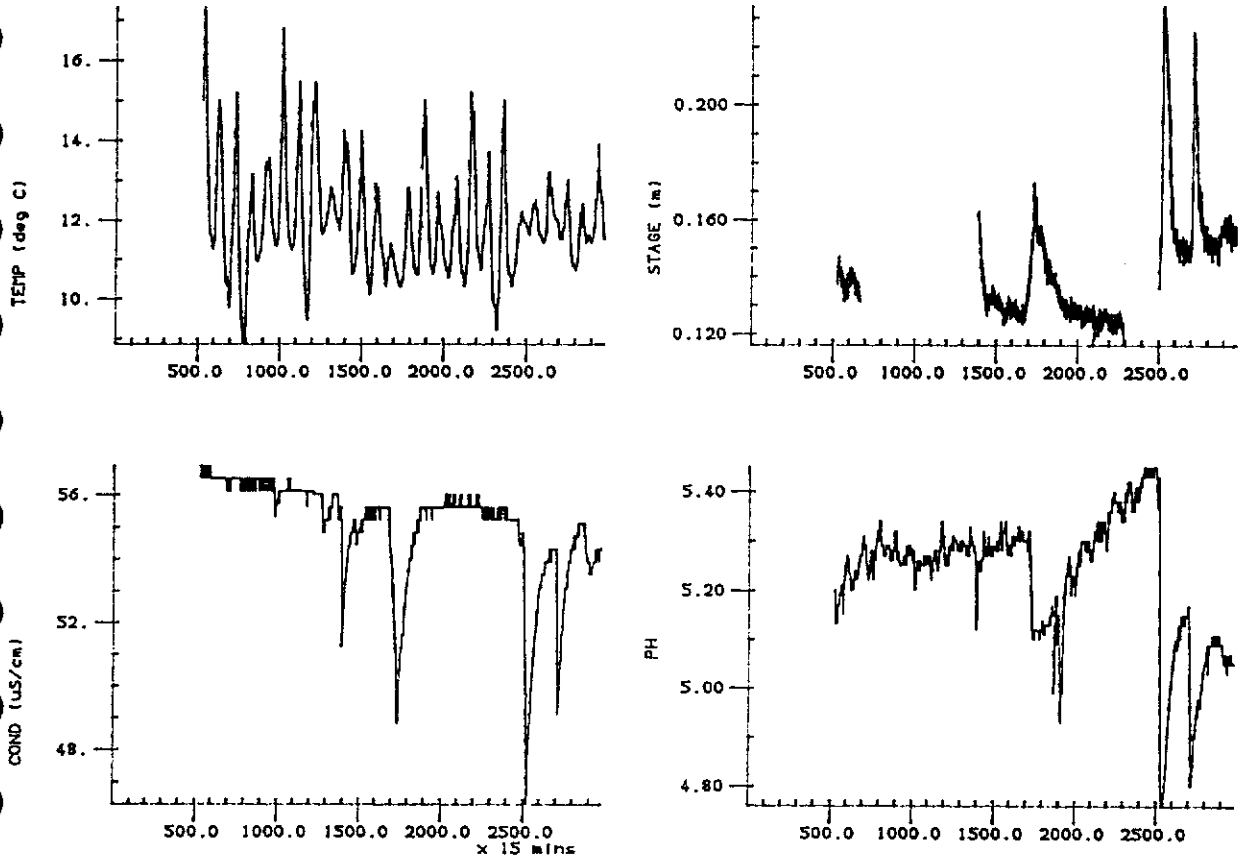

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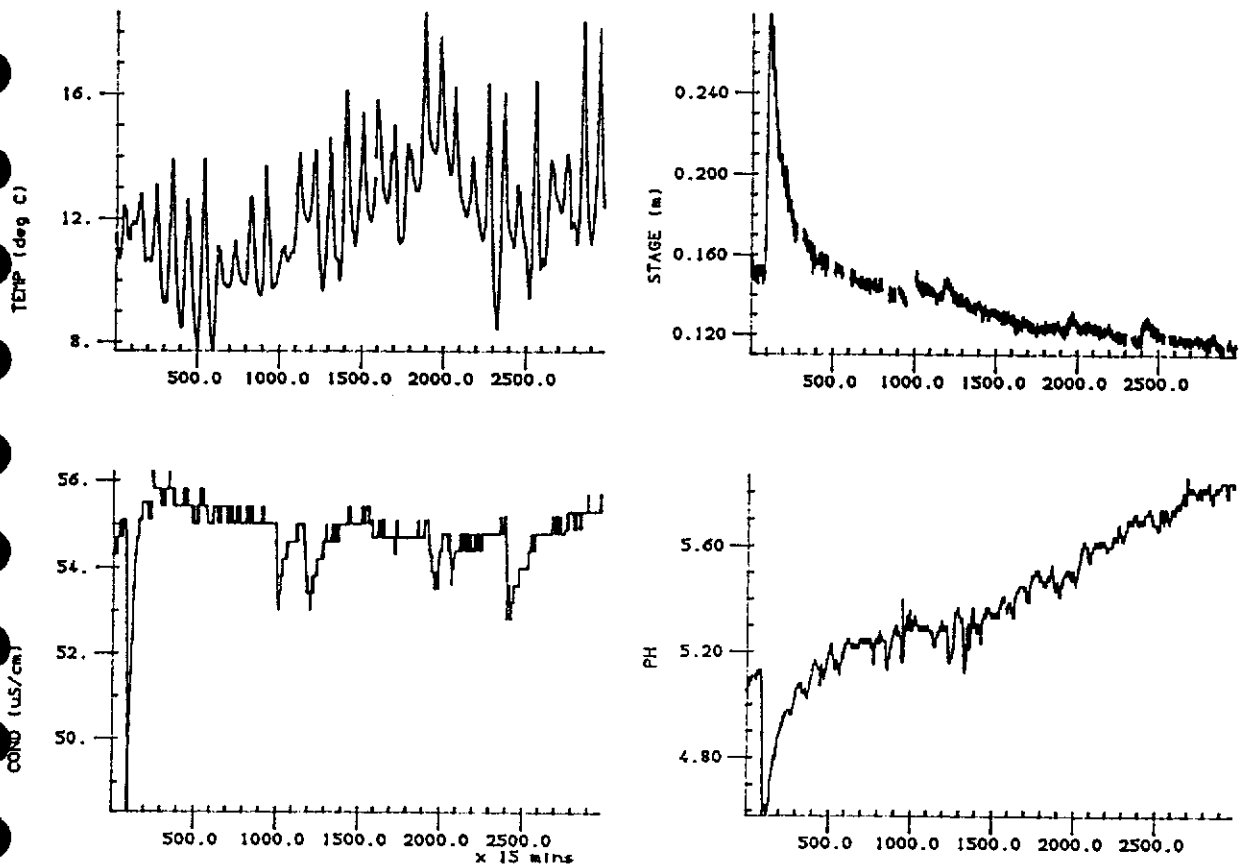

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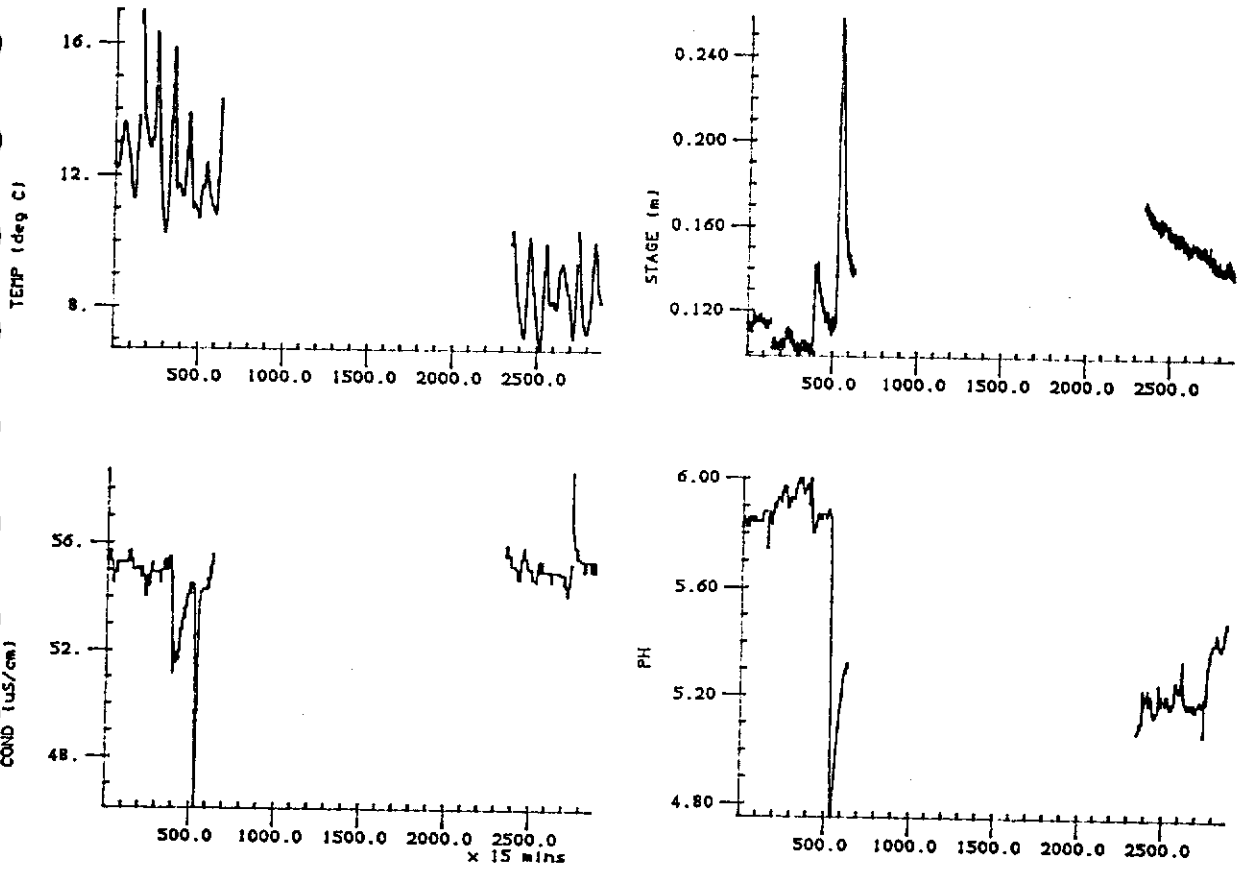

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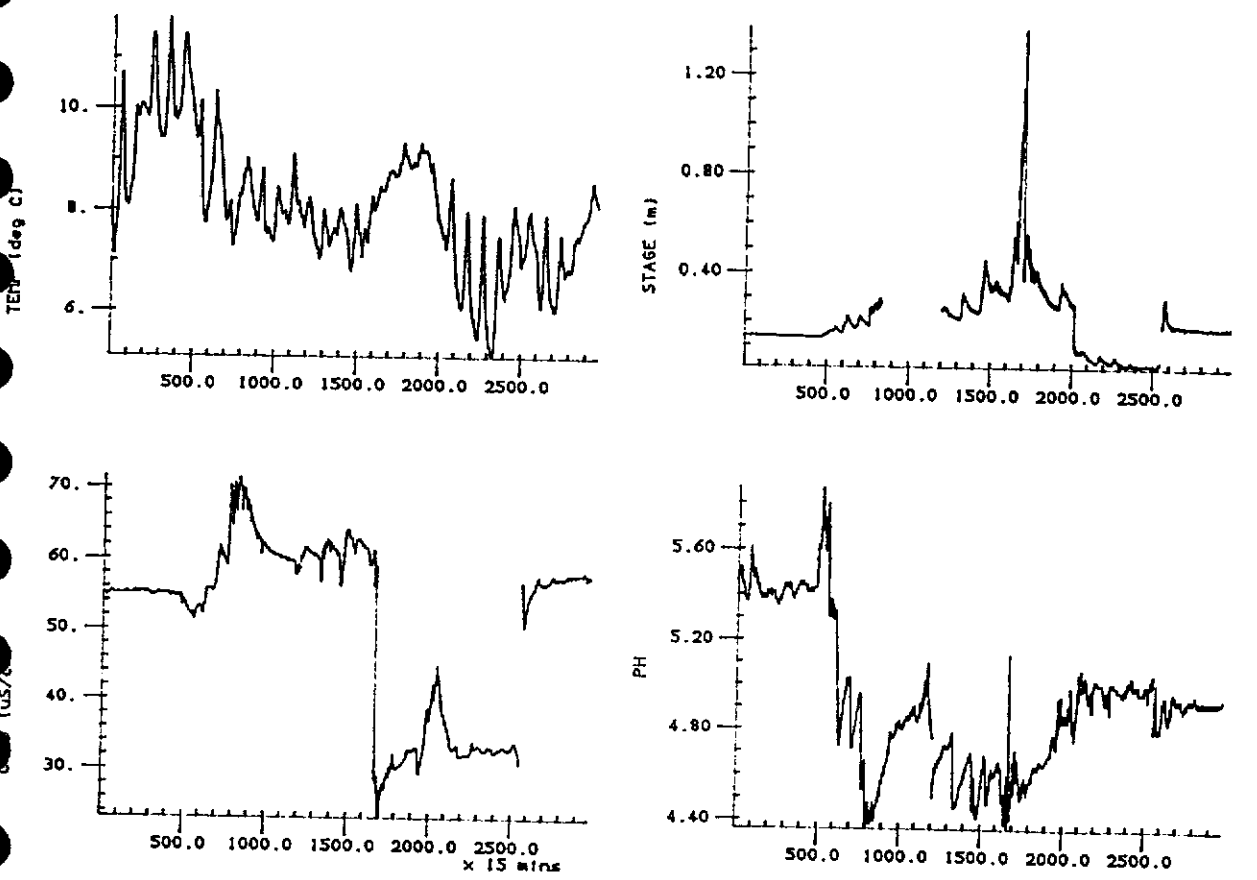

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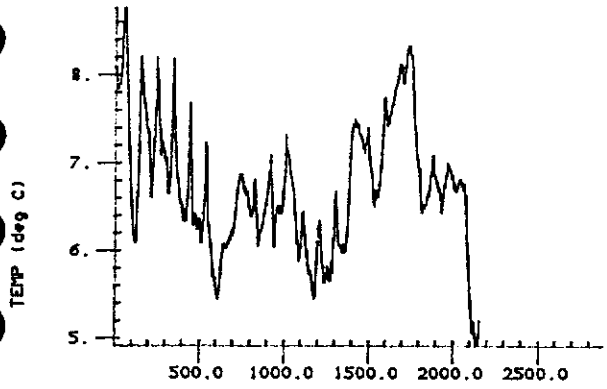
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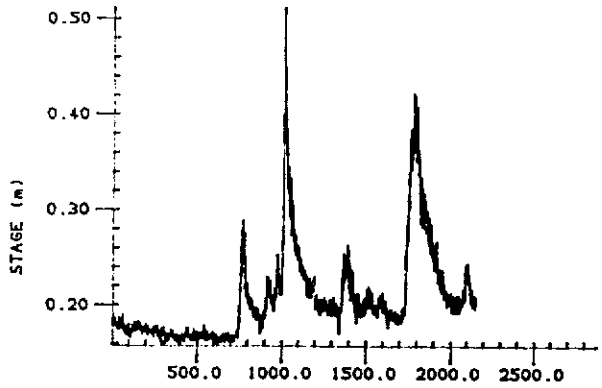
7.
6.
5.
500.0
1000.0
1500.0
2000.0
2500.0


STAGE (m)
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0.40
0.30
0.20
500.0
1000.0
1500.0
2000.0
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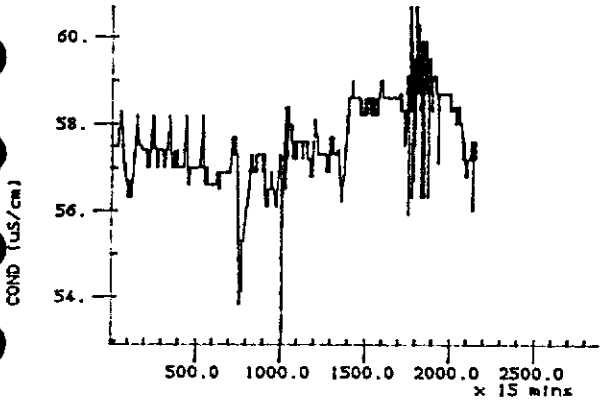
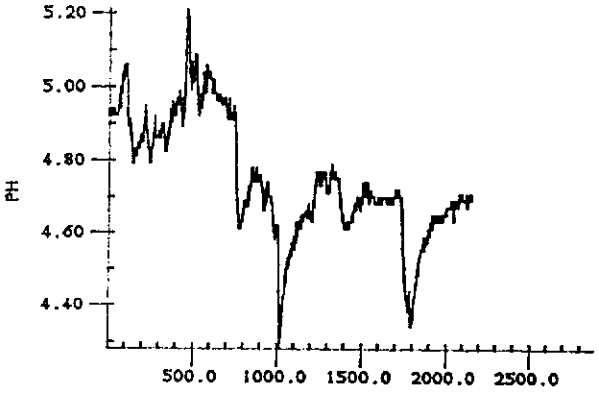

COND (uS/cm)
60.
58.
56.
54.
500.0
1000.0
1500.0
2000.0
2500.0
x 15 mins


PH
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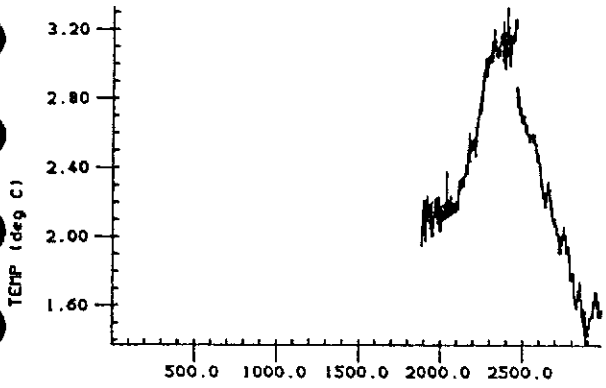

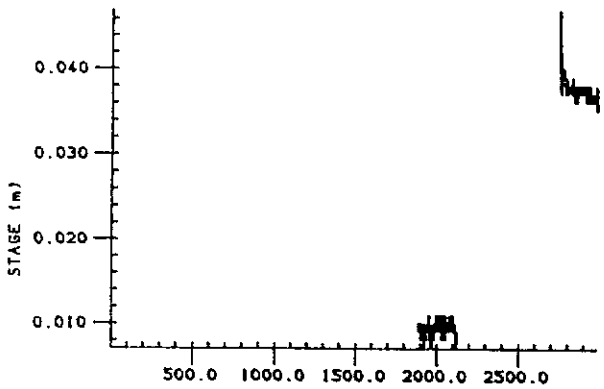

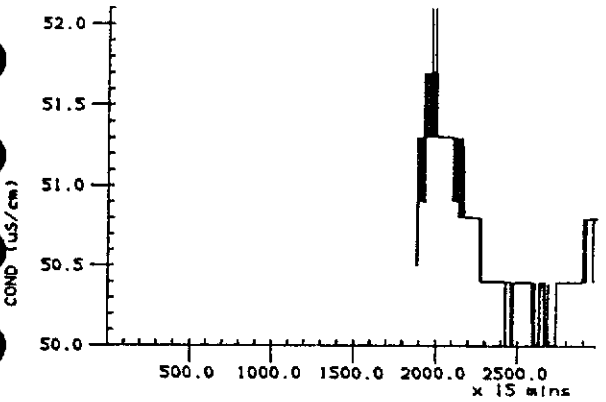

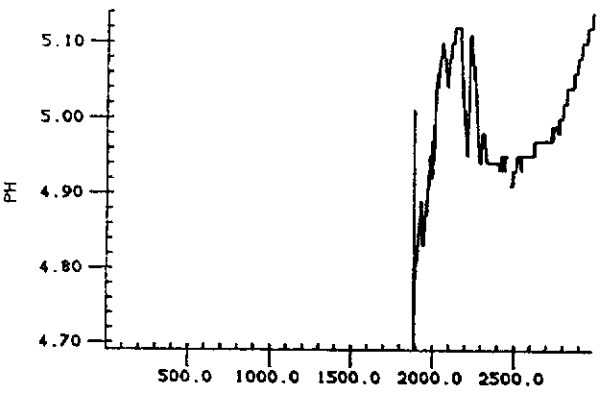

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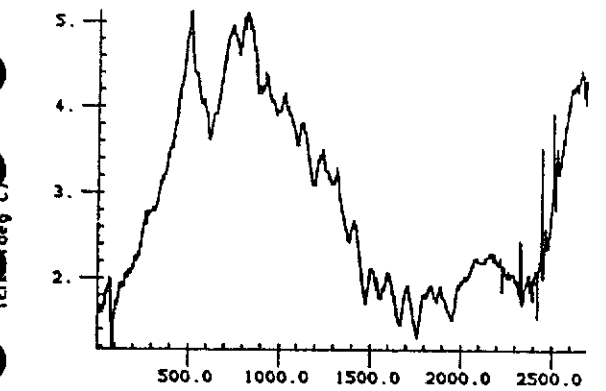

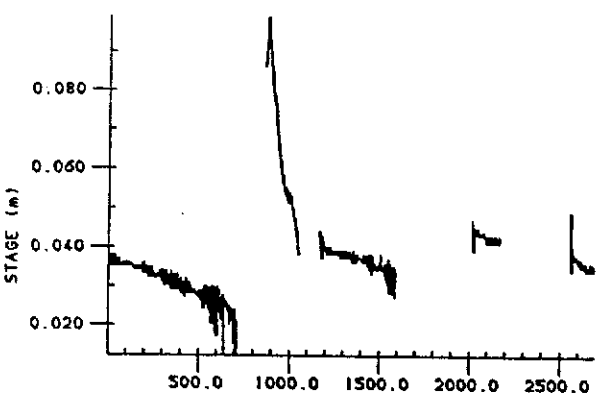

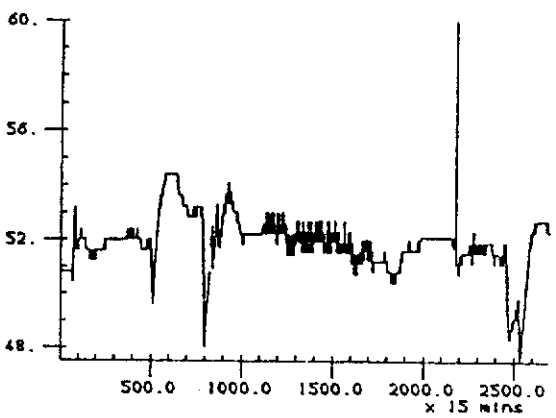

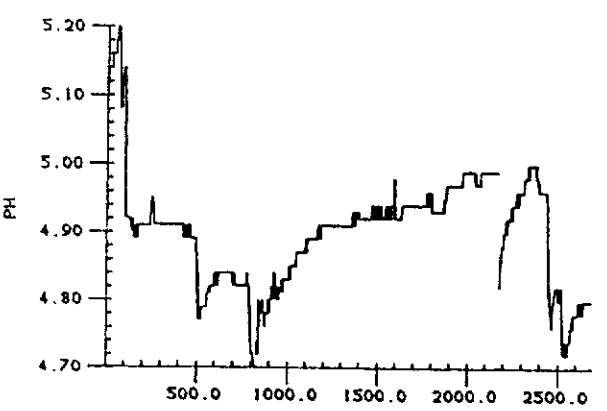

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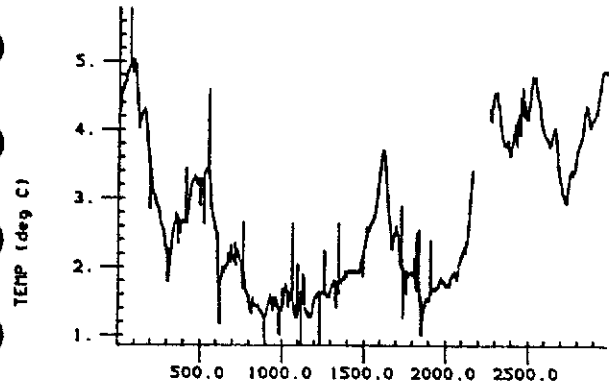

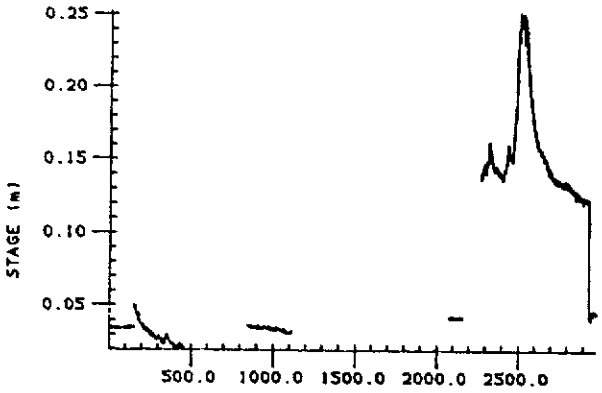

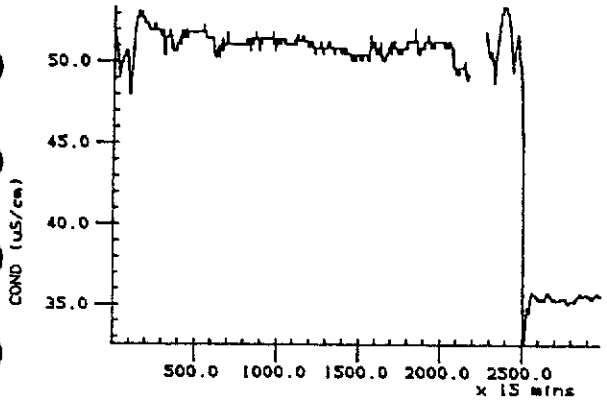

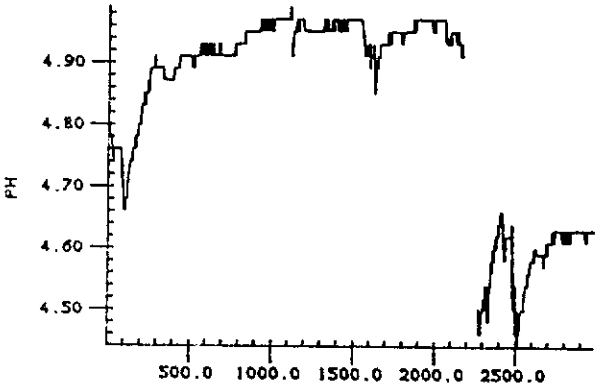

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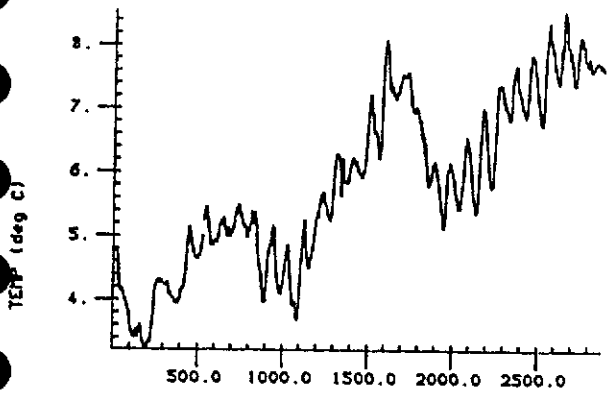

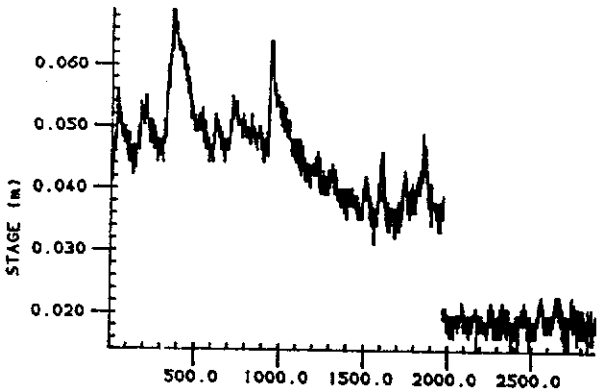

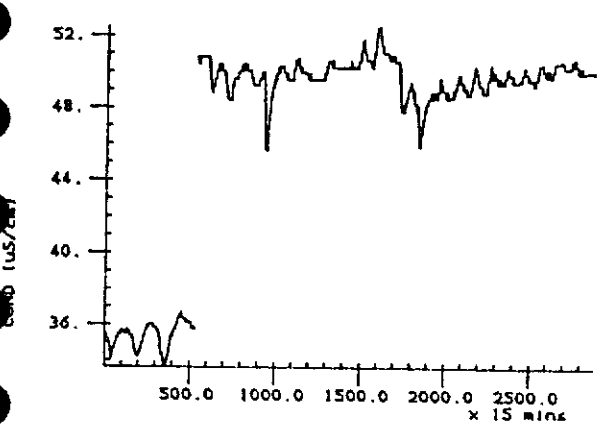

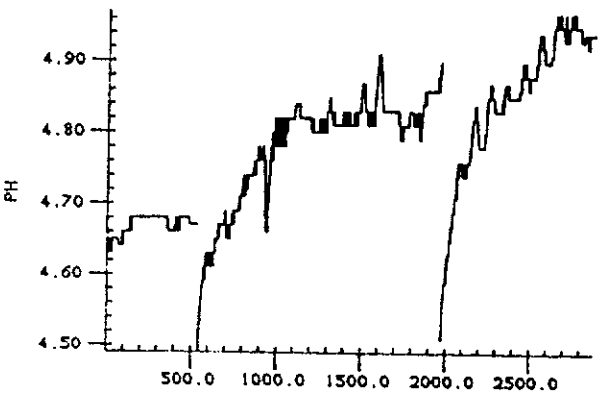

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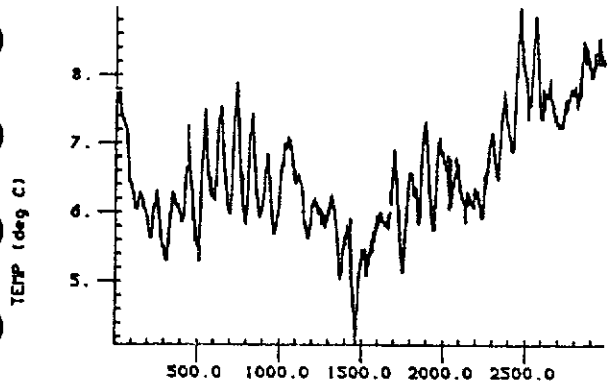

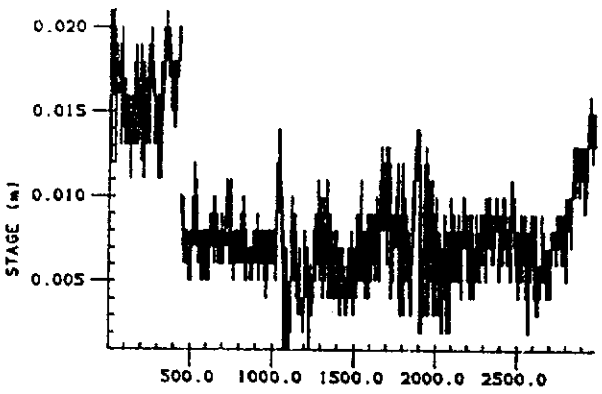

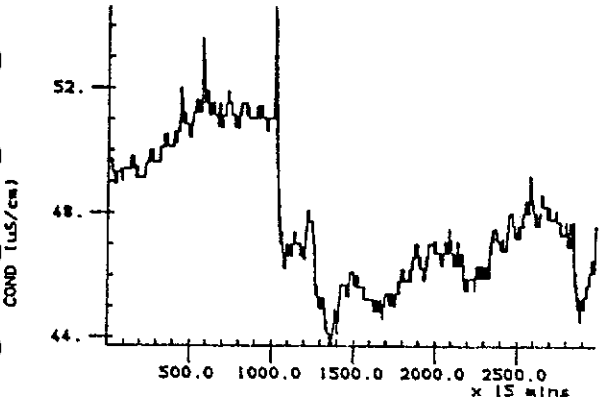

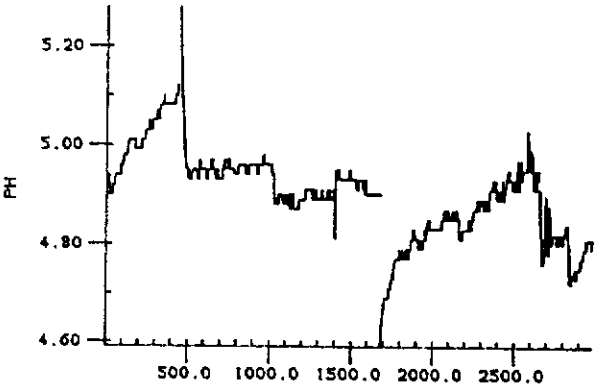

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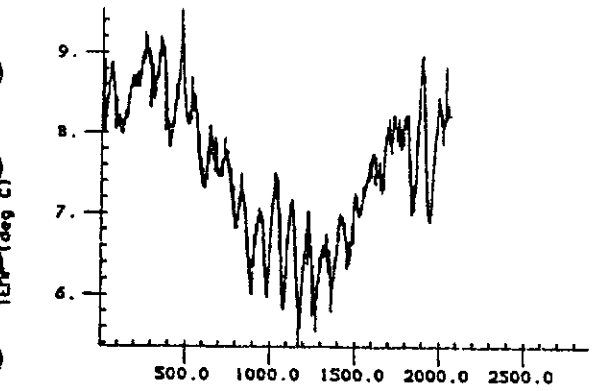

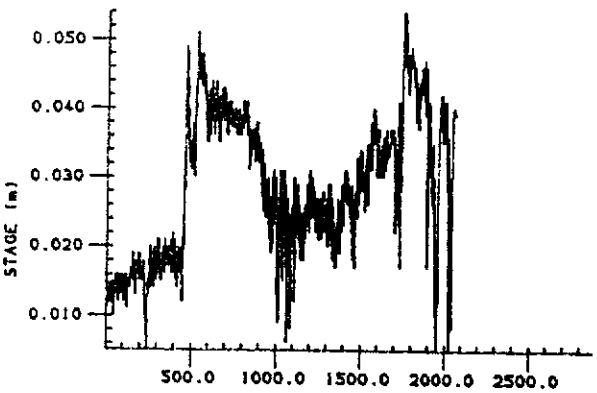

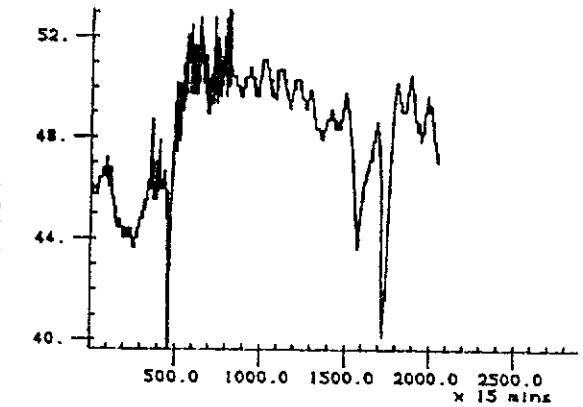

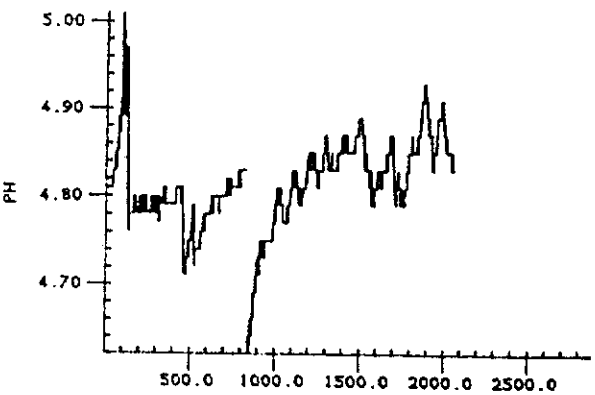

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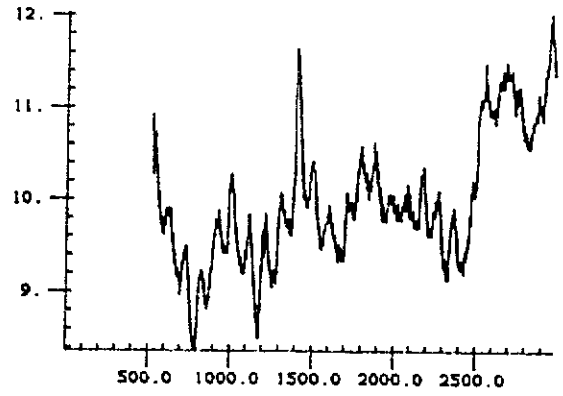

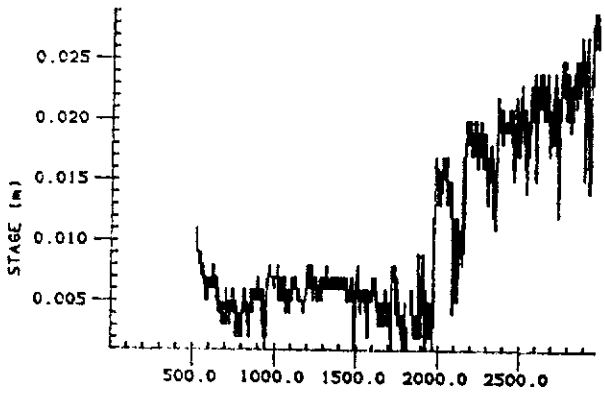

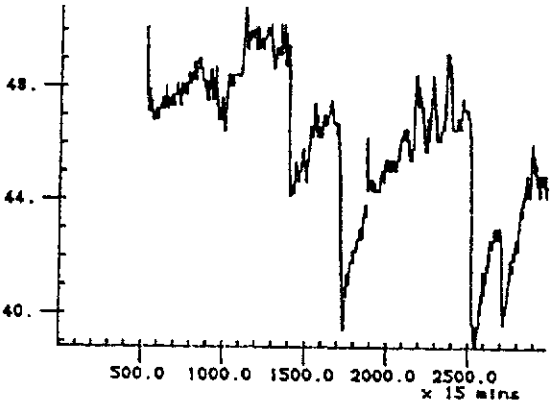

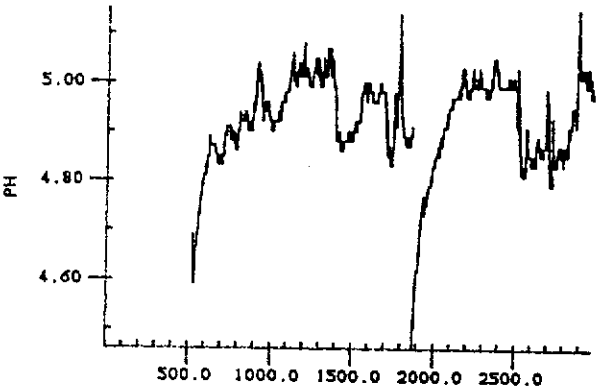

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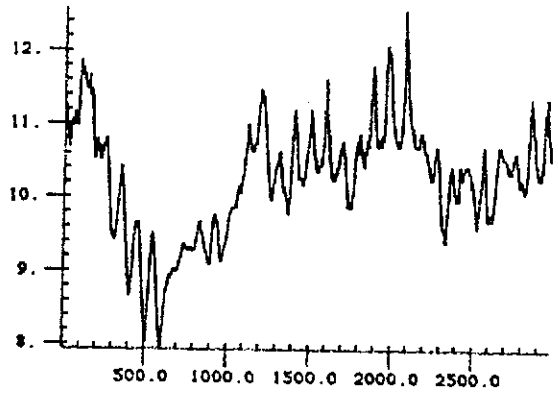

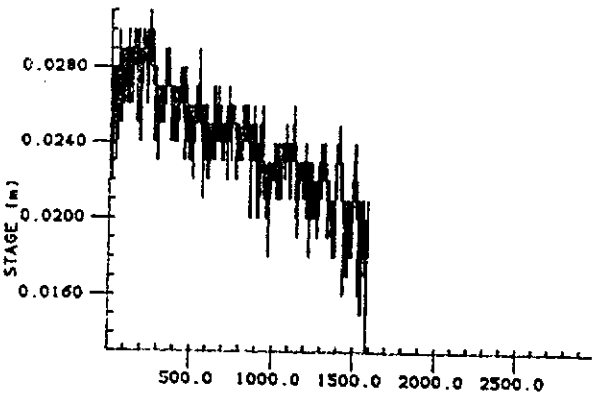

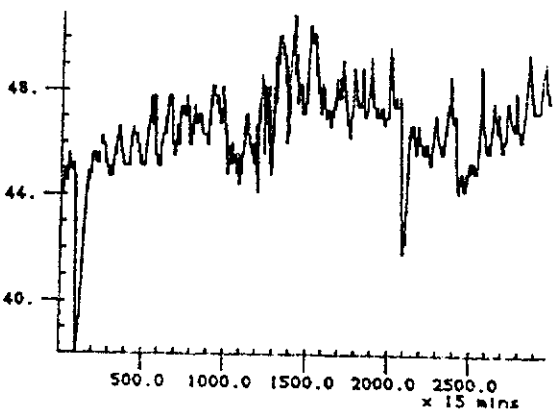

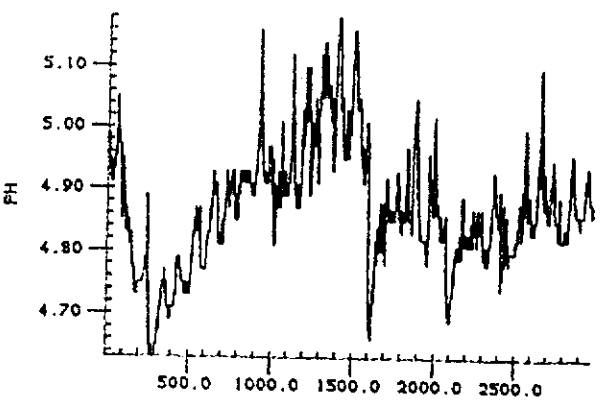

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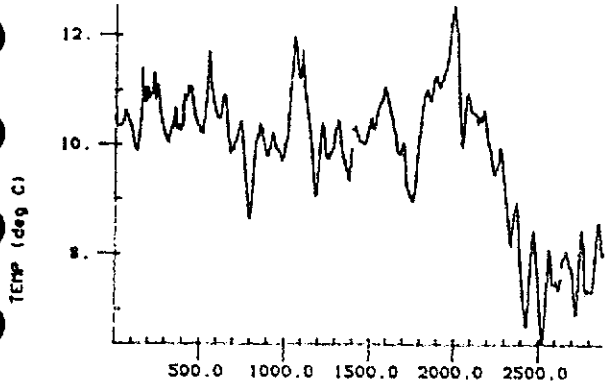

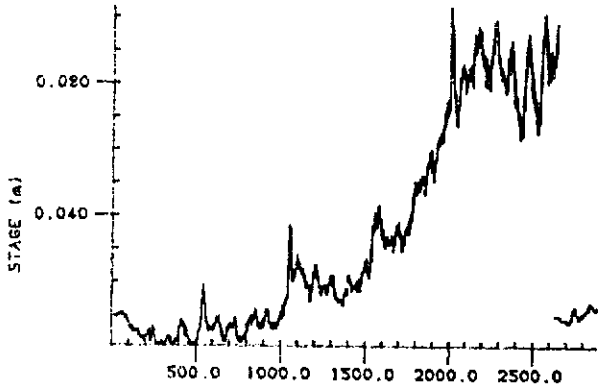

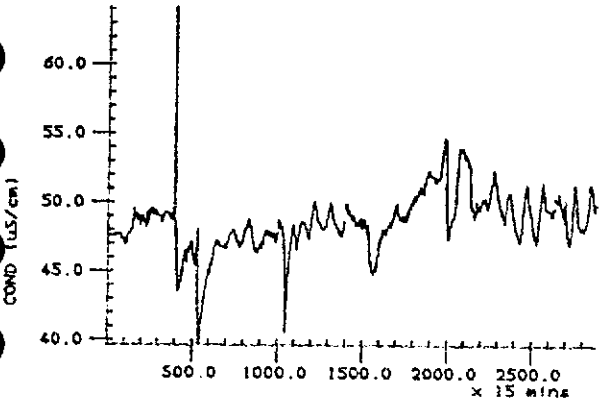

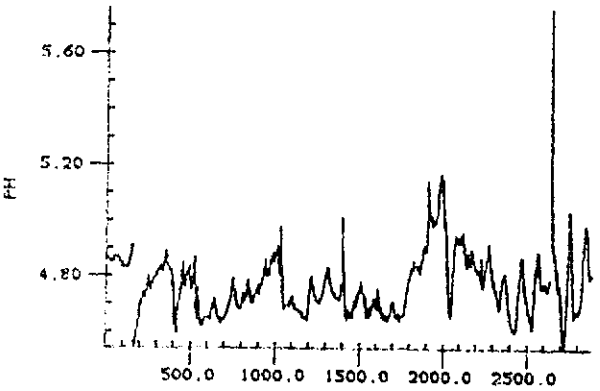

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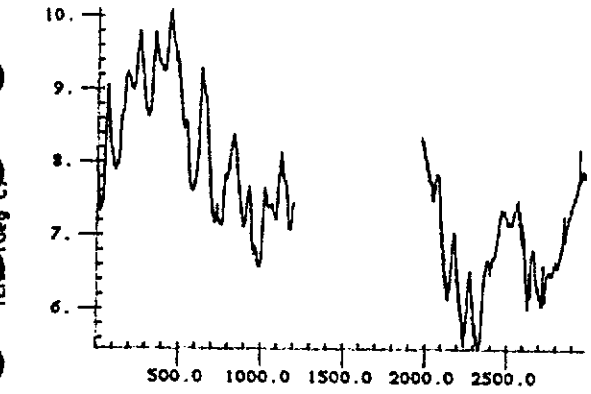

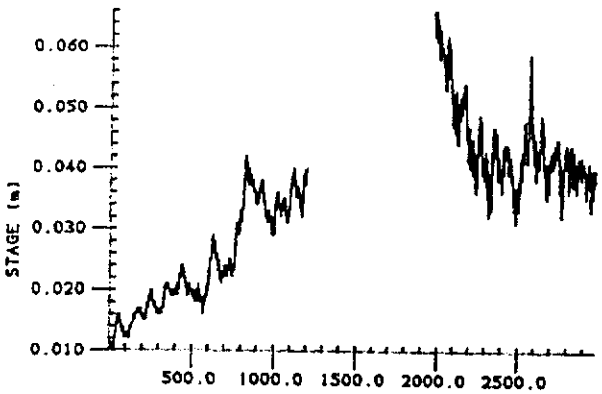

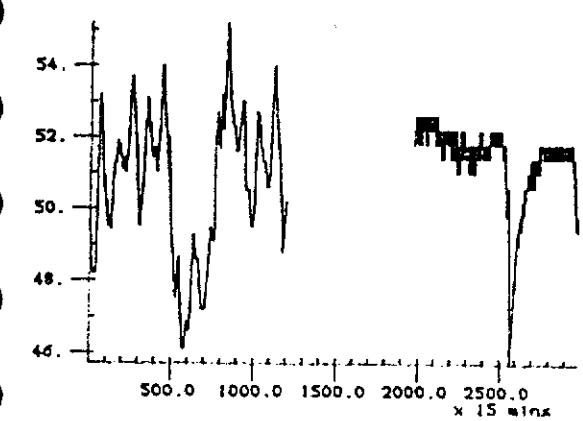

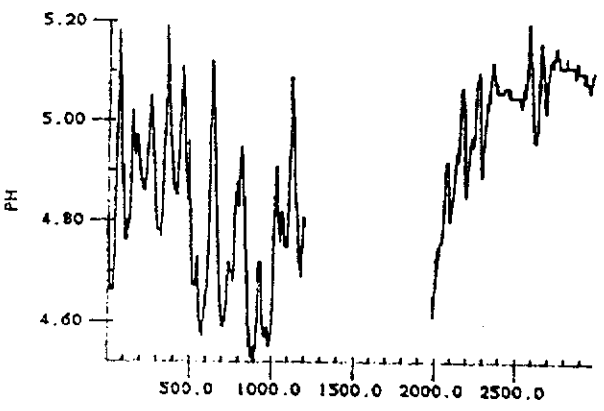

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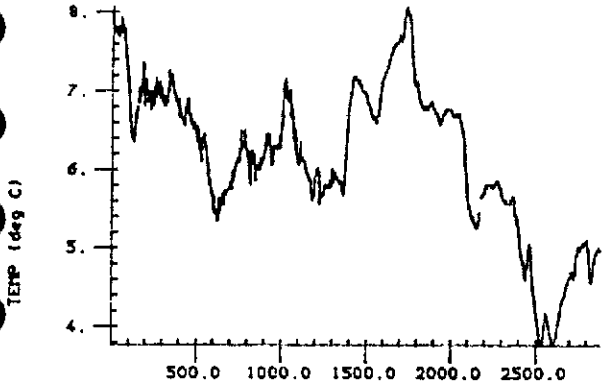

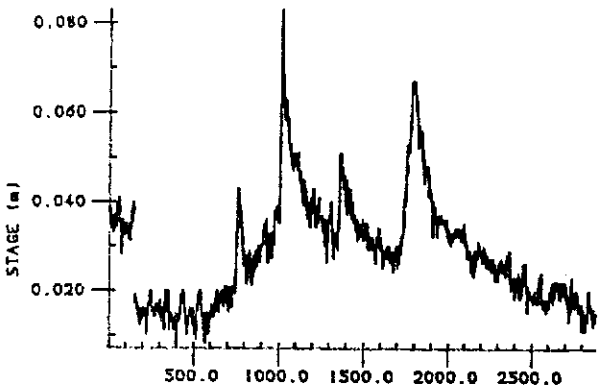

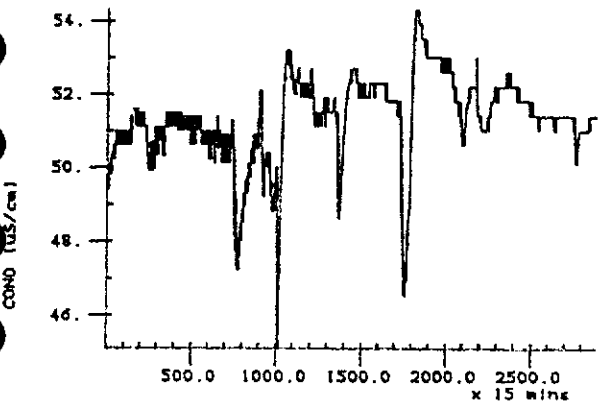

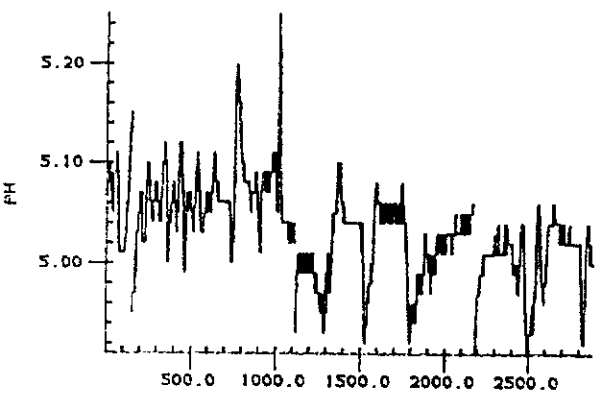

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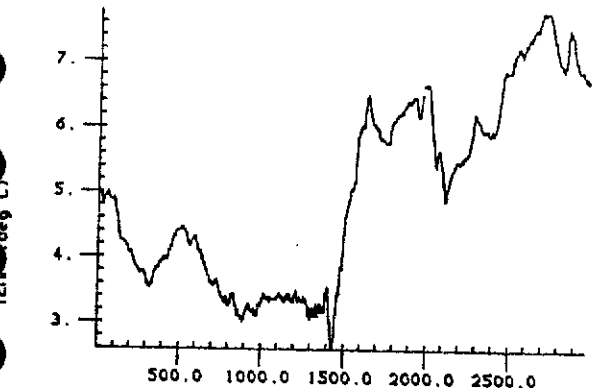

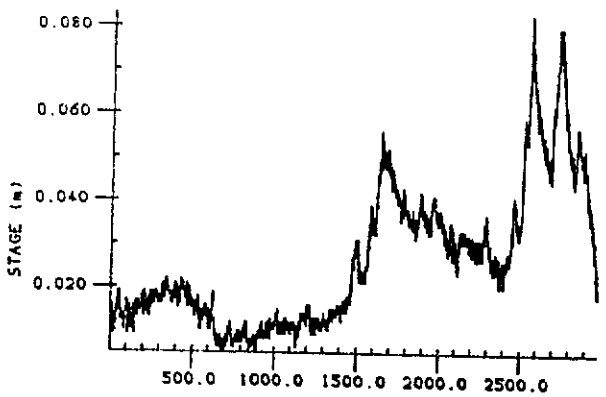

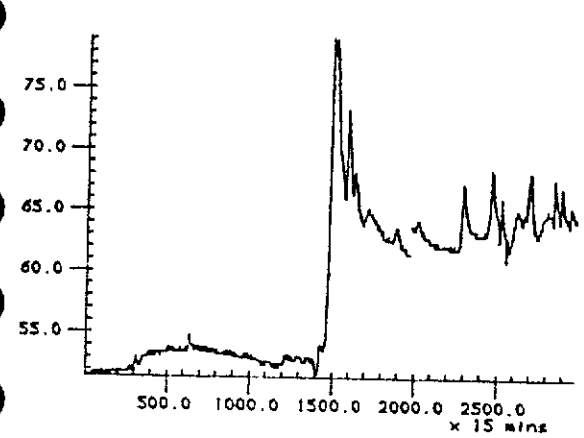

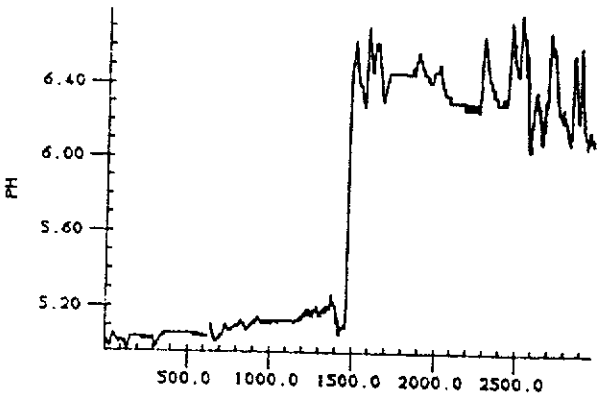

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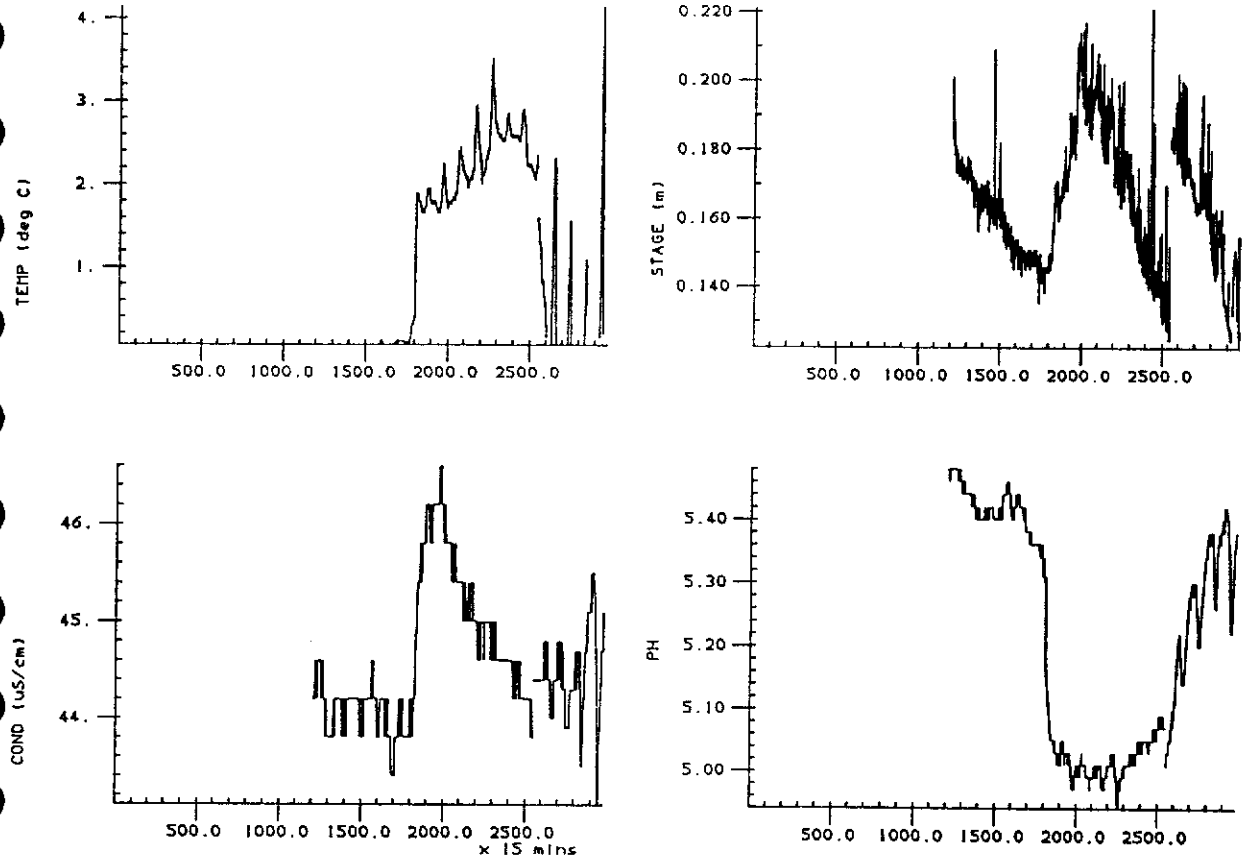

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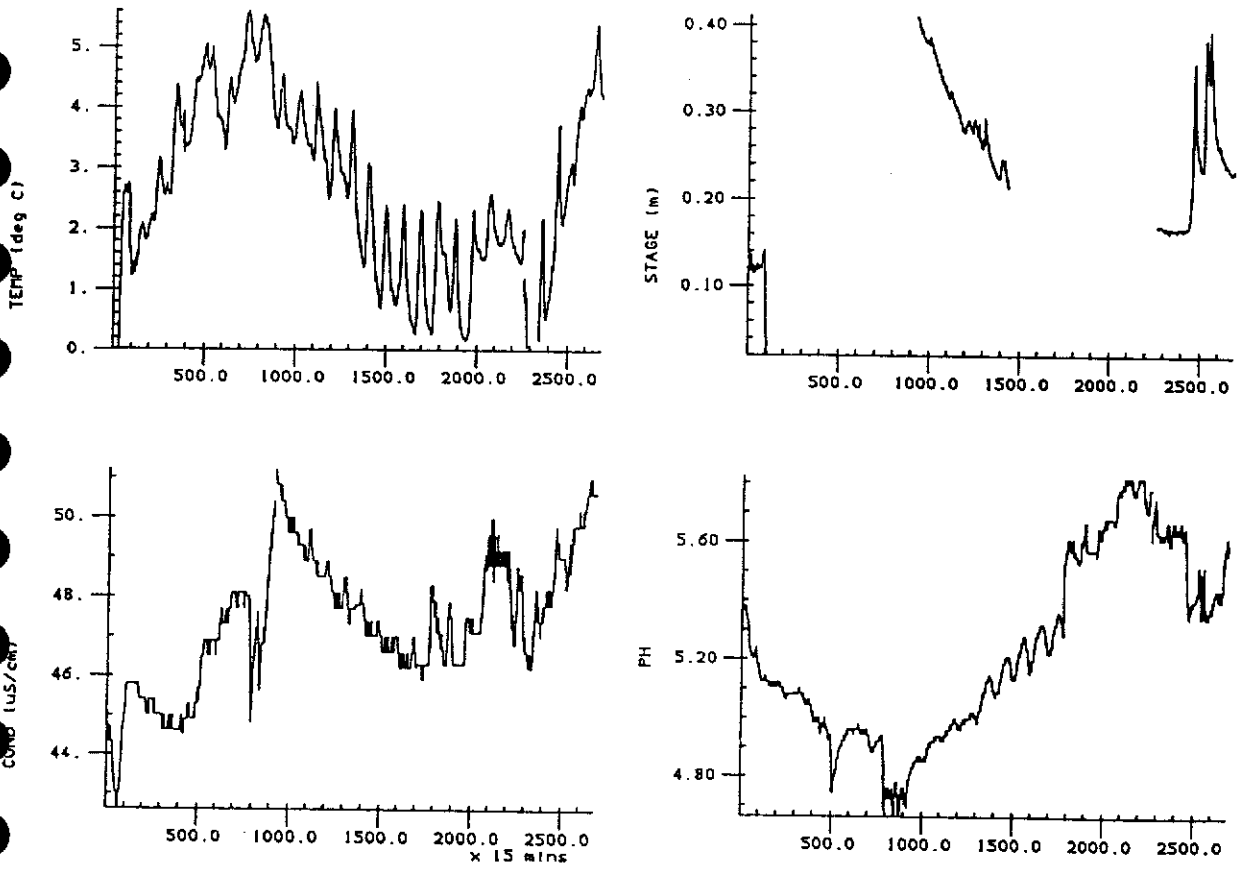

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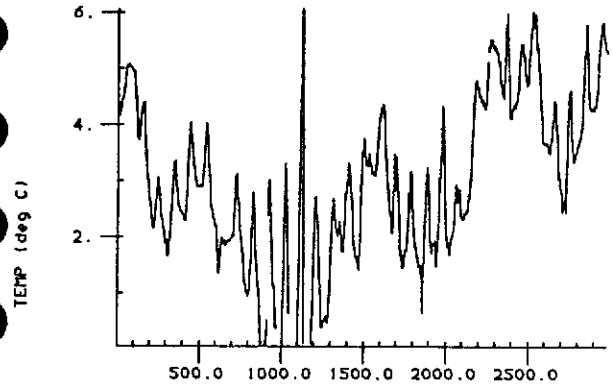

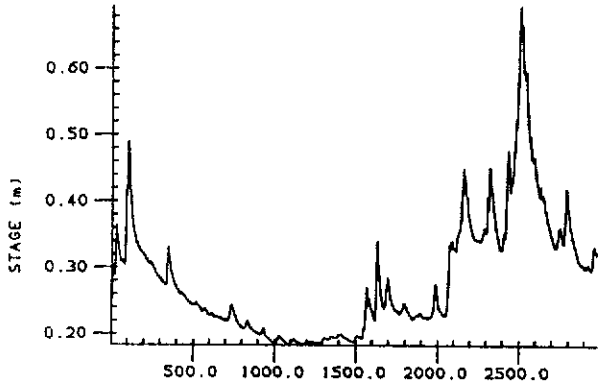

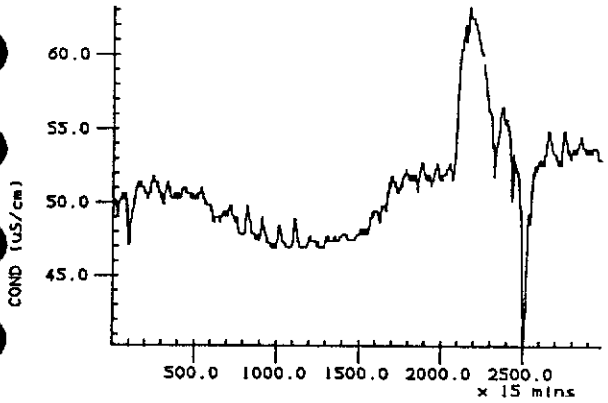

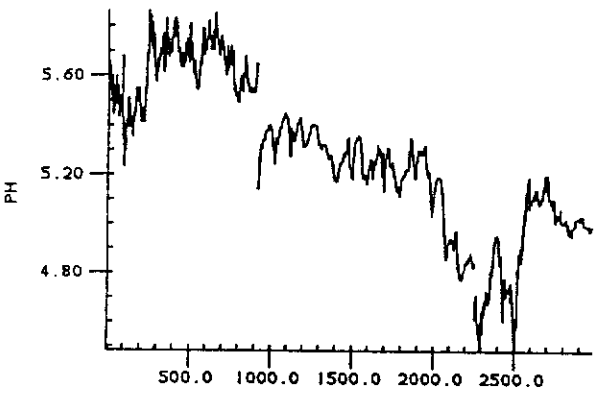

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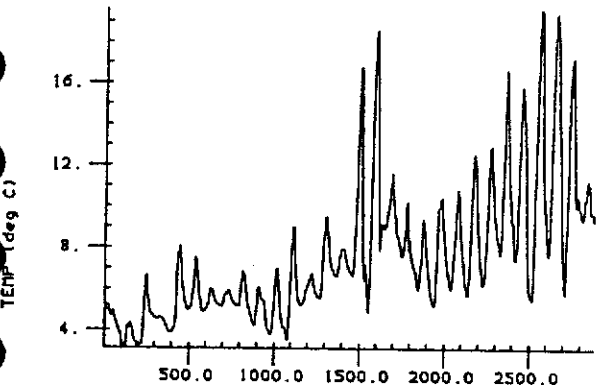

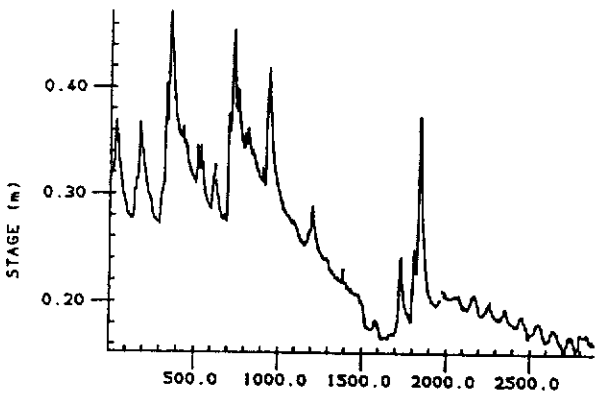

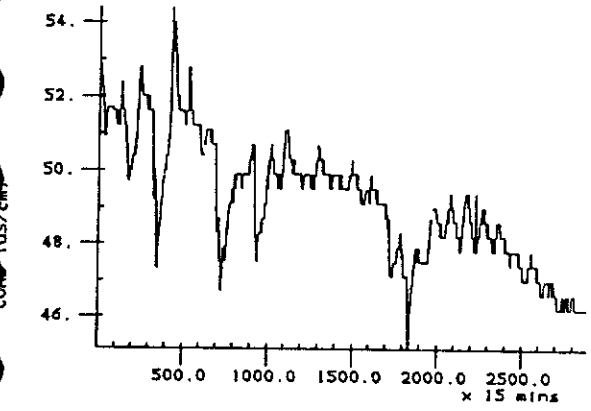

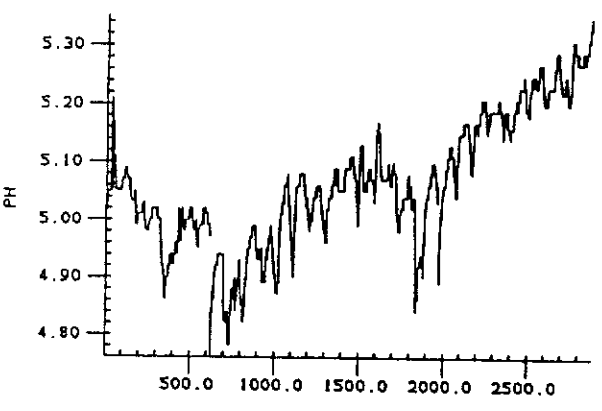

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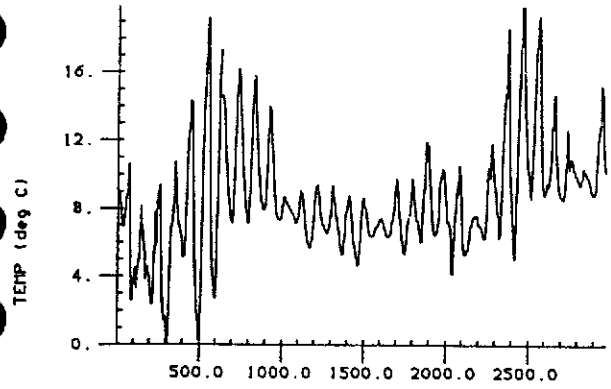

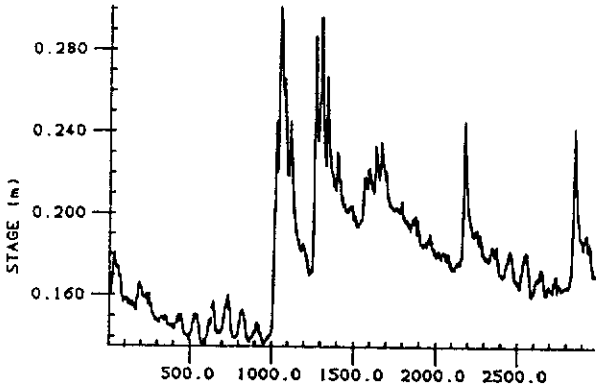

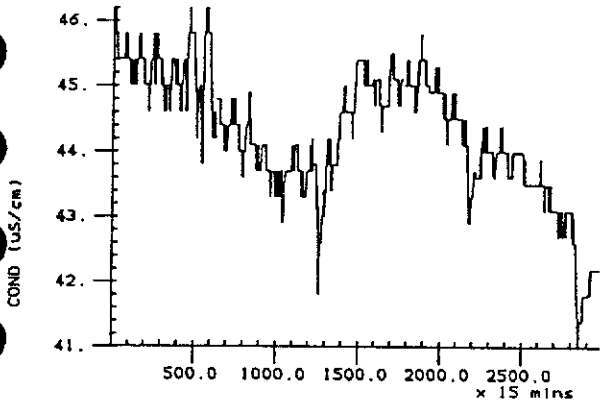

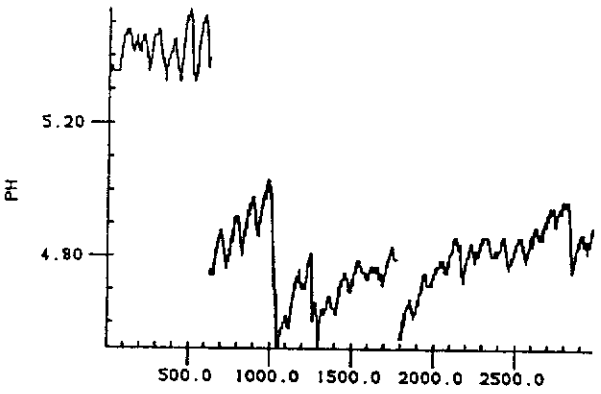

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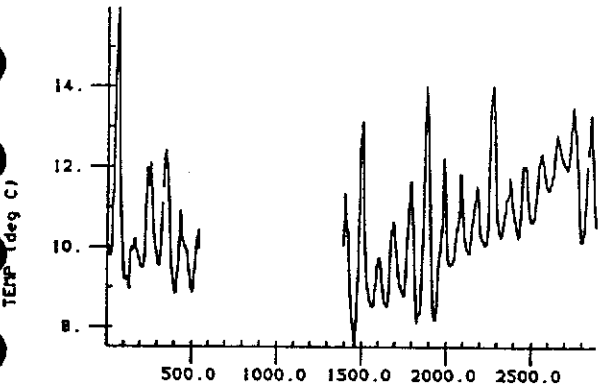

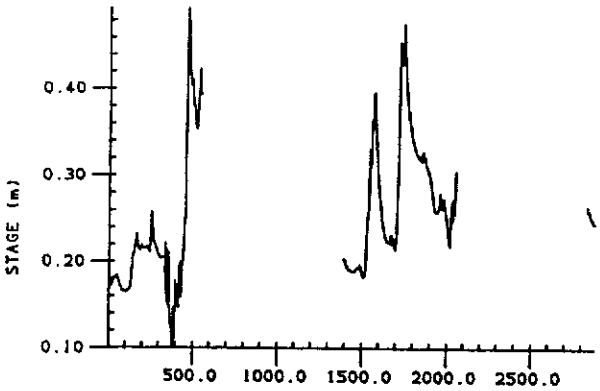

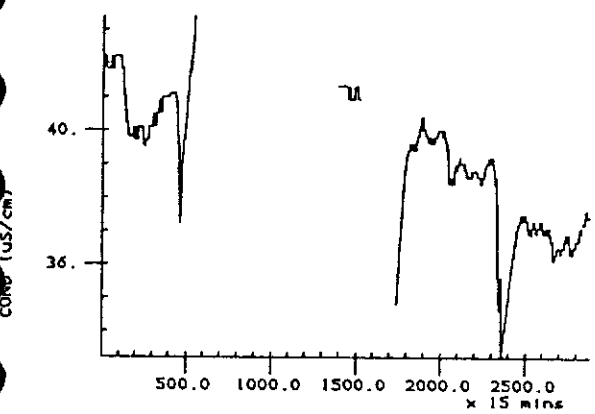

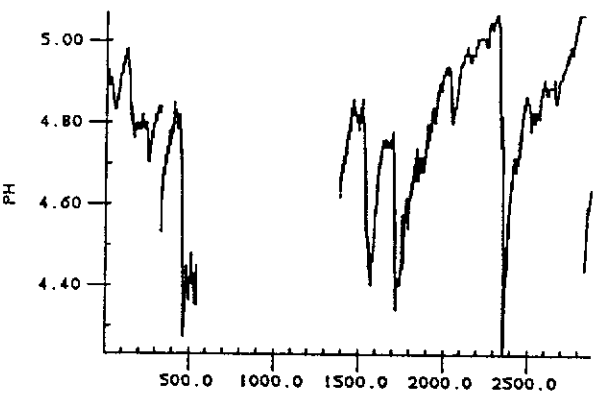

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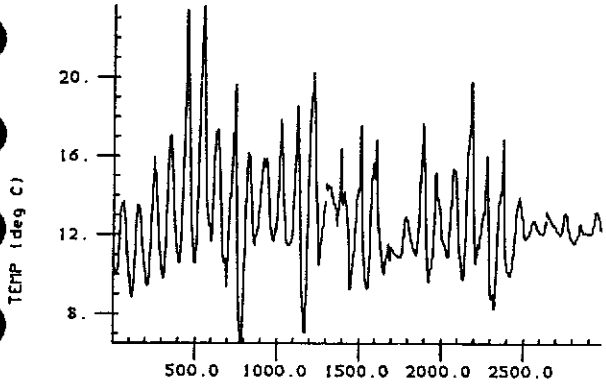

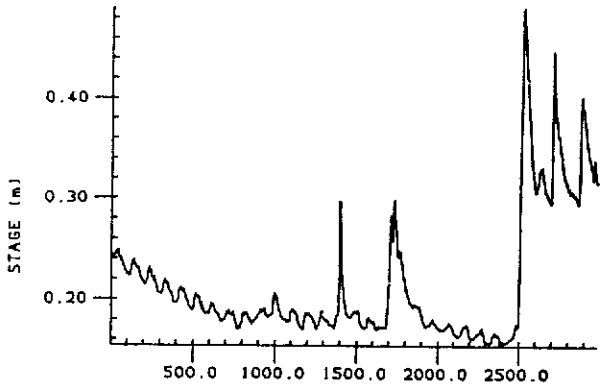

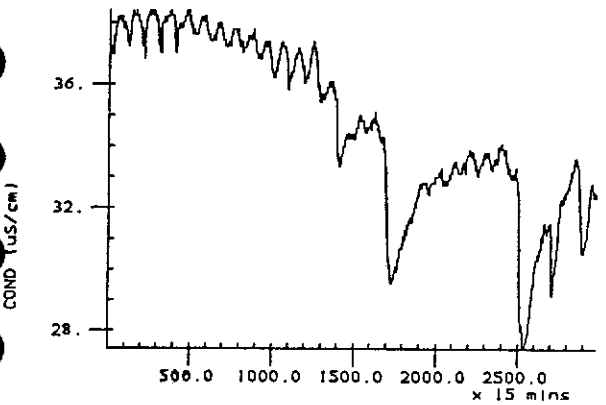

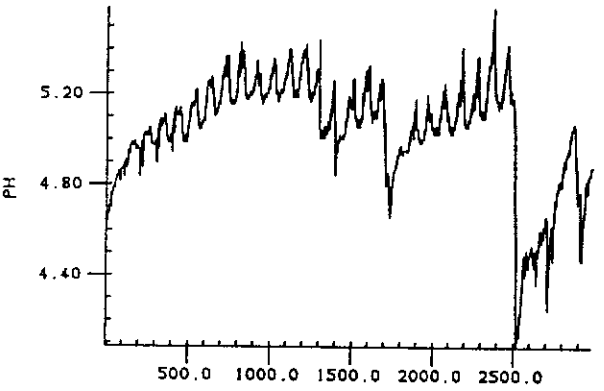

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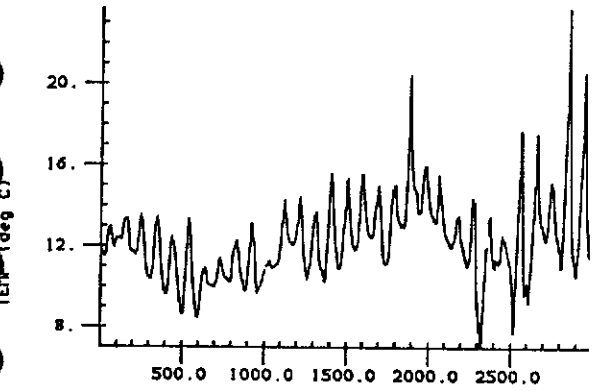

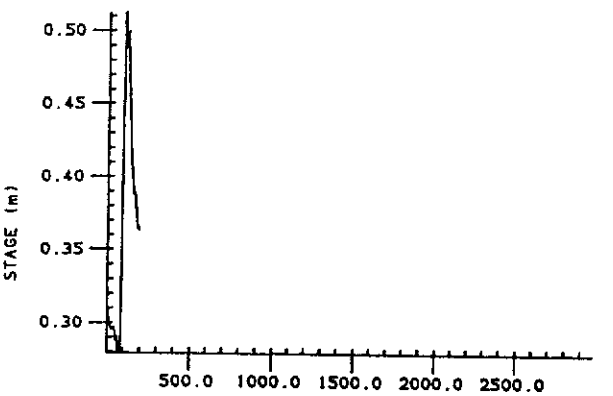

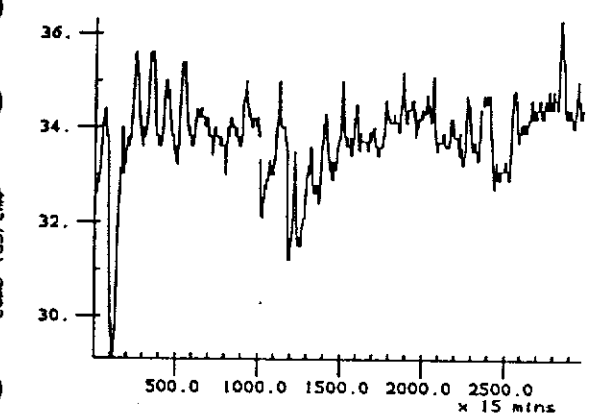

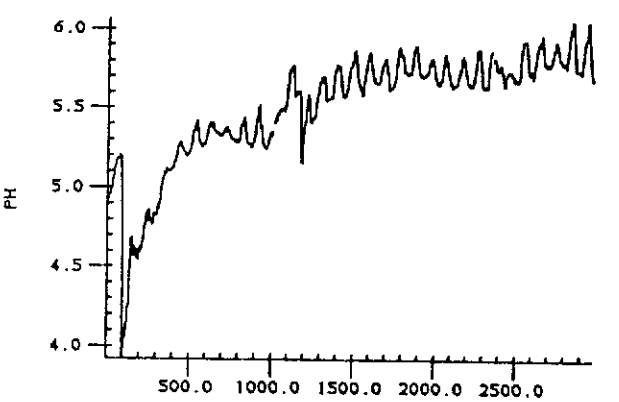

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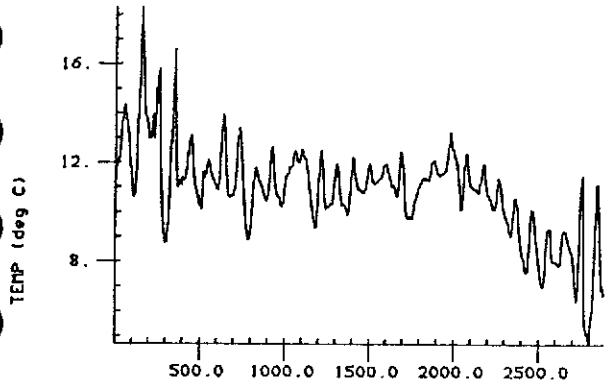

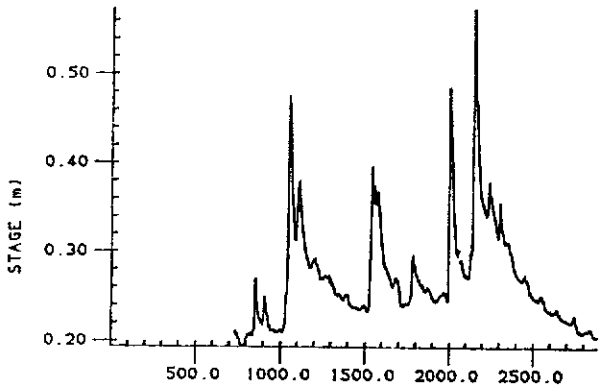

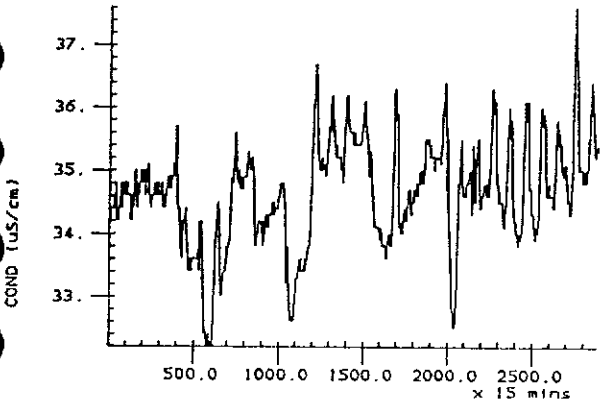

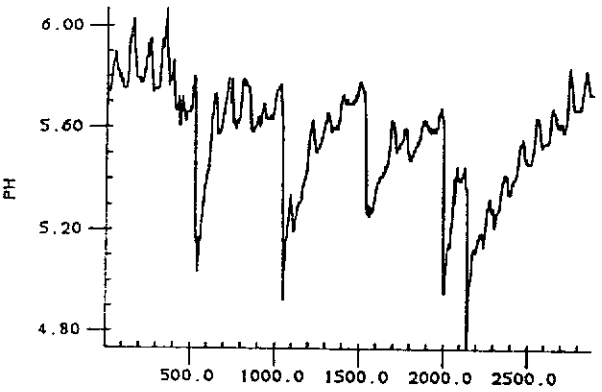

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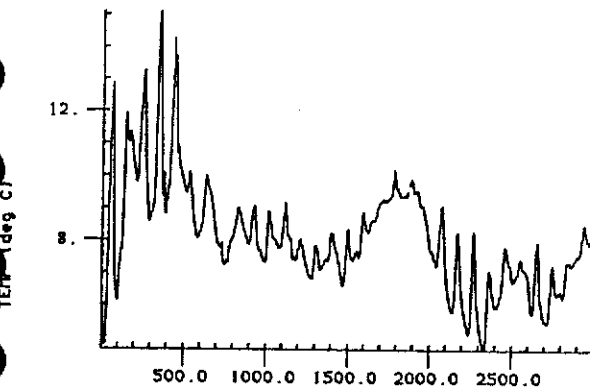

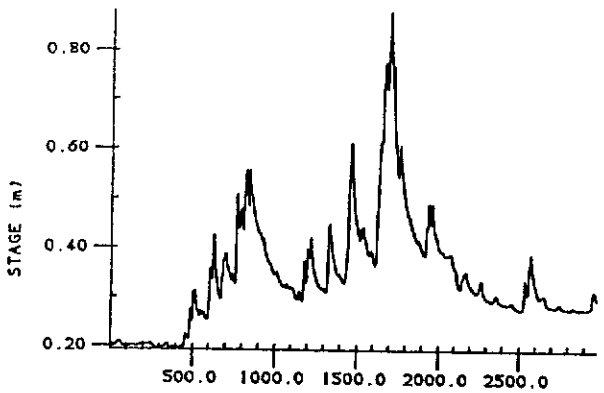

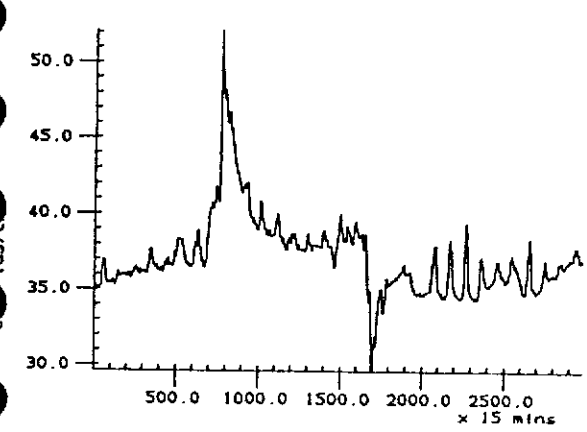

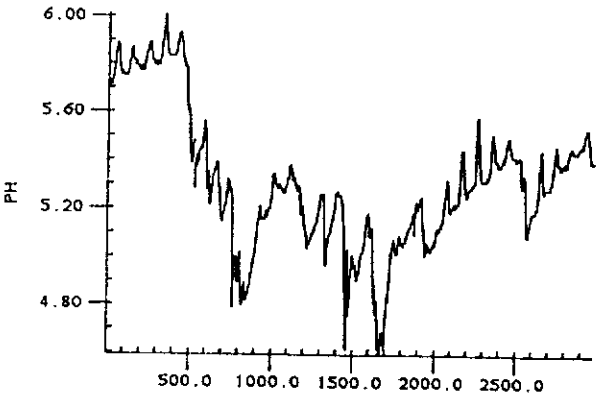

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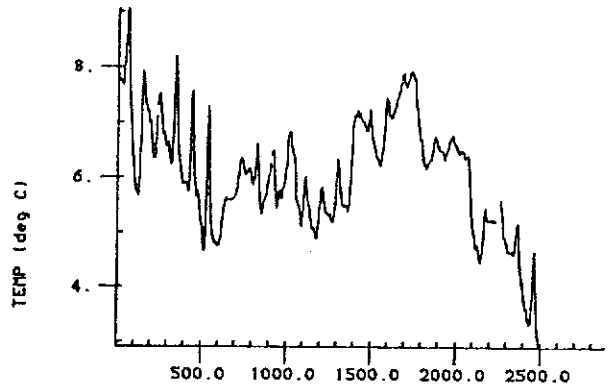

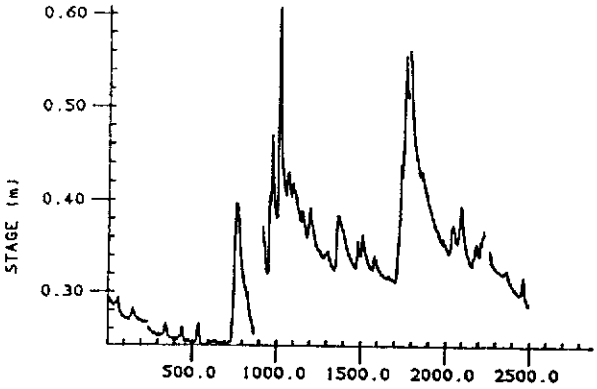

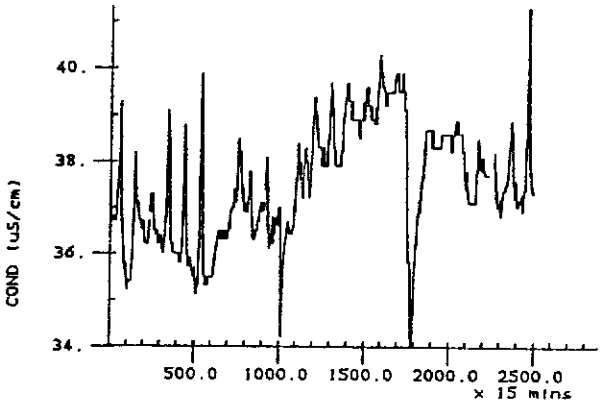

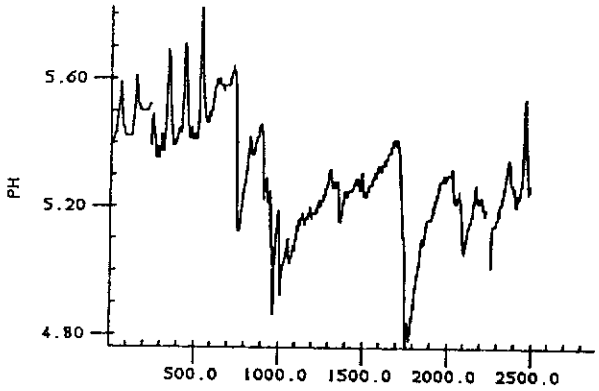

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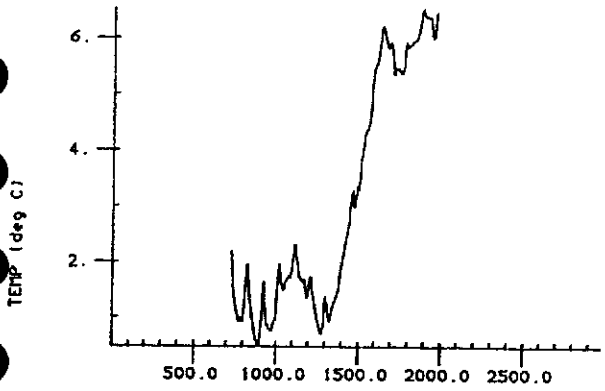

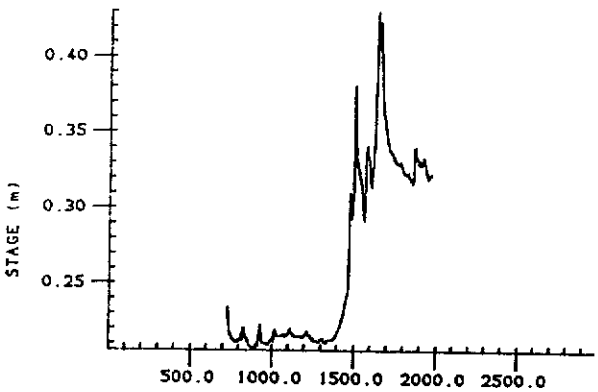

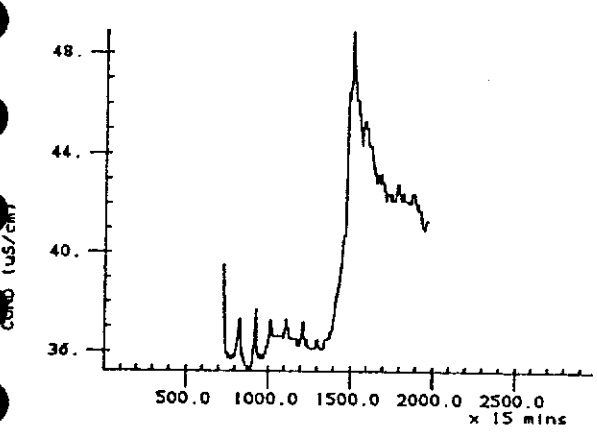

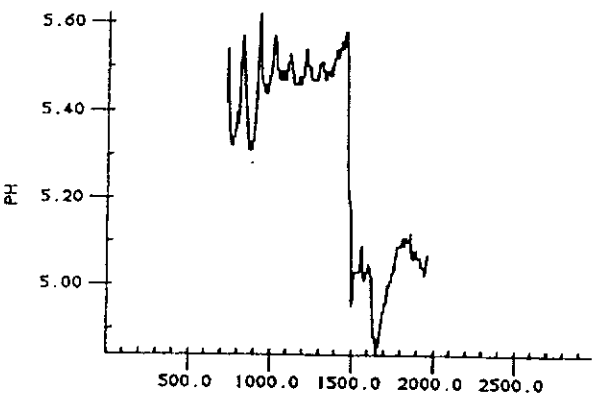

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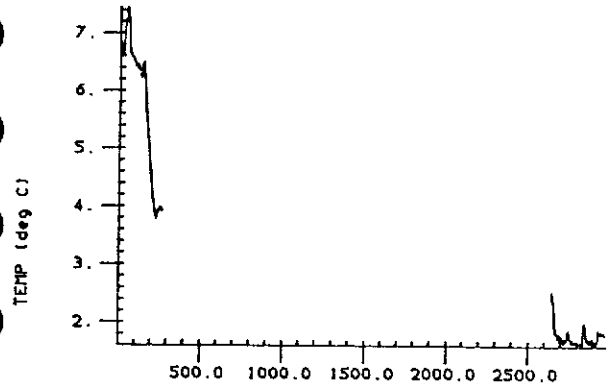

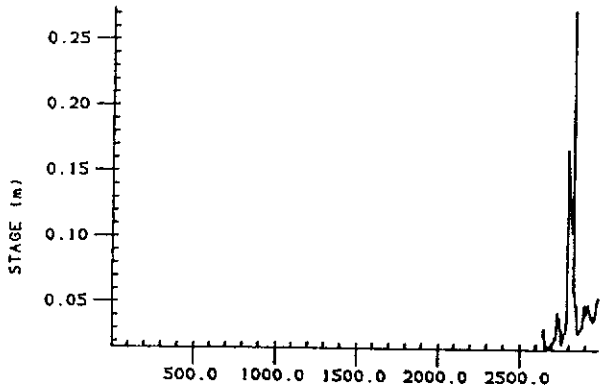

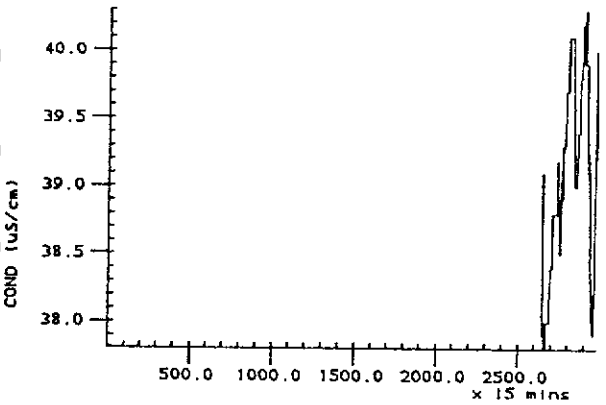

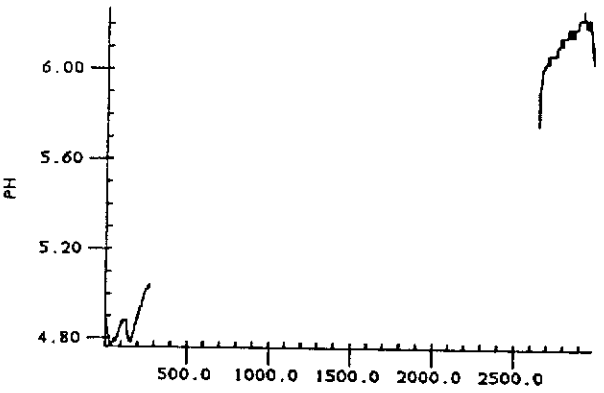

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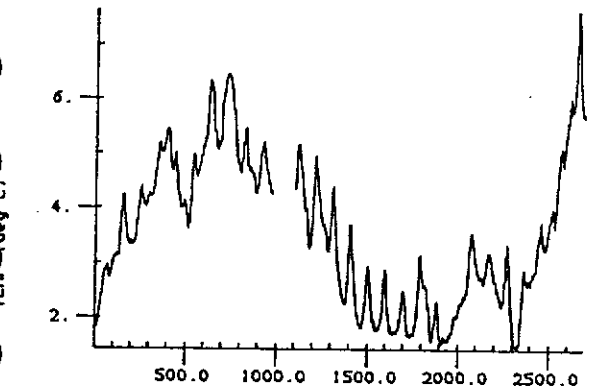

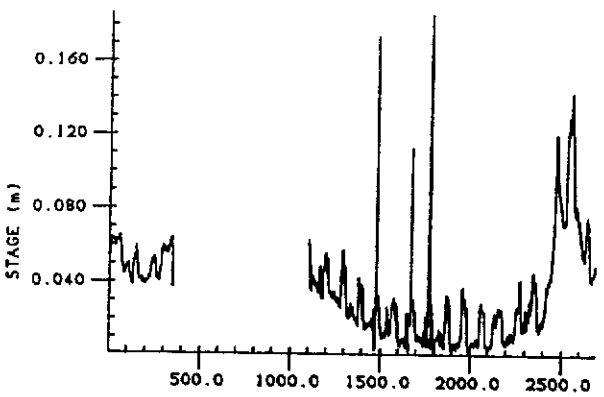

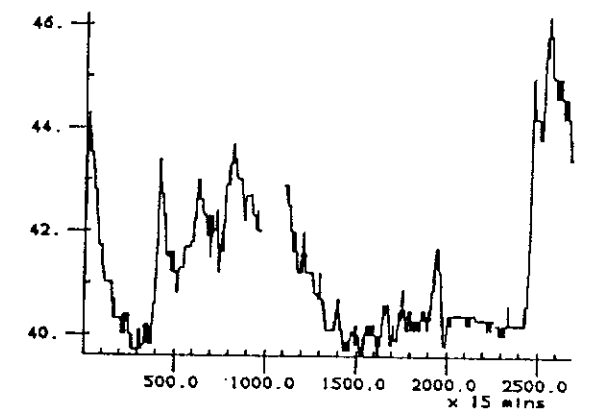

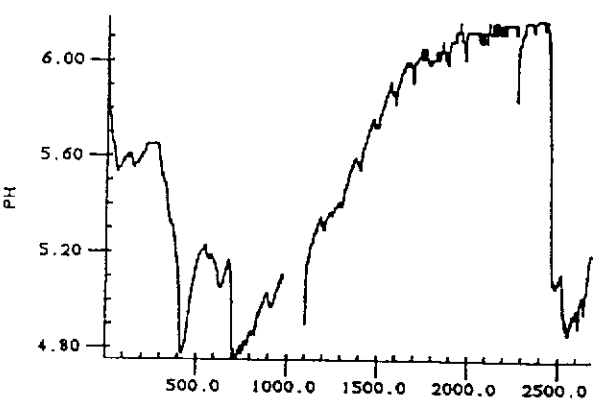

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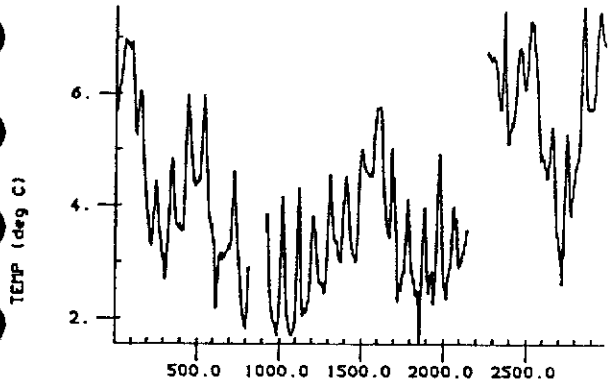

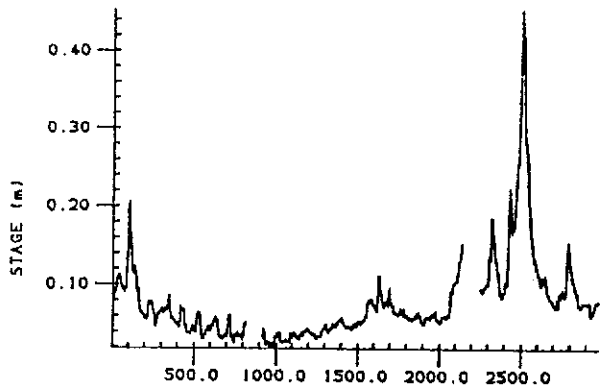

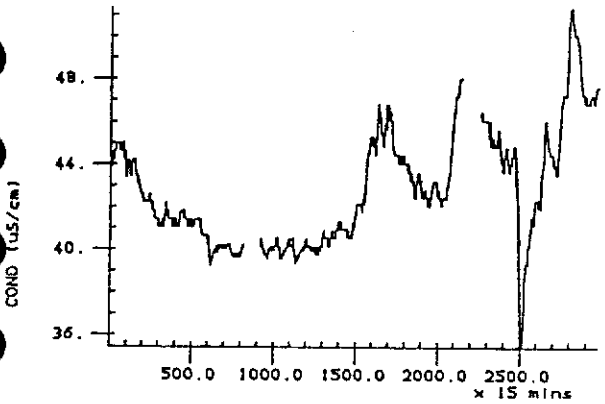

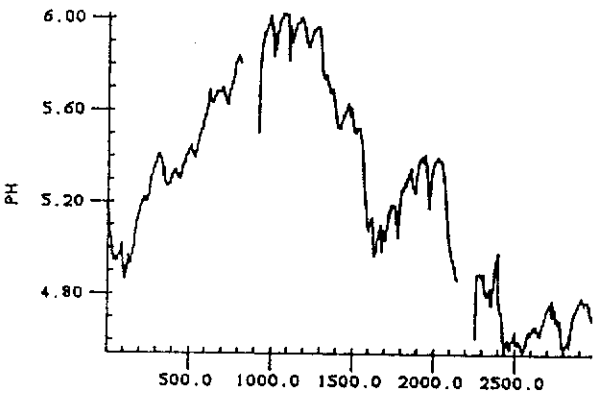

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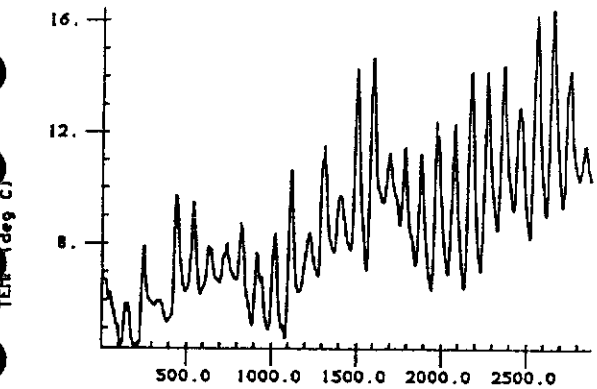

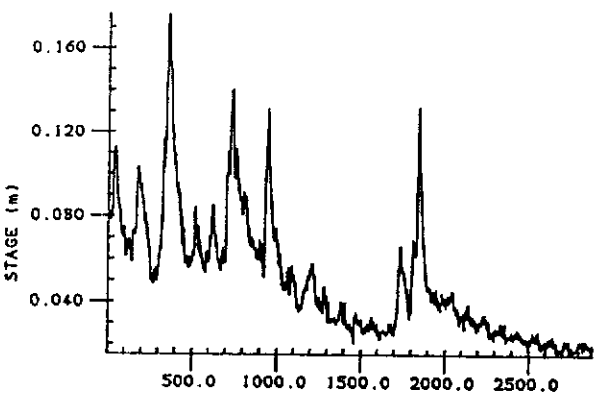

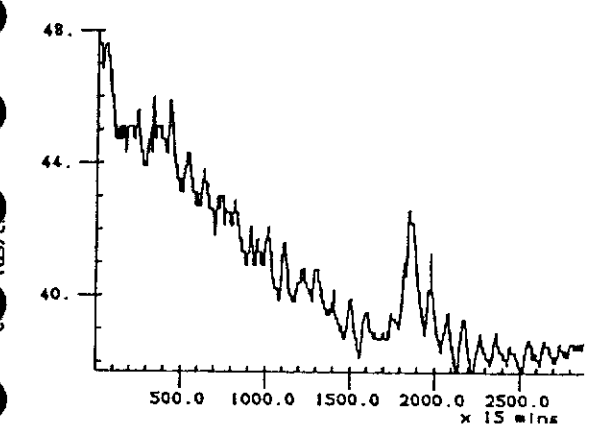

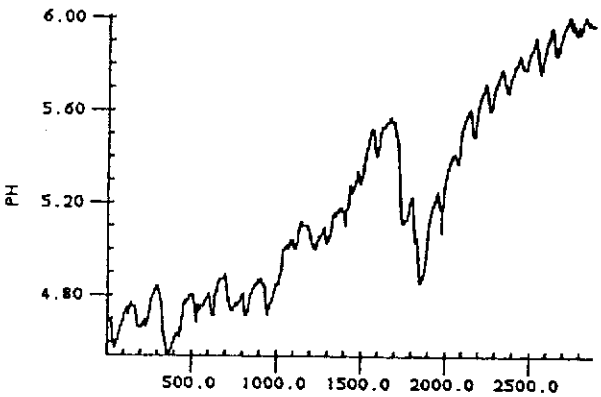

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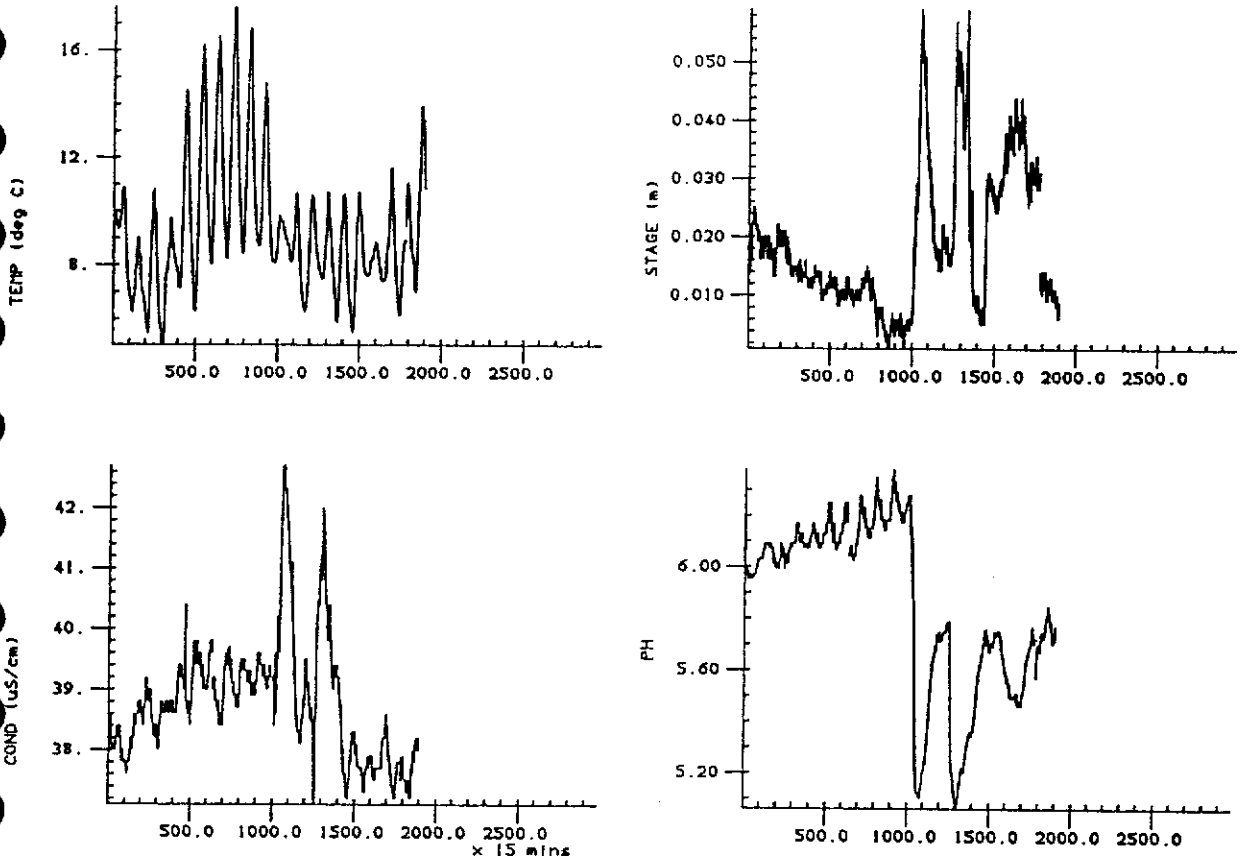

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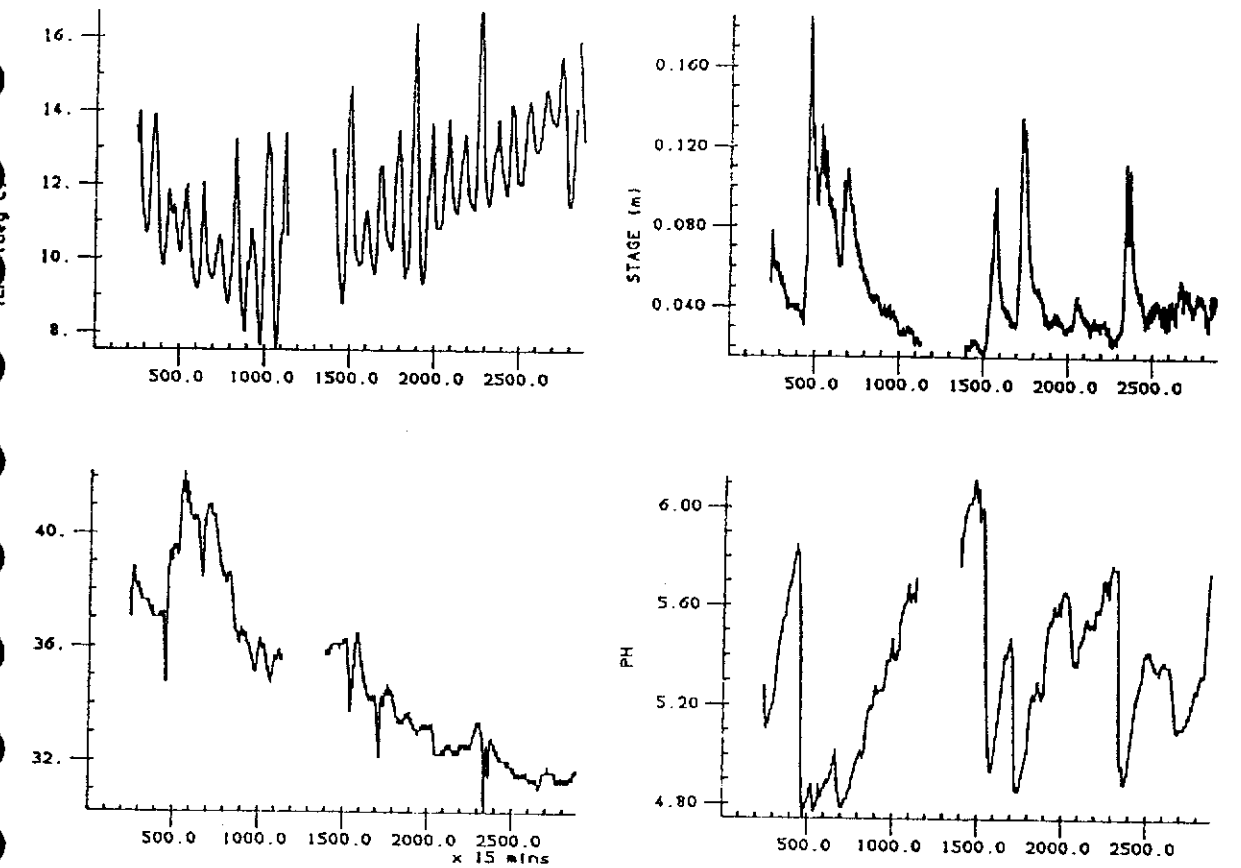

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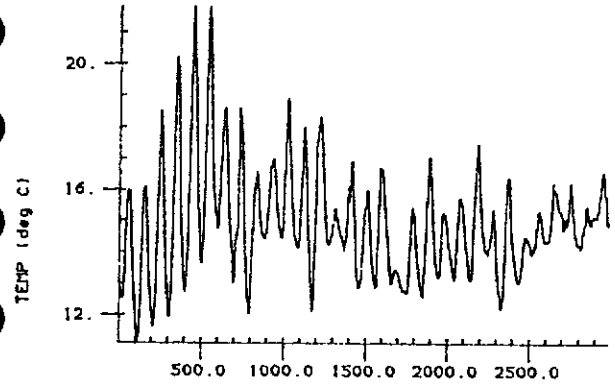

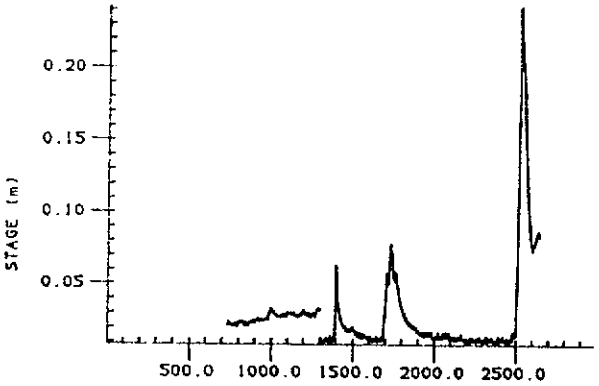

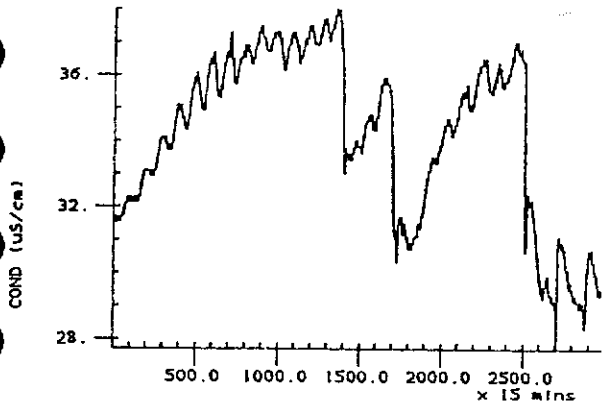

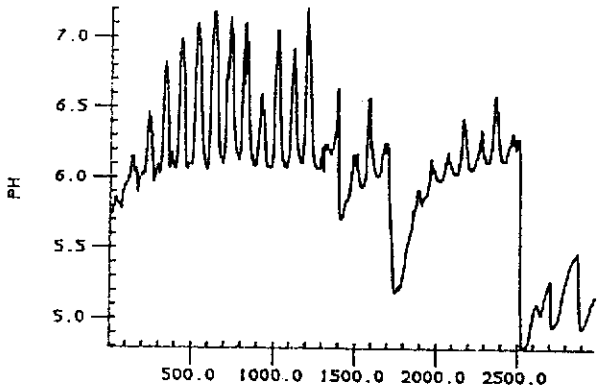

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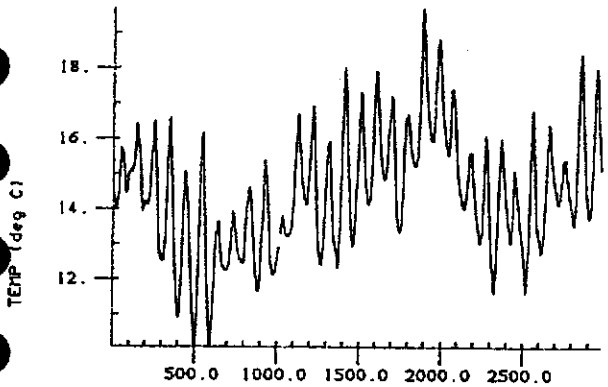

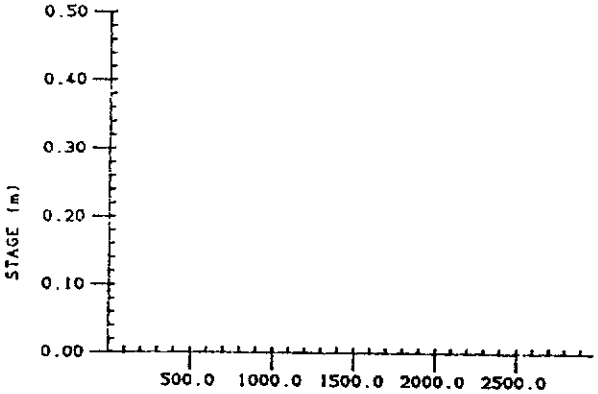

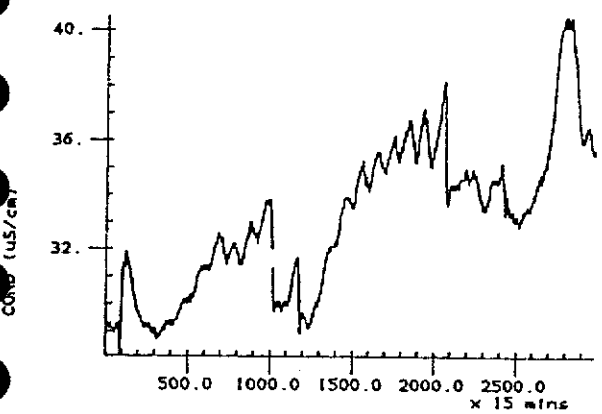

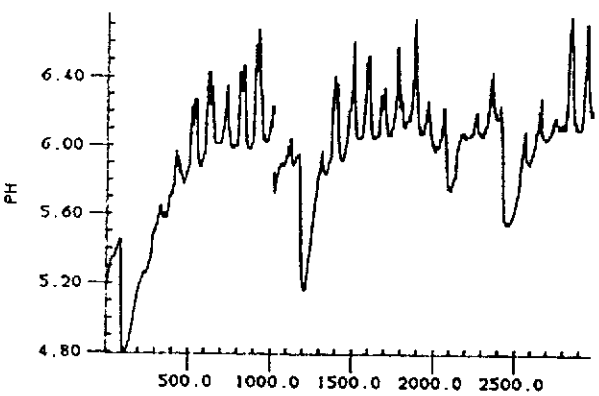

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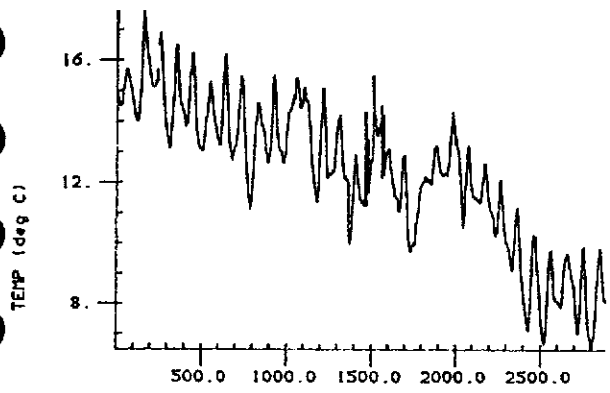

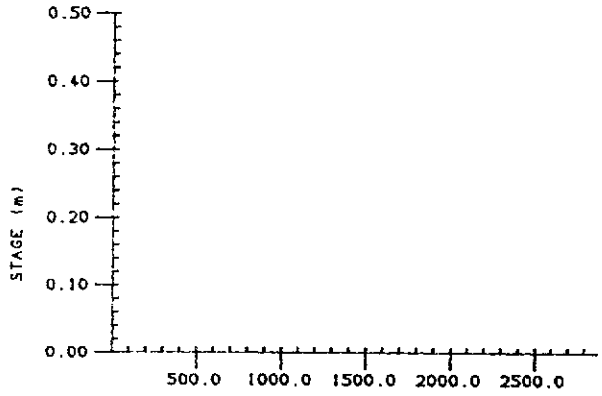

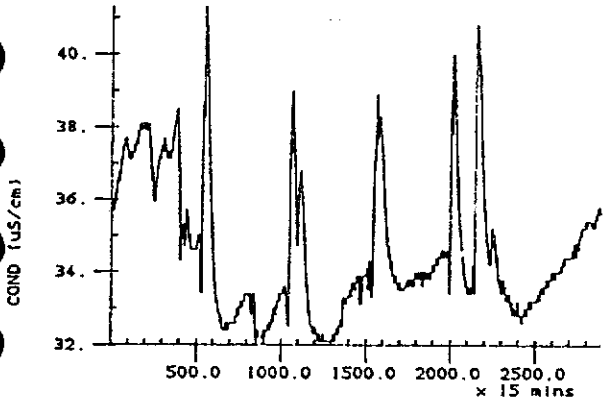

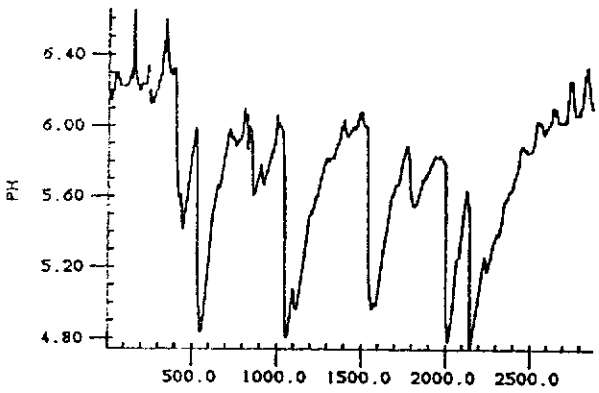

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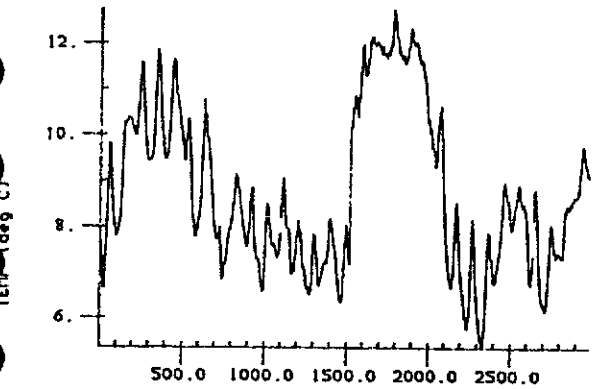

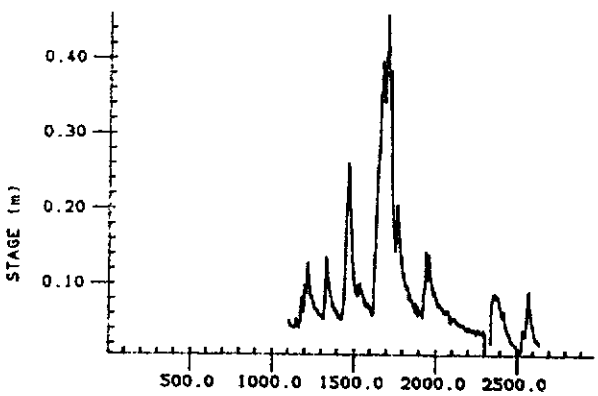

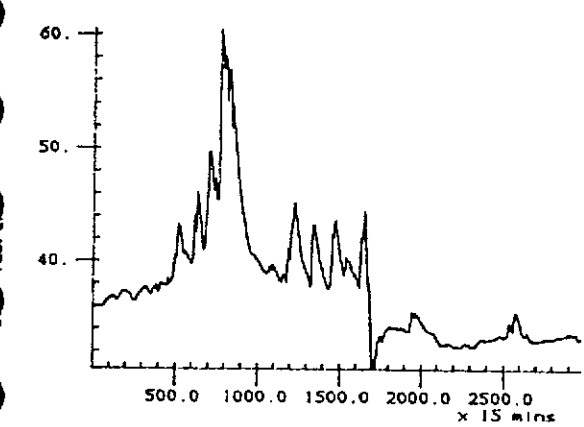

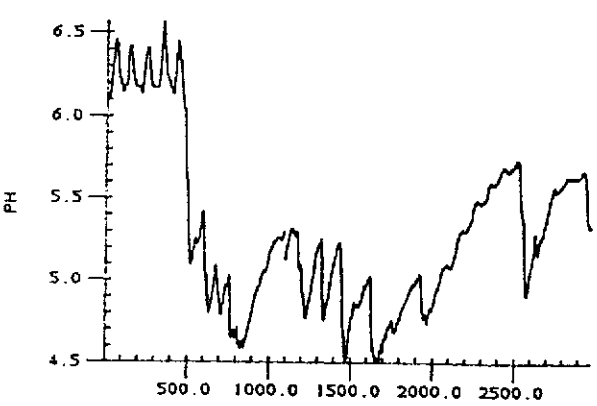

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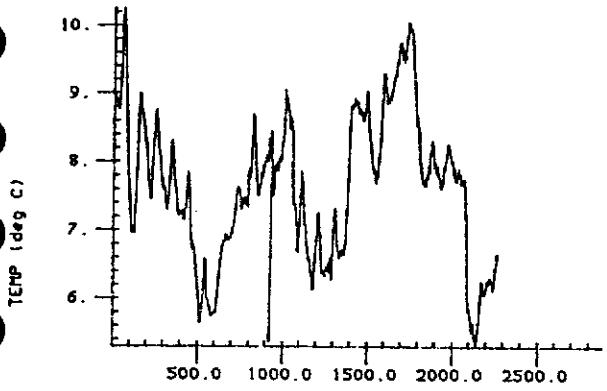
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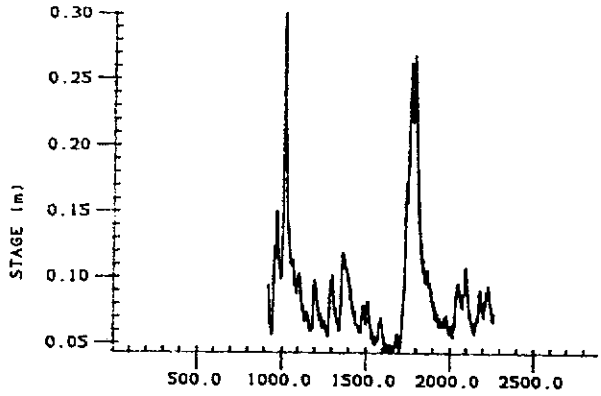
10.
9.
8.
7.
6.
500.0
1000.0
1500.0
2000.0
2500.0


STAGE (m)
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0.25
0.20
0.15
0.10
0.05
500.0
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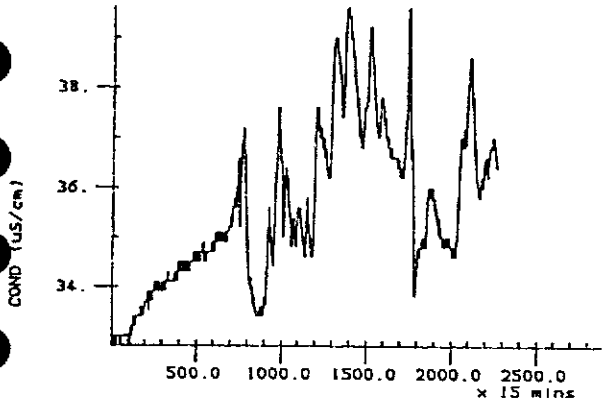
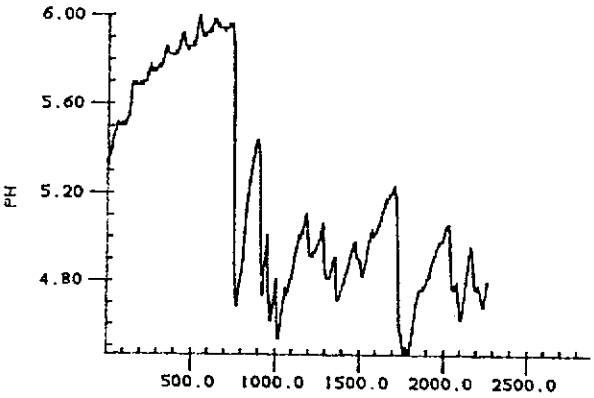

COND (uS/cm)
38.
36.
34.
500.0
1000.0
1500.0
2000.0
2500.0
x 15 mins


PH
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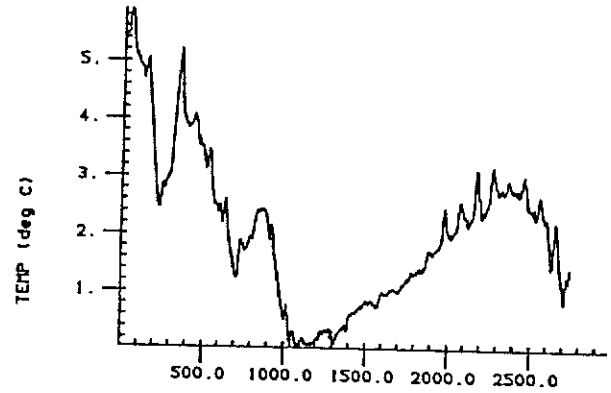

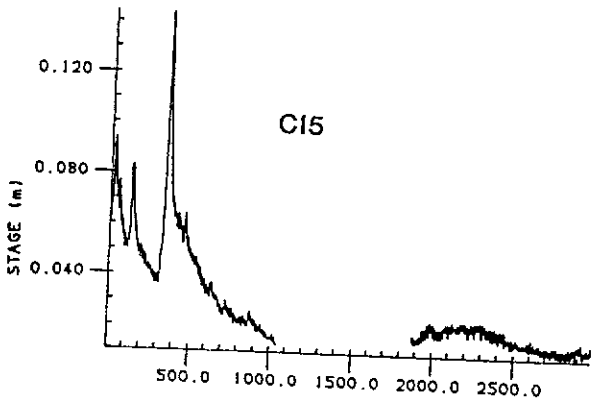

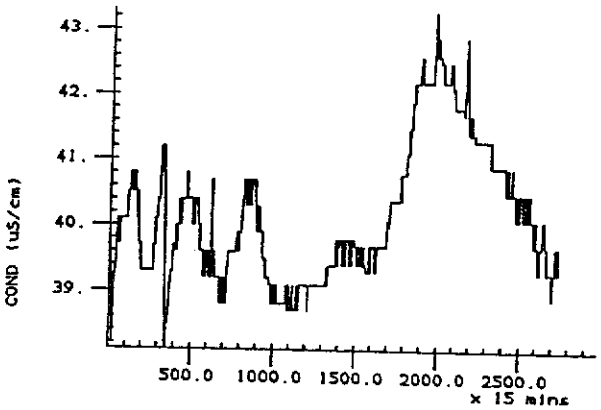

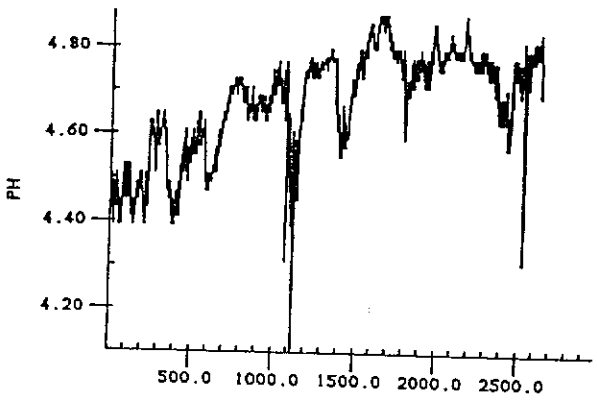

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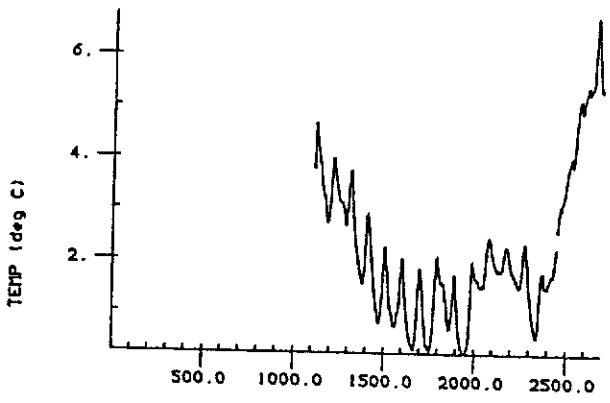

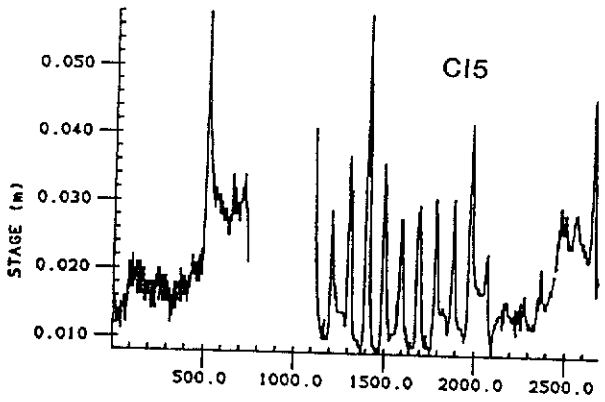

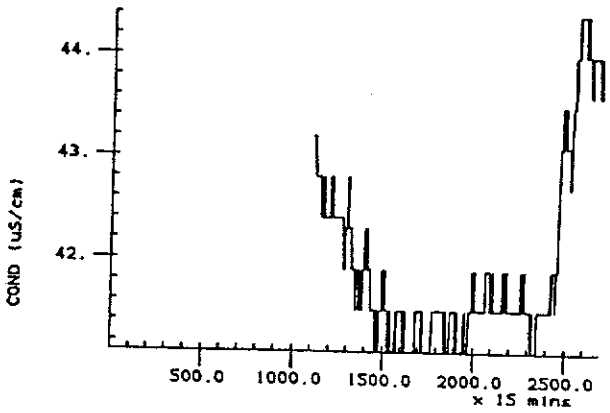

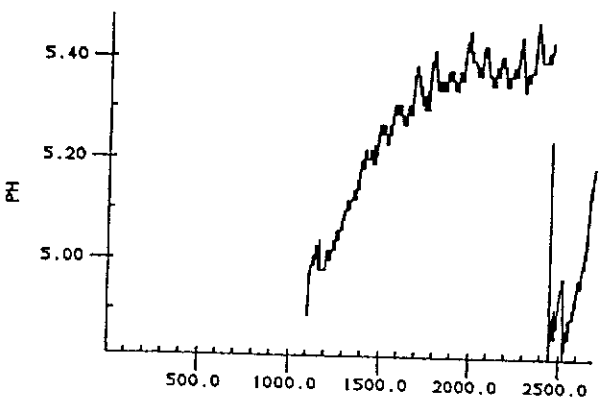

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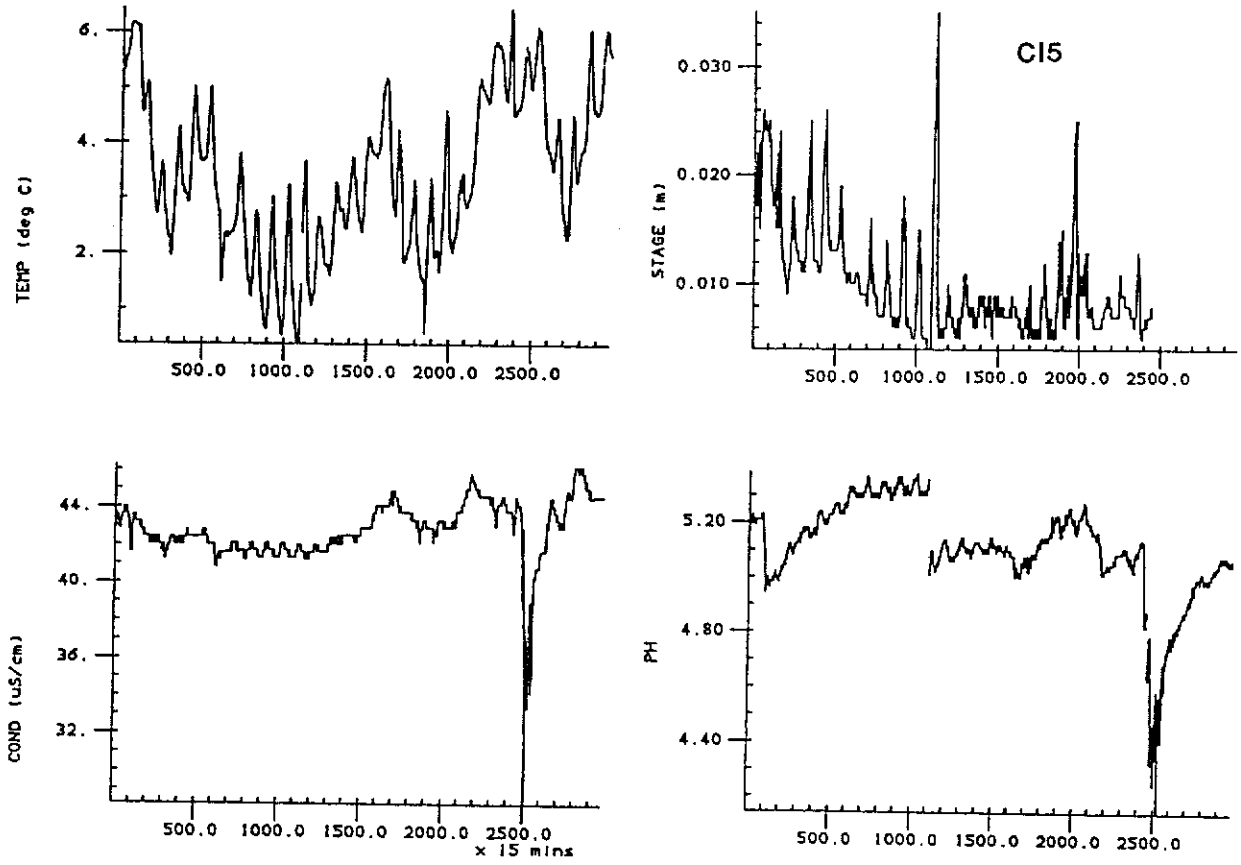

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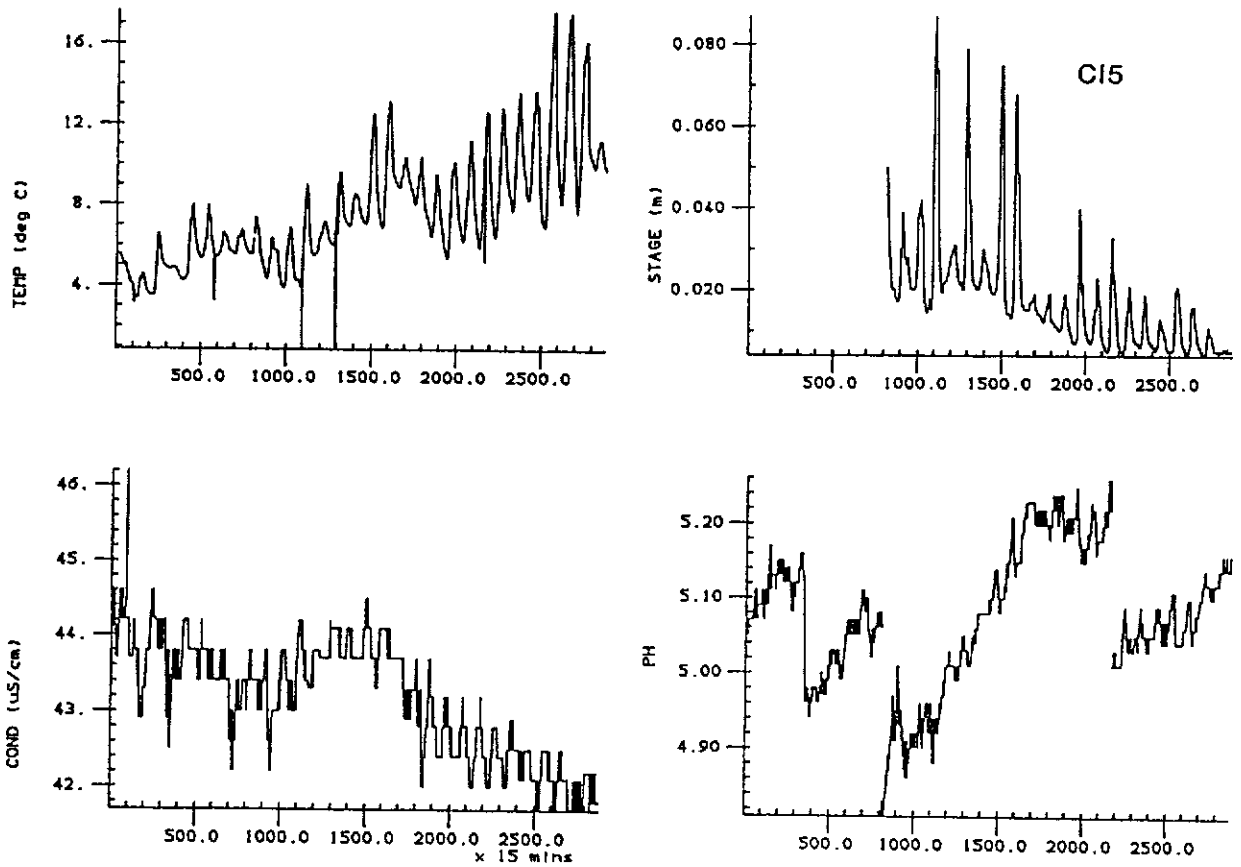

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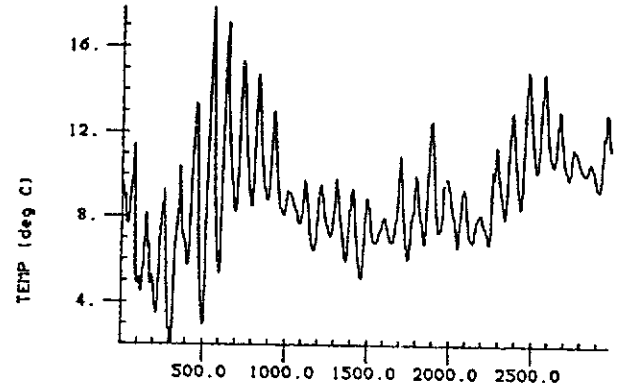

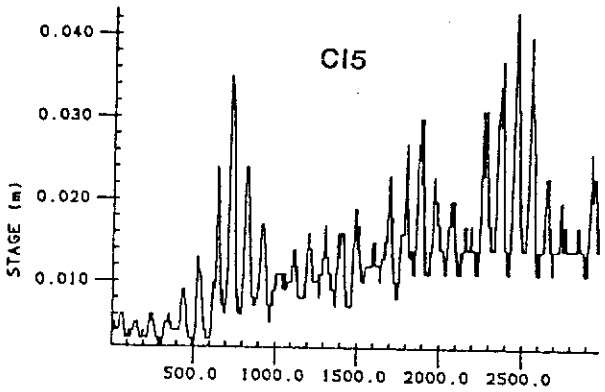

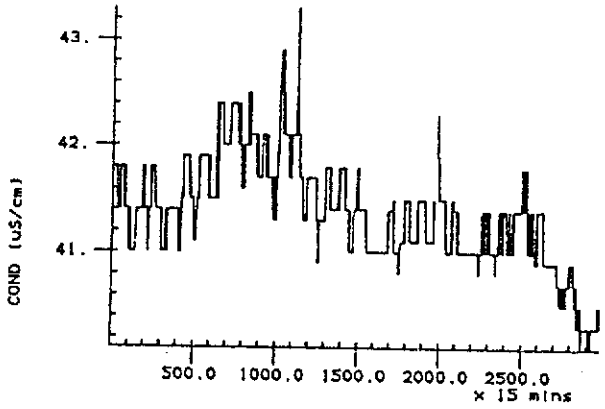

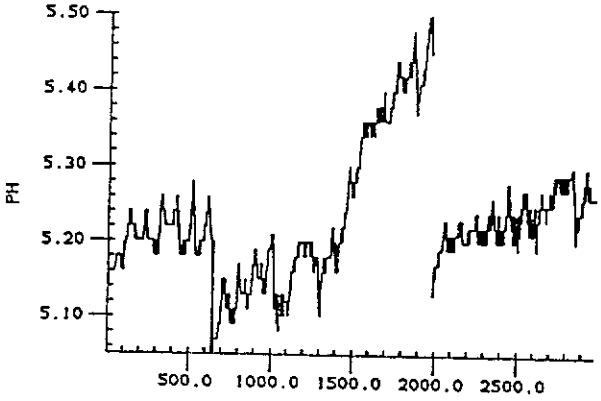

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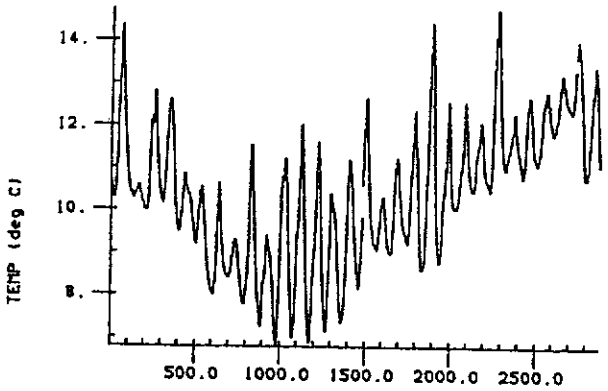

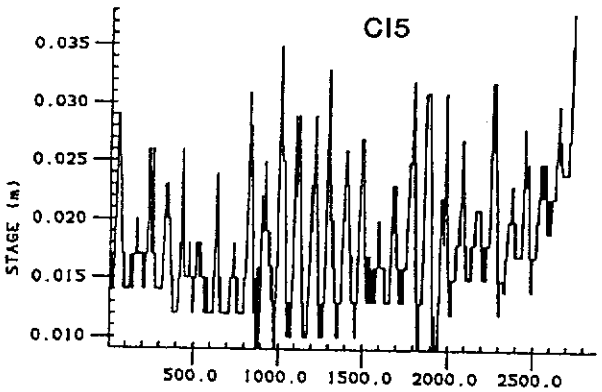

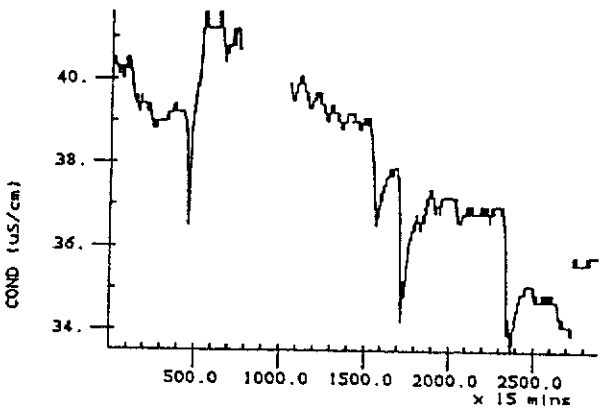

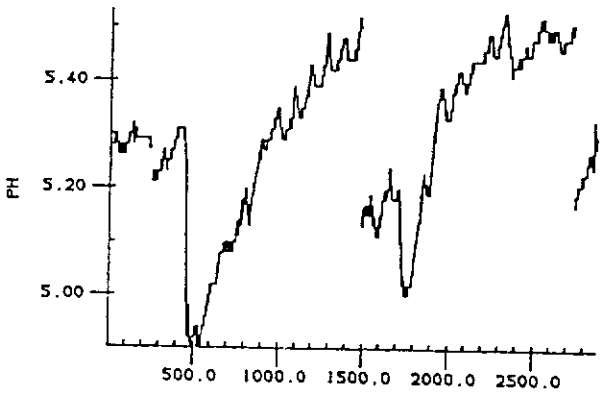

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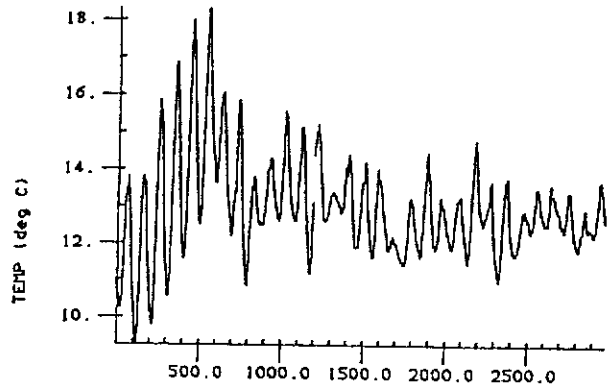

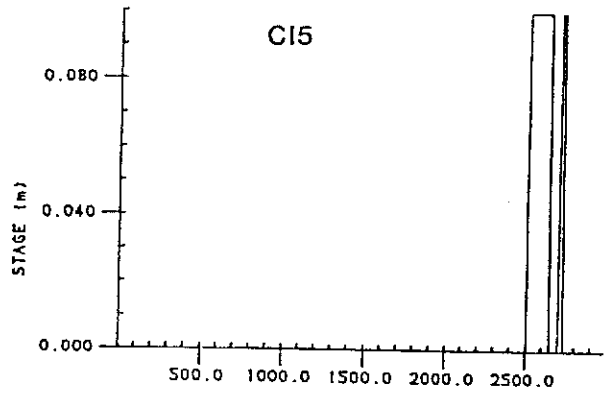

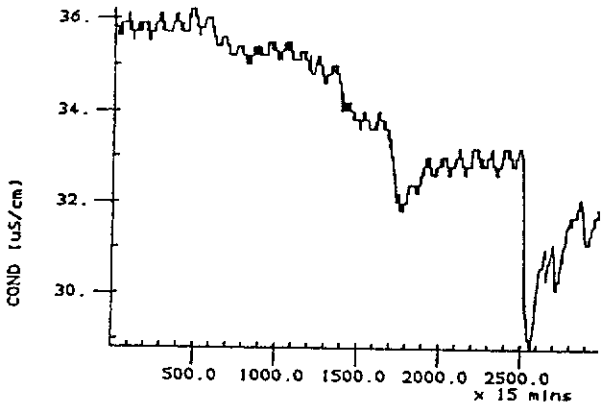

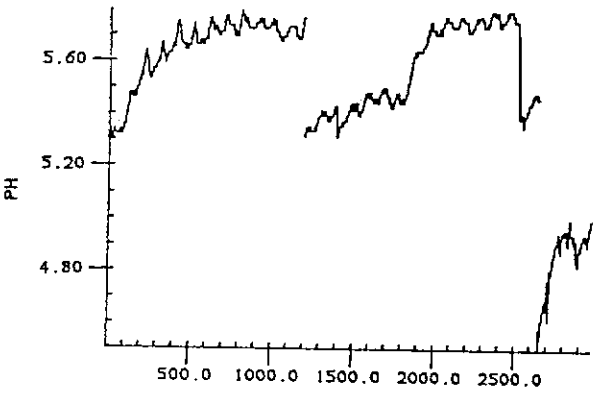

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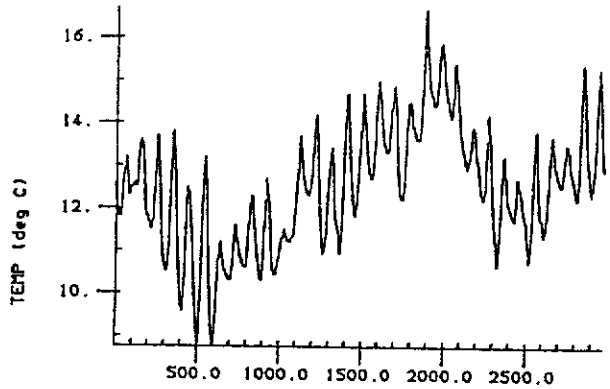

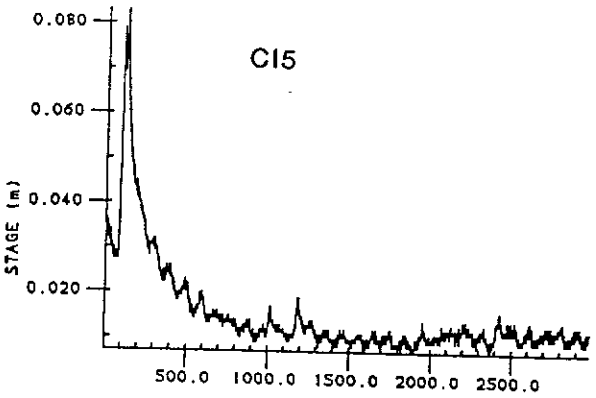

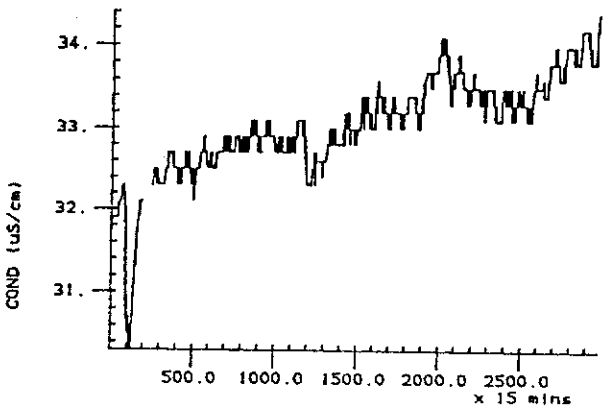

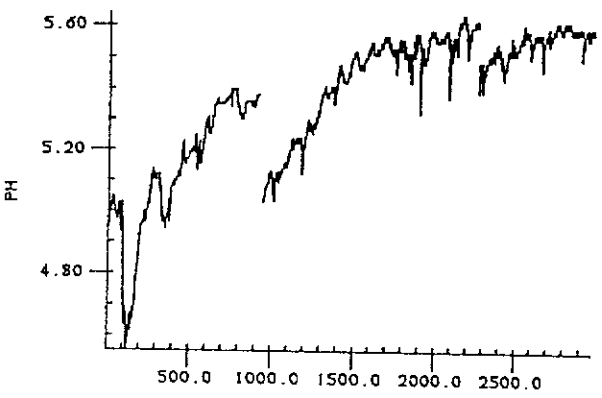

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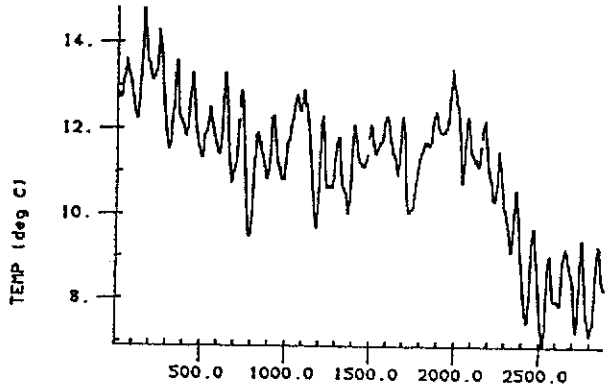

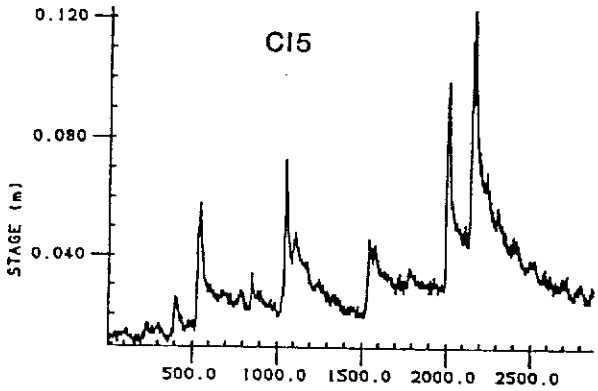

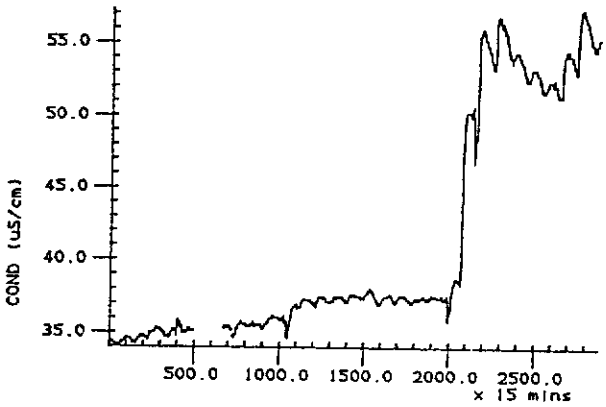

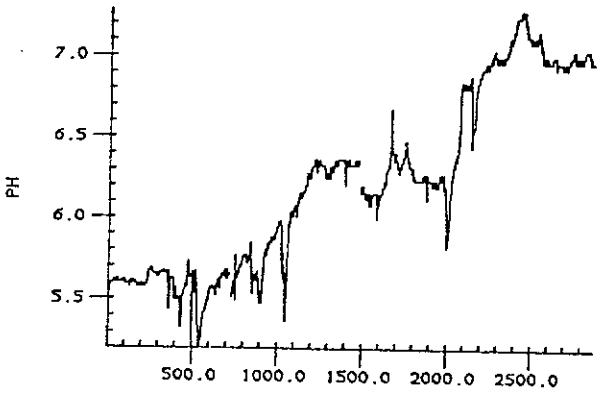

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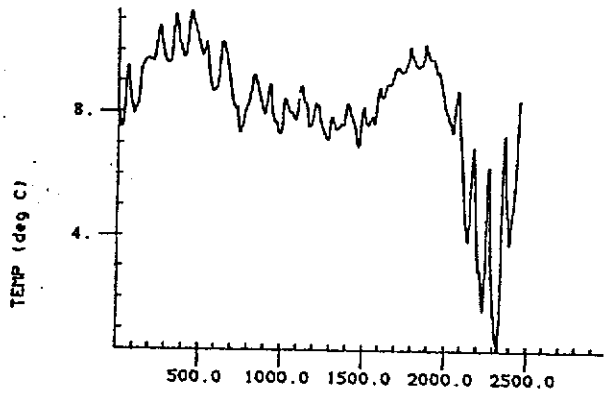

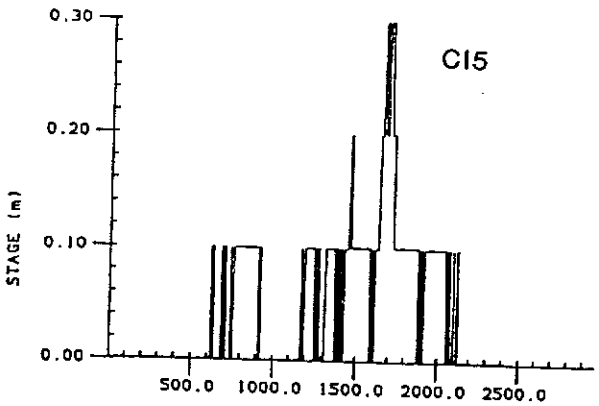

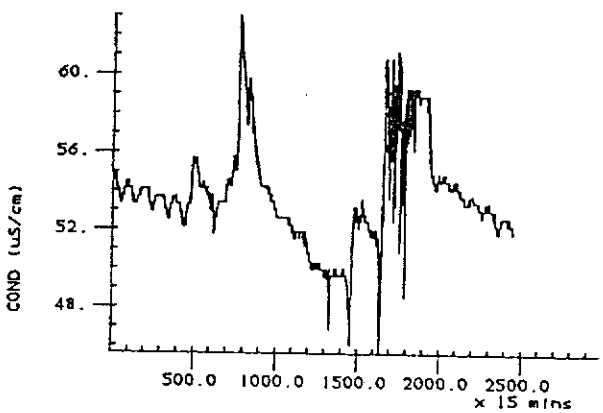

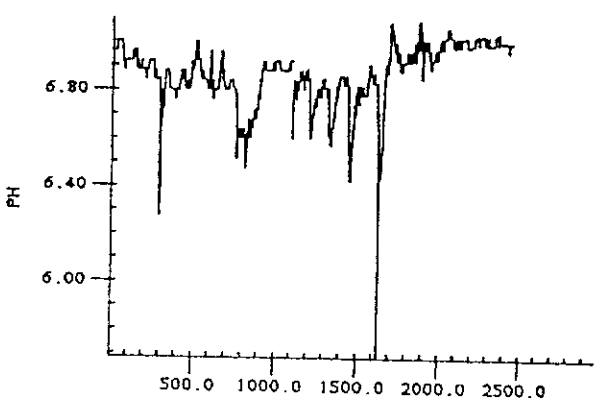

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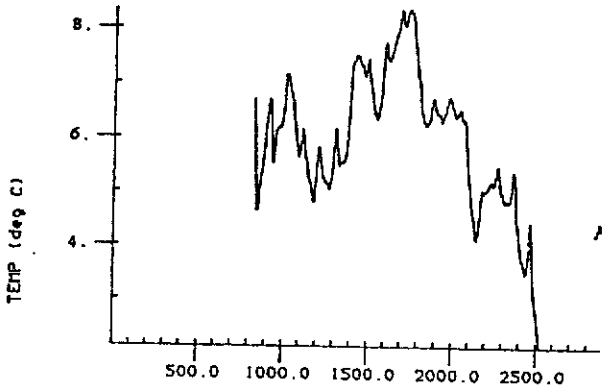

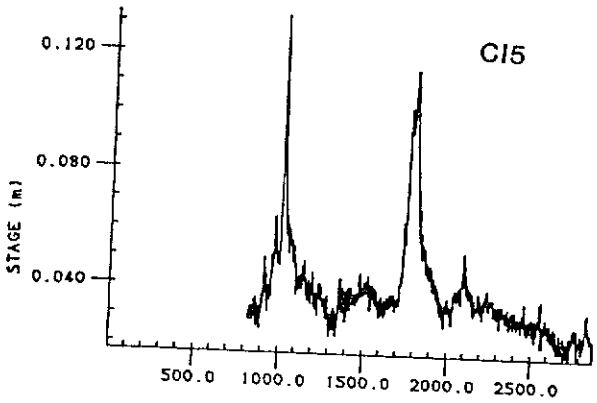

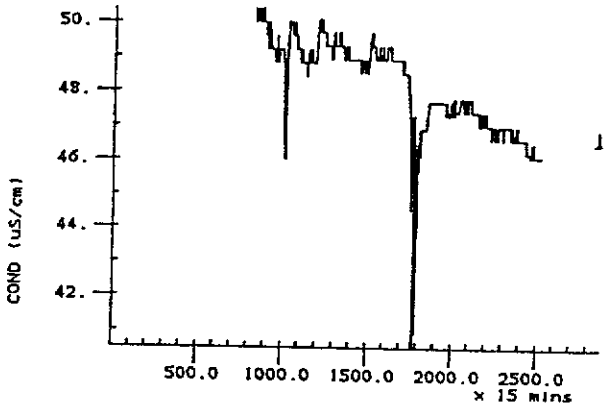

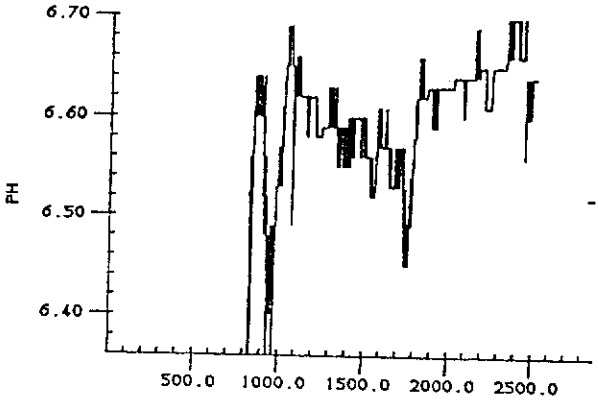

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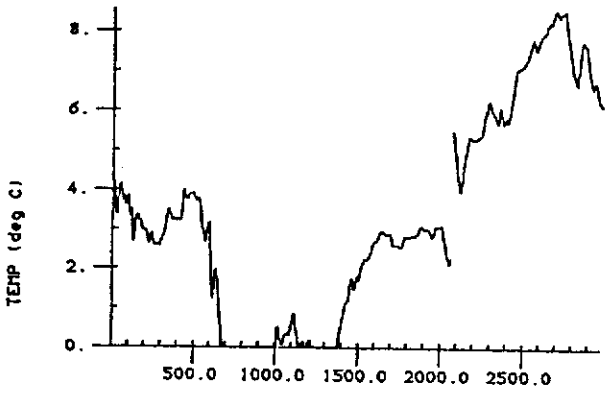

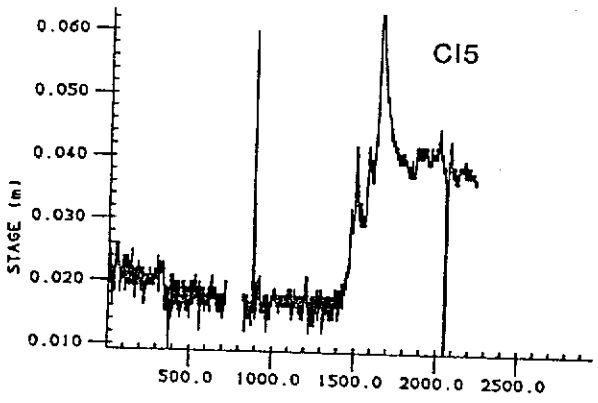

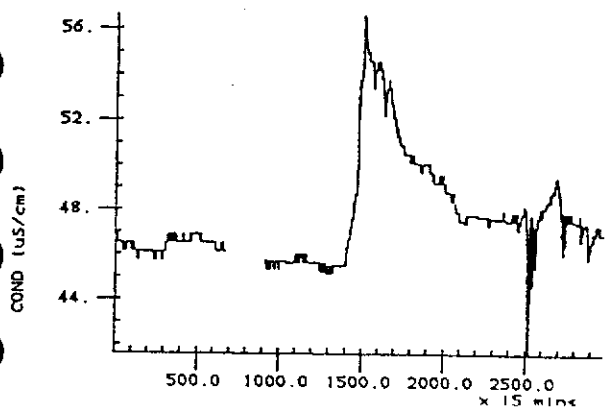

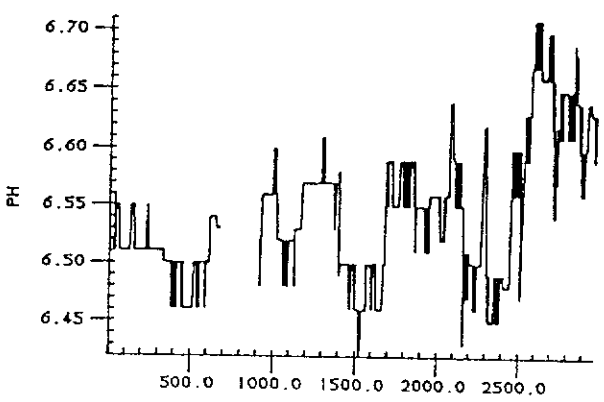

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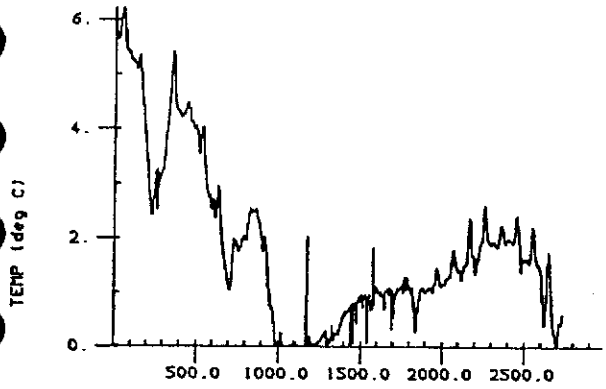

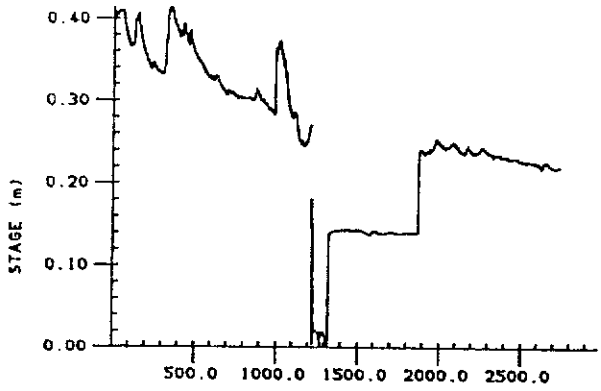

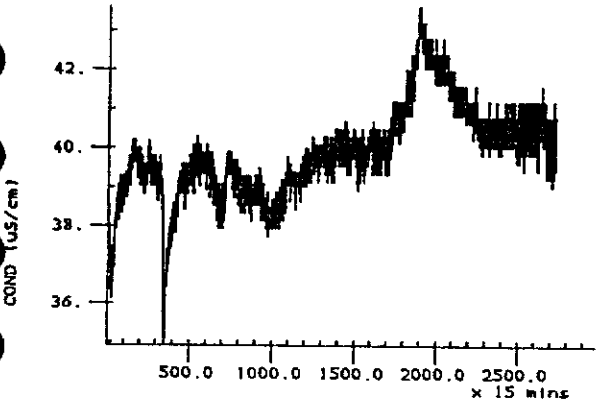

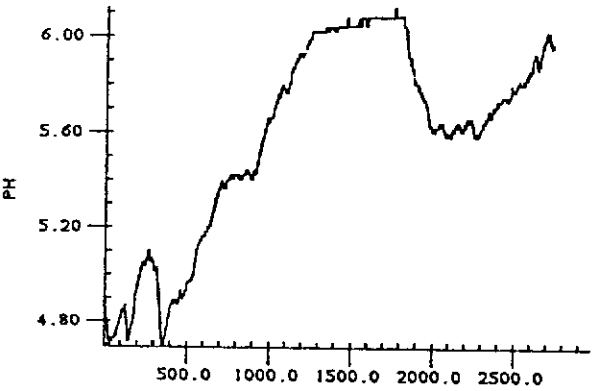

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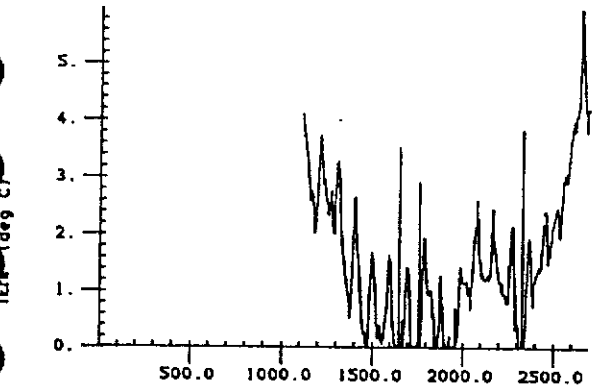

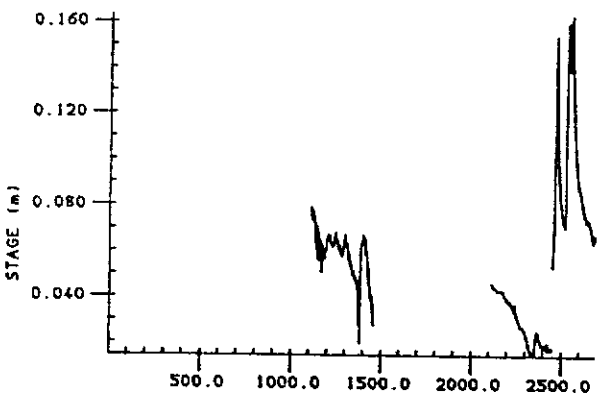

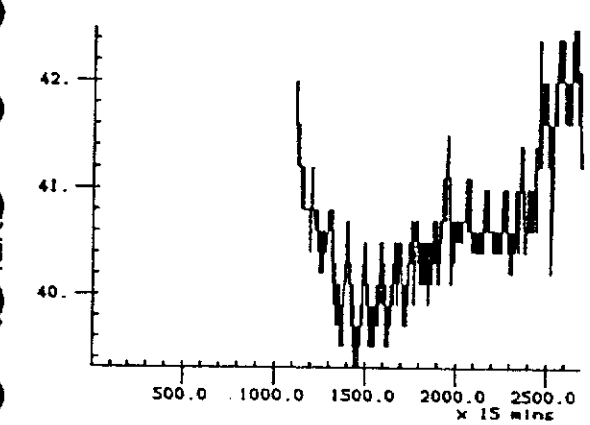

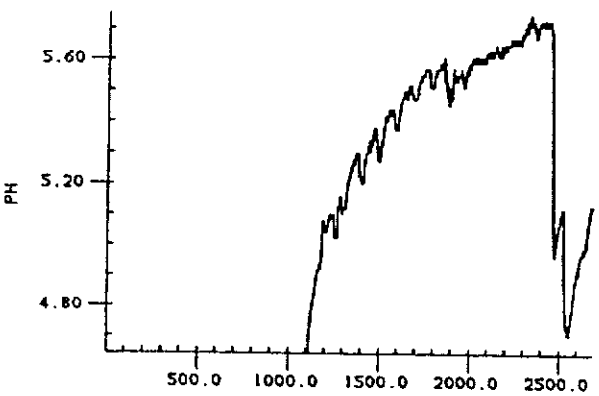

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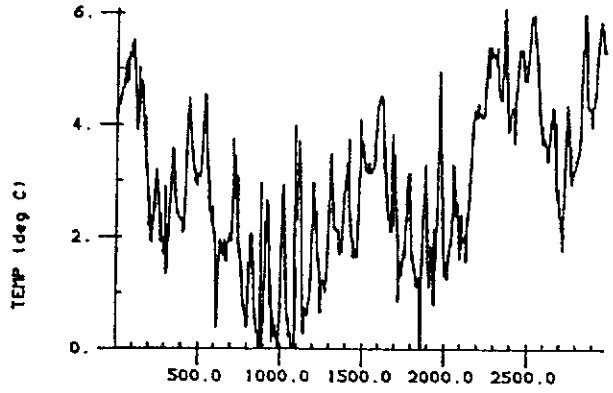

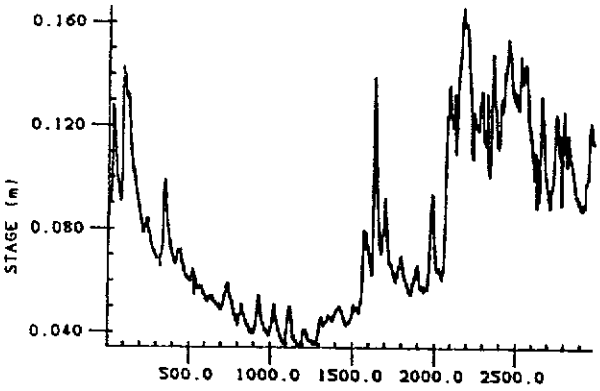

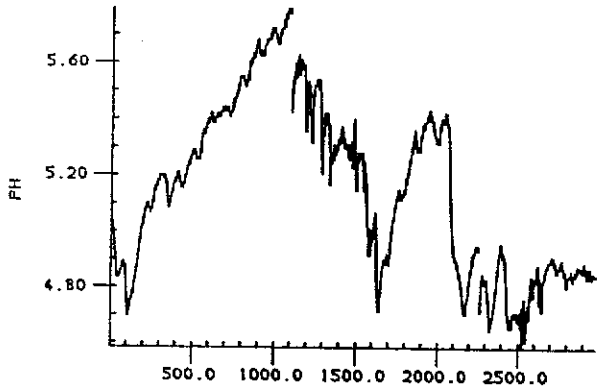

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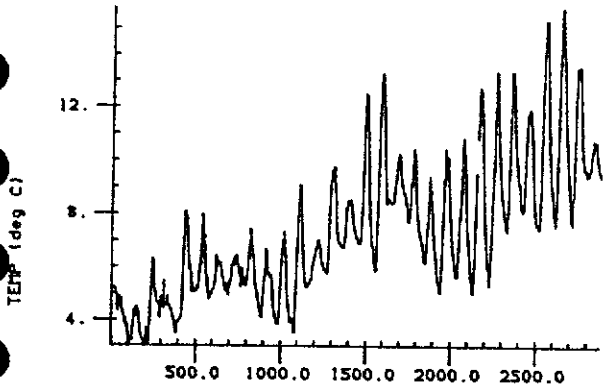

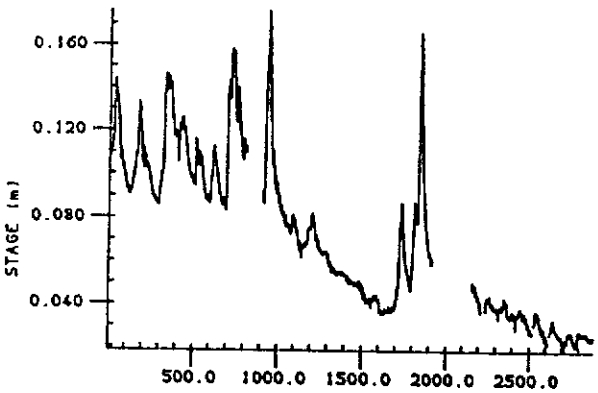

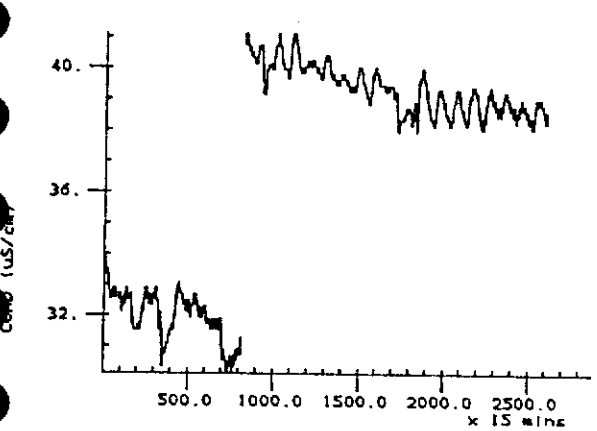

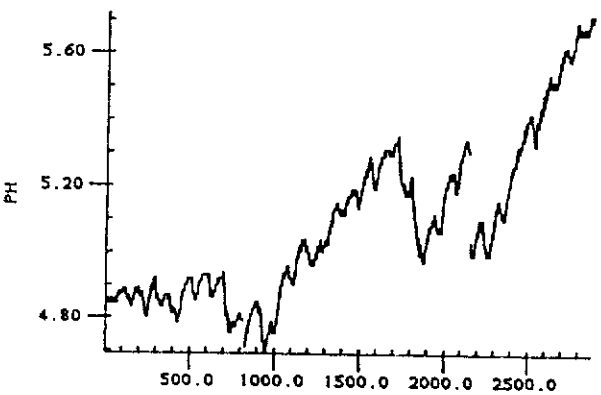

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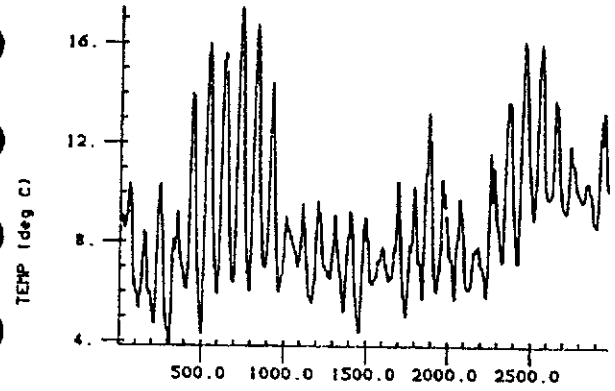

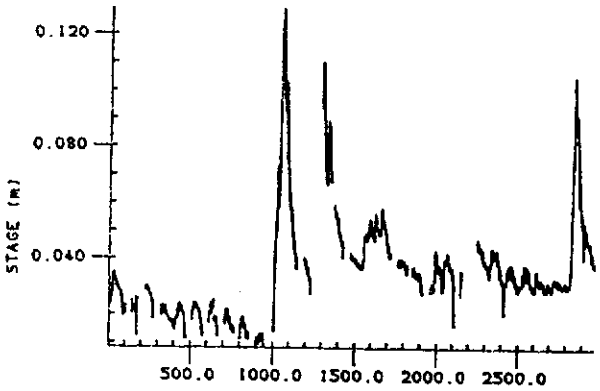

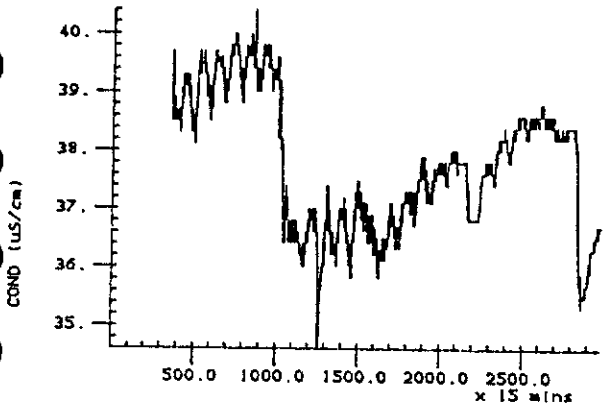

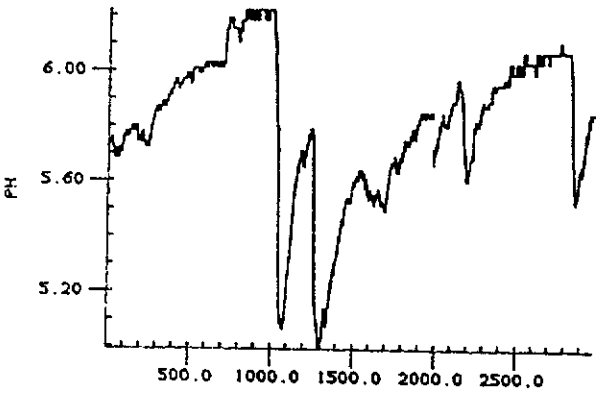

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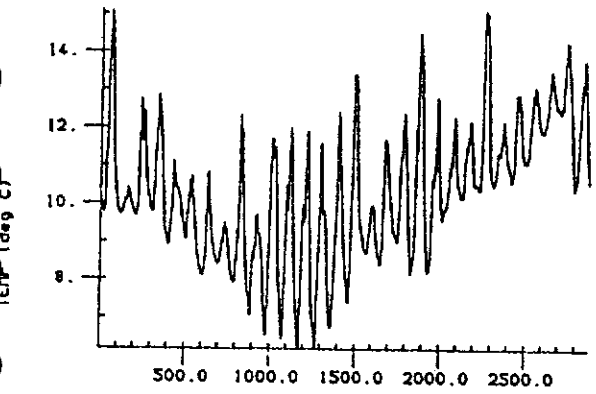

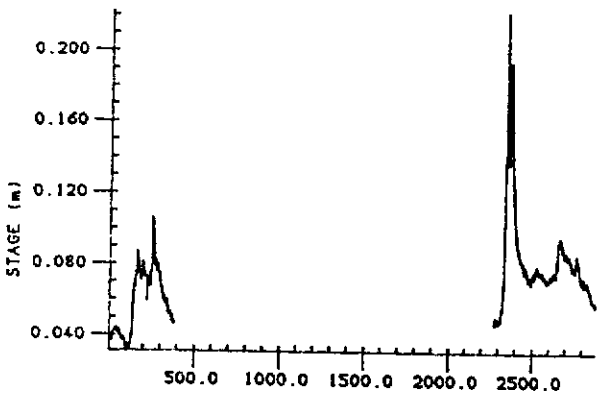

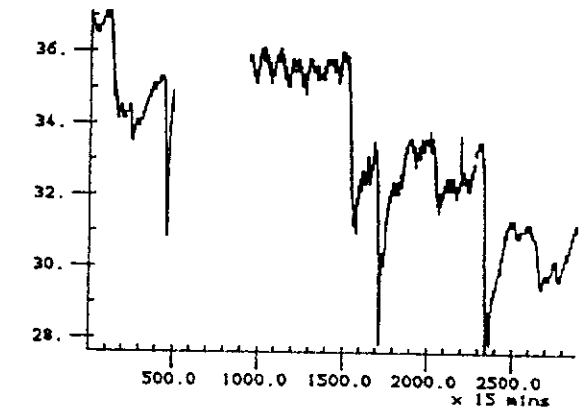

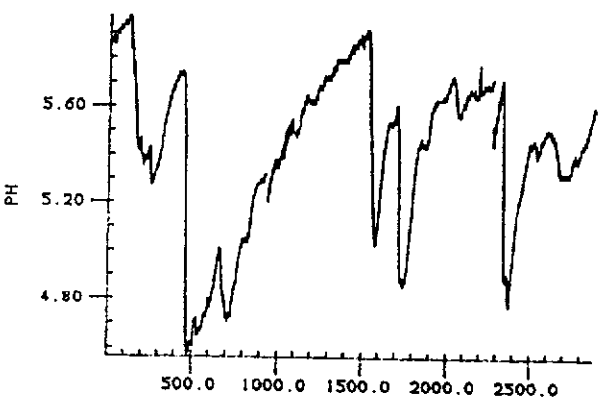

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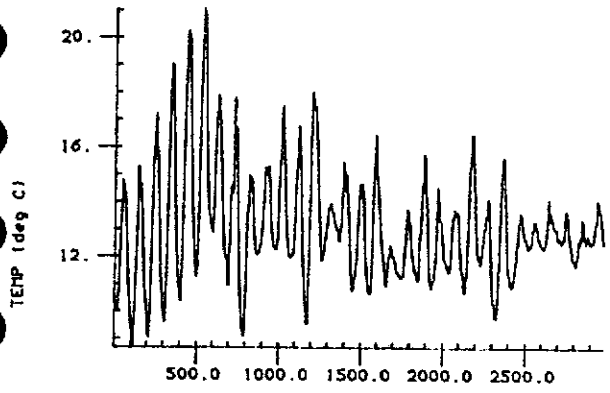

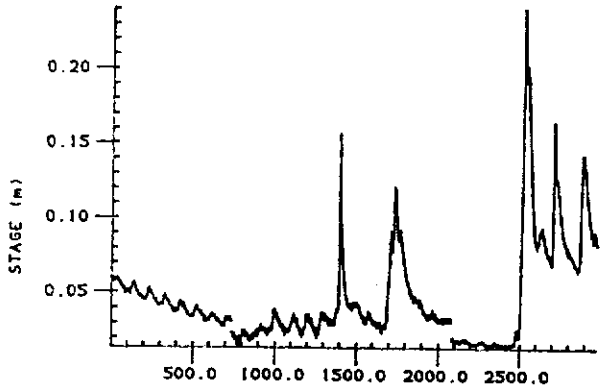

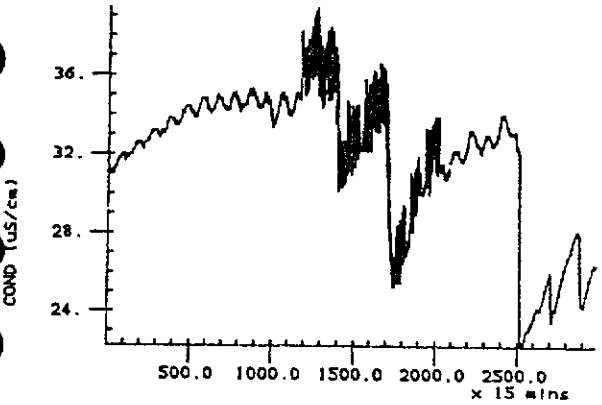

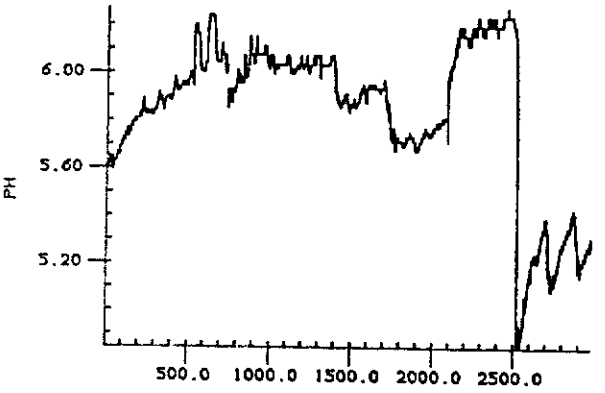

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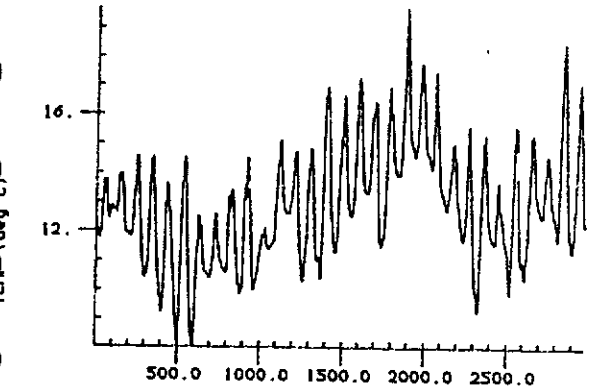

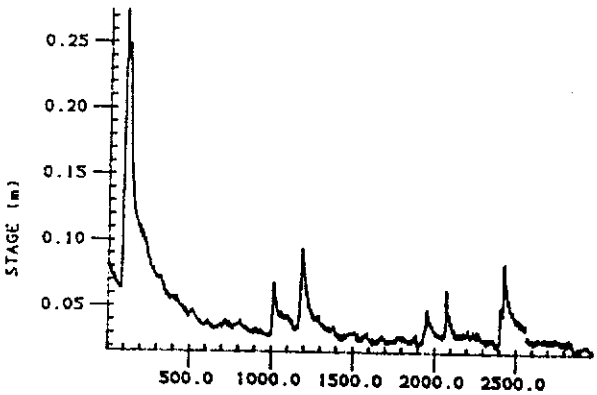

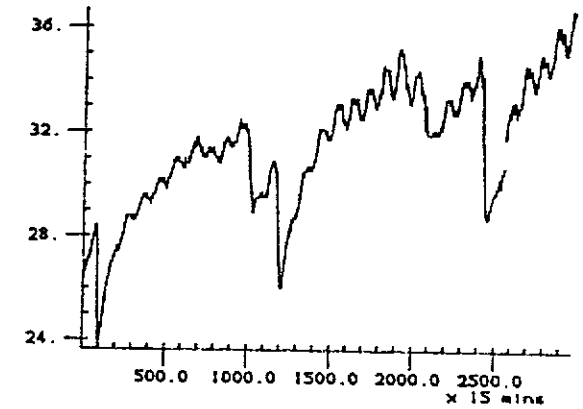

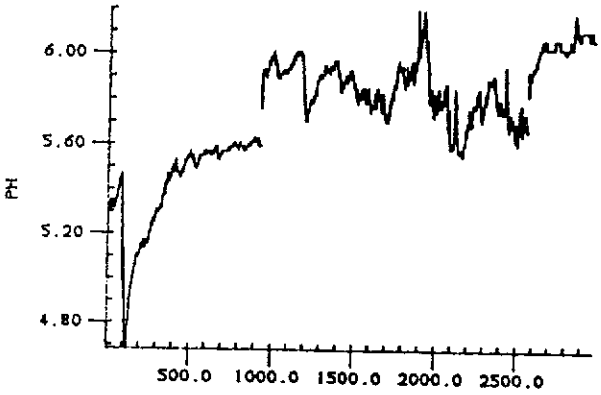

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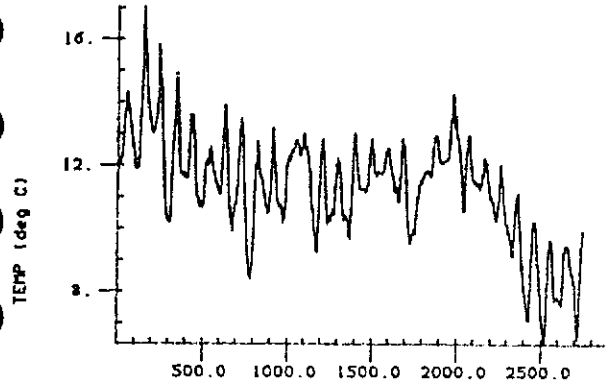

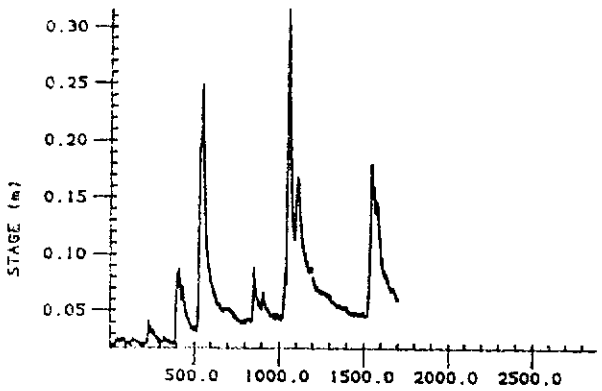

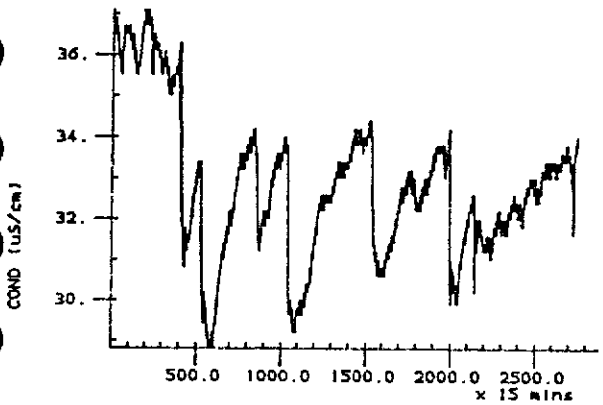

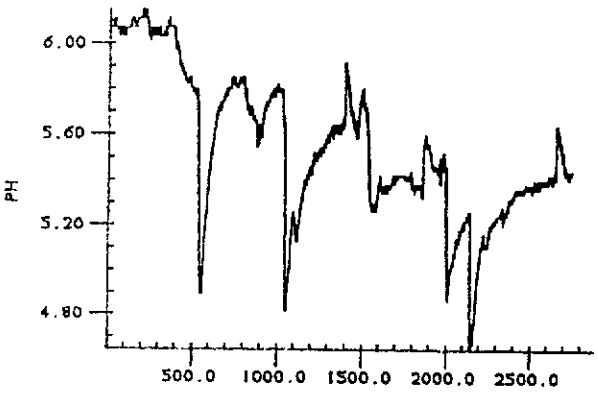

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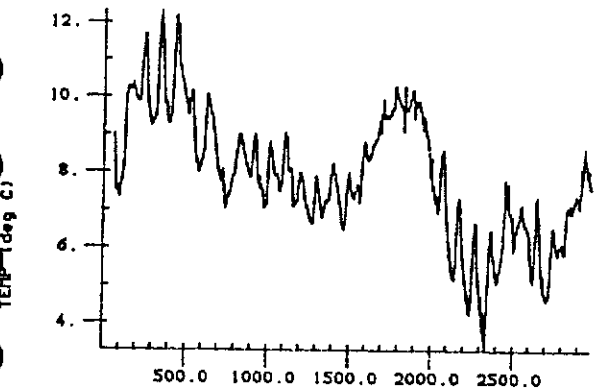

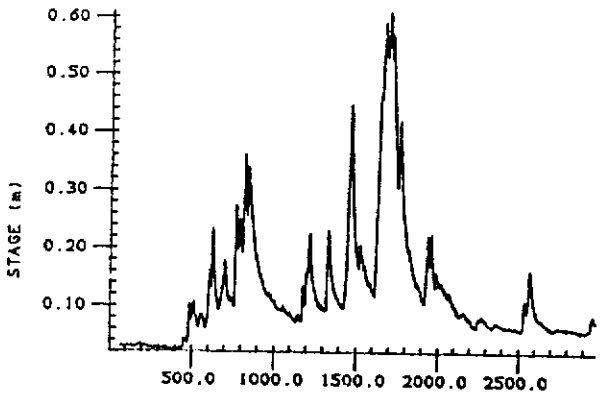

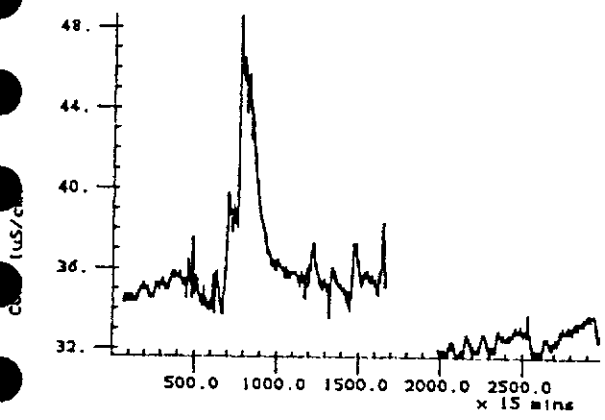

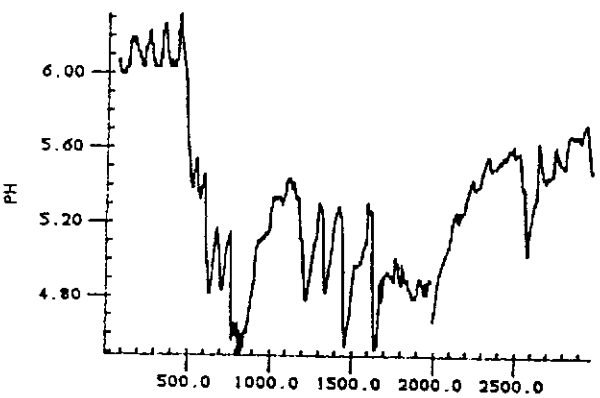

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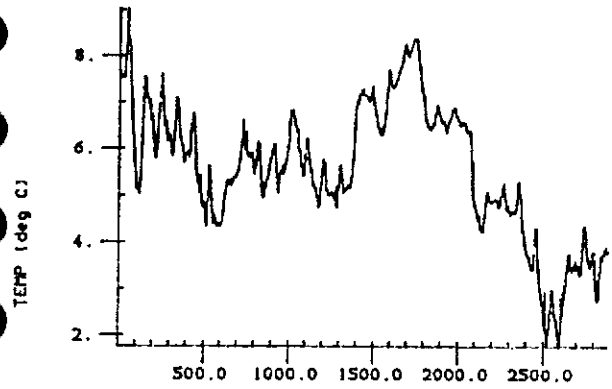

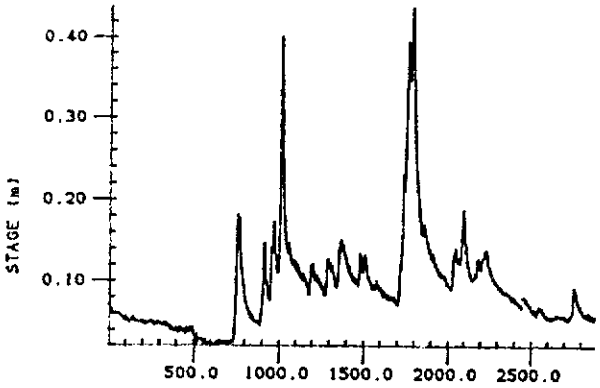

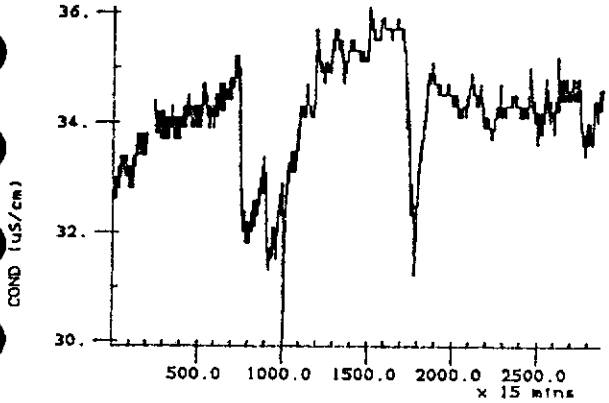

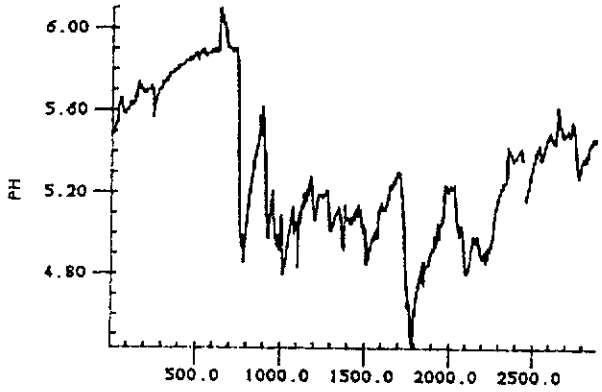

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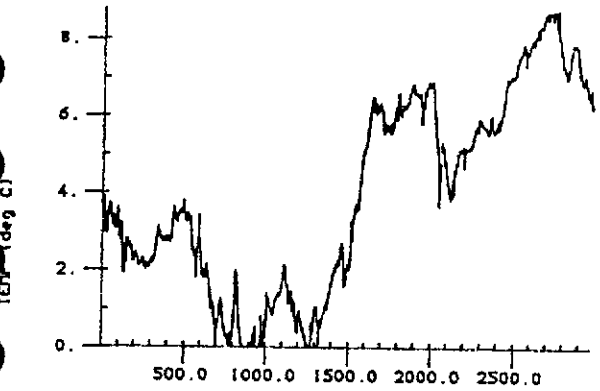

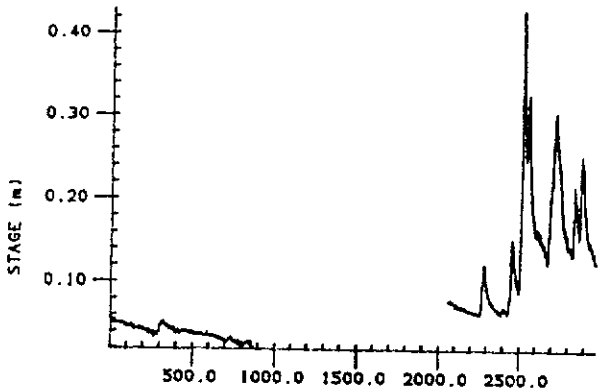

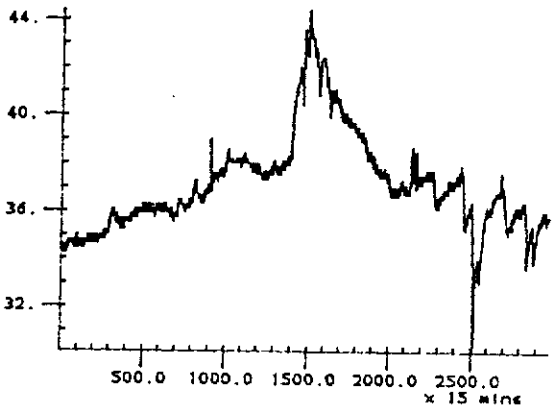

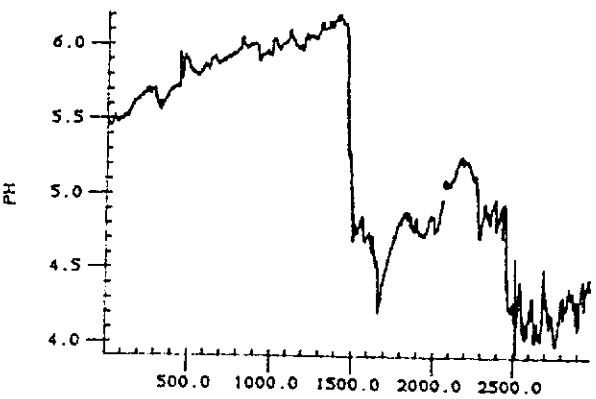

Section 2

Trawsnant Automatic Weather Station

Llyn Brianne automatic weather station
Summary of statistics 1987

Wind speed ($m.s^{-1}$)

Month	n	%miss	Avg	Min	Max	StdDev	StdErr	Variance
8701	550	26.08	4.407	.00	15.62	3.15	.13	9.93E+00
8702	517	23.07	3.532	.00	12.80	2.74	.12	7.50E+00
8703	502	32.53	4.516	.00	12.66	2.73	.12	7.44E+00
8704	482	33.06	3.637	.11	10.69	2.41	.11	5.81E+00
8705	507	31.85	4.027	.25	10.47	2.13	.09	4.53E+00
8706	720	.00	3.468	.05	12.14	2.21	.08	4.87E+00
8707	744	.00	3.127	.25	8.44	1.65	.06	2.72E+00
8708	557	25.13	2.919	.00	7.95	1.69	.07	2.85E+00
8709	469	34.86	3.621	.14	13.04	2.31	.11	5.33E+00
8710	741	.40	4.050	.14	12.52	2.26	.08	5.11E+00
8711	720	.00	4.258	.03	11.07	2.49	.09	6.21E+00
8712	638	14.25	6.422	.52	12.08	2.54	.10	6.46E+00

Wind direction (degrees clockwise from north)

8701	550	26.08	73.049	178.60	159.10	1.28	0.05	0.16E+01
8702	517	23.07	153.591	279.60	245.60	1.57	0.07	0.25E+01
8703	502	32.53	83.610	254.20	244.30	2.30	0.10	0.53E+01
8704	482	33.06	176.211	238.50	229.80	1.55	0.07	0.24E+01
8705	507	31.85	303.156	159.20	131.60	1.44	0.06	0.21E+01
8706	720	0.00	229.366	137.10	111.80	1.29	0.05	0.17E+01
8707	744	0.00	311.060	127.20	114.40	1.57	0.06	0.25E+01
8708	557	25.13	248.610	143.20	120.60	1.15	0.05	0.13E+01
8709	469	34.86	198.686	173.10	160.30	1.29	0.06	0.17E+01
8710	741	0.40	160.609	312.50	293.70	1.32	0.05	0.17E+01
8711	720	0.00	166.442	311.00	296.50	2.10	0.08	0.44E+01
8712	638	14.25	118.604	349.70	209.90	1.23	0.05	0.15E+01

Rainfall ($mm.hr^{-1}$)

8701	550	26.08	.101	.00	3.00	.38	.02	1.42E-01
8702	517	23.07	.247	.00	6.50	.74	.03	5.40E-01
8703	502	32.53	.093	.00	4.00	.40	.02	1.59E-01
8704	482	33.06	.091	.00	4.50	.40	.02	1.57E-01
8705	507	31.85	.106	.00	3.00	.38	.02	1.46E-01
8706	720	.00	.238	.00	5.50	.66	.02	4.32E-01
8707	744	.00	.119	.00	8.50	.52	.02	2.73E-01
8708	557	25.13	.093	.00	4.50	.39	.02	1.49E-01
8709	469	34.86	.224	.00	10.50	.88	.04	7.76E-01
8710	741	.40	.431	.00	12.00	1.10	.04	1.21E+00
8711	720	.00	.206	.00	6.00	.64	.02	4.09E-01
8712	638	14.25	.288	.00	5.00	.73	.03	5.31E-01

Soil temperature (^{o}C at about 10 cm)

8701	550	26.08	2.690	1.00	6.59	1.51	.06	2.28E+00
8702	517	23.07	3.342	1.00	6.26	1.55	.07	2.41E+00
8703	502	32.53	2.948	1.25	6.25	1.14	.05	1.31E+00
8704	482	33.06	8.465	4.17	12.20	1.92	.09	3.70E+00
8705	507	31.85	9.223	5.63	12.25	1.41	.06	2.00E+00
8706	720	.00	10.840	8.25	14.25	1.31	.05	1.72E+00
8707	744	.00	13.153	10.75	16.04	.84	.03	7.00E-01
8708	557	25.13	13.034	10.25	15.75	1.29	.05	1.66E+00
8709	469	34.86	11.257	8.00	13.50	1.48	.07	2.19E+00
8710	741	.40	8.346	4.75	11.25	1.45	.05	2.11E+00
8711	720	.00	6.244	2.75	8.75	1.39	.05	1.92E+00

Llyn Brianne automatic weather station
Summary statistics 1987

Solar radiation ($W.m^{-2}$)

Month	n	%miss	Avg	Min	Max	StdDev	StdErr	Variance
8701	550	26.08	26.252	.00	329.30	57.85	2.47	3.35E+03
8702	517	23.07	46.535	.00	531.80	92.75	4.08	8.60E+03
8703	502	32.53	79.024	.00	642.90	128.42	5.73	1.65E+04
8704	482	33.06	152.711	.00	811.20	212.66	9.69	4.52E+04
8705	507	31.85	183.795	.00	817.80	227.81	10.12	5.19E+04
8706	720	.00	139.014	.00	841.50	175.12	6.53	3.07E+04
8707	744	.00	159.263	.00	845.00	198.34	7.27	3.93E+04
8708	557	25.13	148.284	.00	747.10	192.32	8.15	3.70E+04
8709	469	34.86	98.916	.00	616.20	148.28	6.85	2.20E+04
8710	741	.40	62.779	.00	574.60	112.35	4.13	1.26E+04
8711	720	.00	35.531	.00	408.60	75.99	2.83	5.77E+03
8712	638	14.25	18.938	.00	292.80	46.32	1.83	2.15E+03

Net radiation ($W.m^{-2}$)

8701	550	26.08	.298	-61.40	207.70	41.62	1.77	1.73E+03
8702	517	23.07	15.691	-57.40	282.30	59.63	2.62	3.56E+03
8703	502	32.53	15.751	-61.50	270.00	59.77	2.67	3.57E+03
8704	482	33.06	72.964	-52.60	452.80	122.82	5.59	1.51E+04
8705	507	31.85	95.917	-58.20	461.90	139.35	6.19	1.94E+04
8706	720	.00	81.318	-52.10	509.30	113.43	4.23	1.29E+04
8707	744	.00	90.042	-50.50	516.00	129.27	4.74	1.67E+04
8708	557	25.13	86.268	-53.60	506.80	124.76	5.29	1.56E+04
8709	469	34.86	52.177	-54.60	424.10	98.99	4.57	9.80E+03
8710	741	.40	28.229	-55.10	340.50	74.35	2.73	5.53E+03
8711	720	.00	9.695	-55.10	251.10	51.10	1.90	2.61E+03
8712	638	14.25	-.686	-55.40	210.60	33.33	1.32	1.11E+03

Wet-bulb depression (^{o}C)

8701	550	26.08	.238	.00	4.47	.46	.02	2.14E-01
8702	517	23.07	.252	.00	2.36	.42	.02	1.78E-01
8703	502	32.53	.340	.00	4.01	.55	.02	2.99E-01
8704	482	33.06	1.802	.00	7.76	2.14	.10	4.58E+00
8705	507	31.85	1.660	.00	6.82	1.63	.07	2.66E+00
8706	720	.00	.922	.00	4.42	1.06	.04	1.12E+00
8707	744	.00	1.448	.00	7.87	1.54	.06	2.38E+00
8708	557	25.13	1.052	.00	5.37	1.09	.05	1.20E+00
8709	469	34.86	.872	.00	3.90	.96	.04	9.26E-01
8710	741	.40	.661	.00	3.91	.73	.03	5.31E-01
8711	720	.00	.565	.00	2.93	.50	.02	2.54E-01
8712	638	14.25	.304	.00	2.32	.42	.02	1.78E-01

Air temperature (^{o}C)

8701	550	26.08	-3.118	-14.96	7.41	4.61	.20	2.12E+01
8702	517	23.07	1.381	-8.17	8.04	4.17	.18	1.74E+01
8703	502	32.53	-.843	-6.90	7.38	3.20	.14	1.02E+01
8704	482	33.06	8.733	-2.42	20.39	5.00	.23	2.50E+01
8705	507	31.85	7.649	-3.01	19.48	4.50	.20	2.03E+01
8706	720	.00	9.101	-1.04	17.99	3.52	.13	1.24E+01
8707	744	.00	12.772	2.46	25.21	3.51	.13	1.23E+01
8708	557	25.13	12.461	.42	23.24	3.84	.16	1.47E+01
8709	469	34.86	9.616	-1.96	17.56	3.98	.18	1.58E+01
8710	741	.40	6.379	-3.67	15.44	3.67	.13	1.35E+01
8711	720	.00	3.609	-6.17	10.40	3.10	.12	9.61E+00

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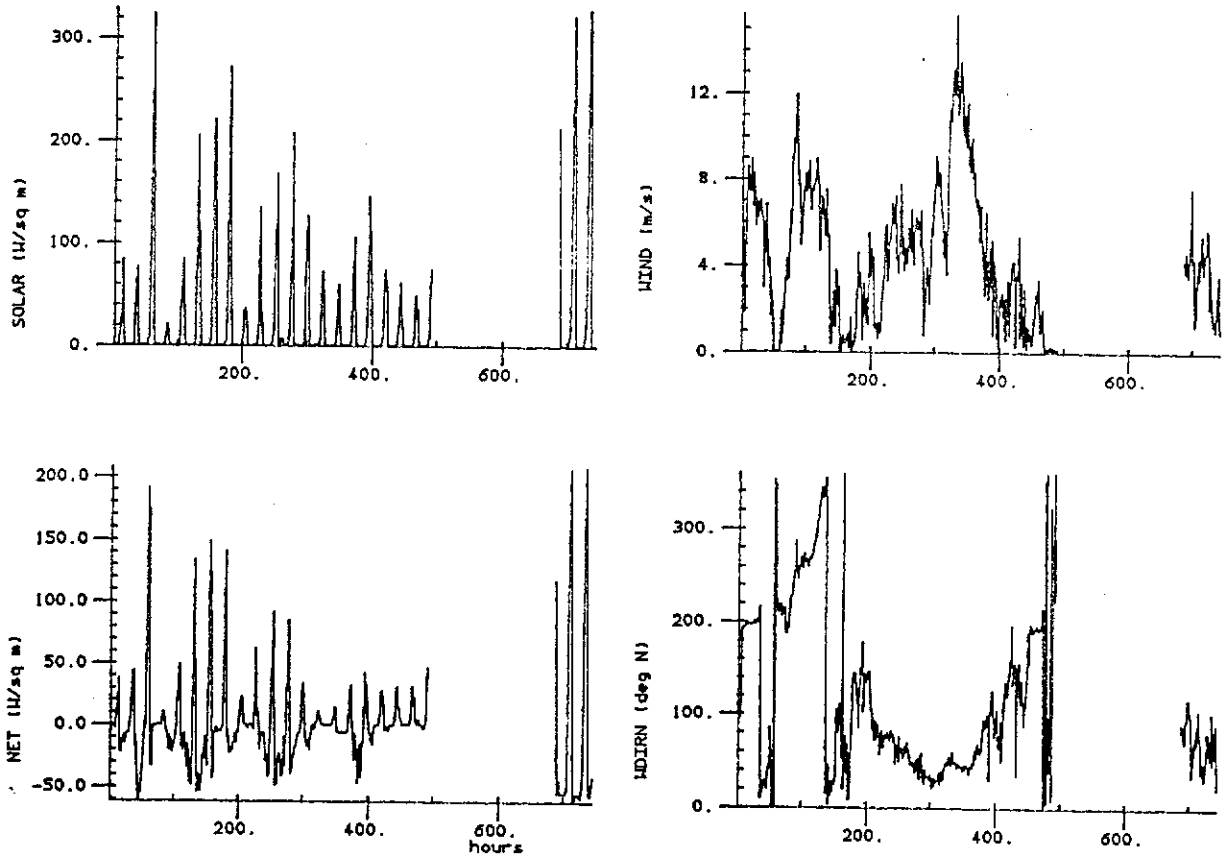

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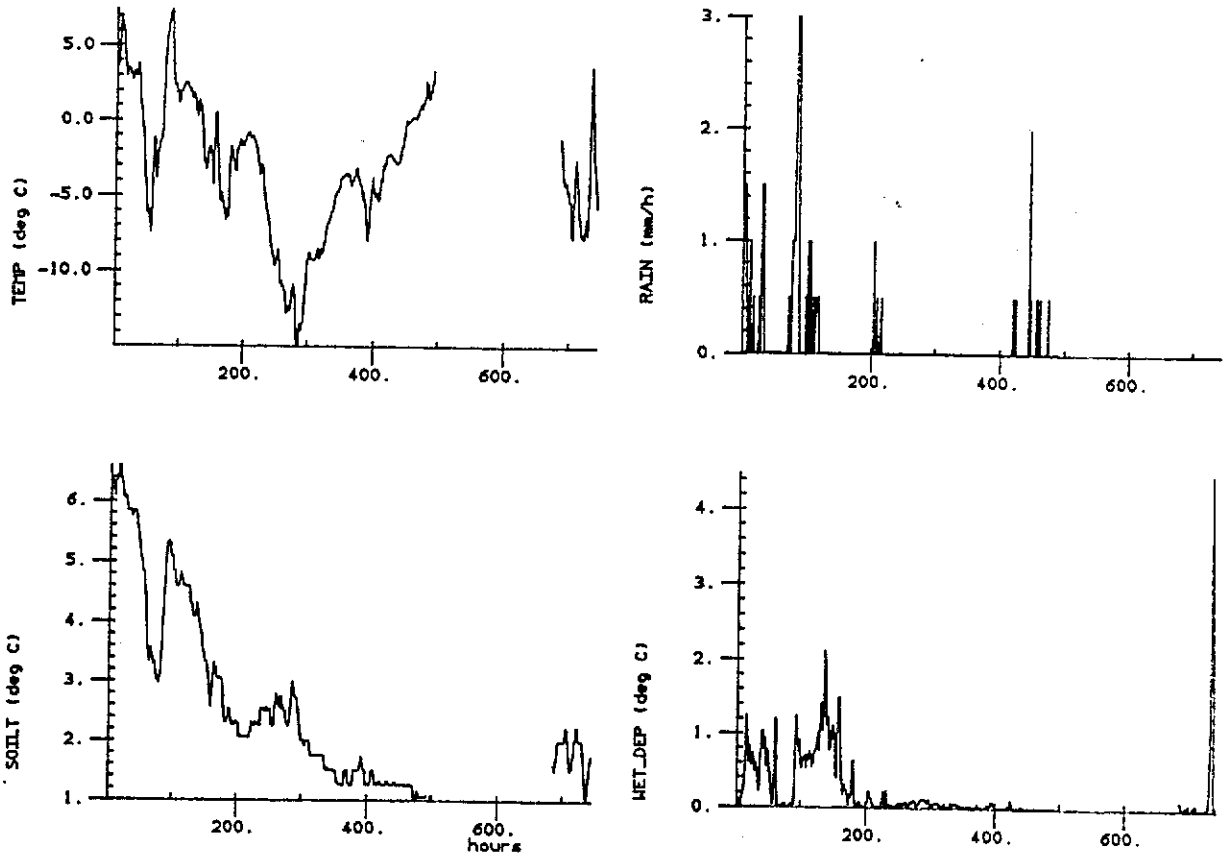

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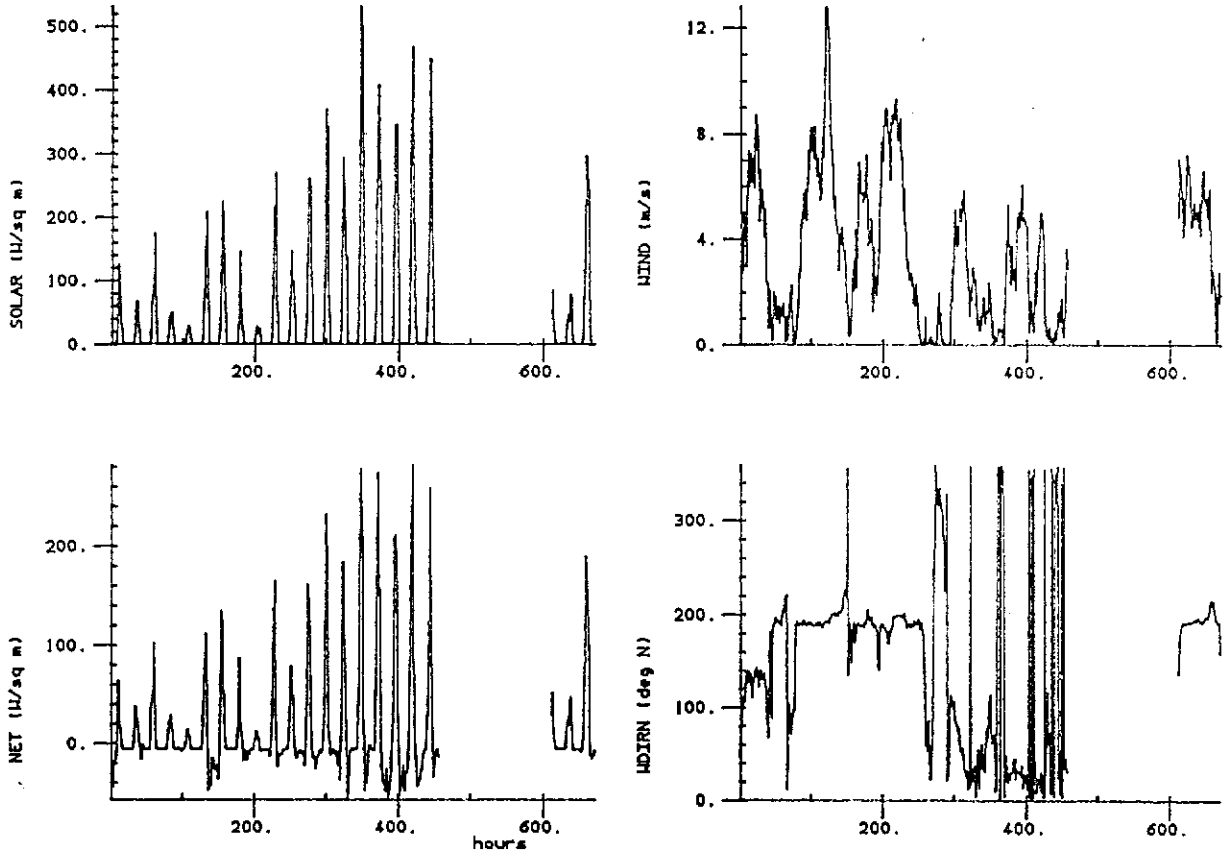

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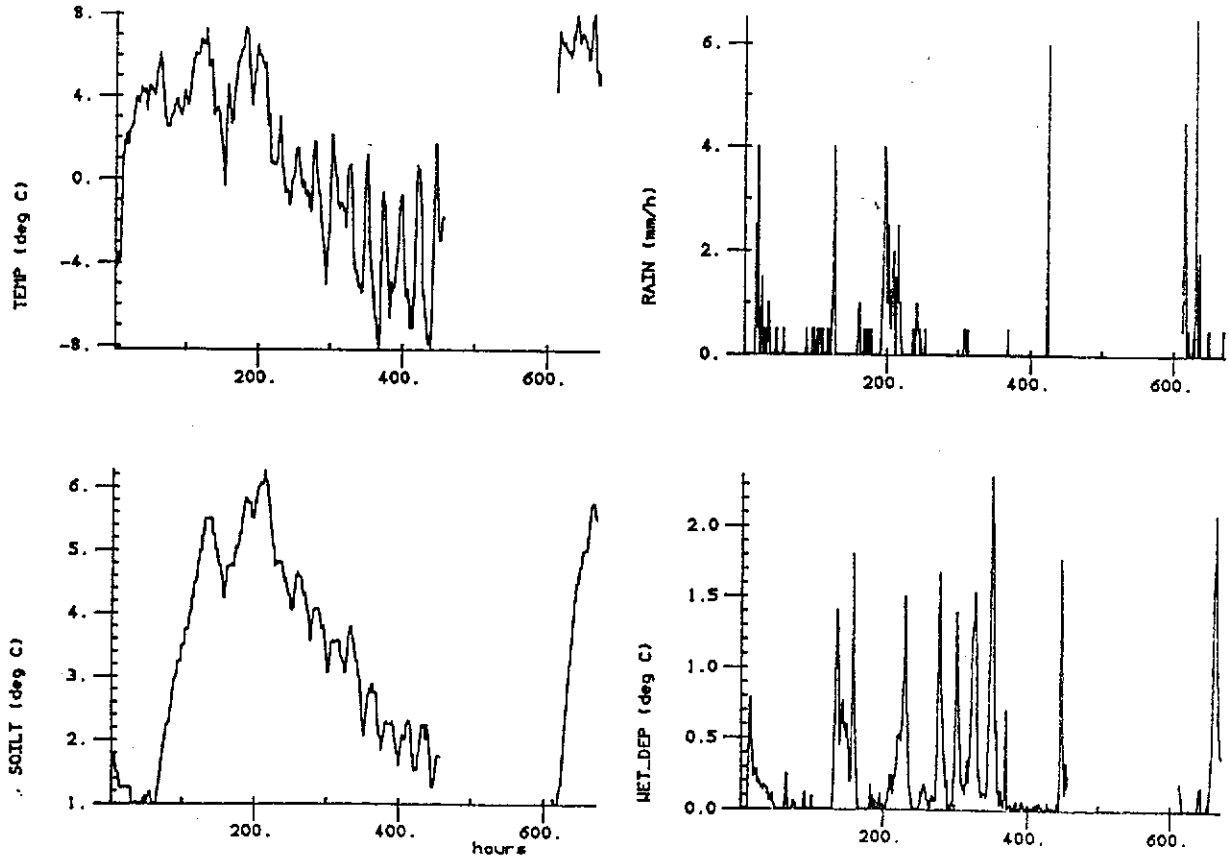

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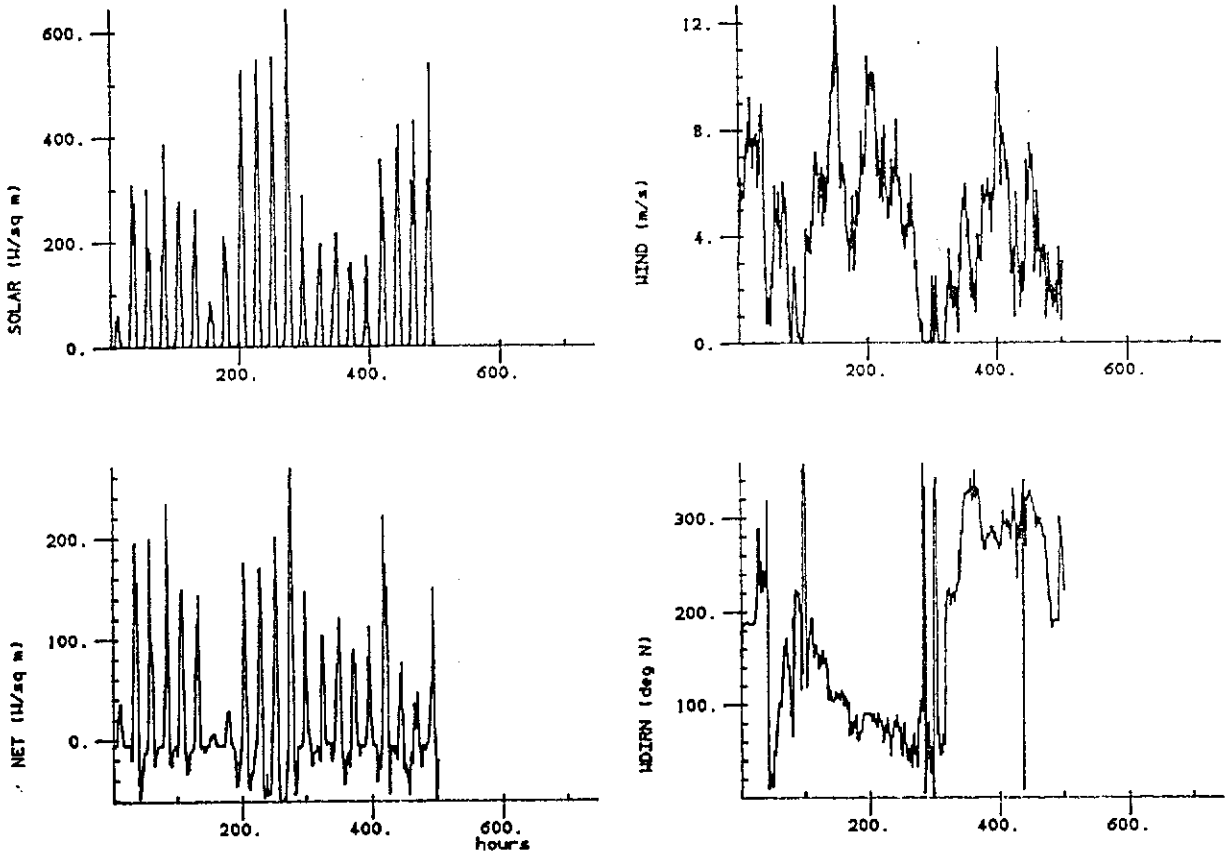

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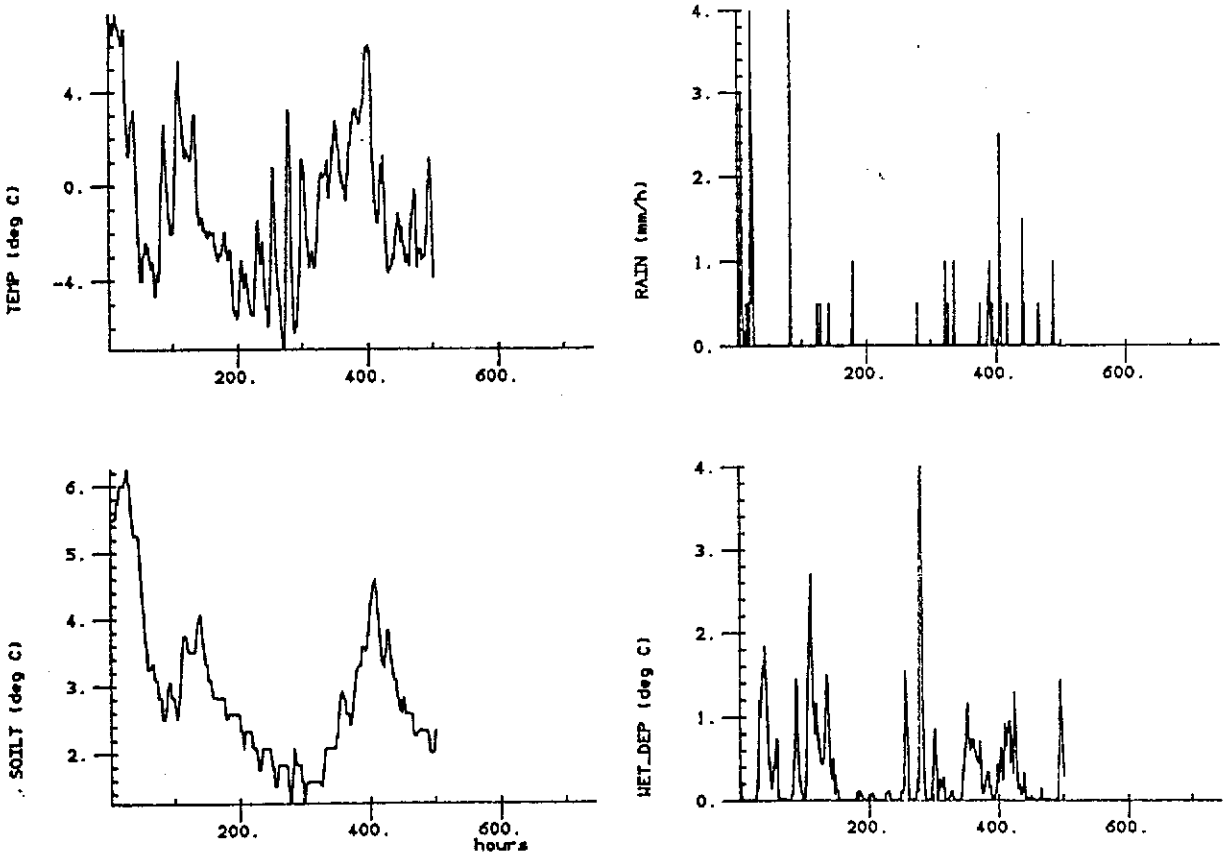
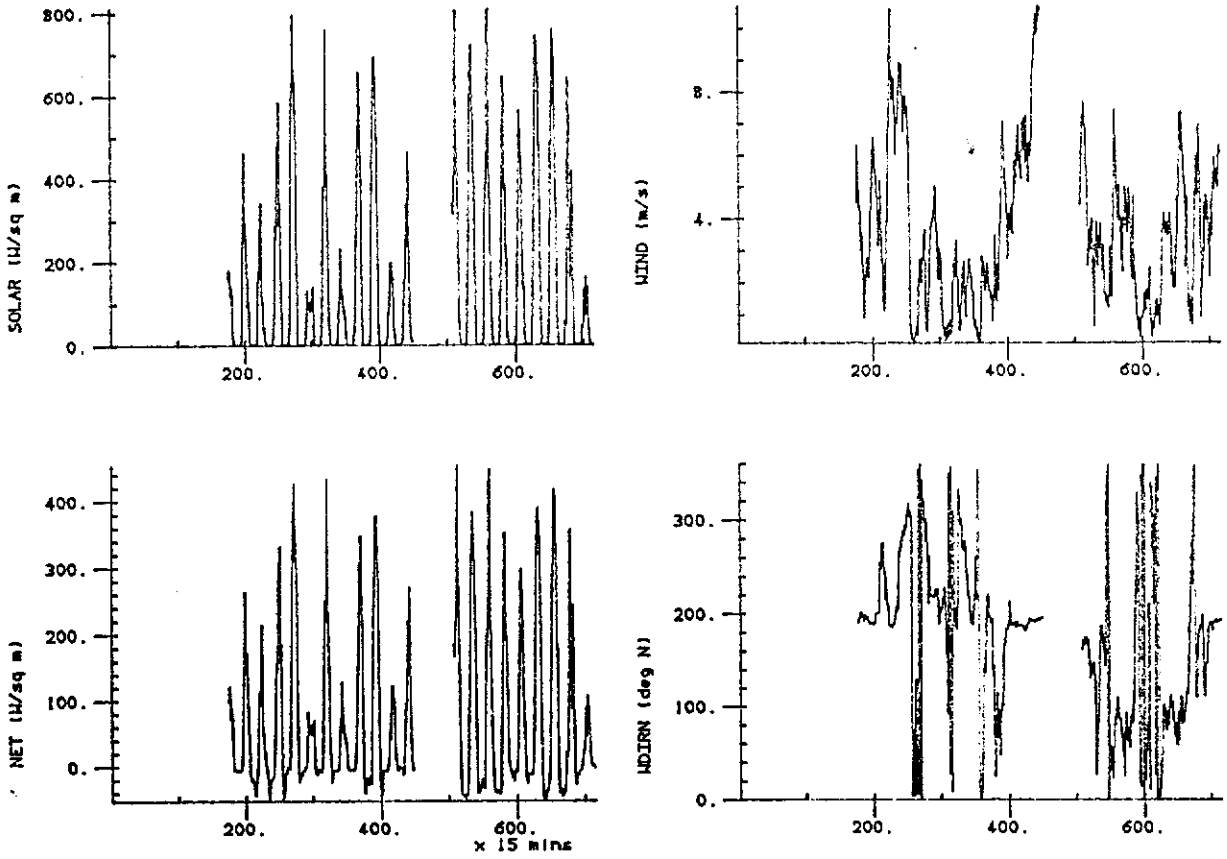


LLYN BRIANNE AWS APR 1987



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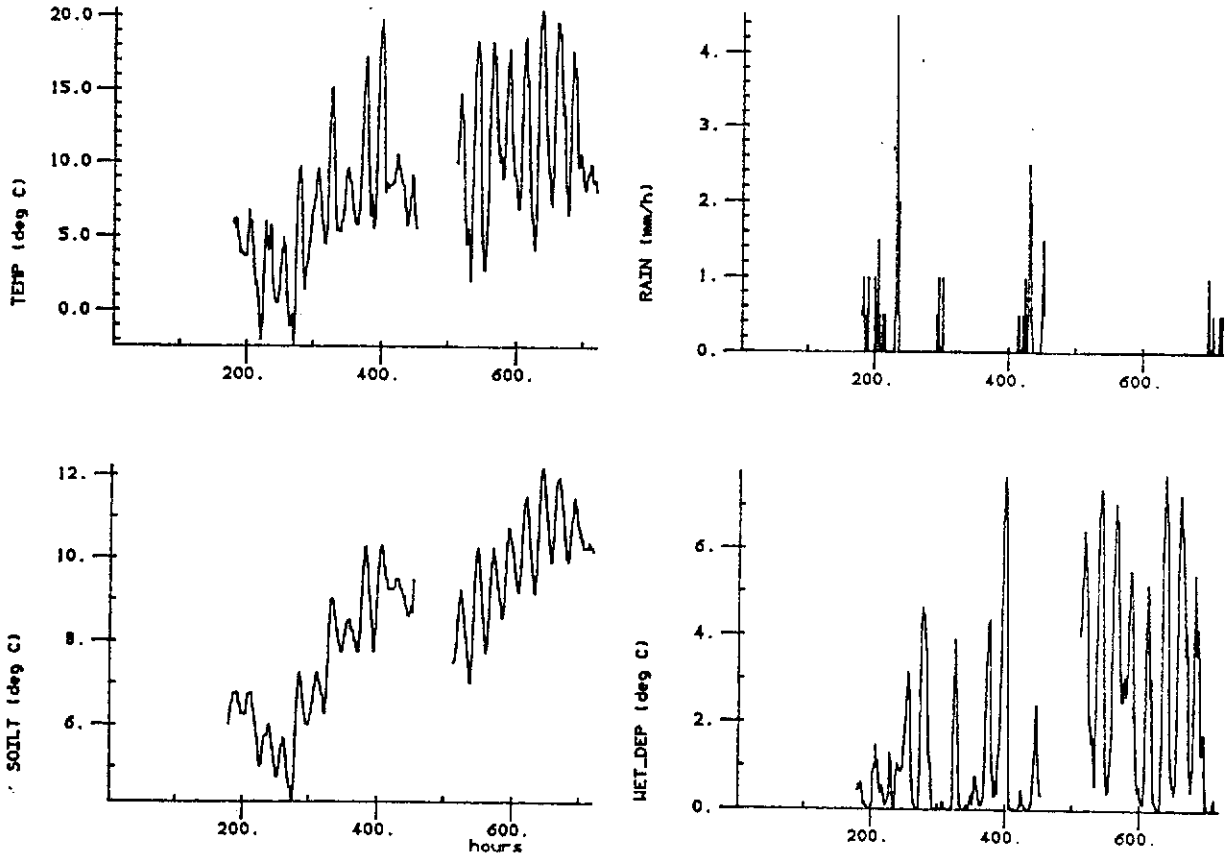

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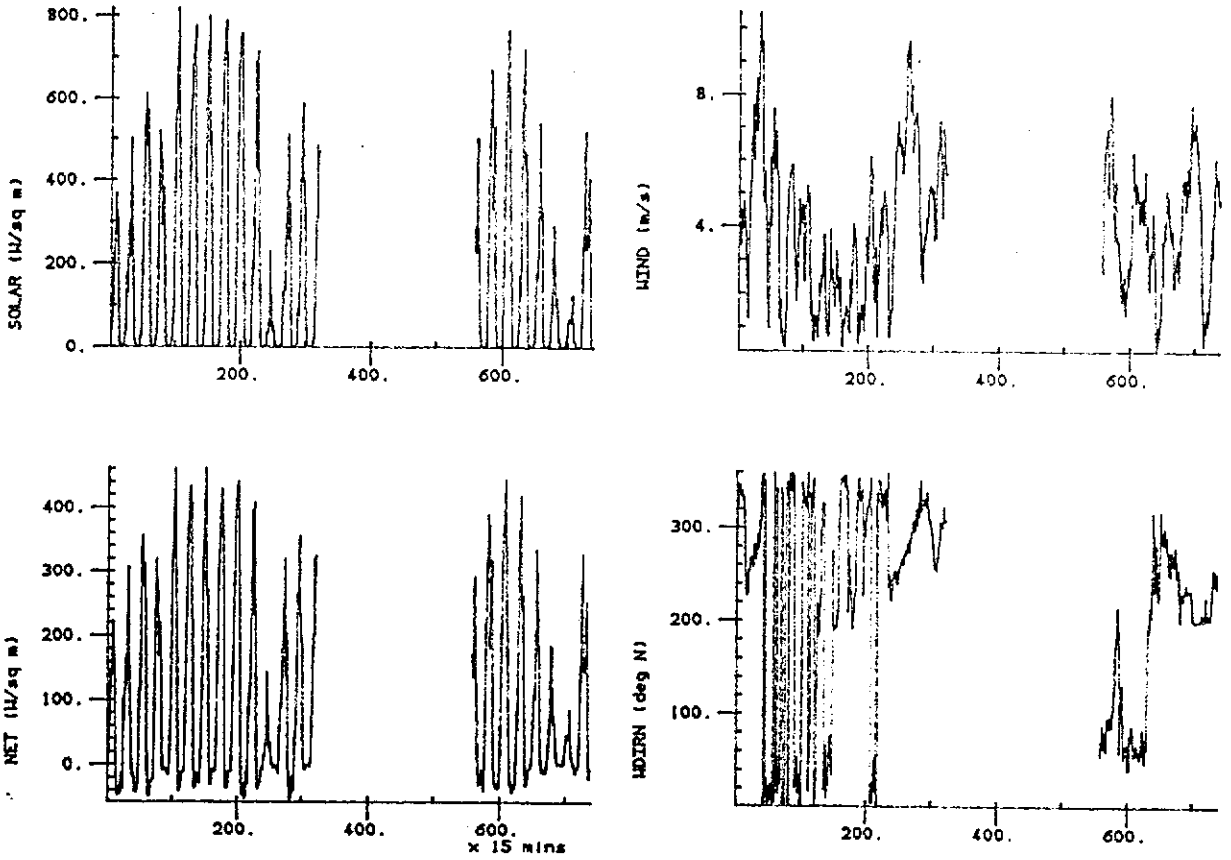

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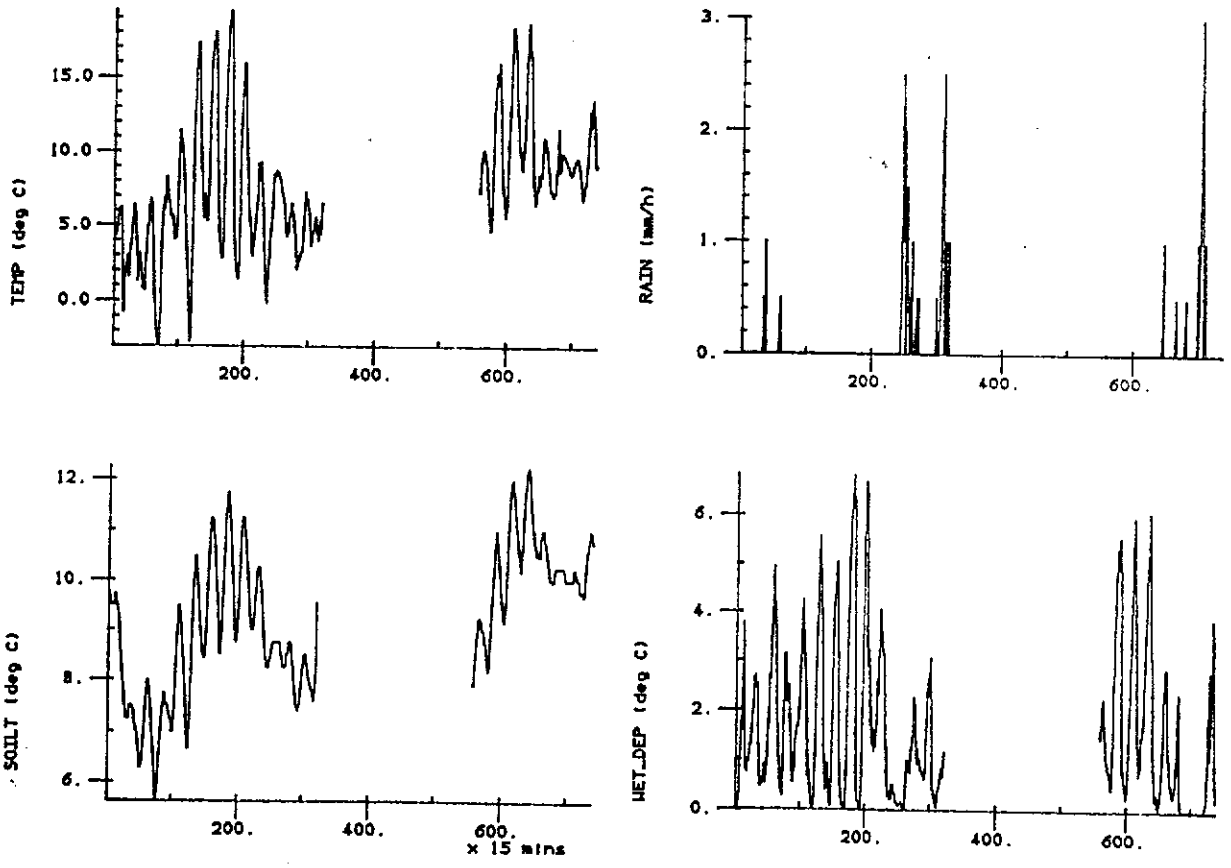

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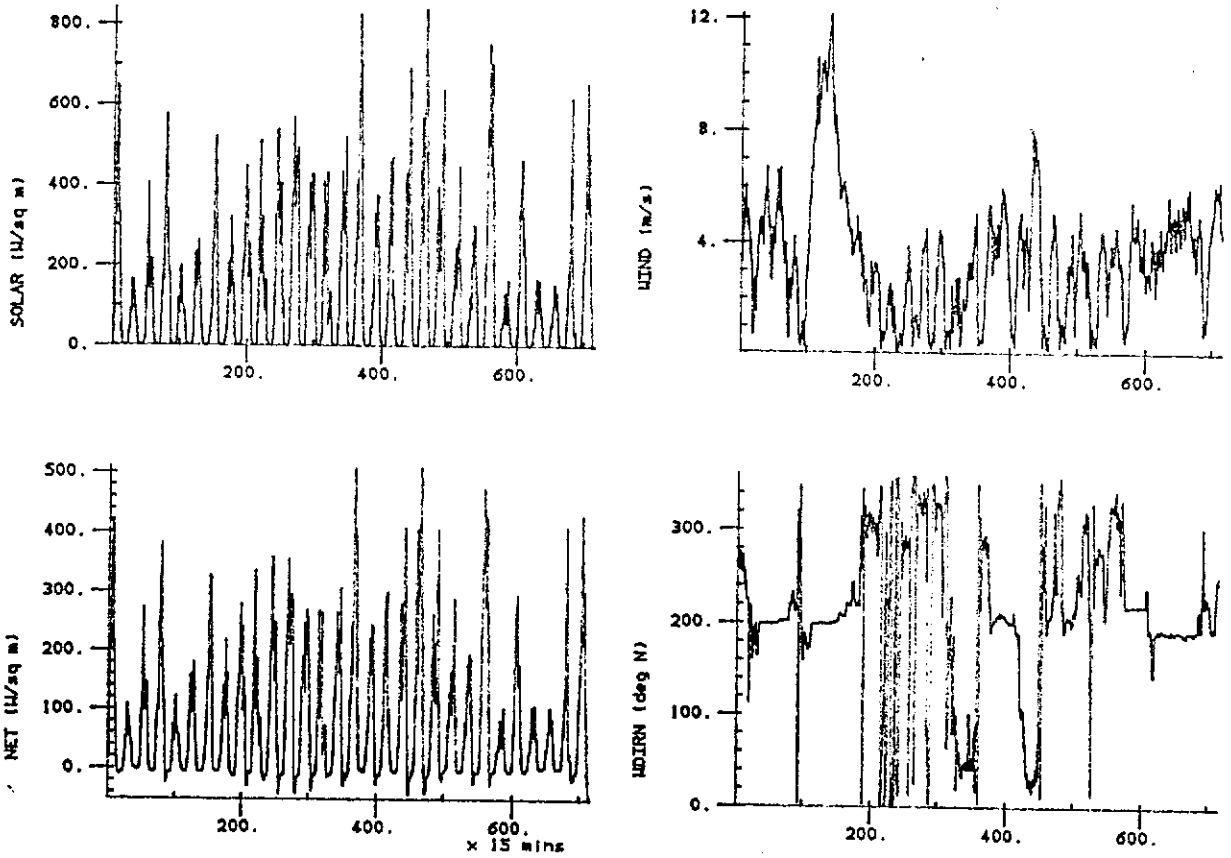

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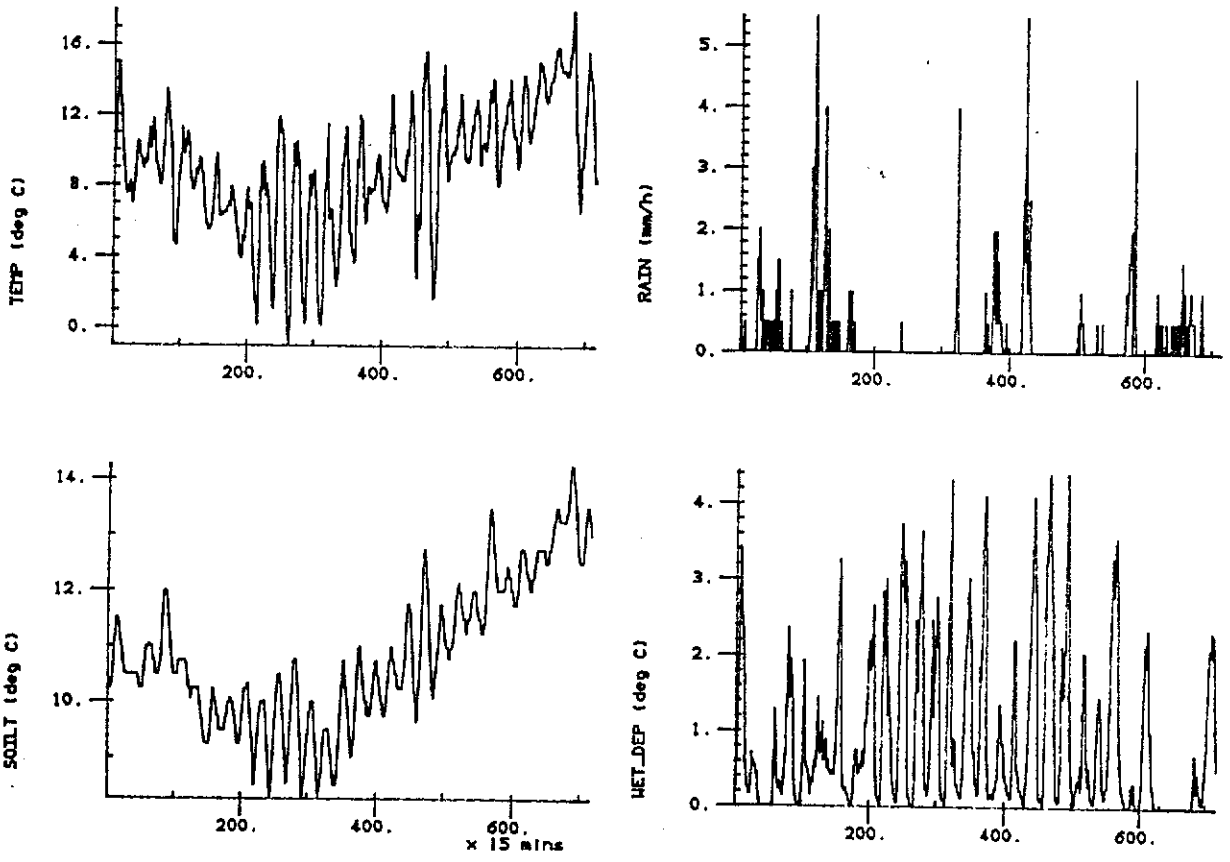

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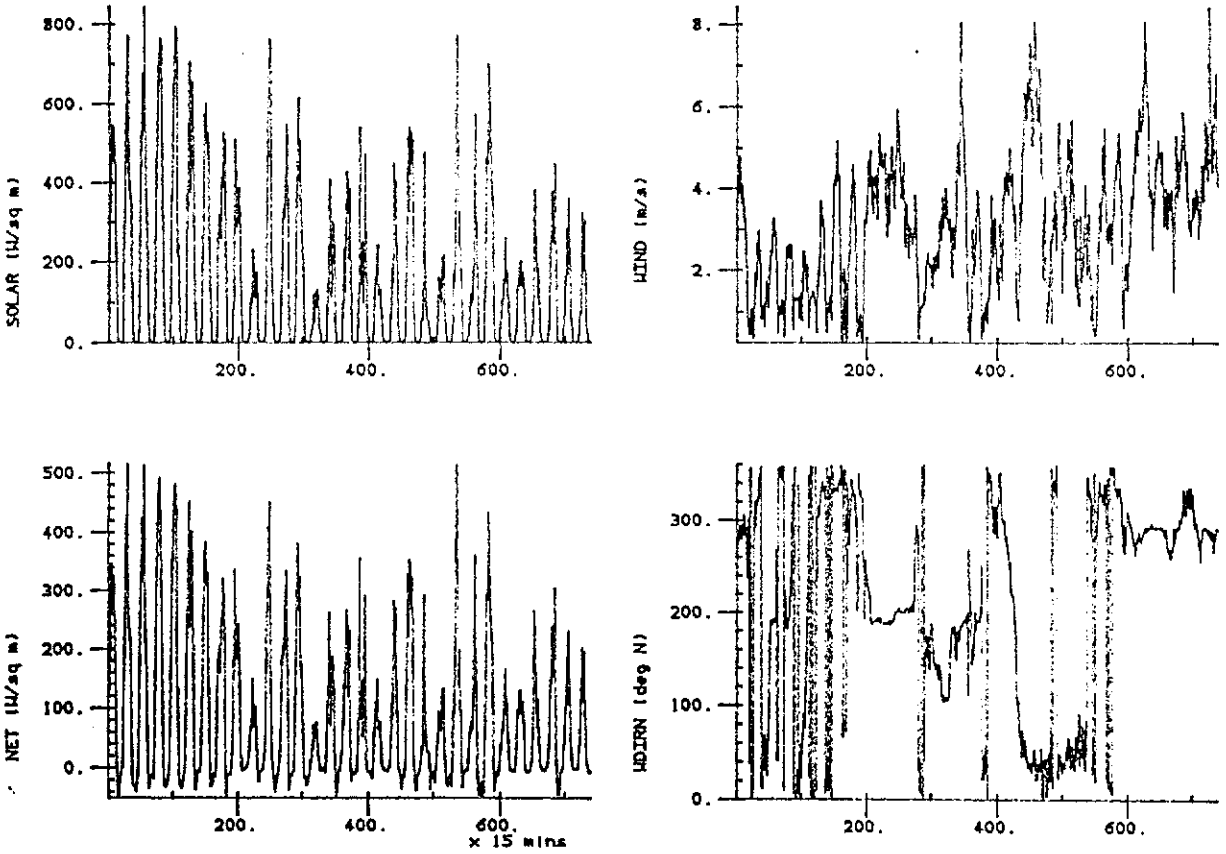

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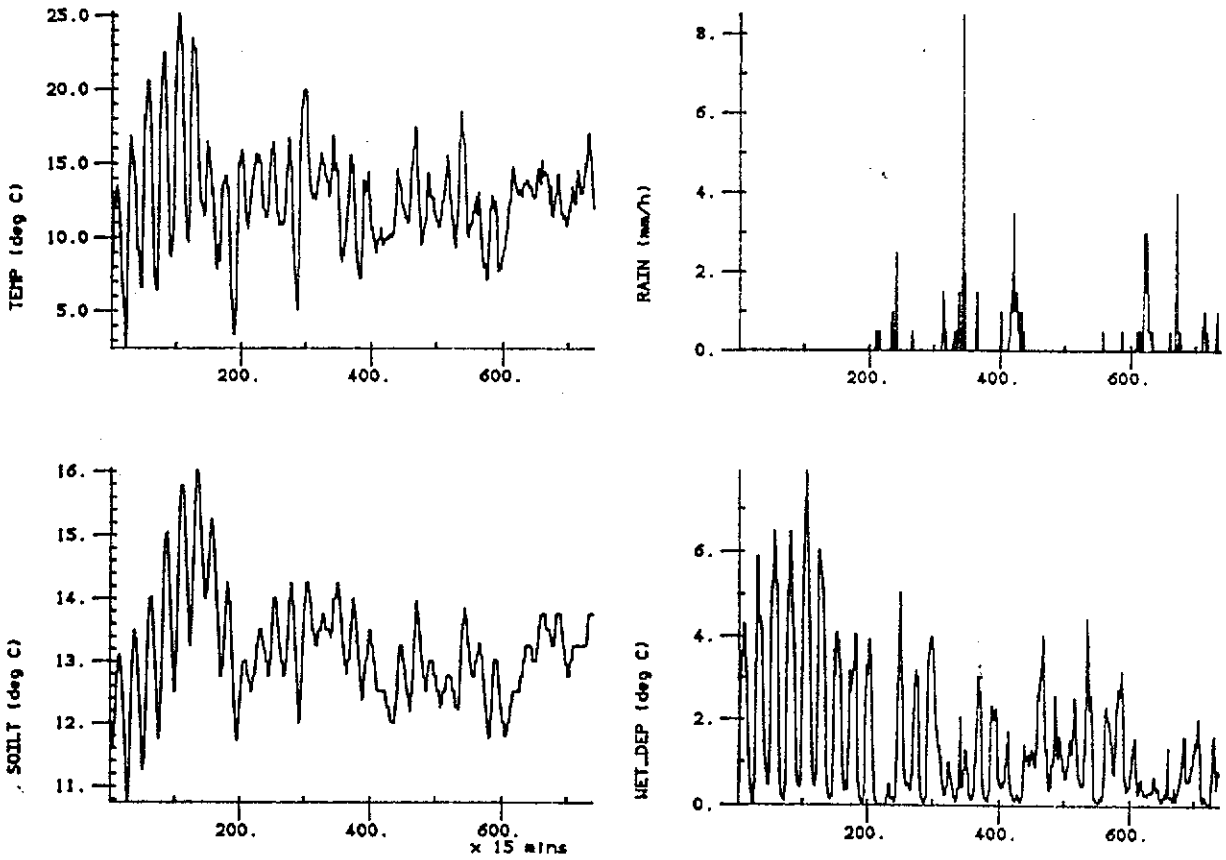

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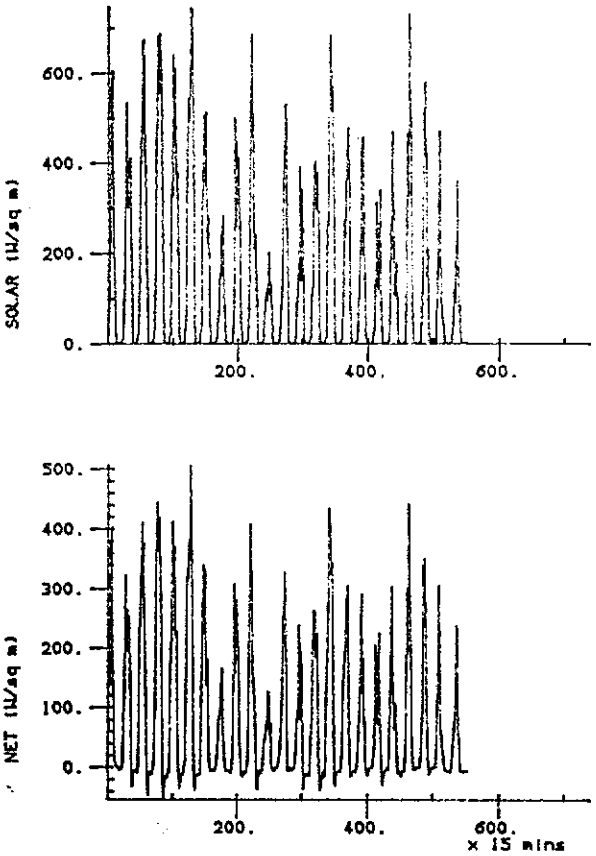

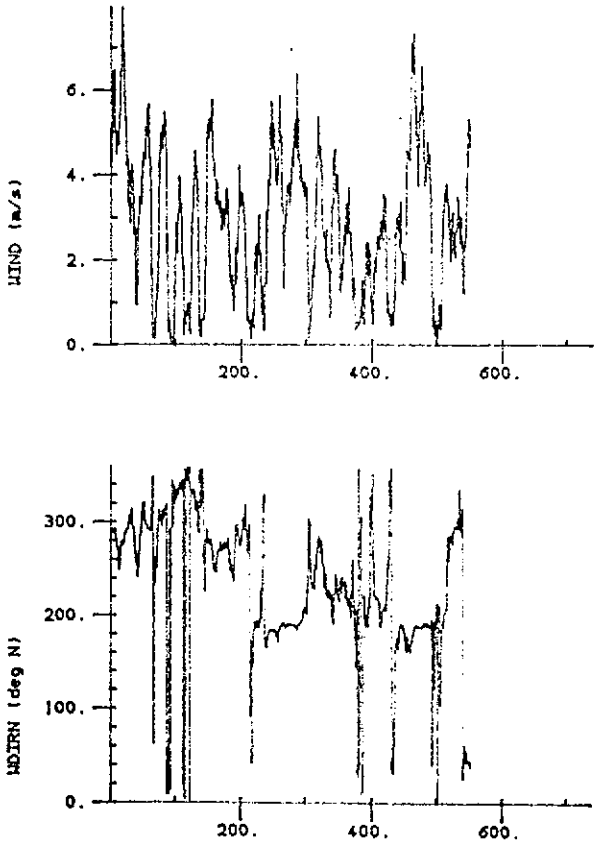

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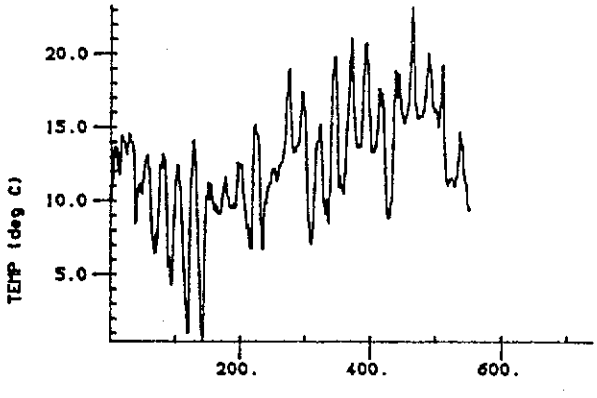

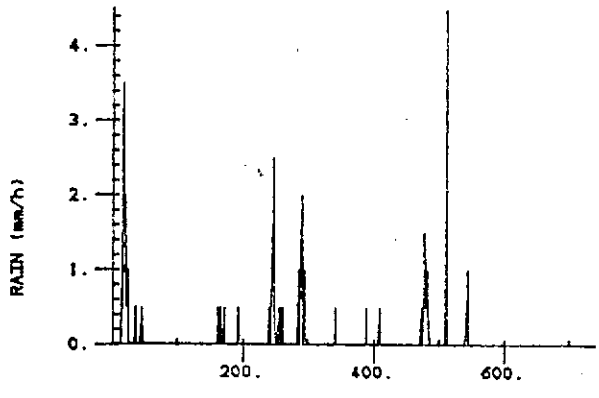

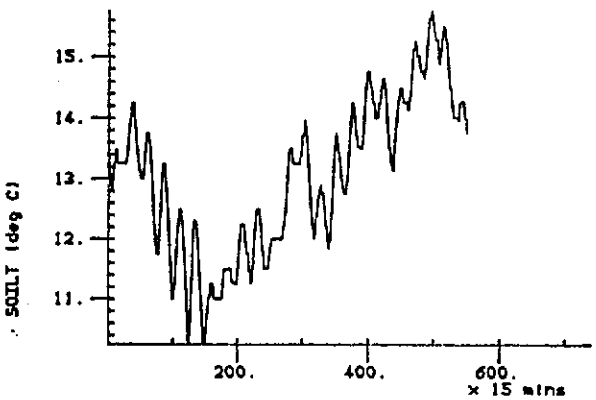

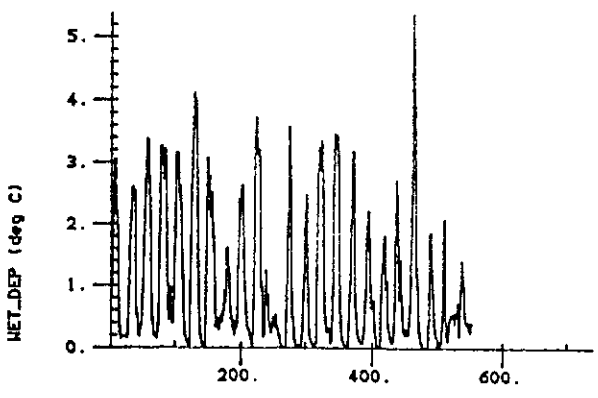

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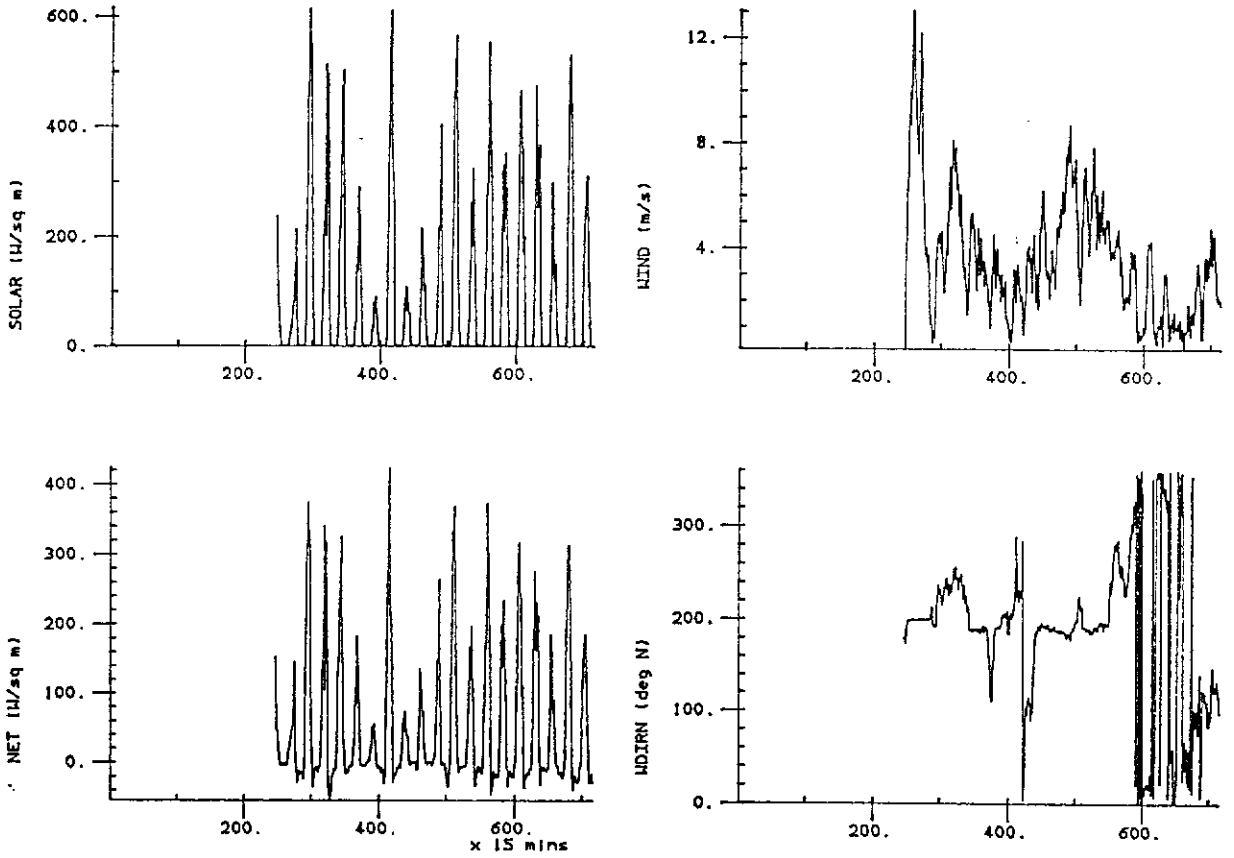

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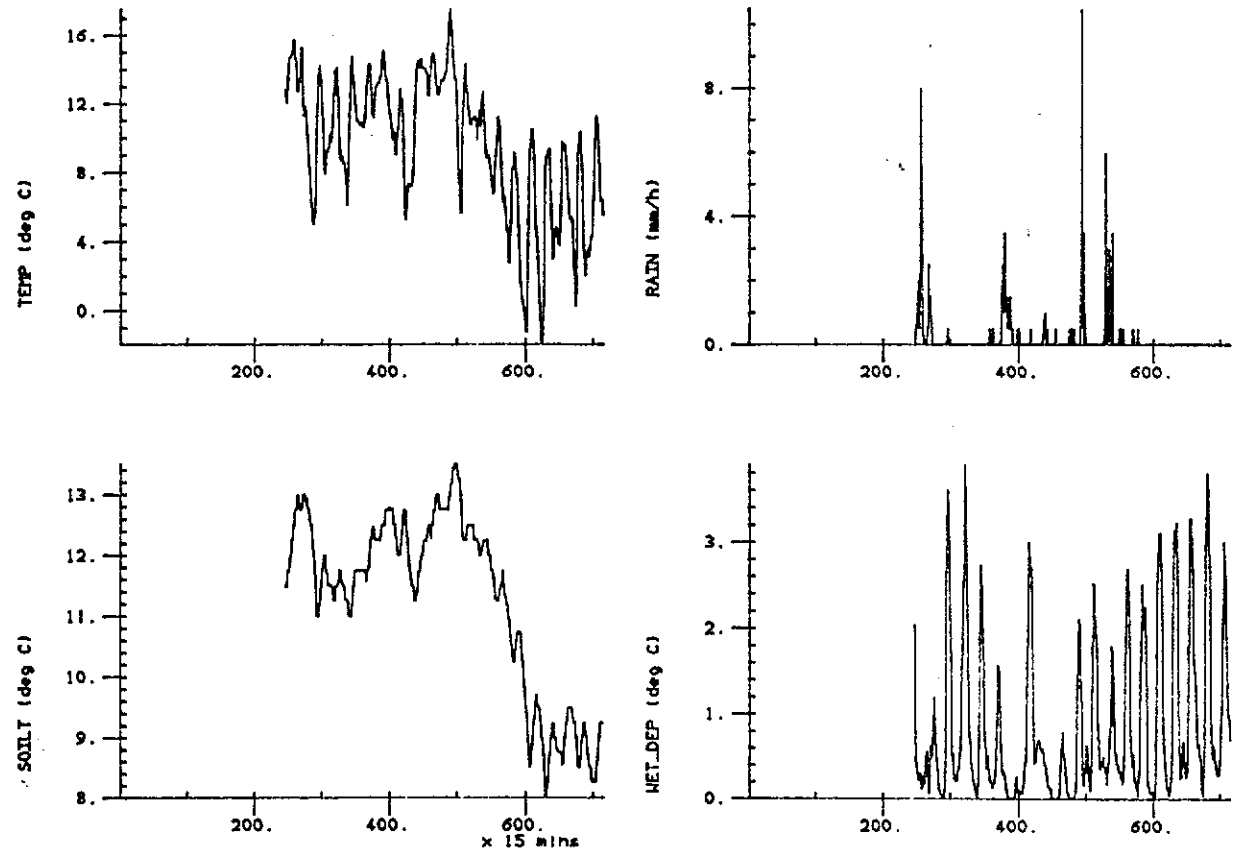
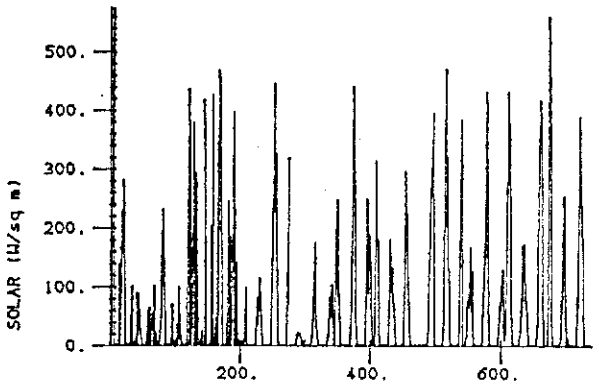
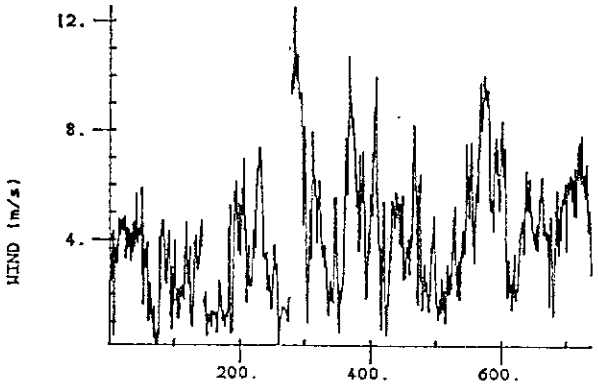
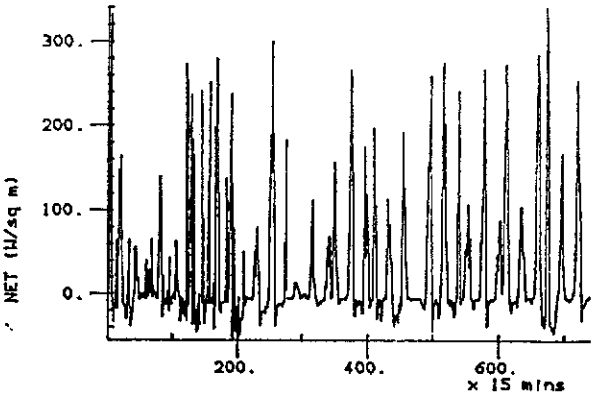
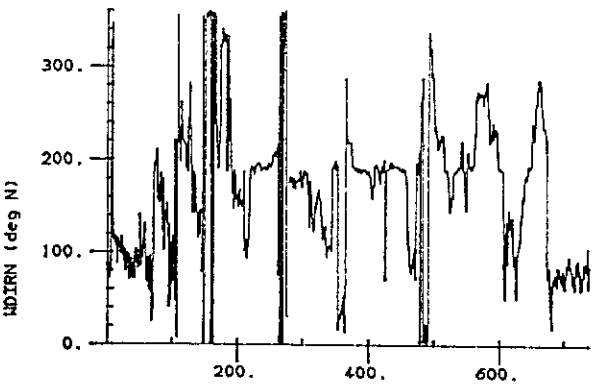


LLYN BRIANNE AWS OCT 1987









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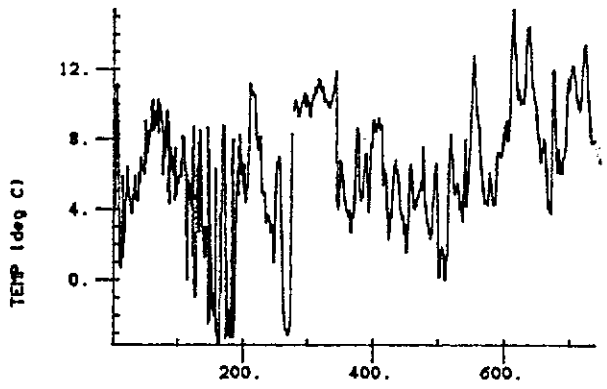
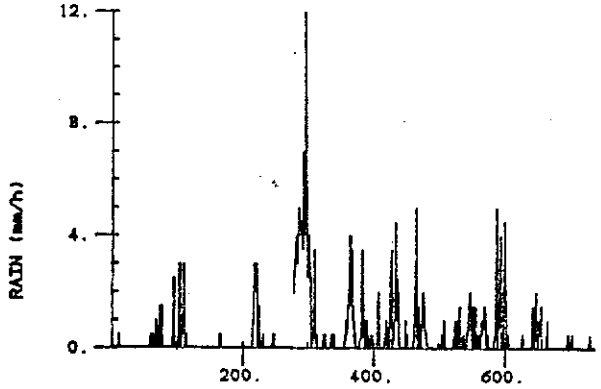
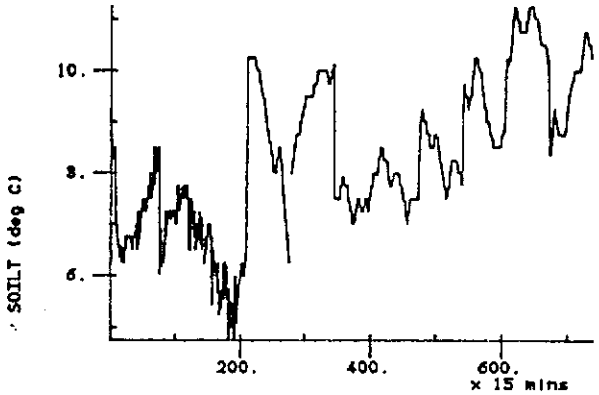
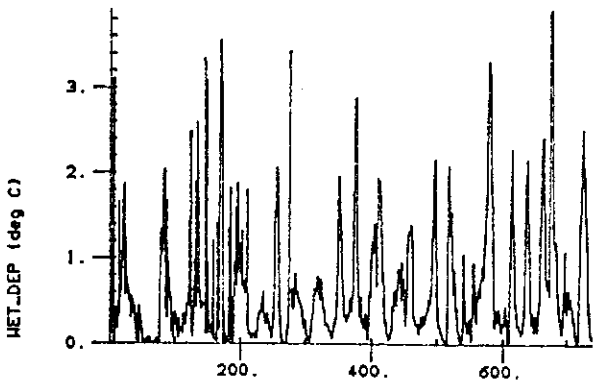
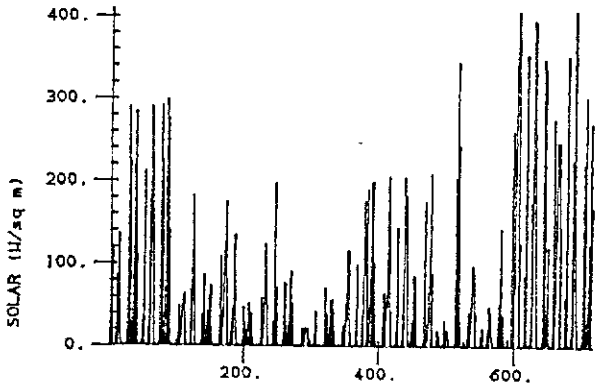


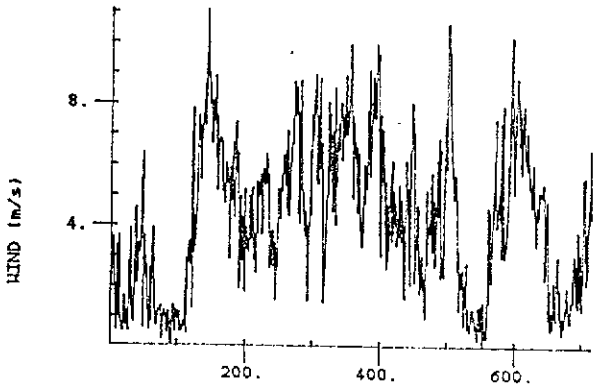


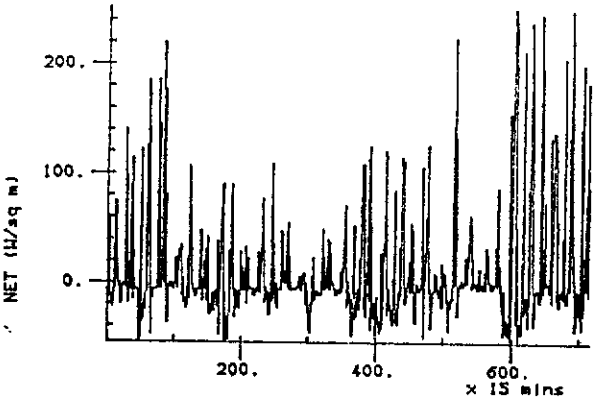


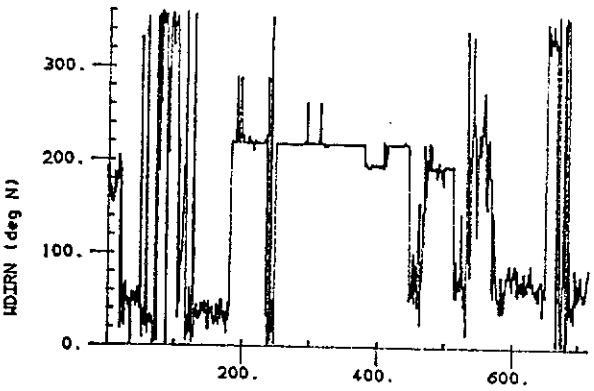


LLYN BRIANNE AWS NOV 1987

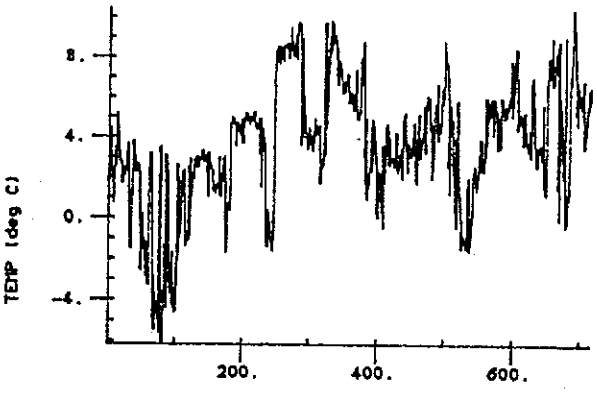


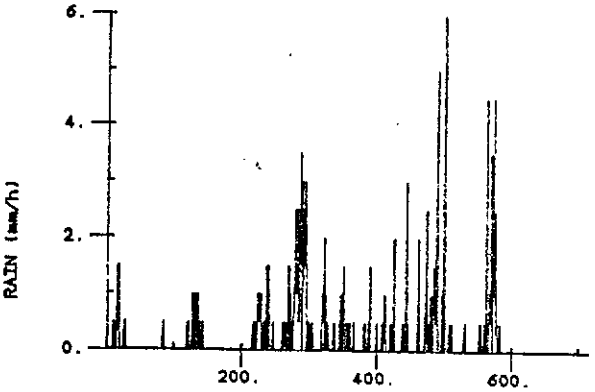


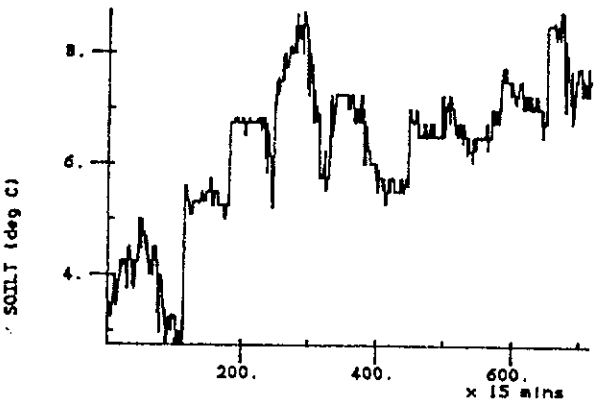


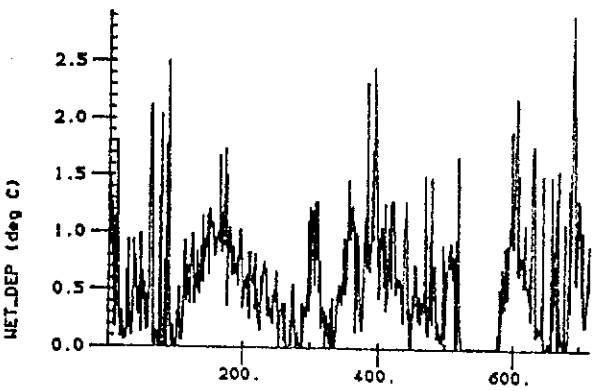


LLYN BRIANNE AWS NOV 1987

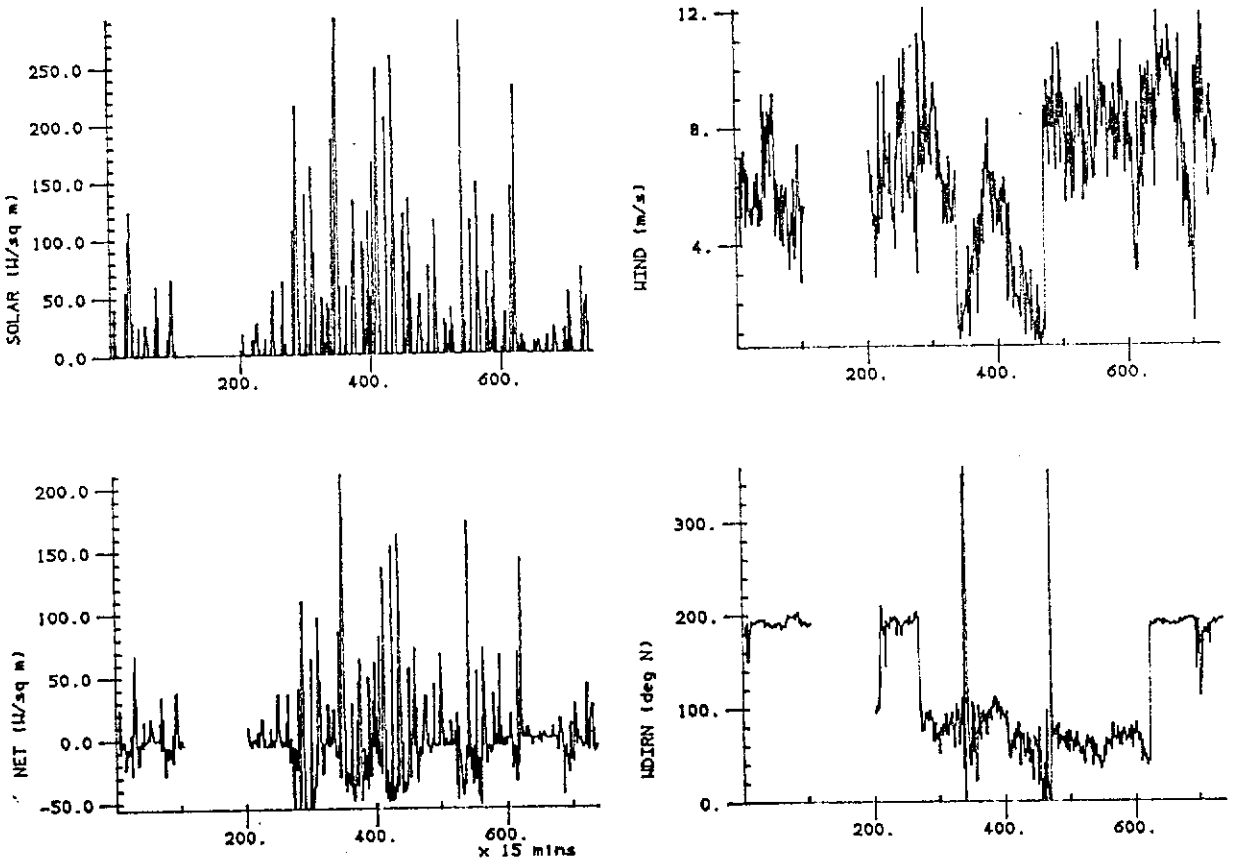








LLYN BRIANNE AWS DEC 1987



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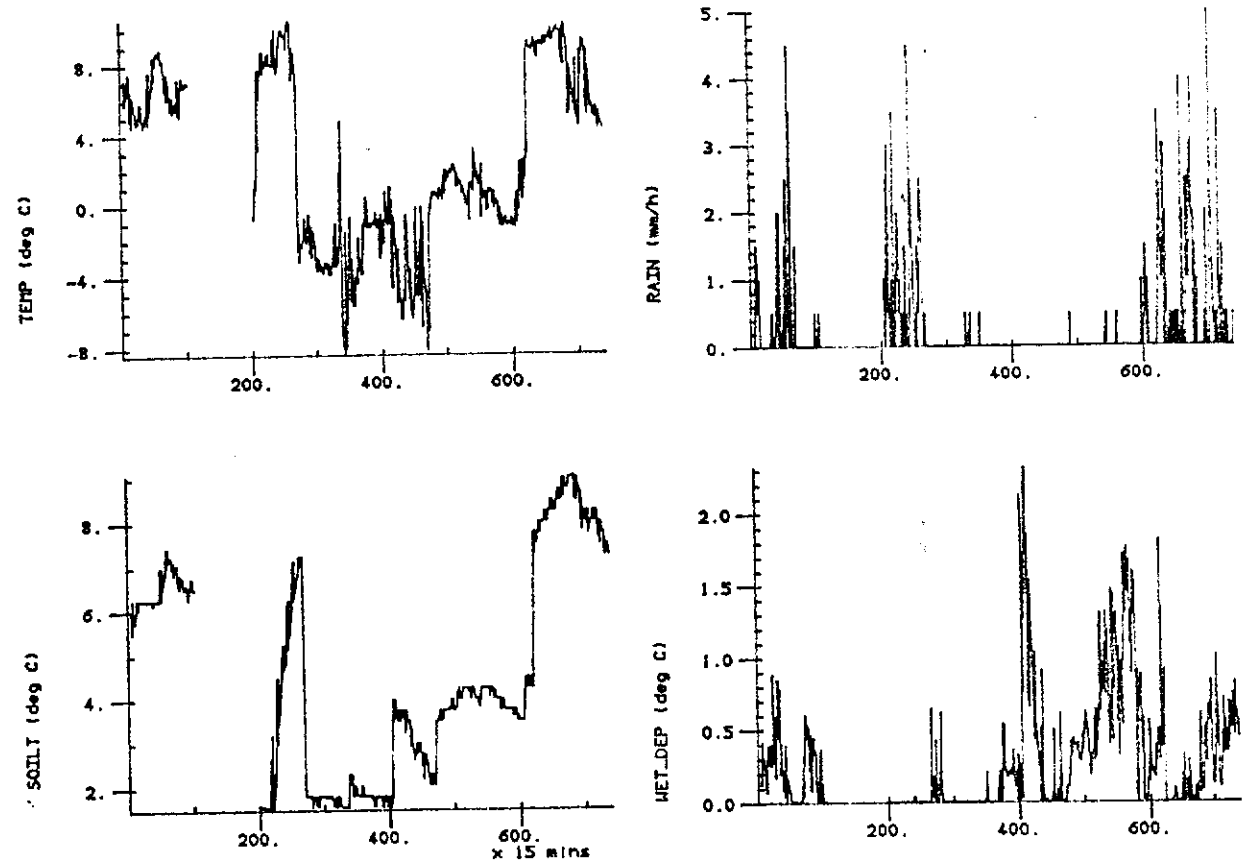


Section 3

Stage-discharge equations

Llyn Brianne Project
Post-August 1986 stage-discharge relations

Site	Number of spot gaugings	Stage-discharge equation $Q = C(h+AO)^B$ $(l.s^{-1})$ C	AO	B	95% Confidence limits (%)		Period of applicability
LI1	13	4335.1	-0.108	1.6568	-	-	Aug - Dec 1986*
	6	44431	0.000	3.699	+15	-13	Jan - mid Apr 1987
		1588.1	-0.114	1.165	+ 6.8	- 6.3	mid April 1987 - Oct 1988
LI2	33	1696.5	-0.067	1.677	+ 7.7	- 7.2	Aug 1986 - Oct 1988
LI3	31	Previous rating applies					Aug - Oct 1986
		9620.3	-0.026	2.323	+ 4.6	- 4.4	Nov 1986 - Oct 1988
LI4	14	1387.4	0.000	1.4969			1985 - Oct 1988
CI2	9	1938.6	+0.105	3.2206			1987 - Oct 1988
CI4		1268.9	-0.012	1.2787	+10.0	- 9.2	1985 - 1987
CI5		1660.7	0.000	1.376			August 1986 - Oct 1988
CI6		Previous rating applies					
UC4		1322.8	-0.051	2.245	+ 8.2	- 7.6	1985 - Dec 1986
		Post-Dec 1986 rating to be determined - awaiting high flow					

Notes: (1) Ratings derived by University College, Swansea (Department of Geography).
(2) * Previous rating could be applied.
(3) Ratings for LI8 and CI3 to be determined.

Section 4

Atmospheric deposition chemistry

Bulk deposition chemistry UC4 1987 (non-metals)

Date	Site	pH	Cond.	Amm.N	TON	NO_2	T.Hard	T.Alk	Cl	Orth.P	Si	SO_4	DOC
28-JAN-87	UC4	3.8	61	.92	1.3	.004	2.5		3	.02	.2	7.71	2.6
07-JAN-87	UC4			.13	.1	.004	1.5		6	.02	.2	1.56	.1
18-FEB-87	UC4	4.1	35	.41	.8	.004			2	.02	.2		2
04-FEB-87	UC4	4.4	17	.49	.2	.004	2.8		2	.08	.2	2.05	.8
11-FEB-87	UC4	4.6	16	.15	.2	.004	.7	.4	3	.02	.2	1.72	.9
18-MAR-87	UC4	4.3	42	.78	.8	.004	2.4		4	.02	.2	3.38	1.3
05-MAR-87	UC4	4.8	13	.06	.1	.004	.7	.9	2	.02	.2	.97	.3
11-MAR-87	UC4	5.3	28	.23	.7	.011	7.4	1.5	2	.02	.2	4.91	1.2
15-APR-87	UC4	4.8	17	.25	.1	.004	1.2	.9	3	.02	.2	2.05	.8
25-MAR-87	UC4	4.8	17	.17	.1	.004	.7	.8	2	.02	.2	1.39	.2
08-APR-87	UC4	4.3	21	.41	.43	.004	.5		1	.02	.2	2.17	.6
20-MAY-87	UC4	4.5	27	.57	.3	.004	1.6	.2	3	.02	.2	3.44	.5
22-APR-87	UC4	5.1	22	.42	.2	.004	1.4	1.1	3	.02	.2	2.17	.4
06-MAY-87	UC4	4.7	39	.49	.3	.004	2.1	.5	6	.02	.2	4.08	.7
10-JUN-87	UC4	4.6	27	.17	.1	.004	2.1	.2	4	.02	.2	2.24	.7
27-MAY-87	UC4	4.2	31	.36	.5	.004	1.4		1	.02	.2	3.53	.8
03-JUN-87	UC4	4.5	18	.32	.2	.004	.4	.2	1	.02	.2	1.99	.5
17-JUN-87	UC4	4.6	24	.49	.5	.004	3.3	2.1	2	.04	.2	3.63	.8
24-JUN-87	UC4	4.7	11	.13	.1	.004	.3	.8	1	.02	.2	1.46	.3
01-JUL-87	UC4	4.9	17	.11	.1	.004	.4	1	1	.03	.2	1.18	.3
15-JUL-87	UC4			.54	.5	.004	1.1		1	.02	.2	2.47	1.6
22-JUL-87	UC4	4.6	13	.15	.2	.004	.2	.4	1	.02	.2	1.36	.4
29-JUL-87	UC4	5.2	7	.23	.1	.004	.3	1.4	1	.02	.2	.96	.6
05-AUG-87	UC4	5.8	11	.63	.1	.004	.3	2.3	1	.02	.2	1.71	1
13-AUG-87	UC4	5.1	10	.24	.2	.004	.6	1.4	1	.02	.2	1.29	.7
19-AUG-87	UC4	7.2		2.5	.8	.015		16.7	6	.02	.3		
26-AUG-87	UC4	4.7	17	.34	.2	.004	.7	.8	1	.02	.2	2.22	1.1
02-SEP-87	UC4	5.4	52	1.5	1.3	.007		1.7	5	.02	.2		2.7
09-SEP-87	UC4	5	20	.15	.1	.004	.9	1.4	2	.02	.2	1.35	.5
16-SEP-87	UC4	4.8	16	.11	.1	.004	.9	1.1	2	.02	.2	1.4	.4
23-SEP-87	UC4	4.9	13	.12	.1	.004	.9	1.1	1	.02	.2	1.24	.2
30-SEP-87	UC4	5.3	29	.22	.1	.004		1.5	5	.02	.2		.7
07-OCT-87	UC4	5	11	.28	.3	.004	1.3	1.4	2	.02	.2	1.59	.2

Bulk deposition chemistry UC4 1987 (continued) (non-metals)

Date	Site	pH	Cond	Amm.N	TON	NO_2	T.Hard	T.alk	Cl	Orth.P	Si	SO_4	DOC
14-OCT-87	UC4	4.9	20	.02	.1	.004	1.2	1.1	4	.02	.2	1.9	.2
21-OCT-87	UC4	4.6	15	.16	.2	.004	.6	.3	1	.02	.2	1.33	.4
28-OCT-87	UC4	6	27	.45	1.8	.004	5.7	3.2	1	.02	.2	2.28	1.2
11-NOV-87	UC4	4.3	26	.38	.5	.004	.3		2	.02	.2	2	.6
18-NOV-87	UC4	5.3	46	.14	.1	.004	4.4	1.6	12	.02	.2	2.43	.2
25-NOV-87	UC4	5.1	19	.11	.1	.004	1.2	1.2	4	.02	.2	1.13	.2
02-DEC-87	UC4	4.3	22	.21	.5	.004	1.4		3	.02	.2	2.15	1.2
10-DEC-87	UC4	4.1	34	.16	.6	.006	1.4		9	.02	.2	3.2	.9
16-DEC-87	UC4	5.9	24	.1	.4	.004	5.2	2.2	4	.02	.2	2.56	.4
23-DEC-87	UC4	4.8	14	.11	.1	.004	.7	1	3	.02	.2	1.15	.3

Bulk deposition chemistry UC4 1987 (metals)

Date	Site	Na	K	Cu	Mg	Ca	Zn	Cd	Al	Cr	Mn	Fe	Ni
28-JAN-87	UC4	1.73	.24	.004	.295	.69	.061	.001	.041	.003	.003	.05	.003
07-JAN-87	UC4	2.61	.16	.002	.337	.12	.002	.001	.017	.003	.002	.016	.003
18-FEB-87	UC4												
04-FEB-87	UC4	1.26	.1	.002	.12	.95	.507	.001	.023	.003	.002	.018	.003
11-FEB-87	UC4	1.27	.1	.002	.159	.12	.012	.001	.01	.003	.013	.021	.003
18-MAR-87	UC4	2.59	.14	.007	.302	.47	.039	.001	.038	.003	.004	.056	.003
05-MAR-87	UC4	.87	.1	.002	.1	.11	.013	.001	.004	.003	.002	.006	.003
11-MAR-87	UC4	1.77	.18	.003	.358	2.45	.025	.001		.003	.017	.047	.003
15-APR-87	UC4	1.61	.2	.003	.178	.3	.032	.001	.014	.003	.002	.011	.003
25-MAR-87	UC4	1.35	.1	.002	.155	.11	.009	.001	.01	.003	.002	.02	.003
08-APR-87	UC4	.6	.1	.002	.064	.18	.013	.001	.01	.003	.002	.012	.003
20-MAY-87	UC4	1.78	.15	.006	.205	.3	.198	.001	.019	.003	.005	.015	.003
22-APR-87	UC4	2.09	.1	.002	.253	.22	.03	.001	.017	.003	.002	.007	.003
06-MAY-87	UC4	2.87	.25	.002	.358	.35	.053	.001	.069	.003	.011	.023	.003
10-JUN-87	UC4	2.69	.1	.002	.303	.36	.021	.001	.014	.003	.002	.007	.003
27-MAY-87	UC4	.57	.1	.005	.091	.57	.031	.001	.026	.003	.004	.023	.003
03-JUN-87	UC4	.47	.1	.002	.05	.14	.015	.001	.014	.003	.002	.011	.003
17-JUN-87	UC4	1.08	.1	.002	.176	1.15	.029	.001	.018	.003	.004	.096	.003
24-JUN-87	UC4	.66	.19	.002	.022	.13	.019	.001	.013	.003	.002	.003	.003
01-JUL-87	UC4	.21	.13	.002	.042	.15	.022	.001	.004	.003	.002	.003	.003
15-JUL-87	UC4	.86	.1	.005	.105	.27	.063	.002	.016	.003	.106	.012	.003
22-JUL-87	UC4	.38	.11	.002	.035	.08	.023	.001	.011	.003	.002	.008	.003
29-JUL-87	UC4	.3	.3	.002	.044	.11	.028	.001	.004	.003	.002	.005	.003
05-AUG-87	UC4	.55	.11	.002	.066	.13	.024	.001	.006	.003	.002	.003	.003
13-AUG-87	UC4	.67	.05	.002	.089	.22	.019	.001	.029	.003	.002	.026	.003
19-AUG-87	UC4												
26-AUG-87	UC4	.64	.24	.003	.074	.27	.023	.001	.023	.003	.003	.01	.003
02-SEP-87	UC4												
09-SEP-87	UC4	1.43	.1	.003	.163	.21	.052	.001	.019	.003	.002	.007	.003
16-SEP-87	UC4	1.46	.1	.002	.172	.19	.012	.001	.022	.003	.002	.006	.003
23-SEP-87	UC4	.8	.1	.002	.105	.19	.008	.001	.034	.003	.002	.055	.003
30-SEP-87	UC4												
07-OCT-87	UC4	.98	.13	.002	.112	.34	.017	.001	.033	.003	.002	.012	.003

Bulk deposition chemistry UC4 1987 (continued) (metals)

Date	Site	na	K	Cu	Mg	Ca	Zn	Cd	Al	Cr	Mn	Fe	Ni
14-OCT-87	UC4	2.62	.17	.002	.294	.16	.009	.001	.016	.003	.002	.024	.003
21-OCT-87	UC4	.91	.1	.002	.11	.09	.022	.001	.011	.003	.002	.005	.003
28-OCT-87	UC4			.009	.242	1.95	.069	.001	.036	.003	.014	.05	.006
11-NOV-87	UC4	.71	.6	.002	.083	.11	.009	.001	.019	.003	.002	.024	.003
18-NOV-87	UC4	6.47	.21	.003	.813	.44	.008	.001	.011	.003	.002	.009	.003
25-NOV-87	UC4	2	.1	.002	.268	.15	.009	.001	.009	.003	.002	.013	.003
02-DEC-87	UC4	.45	.19	.009	.113	.4	.023	.001	.028	.003	.002	.013	.003
10-DEC-87	UC4	.63	.11	.004	.089	.56	.015	.001	.044	.003	.004	.024	.003
16-DEC-87	UC4	1.75	.1	.002	.209	1.77	.011	.001	.015	.003	.002	.011	.003
23-DEC-87	UC4	1.49	.1	.002	.165	.13	.008	.001	.014	.003	.002	.007	.003

Bulk deposition chemistry RCS 1987 (non-metals)

Date	Site	pH	Cond	Amm.N	TON	NO_2	T.Hard	T.Alk	Cl	Orth.P	Si	SO_4	DOC
21-JAN-87	RCS	3.4	210	2.4	3.2	.007	3.7		11	.06	.2	19.12	7.8
18-FEB-87	RCS	3.9		.84	1.2	.004			3	.02	.2		5.1
04-FEB-87	RCS	4.1	42	.74	.7	.005	1.2		3	.02	.2	3.9	1.7
11-FEB-87	RCS	4.8	25	.28	.2	.004	1.2	.3	4	.02	.2	2.47	.8
18-MAR-87	RCS	4	118	2.4	3.3	.004	9.2		12	.03	.2	10.28	4
05-MAR-87	RCS	4.5	29	.23	.3	.004	2	.1	4	.02	.2	2.28	.9
11-MAR-87	RCS	7		1.1	2	.019			6	.02	.2		4.8
08-APR-87	RCS	4.3	30	.84	.7	.004	.4		2	.02	.2	2.97	1
25-MAR-87	RCS	4.6	25	.2	.2	.004	1.2	.5	3	.02	.2	1.93	.4
01-APR-87	RCS	5.5		.08	.1	.004			4	.02	.2		
06-MAY-87	RCS	4.5	41	.9	.9	.004	3.1	.1	5	.02	.2	4.63	1.7
15-APR-87	RCS	4.7	16	.24	.1	.004	1	.7	3	.02	.2	1.93	.7
22-APR-87	RCS	4.7	26	.55	.3	.004	2	.5	3	.02	.2	3.36	.7
10-JUN-87	RCS	5.1	32	.35	.1	.004	2.2	.7	6	.07	.2	2.33	1.1
20-MAY-87	RCS	4.5	26	.43	.3	.004	1.4	.2	3	.02	.2	2.82	.4
27-MAY-87	RCS	7.1	56	3.9	.6	.006	1.3	11.8	2	.8	.3	5.92	4.4
17-JUN-87	RCS	4.5	18	.43	.3	.004	.5	.2	2	.02	.2	2.39	.9
24-JUN-87	RCS	4.6	17	.14	.1	.004	.2	.5	1	.02	.2	1.48	.6
01-JUL-87	RCS	4.6	14	.19	.1	.004	25.2	.6	1	.02	.2	1.67	1.3
16-JUL-87	RCS	4.4	21	.44	.3	.004	.4		1	.02	.2	2.33	.9
22-JUL-87	RCS	4.6	12	.1	.2	.004	.2	.3	1	.02	.2	1.29	.6
29-JUL-87	RCS	6	15	1.2	.1	.004	.4	4.6	1	.17	.2	1.55	1.6
05-AUG-87	RCS	5.8	11	.62	.2	.004	.3	2.1	1	.02	.2	1.63	.7
12-AUG-87	RCS	4.9	20	.44	.4	.004	1.7	1.1	2	.02	.2	2.96	1.4
19-AUG-87	RCS	6.7	34	.65	.5	.004		5.6	3	.02	.2		2.6
26-AUG-87	RCS	5.1	14	.36	.3	.004	.9	1.3	1	.02	.2	1.84	1.1
02-SEP-87	RCS	5.2	66	2	2.1	.005		1.6	5	.02	.2		5
09-SEP-87	RCS	5.8	19	.15	.2	.004	2.3	2.2	2	.02	.2	1.51	.6
16-SEP-87	RCS	4.8	24	.16	.2	.004	93.5	1	5	.02	.2	42.62	.5
23-SEP-87	RCS	4.9	16	.18	.2	.004	1.1	1	2	.02	.2	1.94	.3
30-SEP-87	RCS	4.9	26	.18	.1	.004	1.9	1.1	17	.02	.2	1.95	.4
07-OCT-87	RCS	4.6	26	.57	.6	.004	1.8	.5	3	.02	.2	2.65	.6
14-OCT-87	RCS	4.9	29	.07	.1	.004	2.2	1.1	6	.02	.2	1.54	.2

Bulk deposition chemistry RCS 1987 (continured) (non-metals)

Date	Site	pH	Cond	Amm.N	TON	NO_2	T.Hard	T.Alk	Cl	Orth.P	Si	SO_4	DOC
21-OCT-87	RCS	4.5	16	.08	.3	.004	.3		1	.02	.2	1.14	.3
28-OCT-87	RCS	6.1	8	.09	.2	.004	2.6	3	1	.02	.2	1.12	.4
04-NOV-87	RCS	4	39	.55	1	.004	.9		1	.02	.2	3.31	1.6
11-NOV-87	RCS	4.2	35	.48	.7	.004	1		2	.02	.2	2.64	.8
18-NOV-87	RCS	5.1	53	.1	.2	.004	4.5	1.3	14	.02	.2	2.7	.3
25-NOV-87	RCS	5.3	7	.03	.1	.004	.3	1.4	1	.02	.2	.46	.2
02-DEC-87	RCS	4.2	41	.11	.3	.004	2.2		1	.02	.2	2.87	.7
10-DEC-87	RCS	4	54	.76	1.4	.006	2.6		2	.02	.2	4.89	2
16-DEC-87	RCS	4.2	53	.72	1.1	.004	3.5		6	.02	.2	4.16	1.4
23-DEC-87	RCS	4.8	23	.1	.2	.004	2.4	.8	4	.02	.2	2.17	.9

Bulk deposition chemistry RCS 1987 (metals)

Date	Site	Na	K	Cu	Mg	Ca	Zn	Cd	Al	Cr	Mn	Fe	Ni
21-JAN-87	RCS	4.82	.22	.004	.724	.34	.191	.005	.215	.003	.01	.085	.003
18-FEB-87	RCS												
04-FEB-87	RCS	1.57	.11	.002	.147	.3	.072	.002	.048	.003	.003	.034	.004
11-FEB-87	RCS	2.19	.12	.002	.268	.15	.035	.001	.014	.003	.002	.013	.003
18-MAR-87	RCS	8.07	.51	.016	1.072	2.05	.149	.005	.223	.003	.019	.159	.006
05-MAR-87	RCS	1.98	.1	.002	.264	.48	.057	.001	.021	.003	.002	.018	.003
11-MAR-87	RCS												
08-APR-87	RCS	.74	.1	.002	.087	.15	.024	.001	.011	.003	.002	.016	.003
25-MAR-87	RCS	2.2	.1	.002	.247	.16	.022	.001	.014	.003	.002	.024	.003
01-APR-87	RCS												
06-MAY-87	RCS	2.73	.19	.033	.369	.74	.045	.001	.076	.003	.01	.049	.003
15-APR-87	RCS	1.5	.1	.002	.16	.22	.032	.001	.023	.003	.002	.011	.003
22-APR-87	RCS	2.49	.1	.002	.314	.31	.021	.001	.02	.003	.004	.007	.003
10-JUN-87	RCS	3.81	.26	.002	.417	.24	.021	.001	.013	.003	.002	.009	.003
20-MAY-87	RCS	1.99	.11	.003	.225	.22	.031	.001	.016	.003	.002	.011	.003
27-MAY-87	RCS	1.62	1.56	.008	.152	.37	.049	.001	.027	.003	.005	.025	.003
17-JUN-87	RCS	.81	.1	.002	.079	.21	.023	.001	.022	.003	.002	.017	.003
24-JUN-87	RCS	.31	.1	.002	.027	.09	.019	.001	.008	.003	.002	.009	.003
01-JUL-87	RCS	.19	.1	.002	.025	.08	.264	.016	.006	.003	.002	.012	.003
16-JUL-87	RCS	.41	.1	.002	.049	.16	.018	.001	.024	.003	.005	.023	.003
22-JUL-87	RCS	.29	.08	.002	.023	.07	.035	.001	.014	.003	.002	.008	.003
29-JUL-87	RCS	.47		.002	.089	.14	.018	.001	.004	.003	.014	.009	.003
05-AUG-87	RCS	.6	.1	.002	.07	.1	.022	.001	.007	.003	.002	.004	.003
12-AUG-87	RCS	1.68	.19	.002	.218	.34	.037	.001	.008	.003	.004	.008	.003
19-AUG-87	RCS												
26-AUG-87	RCS	.63	.1	.002	.097	.34	.052	.001	.039	.003	.004	.012	.003
02-SEP-87	RCS												
09-SEP-87	RCS	1.71	.1	.002	.203	.58	.033	.001	.015	.003	.002	.007	.003
16-SEP-87	RCS	9.93	8.29	.03	5.027	29.19	.194	.001	.049	.003	.031	.218	.003
23-SEP-87	RCS	1.45	.1	.002	.19	.28	.017	.001	.016	.003	.003	.01	.003
30-SEP-87	RCS	2.93	.14	.002	.364	.28	.016	.001	.013	.003	.003	.177	.003
07-OCT-87	RCS	1.39	.11	.006	.193	.57	.044	.001	.056	.003	.005	.026	.003
14-OCT-87	RCS	3.77	.25	.002	.427	.22	.05	.001	.009	.003	.002	.051	.003

Bulk deposition chemistry RCS 1987 (continued) (metals)

Date	Site	Na	K	Cu	Mg	Ca	Zn	Cd	Al	Cr	Mn	Fe	Ni
21-OCT-87	RCS	.56	.1	.005	.068	.12	.014	.001	.012	.003	.002	.029	.003
28-OCT-87	RCS			.002	.115	.89	.089	.002	.096	.003	.004	.073	.003
04-NOV-87	RCS	1	.1	.002	.088	.37	.059	.001	.023	.003	.003	.028	.003
11-NOV-87	RCS	.94	.34	.002	.13	.24	.042	.002	.027	.003	.004	.028	.003
18-NOV-87	RCS	5.59	.1	.002	.896	.5	.022	.001	.012	.003	.002	.017	.003
25-NOV-87	RCS	.59	.16	.002	.067	.11	.022	.0022	.012	.003	.002	.041	.003
02-DEC-87	RCS	1.8	.1	.008	.234	.56	.048	.002	.038	.003	.002	.026	.003
10-DEC-87	RCS	1.46	.2	.008	.207	.71	.054	.001	.066	.003	.008	.049	.003
16-DEC-87	RCS	3.4	.26	.005	.413	.76	.064	.002	.07	.003	.005	.052	.003

Bulk deposition chemistry Cwmystwyth 1987 (non-metals)

Date	Site	pH	Cond	Amm.N	TON	NO_2	T.Hard	T.Alk	Cl	Orth.P	Si	SO_4	DOC
02-JAN-87	CWM	4.7	31	1.3	1	.014		.6	2	.02	.2		
06-JAN-87	CWM	6	51	.29	.1	.004	11.4	2	13	.02	.2	6.02	.2
02-JAN-87	CWM	5	32	.15	.1	.004	2.2	1	8	.02	.2	1.86	.2
05-JAN-87	CWM	4.8	18	.17	.1	.004	.9	.8	3	.02	.2	1.49	.2
03-FEB-87	CWM	4.4	22	.29	.3	.004	.6		2	.02	.2	1.78	.6
12-JAN-87	CWM	4.6	19	.06	.1	.004		.3	2	.02	.2		.3
21-JAN-87	CWM	3.9	57	.6	.9	.004	1.2		3	.02	.2	5.34	1
07-FEB-87	CWM	5	13	.42	.1	.004		1	1	.02	.2		
05-FEB-87	CWM	6.2	5	.02	.1	.004	.7	2.6	1	.02	3.9	.2	1.1
06-FEB-87	CWM	6		1.1	.5	.004			2	.02	.2		
10-FEB-87	CWM	4.6	12	.18	.1	.004	.1	.3	1	.02	.2	1.63	.5
10-FEB-87	CWM	4.6	12	.18	.1	.004	.1	.3	1	.02	.2	1.55	.2
10-FEB-87	CWM	4.9	10	.12	.1	.004	.2	1	3	.02	.2	.93	.3
27-MAR-87	CWM	4.6	26	.4	.3	.004	1.8	.4	4	.02	.2	2.6	.3
14-FEB-87	CWM	6.1	14	1.1	.2	.004	.4	2.4	1	.02	.2	2.19	.6
02-MAR-87	CWM	5.1	12	.12	.2	.004	2	1.4	3	.02	.2	1.19	.2
02-APR-87	CWM	4.7	23	.05	.2	.004		.7	3	.02	.2		.9
30-MAR-87	CWM	5	62	.37	.1	.004	5	1	15	.02	.2	4.37	.2
01-APR-87	CWM	5	10	.04	.1	.004	1.8	1.1	1	.02	.2	2.43	.2
07-APR-87	CWM	4.7	12	.13	.1	.004		.6	1	.02	.2		.6
03-APR-87	CWM	4.5	20	.61	.6	.004	.4	.1	1	.02	.2	2.37	.4
06-APR-87	CWM	4.3	30	1.1	.8	.004	25.3		1	.02	.2	3.78	.8
11-APR-87	CWM	5	12	.33	.2	.004			1	.02	.2		.7
08-APR-87	CWM	4.8	10	.2	.2	.004	.3	.9	1	.02	.2	1.25	.3
09-APR-87	CWM	4.7	14	.36	.2	.004	.2	.5	1	.02	.2	1.85	.3
21-APR-87	CWM	5.1	14	.21	.1	.004	26.2	1.3	3	.02	.2	12.39	.8
13-APR-87	CWM	5.4	10	.2	.1	.004	.6	1.5	2	.02	.2	1.1	.3
16-APR-87	CWM	6.6		1.6	.3	.005			1	.03	.2		1.2
12-MAY-87	CWM	5.5	14	.41	.1	.004	.7	1.7	2	.02	.2	1.34	.5
01-MAY-87	CWM	4.9	11	.48	.1	.004	.9	1.1	1	.02	.2	2.06	.6
11-MAY-87	CWM	7.1	73	1.6	.5	.016	6.8	12.1	12	.15	.2	4.74	1.8
16-JUN-87	CWM	4	56	1.3	1	.004	1.4		2	.06	.2	7.24	.7
14-MAY-87	CWM	5	15	.44	.2	.004	.9	1.3	2	.02	.2	1.88	.8

Bulk deposition chemistry Cwmystwyth 1987 (continued) (non-metals)

Date	Site	pH	Cond	Amm.N	TON	NO_2	T.Hard	T.Alk	Cl	Orth.P	Si	SO_4	DOC
08-JUN-87	CWM	4.4	28	.24	.2	.004	1.1		5	.02	.2	3.04	.8
25-JUN-87	CWM	6.4	9.1	.52	.1	.004	.3	2.7	1	.02	.2	1.42	.5
23-JUN-87	CWM			9	.1	.006	.9		1	.82	.2	3.64	20
24-JUN-87	CWM	5.2	23	1.2	.4	.004	.8	1.3	2	.02	.2	3.38	.7
30-JUN-87	CWM	4.8	7	.05	.1	.004	.1	.8	1	.02	.2	.77	.2
25-JUN-87	CWM	5.1	3.3	.02	.1	.004	25.2	1.2	1	.02	.2	.43	.2
29-JUN-87	CWM	4.7	11	.46	.1	.004	.3	.7	1	.02	.2	1.82	.2
22-JUL-87	CWM	4.5	11.5	.06	.1	.004	.2	.3	1	.02	.2	1.21	.2
27-JUL-87	CWM	5.6	5	.23	.1	.004	.2	1.8	1	.02	.2	.56	.3
28-JUL-87	CWM	4.7	7	.1	.1	.004	.1	.7	1	.02	.2	1.14	.5
29-JUL-87	CWM	4.8	13	.38	.1	.004	.2	.9	1	.02	.2	1.89	.3
11-AUG-87	CWM	5.4	17	.69	.2	.004	1	1.9	2	.02	.2	2.13	.8
12-AUG-87	CWM	5.2	3	.02	.1	.004	25.1	1.6	1	.02	.2	.32	.4
26-AUG-87	CWM	4.6	14	.04	.2	.004	1.9	.5	1	.02	.2	1.94	.3
27-AUG-87	CWM	4.6		.3	.4	.004			4	.02	.7		
04-SEP-87	CWM	6	23	1.7	.6	.014	1.6	3.4	1	.06	.4	2.95	.4
07-SEP-87	CWM	5.3	7	.02	.1	.004	.6	1.4	2	.02	.3	.48	.2
08-SEP-87	CWM	5.7		1.8	1.3	.9			6	.21	.7		
11-SEP-87	CWM	5.2	10	.02	.1	.004	.7	1.4	2	.02	.2	.71	.2
15-SEP-87	CWM	5	8	.02	.1	.004	.5	1.2	1	.02	.2	.84	.4
18-SEP-87	CWM	4.9		.04	.2	.004			1	.02	.8		
22-SEP-87	CWM	4.9	6	.06	.1	.004	.5	1.1	1	.02	.2	.95	.2
22-SEP-87	CWM	4.3	30	.52	.5	.004	2.5		1	.02	.3	4.62	.4
24-SEP-87	CWM	5.1	17	.1	.1	.004	1.2	1.4	4	.02	.2	1.1	.6
05-OCT-87	CWM	4.9	37	1.2	1.4	.004	4.8	1	4	.02	.2	4.58	1.1
07-OCT-87	CWM	4.8	9	.23	.1	.004	.3	1.2	2	.02	.2	1.15	.3
07-OCT-87	CWM	4.9	12	.06	.1	.004	.7	1.2	3	.02	.2	.94	.4
08-OCT-87	CWM	5.8	68	.24	.1	.004	5.6	2.9	20	.02	.2	3.11	.5
09-OCT-87	CWM	5	45	.07	.1	.004	3.6	1.2	13	.02	.2	2.36	.4
12-OCT-87	CWM	4.9	11	.05	.1	.004	.6	1.1	2	.02	.2	.75	.2
13-OCT-87	CWM	4.8	10	.04	.1	.004	.6	.8	2	.02	.2	1.01	.2
14-OCT-87	CWM	5	29	.02	.1	.004	2	1.1	7	.02	.2	1.34	.2
15-OCT-87	CWM	5.1	5	.02	.1	.004	.1	1.3	1	.02	.2	.37	.2

Bulk deposition chemistry Cwmystwyth 1987 (continued) (non-metals)

Date	Site	pH	Cond	Amm.N	TON	NO_2	T.Hard	T.Alk	Cl	Orth.P	Si	SO_4	DOC
16-OCT-87	CWM	4.2	36	.05	.3	.004	1.1		5	.02	.2	2.2	.2
19-OCT-87	CWM	4.9	1	.02	.1	.004	650	1.1	1	.02	.2	.49	.8
20-OCT-87	CWM	5.1		.58	.3	.004			1	.02	.2		1.3
22-OCT-87	CWM	4.4	15	.18	.3	.004	650		2	.02	.2	1.4	.2
22-OCT-87	CWM	5.1	19	.05	.1	.004	1.3	1.3	4	.02	.2	1.2	.2
23-OCT-87	CWM	4.8		.02	.1	.004			5	.02	.2		1.9
26-OCT-87	CWM	6.2		.66	.3	.004			3	.02	.6		2.4
27-OCT-87	CWM	4.6	6	.07	.2	.004	.3	.5	2	.02	.2	.78	.2
28-OCT-87	CWM	5.1	1	.02	.1	.004	25.2	1.6	1	.02	.2	.28	.2
10-NOV-87	CWM	4.4	23	.55	.6	.004	.2		2	.02	.2	2.08	.6
12-NOV-87	CWM	5	40	.05	.1	.004	3.1	1.2	10	.02	.2	1.93	.2
17-NOV-87	CWM	6.2		.02	.1	.004			5	.02	.2		1.4
18-NOV-87	CWM	5	56	.07	.1	.004	6.7	1	13	.02	.2	2.85	.7
30-NOV-87	CWM	4.6	30	.22	.2	.004	1.7	1	5	.02	.2	2	.6
11-DEC-87	CWM			1.2	2.4	.004			7	.02	.2		1.6
16-DEC-87	CWM	4.4	22	.27	.4	.004	1.2		2	.02	.2	2.45	.2
17-DEC-87	CWM	5.6	15	.35	.1	.004	.7	1.7	3	.02	.2	1.01	.2
18-DEC-87	CWM	4.9	6	.02	.1	.004	.1	.9	1	.02	.2	.54	.2
21-DEC-87	CWM	4.7	14	.28	.1	.004	.6	.6	1	.02	.2	1.61	.2
29-DEC-87	CWM	5	18	.31	.2	.004	1.1	1.1	3	.02	.2	1.53	.2
30-DEC-87	CWM	5.7	7	.18	.1	.004	.3	1.9	1	.02	.2	.71	.2

Bulk deposition chemistry Cwmystwyth 1987 (metals)

Date	Site	Na	K	Cu	Mg	Ca	Zn	Cd	Al	Cr	Mn	Fe	Ni
02-JAN-87	CWM												
06-JAN-87	CWM	5.49	.35	.002	1.509	2.11	.011	.001	.048	.003	.088	.043	.003
02-JAN-87	CWM	3.91	.21	.002	.48	.21	.039	.001	.013	.003	.002	.009	.003
05-JAN-87	CWM	1.51	.1	.002	.182	.18	.057	.001	.011	.003	.002	.012	.003
03-FEB-87	CWM	1.18	.1	.005	.12	.09	.026	.001	.019	.003	.002	.014	.003
12-JAN-87	CWM												
21-JAN-87	CWM	1.93	.16	.006	.229	.17	.027	.001	.037	.003	.002	.049	.003
07-FEB-87	CWM												
05-FEB-87	CWM	.83	.1	.002	.084	.27	.004	.001	.014	.005	.002	.004	.003
06-FEB-87	CWM												
10-FEB-87	CWM	.38	.1	.002	.036	.03	.01	.001	.024	.003	.002	.016	.003
10-FEB-87	CWM	.36	.1	.002	.037	.04	.012	.001	.024	.003	.002	.022	.003
10-FEB-87	CWM	.72	.1	.003	.075	.08	.012	.001	.011	.003	.002	.003	.003
27-MAR-87	CWM	2.08	.1	.002	.266	.38	.018	.001	.027	.003	.004	.009	.003
14-FEB-87	CWM	.71	.26	.002	.079	.14	.021	.001	.013	.003	.002	.003	.003
02-MAR-87	CWM	1.82	.12	.003	.239	.46	.027	.001	.008	.003	.002	.005	.003
02-APR-87	CWM												
30-MAR-87	CWM	8.73	.21	.002	1.031	.37	.048	.001	.01	.003	.003	.003	.003
01-APR-87	CWM	.34	.1	.002	.447	.05	.007	.001	.011	.003	.002	.003	.003
07-APR-87	CWM												
03-APR-87	CWM	.58	.1	.002	.074	.15	.022	.001	.026	.003	.002	.008	.003
06-APR-87	CWM	.2	.1	.002	.025	.1	.016	.001	.026	.003	.003	.023	.003
11-APR-87	CWM												
08-APR-87	CWM	.43	.13	.002	.044	.1	.024	.001	.019	.003	.002	.005	.003
09-APR-87	CWM	.52	.1	.002	.059	.08	.008	.001	.009	.003	.002	.004	.003
21-APR-87	CWM	46.83	1.86	.003	5.204	1.96	.002	.001	.013	.003	.002	.004	.003
13-APR-87	CWM	.99	.19	.002	.113	.09	.008	.001	.018	.003	.002	.003	.003
16-APR-87	CWM												
12-MAY-87	CWM	1.5	.1	.002	.168	.13	.002	.001	.015	.003	.002	.009	.003
01-MAY-87	CWM	1.09	.25	.002	.13	.19	.002	.001	.013	.003	.002	.005	.003
11-MAY-87	CWM	6.66	.91	.003	.987	1.23	.009	.001	.013	.003	.011	.005	.003
16-JUN-87	CWM	1.34	.2	.003	.23	.23	.018	.001	.035	.003	.007	.019	.003
14-MAY-87	CWM	1.23	.1	.002	.144	.19	.002	.001	.014	.003	.003	.005	.003

Bulk deposition chemistry Cwmystwyth 1987 (continued) (metals)

Date	Site	Na	K	Cu	Mg	Ca	Zn	Cd	Al	Cr	Mn	Fe	Ni
08-JUN-87	CWM	2.37	.1	.002	.295	.12	.005	.001	.03	.003	.002	.013	.003
25-JUN-87	CWM	.38	.5	.008	.032	.12	.021	.001	.004	.003	.003	.005	.003
23-JUN-87	CWM	.78	1.3	.007	.115	.18	.023	.001	.007	.003	.002	.012	.003
24-JUN-87	CWM	1.18	.1	.002	.14	.17	.007	.001	.01	.003	.002	.002	.003
30-JUN-87	CWM	.18	.1	.003	.011	.04	.01	.001	.006	.003	.002	.005	.003
25-JUN-87	CWM	.2	.1	.002	.025	.07	.003	.001	.008	.003	.002	.007	.003
29-JUN-87	CWM	.16	.1	.002	.016	.1	.015	.001	.005	.003	.002	.003	.003
22-JUL-87	CWM	.3	.1	.002	.042	.08	.004	.001	.015	.003	.002	.004	.003
27-JUL-87	CWM	.31	.1	.002	.034	.06	.003	.001	.004	.003	.002	.002	.003
28-JUL-87	CWM	.33	.1	.002	.033	.05	.008	.001	.008	.003	.002	.004	.003
29-JUL-87	CWM	.81	.1	.002	.046	.07	.007	.001	.004	.003	.002	.003	.003
11-AUG-87	CWM	1.7	.12	.002	.173	.22	.007	.001	.057	.003	.003	.006	.003
12-AUG-87	CWM	.65	.1	.002	.025	.05	.009	.001	.049	.003	.002	.015	.003
26-AUG-87	CWM	.47	.22	.002	.1	.61	.014	.001	.023	.003	.008	.014	.003
27-AUG-87	CWM												
04-SEP-87	CWM	.64	.1	.002	.113	.49	.01	.001	.015	.003	.005	.003	.003
07-SEP-87	CWM	.94	.1	.002	.108	.07	.004	.001	.007	.003	.002	.003	.003
08-SEP-87	CWM												
11-SEP-87	CWM	1.24	.1	.002	.137	.11	.007	.001	.004	.003	.002	.003	.003
15-SEP-87	CWM	.65	.11	.002	.08	.18	.011	.001	.012	.003	.002	.006	.003
18-SEP-87	CWM												
22-SEP-87	CWM	.32	.1	.002	.044	.19	.01	.001	.01	.003	.003	.008	.003
22-SEP-87	CWM	.39	.1	.003	.119	.85	.015	.001	.083	.003	.013	.012	.003
24-SEP-87	CWM	1.97	.1	.002	.24	.17	.006	.001	.007	.003	.002	.003	.003
05-OCT-87	CWM	2.16	.24	.009	.376	1.43	.052	.001	.067	.003	.016	.005	.003
07-OCT-87	CWM	.75	.1	.002	.083	.11	.011	.001	.014	.003	.002	.004	.003
07-OCT-87	CWM	1.59	.11	.003	.19	.11	.005	.001	.005	.003	.002	.009	.003
08-OCT-87	CWM	10.11	.44	.002	1.183	.45	.008	.001	.006	.003	.002	.003	.003
09-OCT-87	CWM	6.44	.23	.002	.772	.31	.008	.001	.007	.003	.002	.003	.003
12-OCT-87	CWM	.88	.1	.002	.104	.08	.004	.001	.004	.003	.002	.003	.003
13-OCT-87	CWM	1	5	.002	.121	.08	.006	.001	.005	.003	.002	.004	.003
14-OCT-87	CWM	3.63	.21	.002	.445	.16	.006	.001	.007	.003	.002	.003	.003
15-OCT-87	CWM	.31	.1	.002	.037	.05	.003	.001	.004	.003	.002	.003	.003

Bulk deposition chemistry Cwmystwyth 1987 (continued) (metals)

Date	Site	Na	K	Cu	Mg	Ca	Zn	Cd	Al	Cr	Mn	Fe	Ni
16-OCT-87	CWM	1.95	.24	.003	.264	.1	.005	.001	.007	.003	.002	.007	.003
19-OCT-87	CWM	.17	.1	.002	.025	.02	.002	.001	.004	.003	.002	.003	.003
20-OCT-87	CWM												
22-OCT-87	CWM	.11	57	.002	.025	.02	.009	.001	.004	.003	.002	.006	.003
22-OCT-87	CWM	2.39	.13	.005	.259	.21	.01	.001	.006	.003	.002	.012	.003
23-OCT-87	CWM												
26-OCT-87	CWM												
27-OCT-87	CWM	.1	.48	.005	.025	.11	.008	.001	.019	.003	.01	.016	.003
28-OCT-87	CWM	.13	.11	.002	.025	.09	.005	.001	.015	.003	.002	.003	.003
10-NOV-87	CWM	.2	.1	.005	.028	.09	.012	.001	.022	.003	.002	.014	.003
12-NOV-87	CWM	4.87	.4	.002	.662	.24	.003	.001	.01	.003	.002	.014	.003
17-NOV-87	CWM												
18-NOV-87	CWM	6.56	.05	.002	.925	1.2	.006	.001	.011	.003	.002	.003	.003
30-NOV-87	CWM	3.07	.33	.002	.369	.17	.005	.001	.019	.003	.002	.016	.003
11-DEC-87	CWM												
16-DEC-87	CWM	1.2	.1	.027	.168	.32	.102	.001	.046	.003	.006	.024	.003
17-DEC-87	CWM	1.78	.15	.002	.185	.11	.008	.001	.011	.003	.002	.003	.003
18-DEC-87	CWM	.35	.1	.002	.035	.05	.006	.001	.01	.003	.002	.003	.003
21-DEC-87	CWM	1.03	.1	.002	.111	.07	.01	.001	.01	.003	.002	.004	.003
29-DEC-87	CWM	1.85	.1	.002	.21	.13	.019	.001	.014	.003	.002	.004	.003
30-DEC-87	CWM	.48	.13	.004	.06	.11	.052	.001	.007	.003	.002	.003	.003

Wet deposition chemistry WDS 1987 (non-metals)

Date	Site	pH	Cond	Amm.N	Ton	NO_2	T.Hard	T.Alk	Cl	Orth.P	Si	SO_4	DOC
07-JAN-87	WDS			.13	.1	.004	1.1		4	.02	.2	1.39	.1
11-FEB-87	WDS	4.6	16	.21	.2	.004	.7	.4	2	.02	.2	1.94	.7
21-JAN-87	WDS	3.8	73	.82	1.2	.004	300		1	.02	.2	6.2	2.5
04-FEB-87	WDS	4.5	18	.32	.3	.004	.4		1	.02	.2	1.91	1
11-MAR-87	WDS	5.3	30	.74	.9	.016		1.5	2	.02	.2		1.4
18-FEB-87	WDS	4.9		.66	.7	.004			1	.02	.2		2.2
05-MAR-87	WDS	4.8	13	.09	.1	.004	.2	.8	2	.02	.2	.96	1.5
01-APR-87	WDS	5	35	.12	.1	.004	4.3	1.2	9	.02	.2	3.43	.5
18-MAR-87	WDS	4.9	32	.71	.5	.004	2.2	1	4	.02	.2	3.26	1.3
25-MAR-87	WDS	4.6	19	.17	.2	.004	1.5	.3	3	.02	.2	1.99	.4
22-APR-87	WDS	4.9	25	.48	.2	.004	1.3	.8	3	.02	.2	2.63	.4
08-APR-87	WDS	4.3	24	.66	.56	.004	.2		1	.02	.2	2.44	.7
15-APR-87	WDS	4.7	16	.26	.1	.004	1.1	.6	2	.02	.2	2.09	.5
20-MAY-87	WDS	4.6	22	.42	.2	.004	1.2	.4	2	.02	.2	2.57	.3
06-MAY-87	WDS	5.7	32	1.2	.3	.004	2.1	1.8	5	.04	.2	3.45	1
13-MAY-87	WDS	5.3	11	.41	.1	.004	1.6	1.4	2	.02	.2	1.87	.4
10-JUN-87	WDS	4.7	26	.1	.1	.004	1.6	.6	5	.02	.2	1.83	.6
27-MAY-87	WDS	4.2		.42	.4	.004	.5		1	.02	.2	3.65	.9
03-JUN-87	WDS	4.5	24	.5	.4	.004	.8		1	.02	.2	2.62	.7
17-JUN-87	WDS	4.6	15	.28	.2	.004	.4	.4	1	.02	.2	1.84	1
24-JUN-87	WDS	4.6	11	.12	.1	.004	25.2	.5	1	.02	.2	1.22	.6
01-JUL-87	WDS	4.8	10	.14	.1	.004	25.2	.8	1	.02	.2	1.03	.3
16-JUL-87	WDS	4.4	32	.86	.8	.004	1.2		1	.02	.2	4.09	2
19-AUG-87	WDS	4	55	.41	.3	.004			2	.02	.2		1.4
26-AUG-87	WDS	5.6	11	.35	.2	.004	2.2	2.1	1	.02	.2	2.23	1
02-SEP-87	WDS	5.2	41	1.7	1.2	.007			2	.02	.2		5.6
09-SEP-87	WDS	5.1	12	.16	.1	.004	.8	1.4	1	.02	.2	1.21	.3
16-SEP-87	WDS	5	14	.32	.1	.004	72.8	1.2	2	.09	.2	44.2	.7
23-SEP-87	WDS	5.9	18	1.1	.2	.007	1.1	3.8	1	.12	.2	2.75	.7
07-OCT-87	WDS	5.5	12	.44	.2	.007	1	2.2	2	.03	.2	2.02	.5
14-OCT-87	WDS	5.1	33	.06	.1	.004	3	1.4	8	.02	.2	1.8	.3
28-OCT-87	WDS	6.2	7	.1	.1	.004	2.2	3.1	1	.02	.2	.77	.5
04-NOV-87	WDS			.35	.5	.004	.5		1	.02	.2	3.5	1.2
11-NOV-87	WDS	4.4	17	.21	.3	.004	.1		1	.02	.2	1.48	.5

Wet deposition chemistry WDS 1987 (metals)

Date	Site	Na	K	Cu	Mg	Ca	Zn	Cd	Al	Cr	Mn	Fe	Ni
07-JAN-87	WDS	2.15	.14	.002	.27	.11	.038	.001	.011	.003	.002	.007	.003
11-FEB-87	WDS	1.34	.1	.002	.16	.1	.051	.001	.004	.003	.002	.003	.003
21-JAN-87	WDS	1	1	.02	.25	.25	.11	.01	.04	.03	.02	.07	.03
04-FEB-87	WDS	.73	.1	.002	.047	.16	.107	.001	.024	.003	.002	.021	.003
11-MAR-87	WDS												
18-FEB-87	WDS												
05-MAR-87	WDS	.79	.1	.002	.091	.08	.02	.001	.004	.003	.02	.004	.003
01-APR-87	WDS	7.71	.12	.002	.958	.26	.079	.001	.016	.003	.002	.003	.003
18-MAR-87	WDS	3.05	.17	.002	.347	.37	.118	.001	.046	.003	.004	.037	.003
25-MAR-87	WDS	1.65	.1	.007	.223	.27	.06	.001	.05	.003	.022	.081	.003
22-APR-87	WDS	2.52	.1	.002	.283	.2	.04	.001	.015	.003	.002	.007	.003
08-APR-87	WDS	.39	.1	.002	.048	.09	.015	.001	.009	.003	.002	.015	.003
15-APR-87	WDS	1.3	.1	.002	.153	.27	.052	.001	.018	.003	.002	.008	.003
20-MAY-87	WDS	1.5	.1	.003	.178	.3	.039	.001	.015	.003	.002	.013	.003
06-MAY-87	WDS	2.87	.1	.002	.357	.34	.04	.001	.026	.003	.005	.024	.003
13-MAY-87	WDS	1.27	.19	.002	.148	.46	.098	.001	.004	.003	.008	.003	.003
10-JUN-87	WDS	2.75	.1	.002	.302	.16	.053	.001	.01	.003	.002	.005	.003
27-MAY-87	WDS	.33	.02	.008	.039	.2	.02	.001	.029	.003	.003	.033	.003
03-JUN-87	WDS	.77	.1	.002	.088	.3	.049	.002	.031	.003	.002	.016	.003
17-JUN-87	WDS	.56	.1	.002	.053	.15	.042	.001	.018	.003	.002	.01	.003
24-JUN-87	WDS	.33	.1	.002	.025	.06	.015	.001	.018	.003	.002	.006	.003
01-JUL-87	WDS	.14	.13	.002	.025	.06	.015	.001	.004	.003	.002	.006	.003
16-JUL-87	WDS	.69	.28	.005	.098	.47	.079	.001	.063	.003	.007	.078	.003
19-AUG-87	WDS												
26-AUG-87	WDS	.82	.22	.002	.115	.71	.05	.001	.026	.003	.011	.037	.003
02-SEP-87	WDS												
09-SEP-87	WDS	.79	.1	.002	.1	.16	.034	.001	.013	.003	.004	.011	.003
16-SEP-87	WDS	11.28	10	.011	3.478	23.55	.009	.001	.004	.003	.004	.017	.003
23-SEP-87	WDS	.53	.34	.002	.12	.28	.026	.001	.025	.003	.011	.009	.003
07-OCT-87	WDS	.99	.29	.002	.138	.25	.053	.001	.028	.003	.005	.014	.003
14-OCT-87	WDS	4.6	.39	.002	.526	.36	.035	.001	.017	.003	.002	.021	.003
28-OCT-87	WDS			.002	.119	.73	.014	.001	.113	.003	.005	.098	.003
04-NOV-87	WDS	1	1	.02	.05	.2	2.02	.01	.04	.03	.02	.03	.03
11-NOV-87	WDS	.28	.48	.002	.055	.05	.022	.001	.008	.003	.002	.011	.003

Section 5

Auto-sampled stream chemistry

Llyn Brianne Acid Waters Project

Auto-sampled events 1987

Site	Date	N
LI1	17-MAR-87	6
	18-MAR-87	25
	19-MAR-87	1
	25-MAR-87	39
	26-MAR-87	9
	11-MAY-87	9
	12-MAY-87	4
	30-MAY-87	28
	31-MAY-87	20
	27-JUL-87	28
	28-JUL-87	8
LI2	26-FEB-87	26
	27-FEB-87	22
	27-JUL-87	40
	28-JUL-87	7
	19-NOV-87	6
	20-NOV-87	4
	21-NOV-87	1
LI3	06-FEB-87	10
	07-FEB-87	3
	26-FEB-87	6
	27-FEB-87	6
	27-JUL-87	11
	28-JUL-87	2
	19-NOV-87	10
	20-NOV-87	2
LI4	30-MAY-87	6
	31-MAY-87	6
	27-JUL-87	10
	28-JUL-87	3
	05-SEP-87	10
	06-SEP-87	2
	16-SEP-87	1
	17-SEP-87	11
	18-SEP-87	1
	19-NOV-87	9
	20-NOV-87	4
	27-DEC-87	10
	28-DEC-87	3
LI8	26-FEB-87	10
	27-FEB-87	2
	17-MAR-87	6
	18-MAR-87	24
	26-MAR-87	35
	27-MAR-87	12
LI8 (cont)	30-MAY-87	28
	31-MAY-87	18
	05-JUN-87	25
	06-JUN-87	23
	05-SEP-87	40
	06-SEP-87	7
	11-SEP-87	16
	12-SEP-87	30
	13-SEP-87	2
	26-DEC-87	4
	27-DEC-87	7
CI3	26-FEB-87	19
	27-FEB-87	11
	25-MAR-87	17
	11-MAY-87	20
	12-MAY-87	3
	13-MAY-87	1
	05-JUN-87	18
	06-JUN-87	7
	17-JUN-87	16
	11-SEP-87	10
	12-SEP-87	9
	13-SEP-87	1
CI4	26-FEB-87	13
	27-FEB-87	3
	11-MAY-87	12
	12-MAY-87	8
	13-MAY-87	2
	16-JUN-87	2
	17-JUN-87	21
	18-JUN-87	6
	13-AUG-87	9
	14-AUG-87	3
CI5	26-MAR-87	4
	27-MAR-87	7
	28-MAR-87	2
	07-OCT-87	2
	08-OCT-87	7
	09-OCT-87	3
C5X	27-JUL-87	13
	16-DEC-87	11
	17-DEC-87	3
CI6	26-FEB-87	19
	27-FEB-87	6
	11-MAY-87	21
	12-MAY-87	7
	30-MAY-87	7
	31-MAY-87	5
	25-JUN-87	23
	26-JUN-87	2
	27-JUL-87	23
	28-JUL-87	2
	19-NOV-87	8
	20-NOV-87	3
UC4	26-MAR-87	9
	27-MAR-87	3
	11-MAY-87	6
	12-MAY-87	6
	13-MAY-87	1
	18-JUN-87	4
	19-JUN-87	8
	20-JUN-87	1
	01-AUG-87	8
	02-AUG-87	35
	03-AUG-87	3

LLYN BRIANNE ACID WATERS PROJECT

Auto-sampled stream chemistry 1987

(Major determinands)

Site	yymmddhhmi	pH	Cond	T-hard	T-alk	SO4	Cl	Na	K	Ca	Mg	Al	TON	DOC
LI1	8707270251	5.5	44	7.6	1.7	7.2	7	4.42	.10	1.90	.737	.110	.1	1.2
	8707270306													
	8707270321	5.5	43	7.3	1.7	6.9	7	4.23	.10	1.78	.727	.100	.1	1.2
	8707270336													
	8707270351	5.6	43	7.6	1.7	6.8	6	4.19	.10	1.91	.705	.110	.1	1.1
	8707270406													
	8707270421	5.4	42	7.6	1.7	6.6	6	4.08	.10	1.90	.701	.122	.1	1.2
	8707270436													
	8707270451	5.4	41	6.5	1.7	5.9	6	4.00	.10	1.60	.638	.140	.1	2.1
	8707270506													
	8707270521	5.2	40	6.6	1.8	5.7	6	3.86	.10	1.65	.613	.184	.1	3.6
	8707270536													
	8707270551	5.1	38	5.7	1.9	6.0	5	3.68	.10	1.45	.599	.275	.1	4.8
	8707270951	4.5	39	4.3	.1	6.0	4	3.28	.10	1.07	.466	.453	.1	8.1
	8707271051													
	8707271151													
	8707271251													
	8707271350	4.5	41	4.8	.1	6.5	5	3.63	.10	1.09	.517	.438	.1	7.5
	8707271450													
	8707271550													
	8707271650	4.6	41	2.8	.3	6.5	5	3.72	.10	.31	.545	.416	.1	6.6

LLYN BRIANNE ACID WATERS PROJECT

Auto-sampled stream chemistry 1987

(Major determinands)

Site	yymmddhhmi	pH	Cond	T-hard	T-alk	SO4	Cl	Na	K	Ca	Mg	Al	TON	DOC
LI1	8707271750													
	8707271850													
	8707271950													
	8707272050	4.6	41	5.6	.6	6.9	5	3.65	.10	1.40	.579	.389	.1	5.3
	8707272150													
	8707272250													
	8707272350													
	8707280050	4.8	41	6.1	.9	6.7	6	4.00	.10	1.44	.615	.333	.1	3.9
	8707280150													
	8707280250													
	8707280350													
	8707280450													
	8707280550													
	8707280650													
	8707280750	4.9	41	6.5	1.1	6.9	10	4.07	.10	1.60	.648	.283	.1	2.9
LI2	8707270137													
	8707270152													
	8707270207	5.7	48	7.4	1.9	7.4	6	4.00	.21	1.63	.800	.160	.2	
	8707270222													
	8707270237													

LLYN BRIANNE ACID WATERS PROJECT

Auto-sampled stream chemistry 1987

(Major determinands)

Site	yymmddhhmi	pH	Cond	T-hard	T-alk	SO4	Cl	Na	K	Ca	Mg	Al	TON	DOC
LI2	8707270252													
	8707270307													
	8707270322													
	8707270337													
	8707270352													
	8707270407													
	8707270422													
	8707270437	5.6	80	7.8	2.3	7.7	8	4.58	.23	1.80	.810	.170	2.5	3.6
	8707270507													
	8707270522	5.6	44	6.8	2.1	6.9	7	3.85	.17	1.58	.760	.170	.2	2.5
	8707270537	5.3	42	6.4	1.6	6.8	6	3.83	.19	1.43	.749	.214	.2	2.0
	8707270552													
	8707270607													
	8707270622	5.2	40	6.5	1.6	6.6	5	3.70	.21	1.44	.737	.253	.2	2.8
	8707270637													
	8707270652	5.1	39	6.1	1.6	6.4	5	3.45	.18	1.46	.689	.307	.2	3.6
	8707270707													
	8707270712													
	8707270737	4.9	41	5.9	1.5	6.4	5	3.41	.13	1.37	.696	.369	.3	4.5
	8707270837													
	8707270937	4.9	40	5.7	1.2	6.2	5	3.32	.10	1.28	.660	.377	.3	5.1

LLYN BRIANNE ACID WATERS PROJECT

Auto-sampled stream chemistry 1987

(Major determinands)

Site	yymmddhhmi	pH	Cond	T-hard	T-alk	SO4	Cl	Na	K	Ca	Mg	Al	TON	DOC
LI2	8707271037													
	8707271137	4.9	41	6.2	1.1	6.3	5	3.52	.10	1.50	.690	.356	.3	5.1
	8707271237													
	8707271337													
	8707271437													
	8707271537	4.9	43	6.1	1.2	6.5	5	4.40	.ff	1.30	.710	.290	.4	4.3
	8707271637													
	8707271737													
	8707271837													
	8707271937													
	8707272037	4.9	44	6.4	1.2	6.6	5	4.16	.15	1.43	.768	.312	.4	3.2
	8707272137													
	8707272237													
	8707272337													
	8707280037	5.0	45	7.4	1.3	7.6	5	4.01	.10	1.65	.830	.356	.4	2.8
	8707280137													
	8707280237													
	8707280337													
	8707280437													
	8707280537	5.0	47	7.6	1.4	7.5	6	4.34	.10	1.73	.852	.301	.4	2.1
	8707280637													

LLYN BRIANNE ACID WATERS PROJECT

Auto-sampled stream chemistry 1987

(Major determinands)

Site	yymmddhhmi	pH	Cond	T-hard	T-alk	SO4	Cl	Na	K	Ca	Mg	Al	TON	DOC
LI3	8707270258	6.4	53	10.2	3.5	8.8	7	5.06	.17	2.77	.876	.057	.2	1.7
	8707270428	6.2	47	9.4	2.9	8.5	6	4.69	.16	2.43	.813	.088	.2	1.5
	8707270528	5.9	43	7.6	2.4	7.4	5	4.03	.12	2.06	.698	.123	.2	1.8
	8707270613	5.8	40	6.6	2.3	6.3	5	3.64	.13	1.81	.596	.143	.2	2.5
	8707270643	5.6	39	6.1	2.2	6.6	9	3.54	.13	1.60	.599	.195	.2	3.1
	8707270743	5.5	37	6.1	1.9	5.8	5	3.21	.14	1.60	.538	.217	.2	3.9
	8707270858	5.4	39	7.2	2.0	7.1	5	3.69	.10	1.90	.645	.332	.2	3.9
	8707271258	5.2	39	7.4	1.6	6.8	5	3.88	.15	1.98	.632	.266	.2	3.8
	8707271558	5.4	41	7.3	1.7	7.5	5	3.95	.12	1.94	.675	.288	.2	3.3
	8707271958	5.7	43	8.1	2.0	7.7	5	4.13	.13	2.10	.705	.243	.2	2.9
	8707272258	5.7	43	8.2	2.1	7.4	6	4.17	.23	2.12	.705	.198	.2	2.7
	8707280258	5.9	44	8.6	2.5	8.1	6	4.33	.12	2.31	.766	.185	.2	2.1
	8707280758	6.0	45	8.5	2.5	8.4	6	4.53	.16	2.25	.794	.168	.2	1.8
LI4	8707270333	5.5	42	7.8	1.6	7.9	5	3.72	.10	2.15	.699	.130	.3	1.0
	8707270448	5.3	40	8.1	1.6	7.6	4	3.68	.10	2.26	.642	.121	.3	.7
	8707270548	5.4	39	7.3	1.7	7.0	4	3.31	.10	2.10	.567	.106	.2	1.0
	8707270733	5.3	37	6.7	1.4	7.0	4	3.19	.10	1.87	.527	.131	.2	.7
	8707270948	5.2	36	6.7	1.4	7.2	4	2.92	.10	1.87	.528	.139	.2	.8
	8707271033	5.2	36	6.9	1.3	6.8	3	3.15	.10	1.93	.523	.128	.2	1.0

LLYN BRIANNE ACID WATERS PROJECT

Auto-sampled stream chemistry 1987

(Major determinands)

Site	yymmddhhmi	pH	Cond	T-hard	T-alk	SO4	Cl	Na	K	Ca	Mg	Al	TON	DOC
LI4	8707271233	5.3	36	6.9	1.7	7.0	4	3.05	.10	1.94	.539	.127	.2	.9
	8707271533	5.3	37	7.1	1.5	6.8	3	3.15	.10	2.01	.538	.122	.2	.8
	8707271833	5.4	37	7.0	1.6	7.0	4	3.23	.10	1.97	.552	.117	.2	.8
	8707272133	5.3	38	7.2	1.8	7.4	4	3.23	.10	2.06	.590	.108	.2	.8
	8707280133	5.4	39	7.5	1.3	7.3	4	3.32	.10	2.02	.613	.107	.3	.8
	8707280433	5.3	39	7.8	1.3	7.3	4	3.22	.10	2.14	.600	.104	.3	.8
	8707280733	5.3	39	8.2	1.4	7.7	5	3.32	.10	2.31	.650	.107	.3	.9
LI8	8706051709	5.7	36	7.1	2.6	5.4	6	3.57	.11	1.52	.801	.137	.1	3.8
	8706051724													
	8706051739													
	8706051754													
	8706051809	5.5	34	6.7	2.5	5.4	5	3.43	.15	1.55	.758	.193	.1	4.1
	8706051824													
	8706051839													
	8706051854	5.0	34	5.6	2.2	5.5	4	3.10	.20	1.27	.678	.220	.1	5.7
	8706051909													
	8706051924													
	8706051939	4.9	33	5.6	2.0	5.5	4	3.02	.19	1.25	.649	.233	.1	5.9
	8706051954													
	8706052009													

LLYN BRIANNE ACID WATERS PROJECT

Auto-sampled stream chemistry 1987

(Major determinands)

Site	yymmddhhmi	pH	Cond	T-hard	T-alk	SO4	Cl	Na	K	Ca	Mg	Al	TON	DOC
LI8	8706052024													
	8706052039	4.8	32	5.0	1.5	4.9	3	2.65	.25	1.17	.566	.228	.1	5.4
	8706052108	4.8		4.6	1.2	5.0	4	2.84	.19	1.00	.560	.236	.1	5.4
	8706052109													
	8706052124													
	8706052139													
	8706052154													
	8706052209													
	8706052224													
	8706052239	4.7	34	4.6	1.0	5.1	4	2.89	.14	1.03	.579	.262	.2	4.9
	8706052254													
	8706052309													
	8706060009													
	8706060109	4.8	36	5.4	1.1	5.7	5	3.41	.13	1.19	.686	.283	.1	4.0
	8706060209													
	8706060309													
	8706060409													
	8706060509	4.9	37	5.9	1.4	5.8	5	3.57	.16	1.21	.719	.265	.2	2.7
	8706060609													
	8706060709													
	8706060809													

LLYN BRIANNE ACID WATERS PROJECT

Auto-sampled stream chemistry 1987

(Major determinands)

Site	yymmddhhmi	pH	Cond	T-hard	T-alk	SO4	Cl	Na	K	Ca	Mg	Al	TON	DOC
LI8	8706060909	5.0	38	5.9	1.5	5.6	5	3.49	.17	1.21	.716	.259	.2	2.6
	8706061009													
	8706061109													
	8706061209													
	8706061309	4.8	39	5.9	1.1	5.5	6	3.67	.12	1.21	.709	.301	.1	3.5
	8706061409													
	8706061509													
	8706061609													
	8706061709	4.9	40	5.9	1.3	5.4	6	3.74	.17	1.20	.715	.290	.2	2.5
	8706061809													
	8706061909													
	8706062009													
	8706062109													
	8706062209	4.9	40	6.0	1.3	5.5	6	3.79	.22	1.25	.735	.288	.2	2.1
CI3	8706051751	5.7	36	5.9	2.4	4.9	5	3.96	.25	1.20	.751	.079	.1	1.5
	8706051806													
	8706051821													
	8706051836	5.5	38	5.0	2.3	4.8	5	3.64	.19	1.02	.691	.106	.1	2.1
	8706051851													
	8706051906													

LLYN BRIANNE ACID WATERS PROJECT

Auto-sampled stream chemistry 1987

(Major determinands)

Site	yymmddhhmi	pH	Cond	T-hard	T-alk	SO4	Cl	Na	K	Ca	Mg	Al	TON	DOC
CI3	8706051921													
	8706051936	5.4	36	5.1	2.3	4.6	5	3.52	.16	1.04	.645	.131	.1	2.4
	8706051951													
	8706052006													
	8706052021													
	8706052036	5.5	32	5.2	2.2	4.7	4	3.33	.22	1.08	.639	.142	.2	2.4
	8706052051													
	8706052106													
	8706052121													
	8706052136													
	8706052151	5.2	34	4.9	1.9	4.9	5	3.27	.17	.97	.681	.172	.3	2.5
	8706052321	5.4	34	5.8	2.1	5.1	4	3.52	.20	1.17	.712	.159	.3	2.2
	8706060051	5.3	37	5.1	2.0	4.9	4	3.30	.15	1.04	.657	.177	.4	2.2
	8706060351	5.4	34	5.1	2.0	4.8	5	3.38	.15	1.06	.687	.176	.4	2.1
	8706060651	5.2	36	5.0	1.8	4.8	4	3.36	.21	1.01	.685	.178	.4	1.8
	8706060851	5.2	37	5.7	1.8	4.8	4	3.51	.14	1.12	.720	.180	.4	2.0
	8706061051	5.2	37	5.6	1.8	4.6	4	3.34	.14	1.10	.700	.169	.4	1.7
	8706061251	5.1	39	5.6	1.7	4.6	4	3.41	.18	1.10	.708	.164	.4	1.7
	8706061551	5.1	36	5.5	1.7	4.8	4	3.34	.17	1.04	.746	.186	.4	1.7
	8706170150													
	8706170205													

LLYN BRIANNE ACID WATERS PROJECT

Auto-sampled stream chemistry 1987

(Major determinands)

Site	yymmddhhmi	pH	Cond	T-hard	T-alk	SO4	Cl	Na	K	Ca	Mg	Al	TON	DOC
CI3	8706170220													
	8706170235													
	8706170250													
	8706170305													
	8706170320													
	8706170335													
	8706170350													
	8706170405													
	8706170420													
	8706170435													
	8706170505													
	8706170520													
	8706170535													
	8706170750													
CI4	8706162229	6.2	32	5.6	2.7	4.1	5	3.12	.23	1.10	.726	.076	.1	2.6
	8706162329	6.0	29	5.3	2.5	4.0	5	3.18	.20	.98	.701	.105	.1	3.4
	8706170029													
	8706170129	5.6	33	4.6	2.1	4.0	5	2.95	.15	.86	.657	.120	.1	3.8
	8706170229	5.3	29	4.8	1.8	3.9	8	3.14	.16	.93	.637	.127	.1	3.6
	8706170329													

LLYN BRIANNE ACID WATERS PROJECT

Auto-sampled stream chemistry 1987

(Major determinands)

Site	yymmddhhmi	pH	Cond	T-hard	T-alk	SO4	Cl	Na	K	Ca	Mg	Al	TON	DOC
CI4	8706170429	5.1	29	3.3	1.5	3.1	5	2.43	.10	.65	.489	.113	.1	3.9
	8706170529													
	8706170629	4.9	29	3.9	1.3	3.8	4	2.85	.12	.73	.542	.148	.1	4.2
	8706170729													
	8706170829													
	8706170929	4.8	30	3.6	1.0	3.9	4	2.84	.11	.63	.528	.150	.1	4.2
	8706171029													
	8706171129													
	8706171229	4.8	31	3.6	1.0	3.8	5	2.76	.10	.63	.505	.150	.1	4.0
	8706171329													
	8706171429													
	8706171529	4.8	31	3.6	1.0	3.9	4	2.86	.10	.63	.550	.155	.1	3.9
	8706171629													
	8706171729													
	8706171829	4.9	31	3.8	1.3	3.8	4	2.87	.13	.70	.551	.143	.1	4.0
	8706171929													
	8706172229	5.0	30	3.9	1.4	3.8	5	2.90	.10	.75	.579	.140	.1	3.7
	8706180329	5.1	29	3.9	1.5	3.9	5	2.87	.10	.73	.588	.128	.1	3.4
	8706180729	5.1	31	3.9	1.6	3.8	4	2.89	.16	.75	.598	.125	.1	3.1
	8706181229	5.2	34	4.9	1.7	4.0	4	3.06	.10	.97	.618	.118	.1	3.0
	8706181629	5.3	30	4.7	1.8	4.0	4	2.95	.10	.90	.620	.116	.1	3.1

LLYN BRIANNE ACID WATERS PROJECT

Auto-sampled stream chemistry 1987

(Major determinands)

Site	yymmddhhmi	pH	Cond	T-hard	T-alk	SO4	Cl	Na	K	Ca	Mg	Al	TON	DOC
CI4	8706181829	5.3	38	4.7	1.8	3.8	4	2.84	.15	.89	.605	.113	.1	3.3
	8706182029	5.2	28	4.1	1.7	3.7	4	2.80	.16	.80	.565	.129	.1	5.1
C5X	8707270231	6.1	29	4.4	2.3	4.1	5	2.55	.10	.93	.557	.041	.1	1.2
	8707270331	6.1	29	4.3	2.4	4.1	5	2.58	.10	.89	.568	.053	.1	1.2
	8707270416	5.8	28	4.1	2.1	4.0	5	2.42	.10	.83	.548	.068	.1	1.4
	8707270446	5.6	27	4.2	1.8	4.0	4	2.37	.20	.85	.549	.084	.1	1.9
	8707270546	5.5	25	4.2	1.7	3.7	4	2.21	.20	.84	.519	.108	.1	1.8
	8707270616	5.2	24	3.6	1.5	3.5	3	2.06	.20	.77	.493	.129	.1	2.2
	8707270646	5.3	25	4.4	1.7	3.6	3	2.12	.30	.92	.500	.146	.1	2.5
	8707270701	5.3	25	3.5	1.7	3.4	3	1.99	.20	.74	.471	.138	.1	2.5
	8707270746	5.3	26	3.5	1.6	3.4	3	1.95	.20	.75	.474	.150	.1	2.5
	8707271031	5.4	25	4.3	1.7	3.6	3	2.08	.20	.89	.502	.136	.1	2.3
	8707271310	5.2	25	3.6	1.5	3.4	3	1.94	.10	.79	.467	.125	.1	2.2
	8707271510	5.2	25	3.5	1.5	3.5	3	1.96	.10	.76	.475	.121	.1	2.1
	8707271555	5.2	25	3.6	1.6	3.6	3	1.99	.10	.78	.484	.126	.1	2.0
CI6	8706250750	5.3	29	3.6	1.9	3.4	4	2.23	.10	.77	.487	.077	.1	2.3
	8706250751													
	8706250805	5.5	25	4.1	1.7	3.5	4	2.29	.10	.80	.503	.087	.1	2.4
	8706250820	5.3	25	3.7	1.7	3.4	4	2.20	.10	.84	.492	.073	.1	2.2

LLYN BRIANNE ACID WATERS PROJECT

Auto-sampled stream chemistry 1987

(Major determinands)

Site	yymmddhhmi	pH	Cond	T-hard	T-alk	SO4	Cl	Na	K	Ca	Mg	Al	TON	DOC
CI6	8706250835	5.2	25	4.4	1.6	3.6	4	2.35	.10	.93	.521	.083	.1	2.4
	8706250850	5.2	25	4.0	1.5	3.5	4	2.31	.10	.79	.506	.083	.1	1.9
	8706250905	5.3	25	3.6	1.6	3.3	4	2.27	.10	.79	.487	.077	.1	1.9
	8706250920													
	8706250935	5.4	25	3.5	1.7	3.4	4	2.35	.10	.76	.493	.075	.1	2.2
	8706250950													
	8706251005	5.3	24	3.5	1.6	3.4	4	2.30	.10	.76	.487	.085	.1	2.2
	8706251020													
	8706251035													
	8706251050													
	8706251105													
	8706251120													
	8706251135													
	8706251220	6.0	27	4.4	2.5	3.5	4	2.39	.10	.94	.560	.046	.1	2.2
	8706251235													
	8706251250													
	8706251305													
	8706251720	5.4	25	4.4	1.9	3.6	4	2.26	.10	.95	.512	.079	.1	2.3
	8706252120	5.4	26	4.1	1.6	3.9	4	2.39	.10	.80	.525	.084	.1	1.9
	8706260520	5.7	27	4.4	1.9	4.0	4	2.38	.10	.94	.563	.061	.1	1.6
	8706261220	5.8	27	4.9	2.1	4.2	4	2.60	.10	.97	.604	.055	.1	1.6

LLYN BRIANNE ACID WATERS PROJECT

Auto-sampled stream chemistry 1987

(Major determinands)

Site	yymmddhhmi	pH	Cond	T-hard	T-alk	SO4	Cl	Na	K	Ca	Mg	Al	TON	DOC
CI6	8707270207	6.3	31	6.1	5.7	3.1	3	2.70	.14	1.45	.667	.041	.1	2.3
	8707270222													
	8707270237													
	8707270252													
	8707270307													
	8707270322	6.5	26	5.6	5.0	2.8	3	2.50	.18	1.27	.601	.066	.1	3.6
	8707270337													
	8707270352													
	8707270407													
	8707270422													
	8707270437	6.1	23	4.6	3.4	2.7	2	2.22	.20	1.02	.527	.082	.1	4.0
	8707270452													
	8707270507													
	8707270522	5.8	21	4.2	2.8	2.9	2	2.05	.24	1.04	.495	.088	1.0	3.9
	8707270537	5.7	21	4.0	2.5	2.8	2	1.95	.26	.93	.472	.092	.1	4.1
	8707270552													
	8707270607	5.4	19	3.8	2.0	2.7	2	1.74	.28	.86	.426	.103	.1	4.1
	8707270622													
	8707270652	5.3	24	3.6	1.7	2.8	2	1.71	.29	.79	.434	.110	.1	4.0
	8707270752	5.2	19	3.6	1.6	2.8	2	1.66	.16	.77	.424	.104	.1	3.5
	8707271207	5.2	19	3.6	1.5	2.8	2	1.64	.10	.77	.405	.105	.1	3.1

LLYN BRIANNE ACID WATERS PROJECT

Auto-sampled stream chemistry 1987

(Major determinands)

Site	yymmddhhmi	pH	Cond	T-hard	T-alk	SO4	Cl	Na	K	Ca	Mg	Al	TON	DOC
CI6	8707271507	5.1	19	3.5	1.5	3.1	2	1.64	.10	.76	.411	.127	.1	3.1
	8707271907	5.2	19	3.5	1.6	3.0	3	1.68	.10	.74	.410	.100	.1	2.5
	8707280107	5.5	21	3.8	2.0	3.1	2	1.83	.10	.86	.439	.073	.1	2.2
	8707280707	5.7	21	4.0	2.3	3.3	3	2.08	.10	.95	.484	.078	.1	2.3
UC4	8706182042	6.2	27	5.5	3.6	3.4	5	3.11	.10	1.07	.739	.072	.1	5.9
	8706182127	5.9	26	4.6	3.4	3.0	4	2.87	.10	.87	.682	.078	.1	5.9
	8706182212	5.8	24	4.4	2.8	2.7	4	2.72	.10	.93	.597	.068	.1	5.9
	8706182242	5.7	25	4.4	3.0	2.9	4	2.60	.10	.79	.611	.079	.1	6.0
	8706190042	5.5	24	4.2	2.3	2.9	4	2.56	.10	.86	.576	.073	.1	5.8
	8706190342	5.5	22	4.4	2.5	2.8	4	2.62	.10	.92	.561	.069	.1	5.6
	8706190542	5.5	26	4.1	2.4	2.9	4	2.47	.10	.80	.564	.074	.1	5.6
	8706190942	5.5	24	4.1	2.3	3.0	4	2.65	.10	.83	.581	.070	.1	5.4
	8706191242	5.6	27	5.4	2.6	4.3	4	3.74	.28	1.01	.724	.098	.1	5.2
	8706191542	5.7	24	4.7	2.9	3.2	3	2.82	.10	.89	.613	.060	.1	5.2
	8706191842	6.0	24	4.6	3.1	3.3	4	2.82	.10	.87	.636	.062	.1	4.8
	8706192242	6.1	24	4.8	3.1	3.3	3	3.04	.10	.94	.674	.065	.1	4.5

Section 6

Spot-sampled stream chemistry

Spot-sampled stream chemistry Jan-Mar 1987

(mean, max., min. and std. dev.)

pH	Hard	Ca	Mg	Al	Zn	Mn	Fe	SO_4	Cl	Na
					CI1 (n = 6)					
5.17	5.23	1.00	.70	.10	.01	.06	.03	4.64	6.00	3.10
6.20	6.30	1.21	.84	.12	.01	.08	.04	5.87	7.00	3.98
4.80	4.30	.75	.54	.03	.00	.00	.00	3.60	5.00	1.99
.51	.76	.16	.11	.04	.00	.03	.01	.77	.63	.66
					CI2 (n = 6)					
4.77	4.18	.72	.65	.16	.01	.27	.13	4.98	5.83	3.30
5.00	4.80	.89	.78	.24	.02	.36	.17	6.55	6.00	4.01
4.60	3.50	.55	.50	.11	.01	.19	.09	3.38	5.00	2.80
.16	.58	.15	.09	.05	.00	.06	.03	1.05	.41	.44
					CI5 (n = 6)					
5.07	5.03	.92	.71	.30	.02	.08	.06	4.72	6.00	3.05
5.20	6.50	1.28	.86	.37	.03	.10	.10	5.52	6.00	4.01
4.80	3.40	.52	.53	.21	.01	.06	.00	3.79	6.00	1.88
.15	1.31	.31	.14	.06	.01	.01	.04	.63	.00	.73
					LI1 (n = 6)					
4.83	5.82	1.19	.75	.53	.02	.11	.03	7.16	7.83	4.04
5.00	7.40	1.65	.88	.62	.03	.15	.05	8.25	8.00	4.53
4.60	4.50	.83	.60	.45	.01	.08	.01	5.92	7.00	2.83
.15	1.10	.31	.10	.06	.01	.03	.01	.91	.41	.65
					LI2 (n = 5)					
4.84	6.70	1.46		.59	.02	.15	.04	7.87	7.80	4.62
5.00	8.20	1.82		.69	.03	.20	.06	9.36	8.00	5.43
4.60	4.90	.96	.64	.44	.02	.11	.03	6.11	7.00	3.85
.15	1.56	.36		.11	.00	.04	.01	1.37	.45	.72
					LI5 (n = 6)					
5.67	7.43	1.36	1.03	.05	.01	.01	.01	6.59	5.33	3.25
5.90	8.40	1.56	1.16	.06	.01	.01	.01	7.69	6.00	3.55
5.50	6.00	1.07	.84	.04	.01	.00	.00	5.05	5.00	2.58
.15	.89	.23	.13	.01	.00	.00	.00	.97	.52	.39
					LI6 (n = 6)					
6.95	12.58	2.51	1.59	.05	.01	.01	.04	5.12	5.67	3.00
7.10	15.80	3.37	1.82	.07	.01	.02	.08	5.83	6.00	3.50
6.80	9.70	1.87	1.26	.04	.01	.01	.02	4.29	5.00	2.69
.14	2.29	.62	.23	.01	.00	.00	.02	.64	.52	.33
					LI8 (n = 6)					
5.22	6.34	1.25	.84	.30	.02	.09	.05	6.01	7.17	3.37
5.40	8.10	1.76	1.00	.39	.02	.12	.11	7.00	8.00	3.99
4.90	4.60	.84	.66	.22	.01	.08	.02	4.85	6.00	2.55
.17	1.43	.37	.13	.07	.00	.02	.04	.89	.75	.57

Spot-sampled stream chemistry Apr-Jun 1987

(mean, max., min. and std. dev.)

pH	Hard	Ca	Mg	Al	Zn	Mn	Fe	SO_4	Cl	Na
					CI1 (n = 7)					
5.03	4.61	.90	.62	.10	.01	.06	.03	4.22	6.00	3.49
5.10	5.70	1.13	.81	.13	.02	.08	.04	5.03	7.00	4.12
4.80	4.00	.77	.51	.07	.01	.04	.02	3.48	5.00	3.07
.13	.72	.12	.10	.02	.01	.02	.01	.59	.82	.33
					CI2 (n = 7)					
4.93	4.00	.75	.56	.14	.02	.22	.15	4.04	5.86	3.47
5.30	4.50	.92	.69	.20	.03	.28	.19	4.99	7.00	3.71
4.50	3.20	.62	.44	.08	.01	.16	.12	3.21	5.00	2.85
.28	.46	.12	.08	.05	.01	.04	.03	.68	.90	.29
					CI5 (n = 2)					
5.00	6.10	1.06	.92	.36	.03	.11	.05	5.97	6.00	4.37
5.00	7.10	1.20	1.09	.38	.04	.14	.05	6.83	6.00	5.29
5.00	5.10	.91	.75	.34	.02	.09	.05	5.10	6.00	3.44
.00	1.41	.21	.24	.03	.01	.03	.00	1.22	.00	1.31
					C5X (n = 5)					
5.12	4.92	.92	.69	.14	.01	.05	.02	4.75	5.40	3.50
5.20	5.50	1.06	.76	.20	.01	.07	.04	5.05	6.00	3.80
5.00	4.10	.81	.60	.10	.01	.04	.02	4.34	5.00	3.12
.08	.59	.11	.06	.04	.00	.01	.01	.36	.55	.26
					LI1 (n = 7)					
4.93	6.60	1.44	.77	.41	.02	.11	.03	7.44	7.71	4.74
5.10	7.90	1.83	.87	.70	.03	.13	.07	8.40	8.00	5.13
4.50	4.90	.98	.63	.16	.01	.09	.02	6.50	7.00	4.46
.22	1.06	.31	.08	.21	.00	.01	.02	.63	.49	.22
					LI2 (n = 7)					
4.94	6.99	1.53	.83	.39	.03	.13	.04	7.74	7.29	4.75
5.20	8.20	1.98	.89	.62	.11	.16	.08	8.71	8.00	5.00
4.60	5.80	1.19	.77	.20	.01	.10	.02	7.11	7.00	4.37
.20	.74	.24	.04	.15	.03	.02	.02	.54	.49	.22
					LI5 (n = 7)					
5.69	7.73	1.48	1.04	.05	.01	.01	.01	7.00	5.00	3.68
5.80	9.00	1.79	1.17	.08	.04	.01	.02	7.66	6.00	4.14
5.50	6.90	1.30	.93	.03	.00	.00	.01	6.51	4.00	3.29
.12	.81	.18	.10	.02	.01	.00	.00	.38	.58	.32
					LI6 (n = 7)					
7.19	15.90	3.39	1.86	.05	.01	.01	.04	4.75	5.00	3.20
7.50	24.00	5.33	2.66	.07	.02	.02	.05	5.06	7.00	3.56
6.60	9.50	1.85	1.27	.03	.00	.01	.03	4.37	4.00	2.83
.29	4.97	1.18	.50	.02	.01	.00	.01	.26	1.00	.28
					LI8 (n = 7)					
5.49	7.19	1.49	.86	.23	.02	.07	.06	6.12	6.29	4.11
6.10	8.90	2.07	1.05	.52	.04	.13	.11	7.18	7.00	5.24
4.80	6.50	1.29	.80	.09	.01	.04	.04	5.62	5.00	3.66
.48	.86	.28	.09	.15	.01	.03	.03	.50	.76	.52

Spot-sampled stream chemistry Jul-Sep 1987

(mean, max., min. and std.dev.)

pH	Hard	Ca	Mg	Al	Zn	Mn	Fe	SO_4	Cl	Na
					CI2 (n = 7)					
5.66	4.33	.93	.52	.16	.01	.31	1.02	3.00	4.43	2.72
6.00	5.50	1.22	.69	.28	.02	.57	3.33	3.37	6.00	3.13
5.20	3.50	.73	.40	.11	.01	.19	.29	2.31	3.00	1.96
.25	.65	.15	.09	.06	.01	.12	1.04	.35	.98	.39
					CI3 (n = 7)					
5.84	5.19	1.04	.68	.08	.01	.04	.04	4.45	4.71	3.31
6.20	5.60	1.16	.79	.10	.04	.05	.06	5.02	6.00	3.57
5.70	4.20	.86	.58	.06	.00	.03	.03	4.01	4.00	2.89
.16	.49	.10	.07	.01	.01	.01	.01	.35	.76	.24
					CI4 (n = 7)					
6.18	6.56	1.31	.85	.16	.13	.17	.58	3.78	4.43	3.80
6.60	8.60	1.65	1.35	.19	.86	.32	1.07	5.55	5.00	8.37
5.90	5.00	1.03	.62	.11	.01	.07	.19	2.91	4.00	2.61
.23	1.19	.21	.24	.03	.32	.09	.33	.88	.53	2.03
					CI5 (n = 2)					
6.55	10.55	3.41	.58	.07	.01	.01	.05	5.20	4.50	3.32
6.90	14.60	5.03	.60	.08	.01	.02	.06	5.33	5.00	3.42
6.20	6.50	1.79	.57	.05	.00	.01	.04	5.06	4.00	3.21
.49	5.73	2.29	.02	.02	.00	.00	.01	.19	.71	.15
					CI6 (n = 3)					
6.57	5.93	1.34	.67	.06	.02	.07	.10	3.35	4.00	2.82
6.60	6.40	1.43	.70	.07	.03	.10	.16	3.69	5.00	3.00
6.50	5.50	1.21	.65	.05	.01	.04	.06	2.80	3.00	2.66
.06	.45	.12	.03	.01	.01	.03	.05	.48	1.00	.17
					C5X (n = 7)					
5.77	6.24	1.61	.60	.07	.02	.03	.03	4.64	5.00	3.15
6.90	14.60	5.03	.61	.12	.04	.06	.06	5.33	9.00	3.42
5.20	3.80	.70	.57	.05	.00	.01	.02	3.98	4.00	2.77
.60	3.78	1.55	.01	.02	.01	.02	.01	.46	1.83	.28
					GIL (n = 7)					
6.60	8.83	2.12	.89	.04	.01	.00	.01	7.06	4.86	4.25
6.70	9.40	2.27	.99	.04	.03	.00	.01	7.60	6.00	4.87
6.50	8.00	1.90	.80	.02	.00	.00	.01	6.42	4.00	3.69
.06	.56	.15	.07	.01	.01	.00	.00	.53	.69	.38
					LI1 (n = 7)					
5.36	6.76	1.58	.73	.19	.01	.10	.03	7.31	6.86	4.42
6.20	7.70	1.75	.82	.28	.02	.12	.06	8.34	7.00	4.83
5.00	6.00	1.37	.66	.09	.01	.09	.02	6.56	6.00	3.97
.40	.57	.14	.06	.08	.00	.01	.01	.60	.38	.32

Spot-sampled stream chemistry Jul-Sep 1987 (cont.)

(mean, max., min. and std.dev.)

pH	Hard	Ca	Mg	Al	Zn	Mn	Fe	SO_4	Cl	Na
					LI2 (n = 14)					
5.26	7.77	1.78	.87	.26	.02	.11	.05	7.83	6.93	4.58
6.00	8.70	2.00	.95	.39	.03	.18	.18	8.89	8.00	5.02
5.00	7.10	1.63	.77	.14	.01	.06	.02	6.96	6.00	4.16
.29	.48	.11	.06	.08	.01	.03	.04	.55	.62	.26
					LI3 (n = 7)					
5.94	9.64	2.58	.83	.13	.02	.12	.04	8.40	6.71	4.85
6.70	11.00	3.08	.89	.19	.03	.15	.06	9.43	7.00	5.07
5.50	8.80	2.36	.75	.05	.00	.09	.03	7.87	6.00	4.36
.46	.79	.27	.05	.06	.01	.02	.01	.52	.49	.27
					LI4 (n = 7)					
5.29	8.24	2.15	.74	.12	.01	.03	.01	8.00	5.00	3.76
5.50	8.90	2.37	.82	.16	.02	.04	.01	8.58	6.00	4.02
5.20	7.00	1.82	.67	.08	.01	.02	.00	7.30	4.00	3.35
.11	.68	.18	.07	.03	.01	.01	.00	.43	.58	.22
					LI5 (n = 7)					
5.84	7.10	1.41	.94	.07	.01	.00	.01	6.70	4.29	3.34
6.00	8.10	1.58	1.06	.25	.02	.01	.02	7.42	5.00	3.63
5.70	5.40	1.03	.75	.02	.00	.00	.01	4.97	4.00	2.47
.10	.95	.19	.11	.08	.01	.00	.00	.81	.49	.45
					LI6 (n = 7)					
7.37	20.90	4.61	2.33	.04	.01	.02	.08	4.21	4.29	3.07
7.50	30.20	6.67	3.30	.07	.02	.02	.10	4.94	5.00	3.42
7.20	16.90	3.74	1.84	.02	.00	.01	.05	3.57	4.00	2.71
.14	4.73	1.08	.49	.02	.01	.00	.02	.47	.49	.26
					LI7 (n = 7)					
7.57	28.04	7.01	2.62	.03	.01	.01	.03	5.31	4.43	3.38
7.70	35.50	8.97	3.30	.05	.02	.01	.05	6.29	6.00	3.86
7.40	23.70	6.05	2.16	.01	.00	.00	.02	4.82	4.00	3.00
.11	3.91	1.08	.35	.01	.01	.00	.01	.51	.79	.32
					LI8 (n = 7)					
5.99	7.03	1.54	.81	.15	.01	.05	.07	5.61	5.57	3.57
6.30	7.90	1.68	.92	.21	.02	.07	.10	6.19	7.00	3.85
5.60	6.00	1.25	.72	.09	.00	.02	.04	4.66	5.00	3.24
.29	.68	.16	.07	.05	.00	.02	.02	.55	.79	.23
					UC4 (n = 8)					
6.76	8.43	1.68	1.07	.06	.01	.09	.27	2.90	4.43	3.23
7.00	10.80	2.18	1.37	.08	.02	.16	.37	3.37	5.00	3.82
6.50	6.50	1.27	.83	.04	.00	.05	.18	2.26	3.00	2.32
.17	1.31	.28	.17	.02	.01	.04	.08	.42	.98	.46

Spot-sampled stream chemistry Oct-Dec 1987

(mean, max., min. and std.dev.)

pH	Hard	Ca	Mg	Al	Zn	Mn	Fe	SO_4	Cl	Na
					CI1 (n = 4)					
5.20	4.35	.85	.59	.09	.01	.05	.08	4.46	4.00	2.93
5.50	5.30	.99	.71	.12	.02	.05	.11	5.37	5.00	3.35
5.00	3.30	.68	.49	.08	.01	.04	.05	3.63	3.00	1.96
.22	.91	.16	.10	.02	.00	.01	.03	.76	.82	.65
					CI2 (n = 6)					
4.92	3.53	.68	.51	.13	.01	.19	.28	3.91	4.33	2.85
5.70	4.30	.91	.63	.16	.02	.24	.36	5.16	6.00	3.19
4.60	2.90	.49	.44	.09	.01	.14	.20	3.26	3.00	2.39
.41	.62	.15	.08	.03	.01	.04	.06	.74	1.03	.41
					CI3 (n = 5)					
5.42	5.54	1.06	.77	.11	.01	.05	.03	4.67	4.80	3.27
5.70	6.10	1.40	.93	.15	.01	.05	.04	5.77	5.00	3.61
5.30	4.60	.86	.69	.07	.01	.03	.02	3.92	4.00	2.67
.16	.73	.21	.11	.03	.00	.01	.01	.74	.45	.43
					CI4 (n = 9)					
5.10	5.08	.95	.69	.15	.03	.14	.25	4.56	4.33	3.10
6.10	7.00	1.55	1.00	.25	.09	.23	.33	7.87	6.00	3.76
4.20	3.50	.57	.51	.11	.01	.09	.17	3.62	3.00	2.07
.57	1.26	.34	.16	.04	.03	.04	.06	1.33	.87	.54
					CI5 (n = 2)					
6.75	11.90	3.94	.53	.06	.01	.01	.07	4.52	4.50	3.18
6.80	12.50	4.19	.54	.06	.01	.01	.08	4.67	5.00	3.18
6.70	11.30	3.68	.52	.05	.01	.01	.06	4.37	4.00	3.18
.07	.85	.36	.01	.01	.00	.00	.02	.21	.71	.00
					CI6 (n = 4)					
5.63	5.43	1.06	.70	.09	.01	.06	.06	4.60	4.25	3.00
6.30	6.90	1.44	.81	.11	.01	.07	.11	5.26	5.00	3.44
5.20	3.90	.75	.52	.05	.01	.05	.04	4.01	4.00	2.51
.48	1.30	.29	.14	.03	.00	.01	.03	.57	.50	.41
					C5X (n = 6)					
6.57	10.63	3.29	.61	.06	.00	.01	.06	5.02	4.33	3.28
6.80	12.90	4.33	.71	.09	.01	.01	.10	5.66	5.00	4.08
6.40	9.60	2.94	.50	.04	.00	.01	.03	4.42	3.00	2.76
.14	1.16	.52	.09	.02	.00	.00	.03	.47	.82	.50
					GIL (n = 6)					
6.30	7.27	1.68	.80	.05	.01	.00	.03	6.50	5.33	3.98
6.50	7.70	1.93	.89	.13	.02	.01	.05	7.89	8.00	4.78
6.10	6.70	1.53	.72	.02	.00	.00	.01	5.89	4.00	2.81
.14	.37	.15	.07	.04	.01	.00	.01	.77	1.37	.75
					LI1 (n = 6)					
4.75	5.17	1.11	.66	.45	.02	.11	.07	7.38	6.33	4.22
5.10	6.80	1.56	.80	.58	.02	.13	.20	8.41	7.00	4.59
4.30	3.40	.72	.50	.27	.01	.10	.03	6.57	4.00	3.00
.27	1.11	.27	.11	.10	.00	.01	.06	.76	1.21	.68

Spot-sampled stream chemistry Oct-Dec 1987 (cont.)

(mean, max., min. and std.dev.)

LI2 (n = 11)

4.85	6.56	1.35	.82	.51	.02	.11	.07	7.75	6.55	4.17
5.50	9.40	1.79	1.26	.63	.02	.16	.17		8.00	4.77
4.50	5.30	.99	.71	.35	.01	.08	.03	6.52	5.00	2.85
.25	1.19	.25	.16	.09	.00	.03	.05	1.40	.82	.62
LI2	11									

LI3 (n = 6)

5.08	7.45	1.92	.69	.37	.02	.13	.06	7.17	6.50	4.45
5.70	9.70	2.57	.86	.52	.02	.20	.15	8.03	7.00	5.48
4.70	6.50	1.62	.60	.13	.01	.11	.03	6.56	5.00	3.53
.33	1.16	.35	.09	.13	.00	.03	.05	.63	.84	.72
LI3	6									

LI4 (n = 9)

5.63	11.26	3.30	.79	.17	.01	.04	.02	8.13	6.22	3.84
6.50	18.40	6.22	.91	.24	.02	.07	.07		7.00	4.18
5.10	8.30	2.16	.67	.09	.01	.02	.01	7.04	5.00	2.95
.60	3.46	1.38	.07	.05	.00	.02	.02	1.17	.67	.40
LI4	9									

LI5 (n = 6)

5.75	7.12	1.33	.96	.05	.01	.01	.02	6.56	4.33	3.44
5.80	8.60	1.62	1.12	.07	.01	.01	.03	7.54	5.00	3.85
5.70	6.20	1.15	.84	.04	.01	.00	.01	5.82	4.00	3.17
.05	.92	.16	.12	.01	.00	.00	.01	.71	.52	.26
LI5	6									

LI6 (n = 7)

6.73	11.47	2.38	1.39	.07	.01	.03	.08	4.71	4.57	3.28
7.20	20.00	4.21	2.32	.18	.02	.06	.24	5.35	5.00	4.53
6.20	6.40	1.24	.81	.04	.01	.02	.04	3.82	4.00	2.33
.33	4.40	.93	.51	.05	.01	.02	.07	.63	.53	.73
LI6	7									

LI7 (n = 6)

6.93	17.78	4.27	1.76	.05	.01	.01	.06	5.30	4.83	3.17
7.30	30.00	7.41	2.81	.12	.01	.03	.16	6.04	5.00	3.67
6.30	7.60	1.71	.84	.02	.01	.01	.03	4.53	4.00	2.72
.34	7.26	1.84	.65	.04	.00	.01	.05	.57	.41	.35
LI7	6									

LI8 (n = 10)

4.87	6.67	1.39	.83	.26	.02	.09	.09	6.54	6.00	3.52
5.80	8.40	1.73	1.08	.31	.04	.13	.23	9.42	7.00	4.09
4.30	5.00	1.01	.64	.21	.02	.07	.04	5.01	5.00	2.88
.41	1.31	.28	.15	.04	.01	.02	.06	1.38	.67	.38
LI8	10									

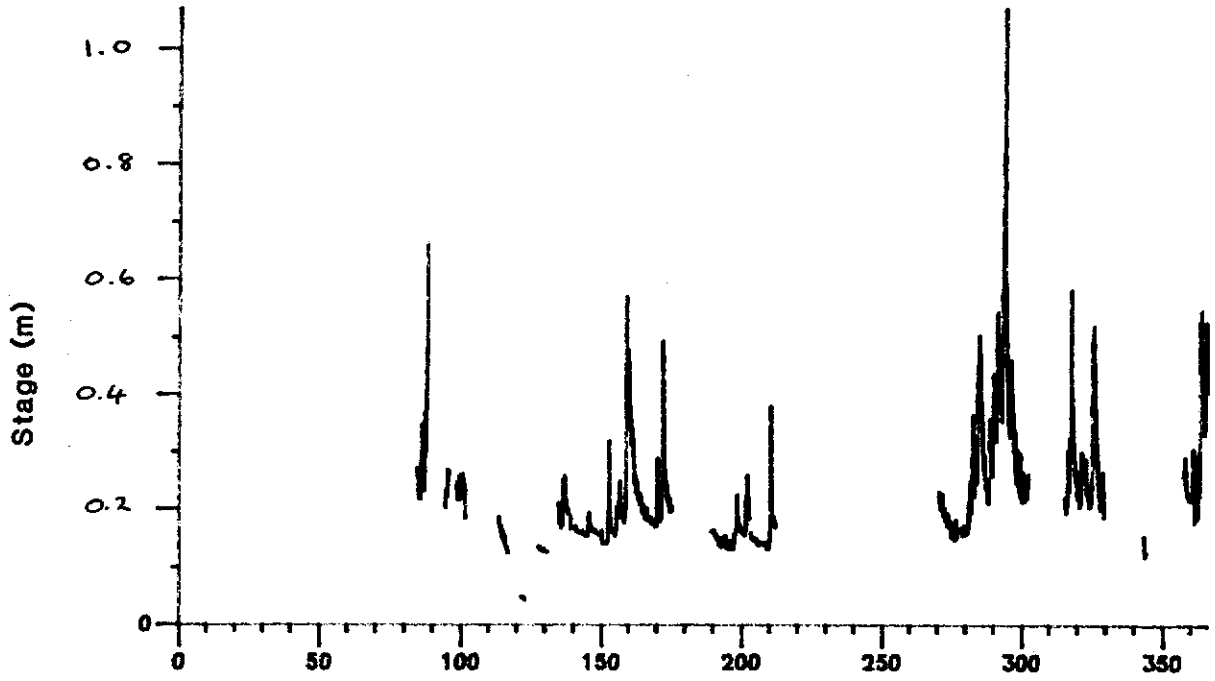
UC4 (n = 6)

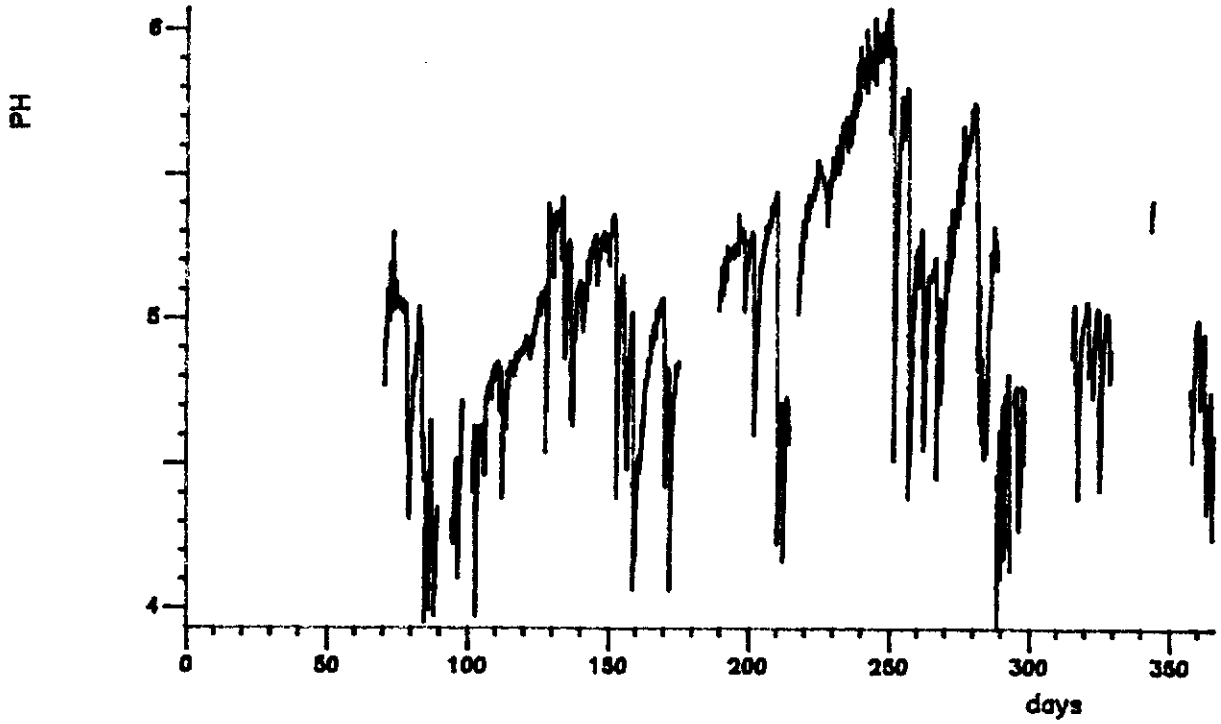
5.93	6.27	1.19	.84	.06	.01	.04	.18	4.15	4.83	3.20
6.50	7.70	1.44	1.07	.11	.03	.07	.25	5.48	6.00	3.87
5.60	5.20	.92	.70	.05	.01	.03	.14	3.41	4.00	2.27
.31	.81	.21	.15	.02	.01	.01	.04	.77	.75	.64

Section 7

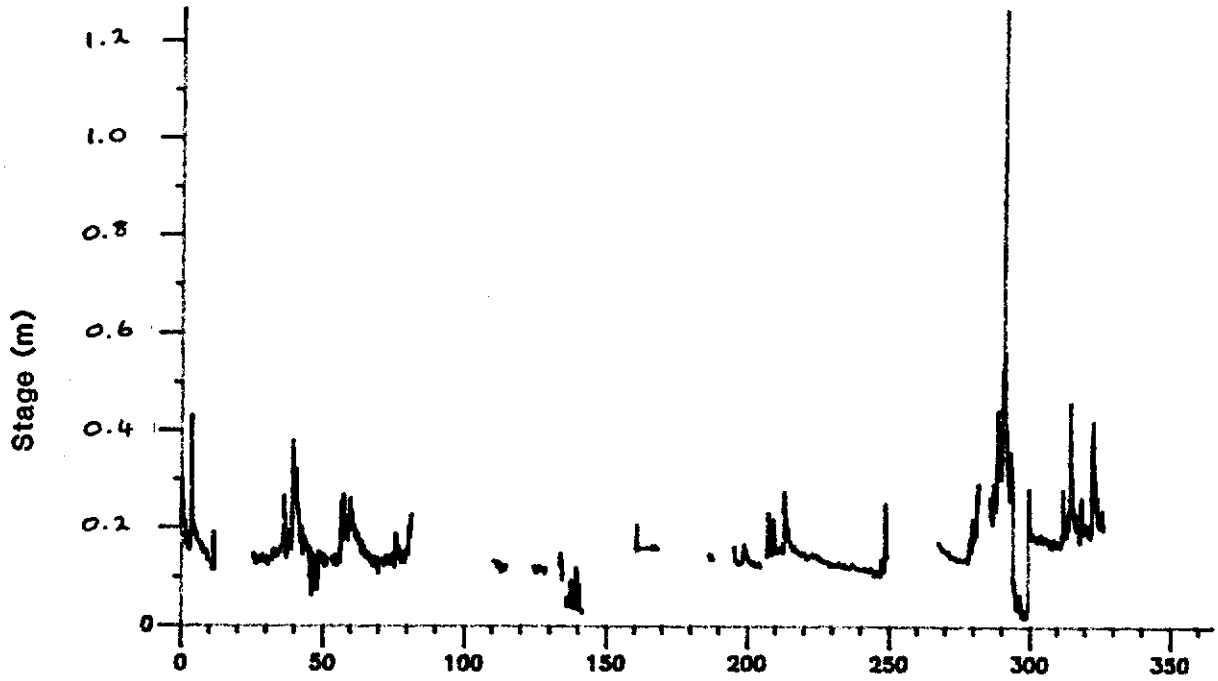
Annual time series plot (pH and stage)
pH-duration curves

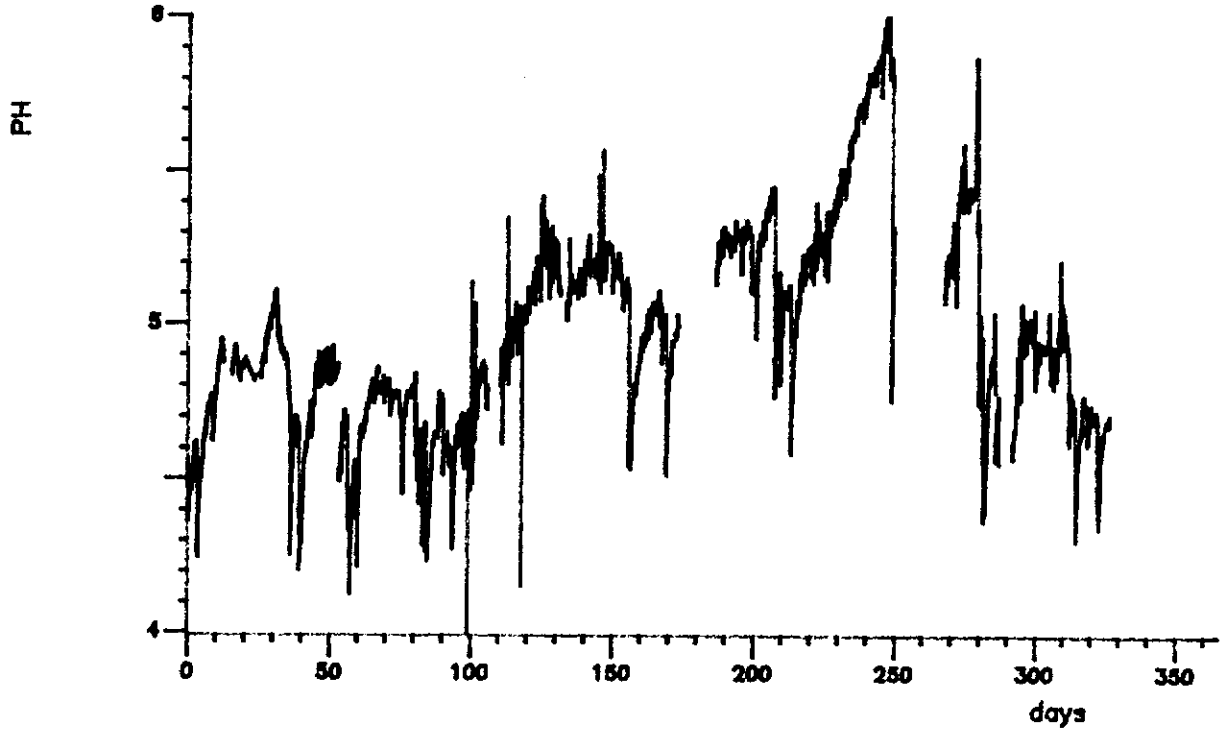
LI1 1987


Stage (m)
1.0
0.8
0.6
0.4
0.2
0
0
50
100
150
200
250
300
350

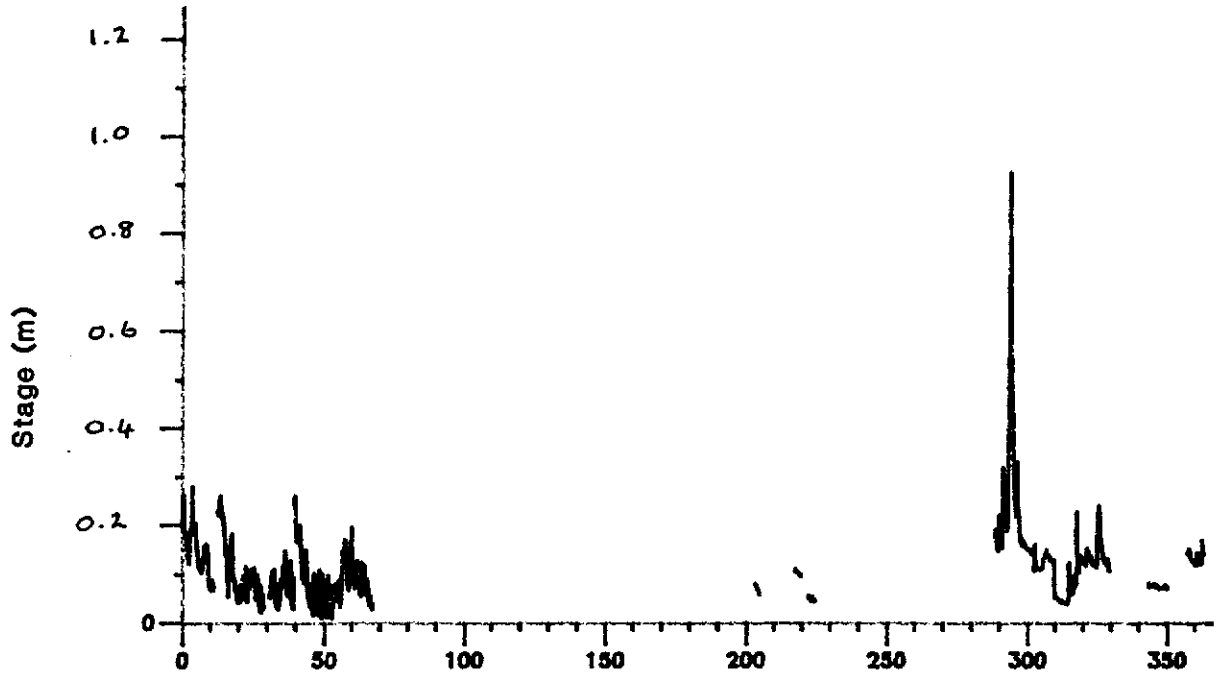

PH
6
5
4
0
50
100
150
200
250
300
350
days

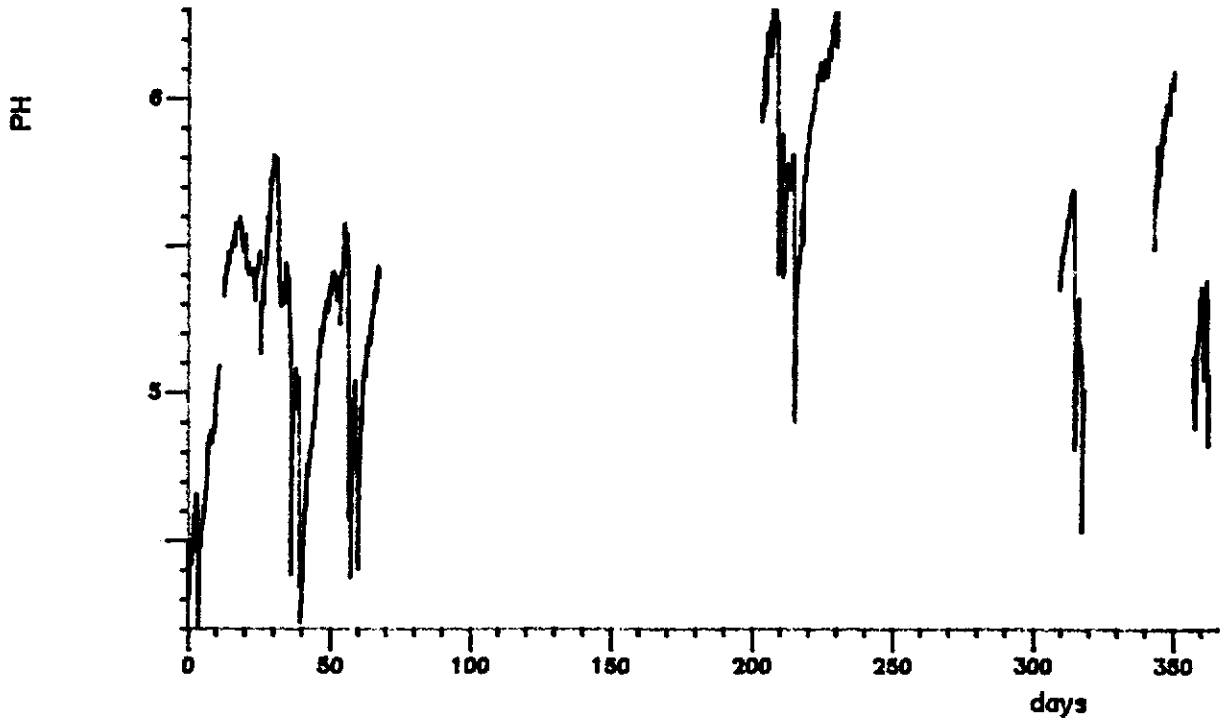
LI2 1987


Stage (m)
1.2
1.0
0.8
0.6
0.4
0.2
0
0
50
100
150
200
250
300
350

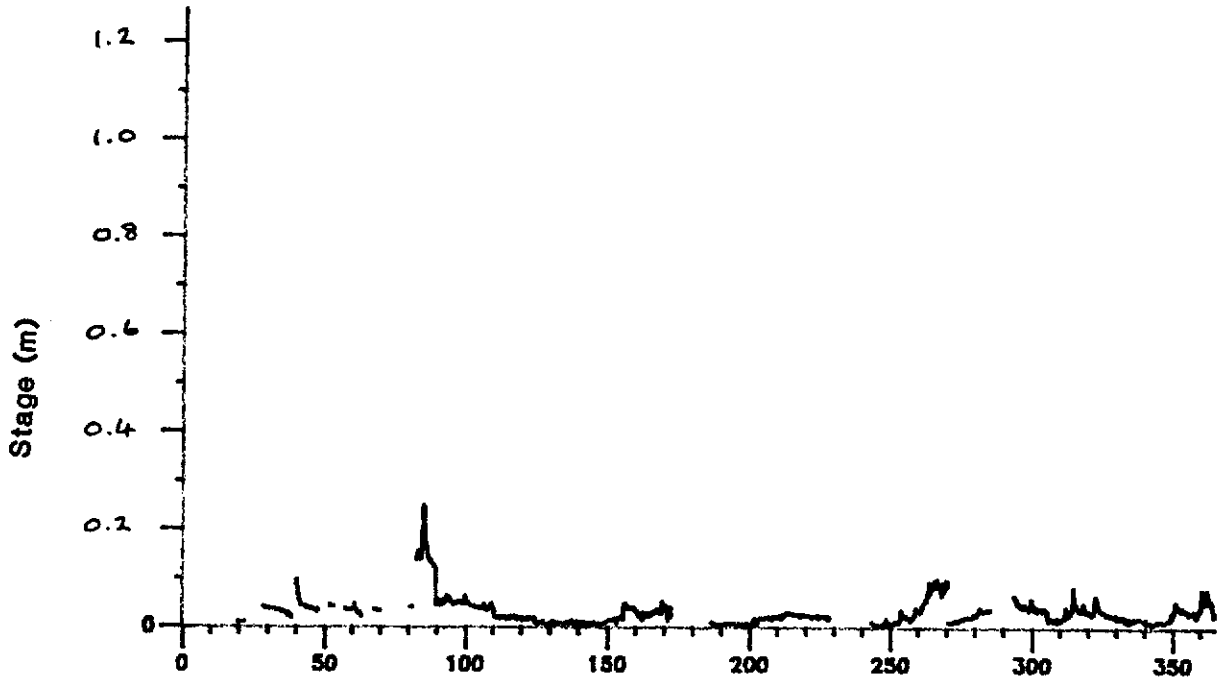

PH
6
5
4
0
50
100
150
200
250
300
350
days

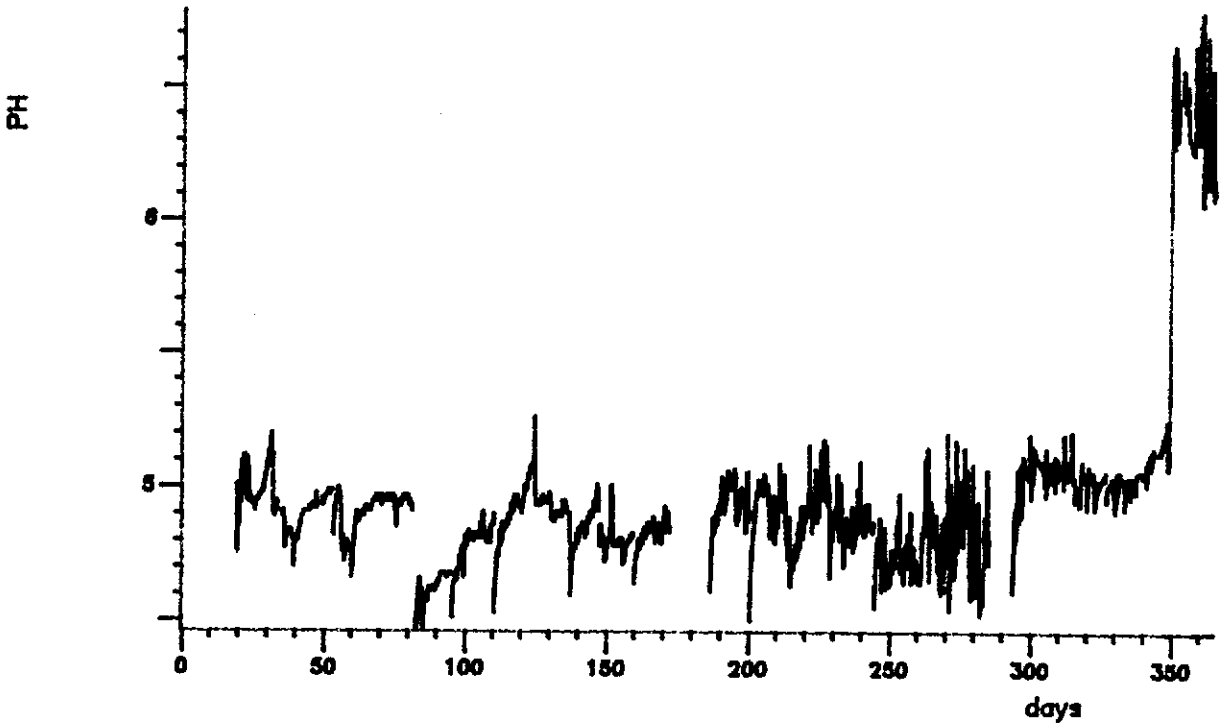
LI3 1987


Stage (m)
1.2
1.0
0.8
0.6
0.4
0.2
0
0
50
100
150
200
250
300
350

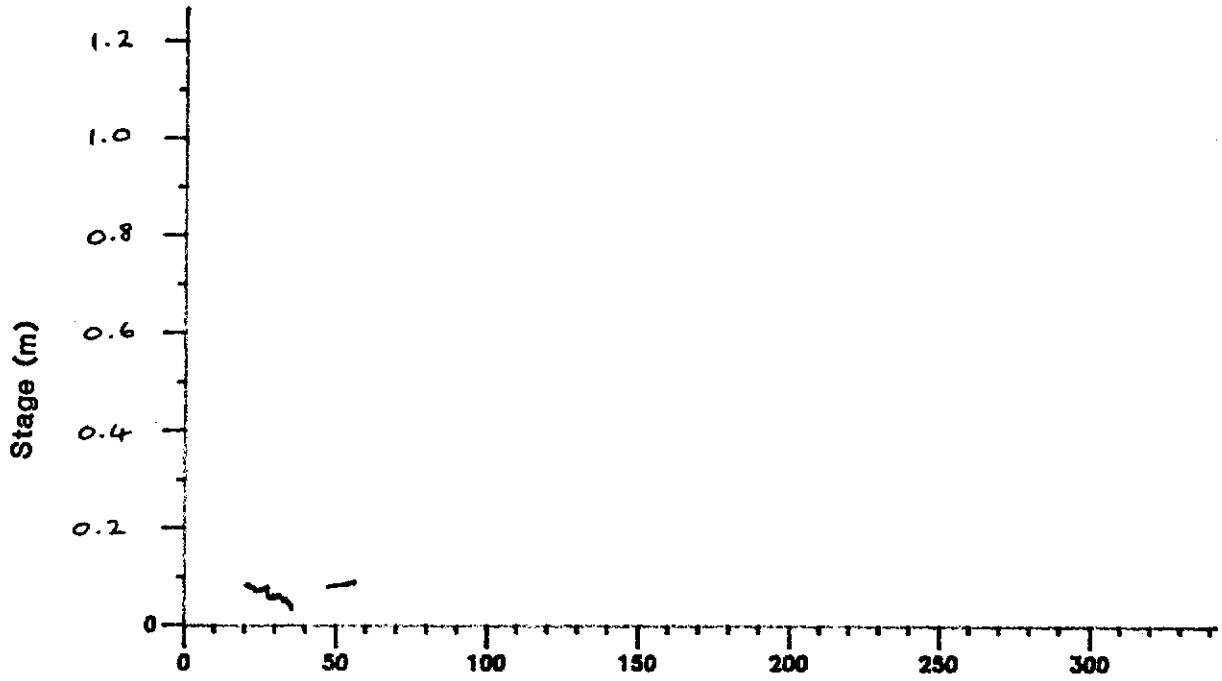

PH
6
5
0
50
100
150
200
250
300
350
days

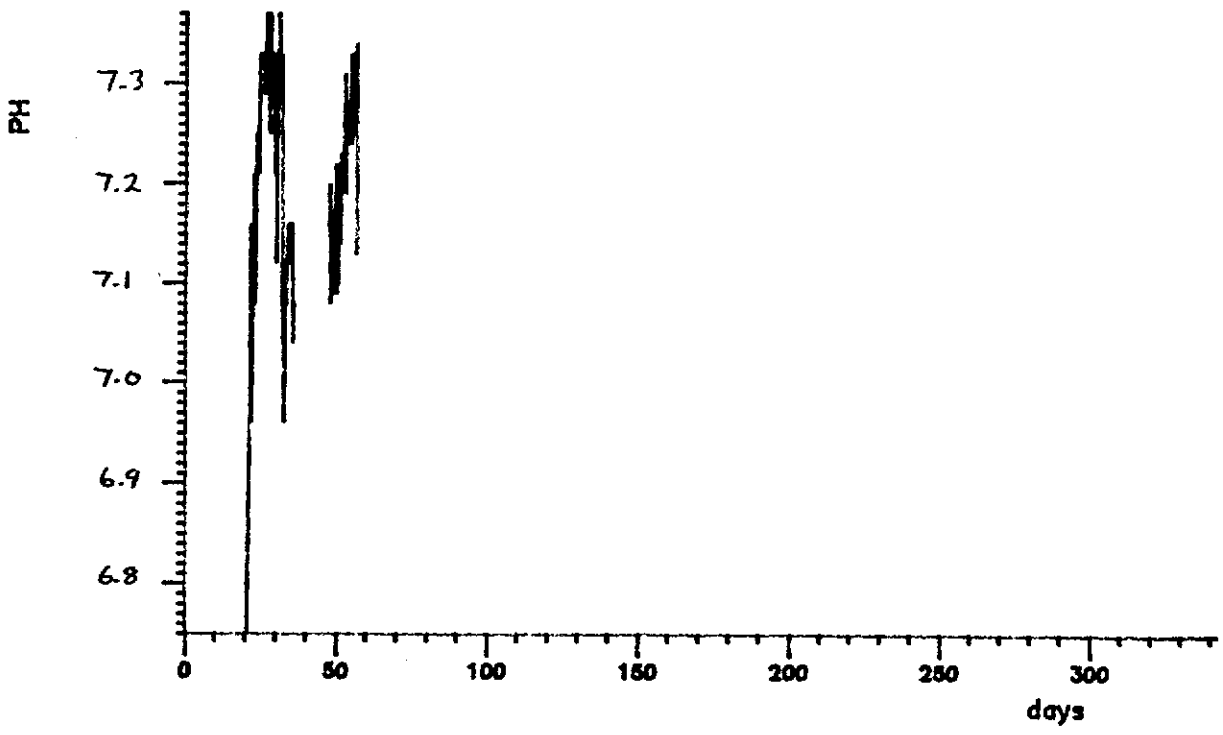
LI4 1987


Stage (m)
1.2
1.0
0.8
0.6
0.4
0.2
0
0
50
100
150
200
250
300
350

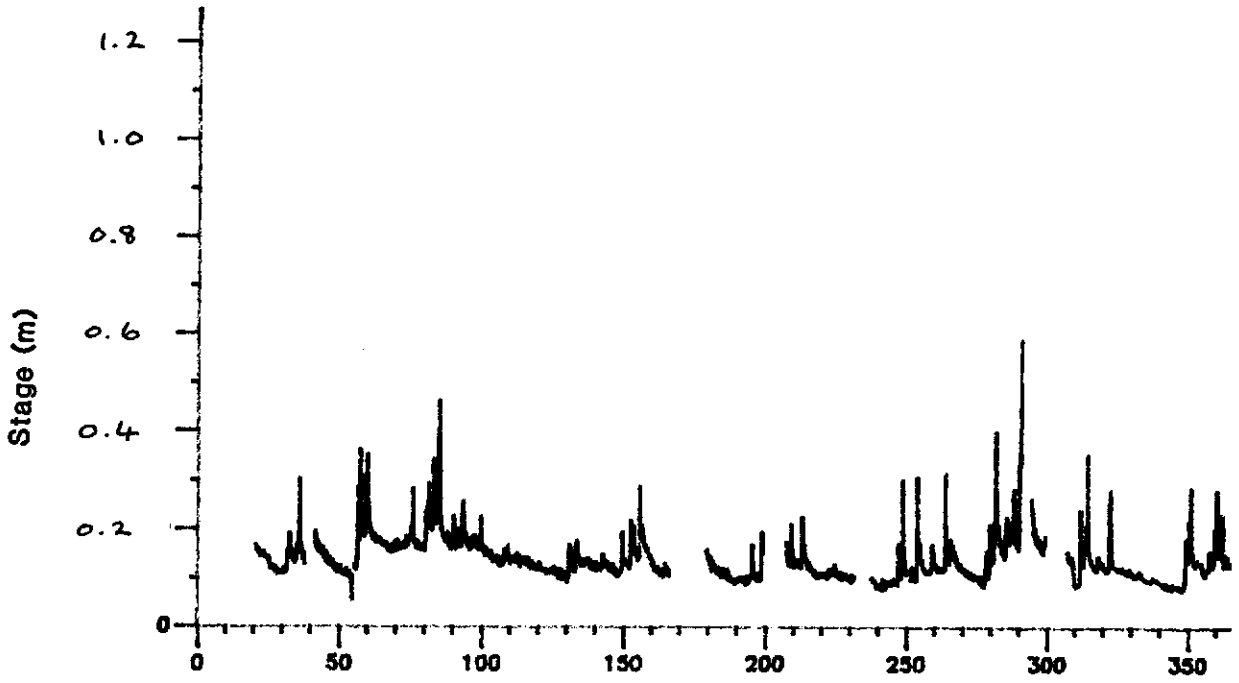

PH
6
5
0
50
100
150
200
250
300
350
days

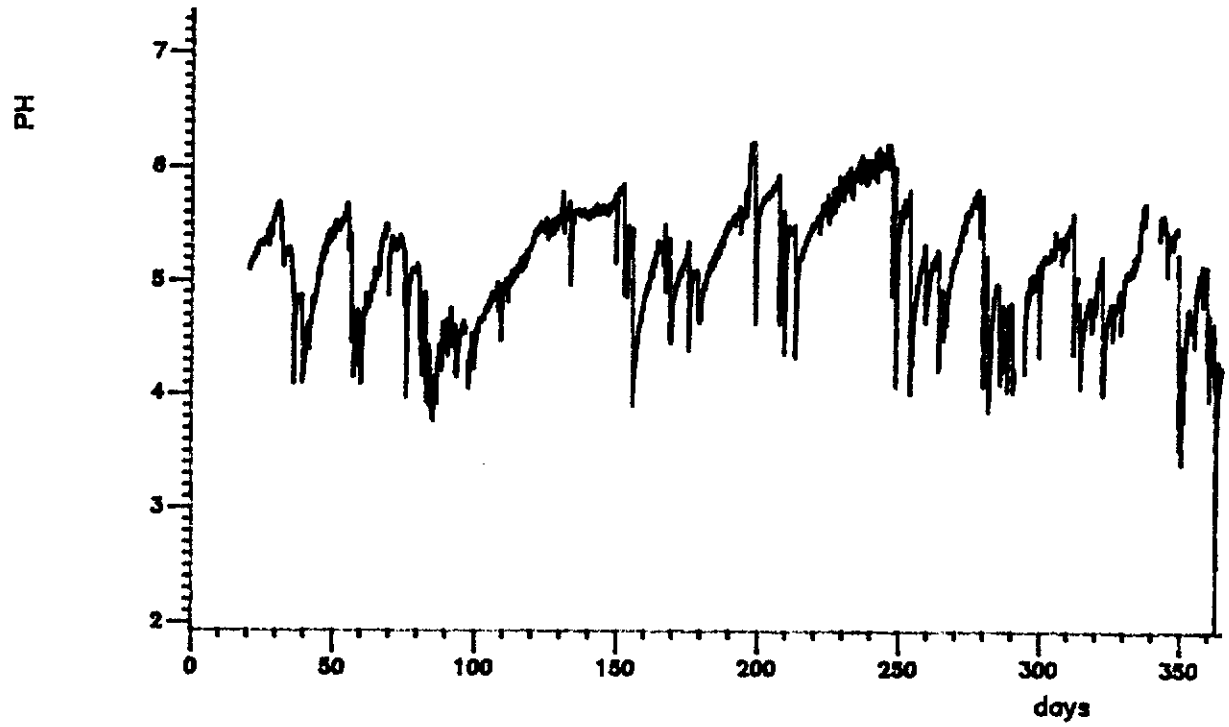
LI6 1987


Stage (m)
1.2
1.0
0.8
0.6
0.4
0.2
0
0
50
100
150
200
250
300

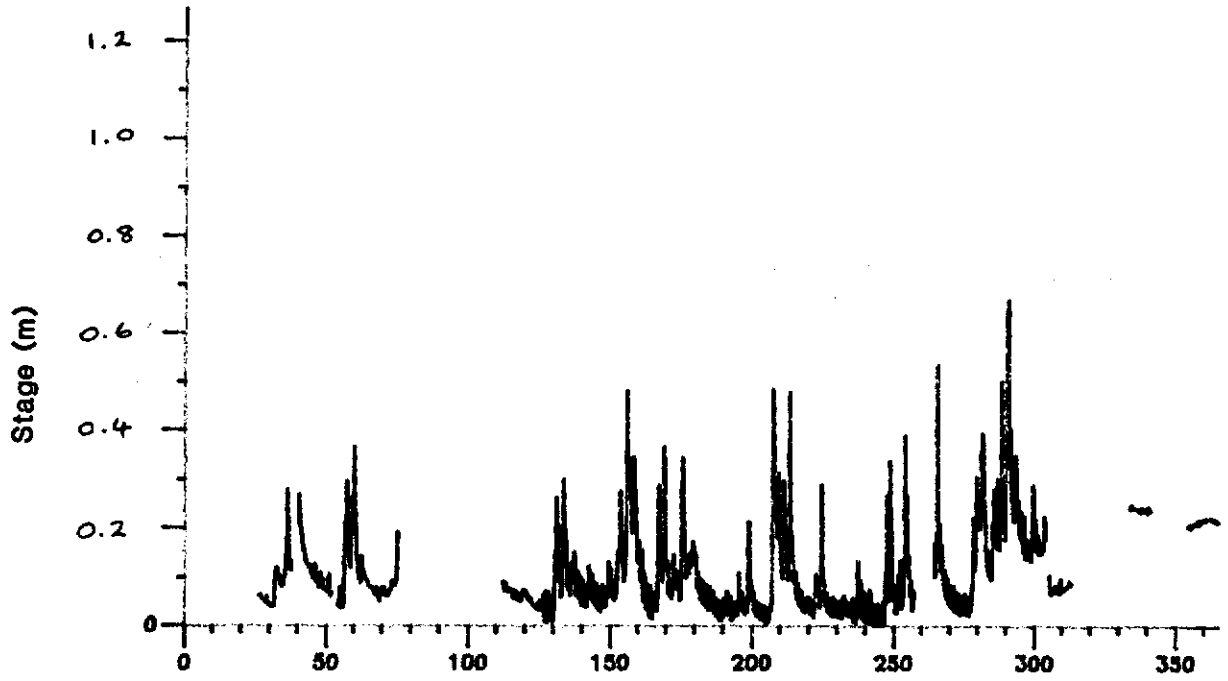

PH
7.3
7.2
7.1
7.0
6.9
6.8
0
50
100
150
200
250
300
days

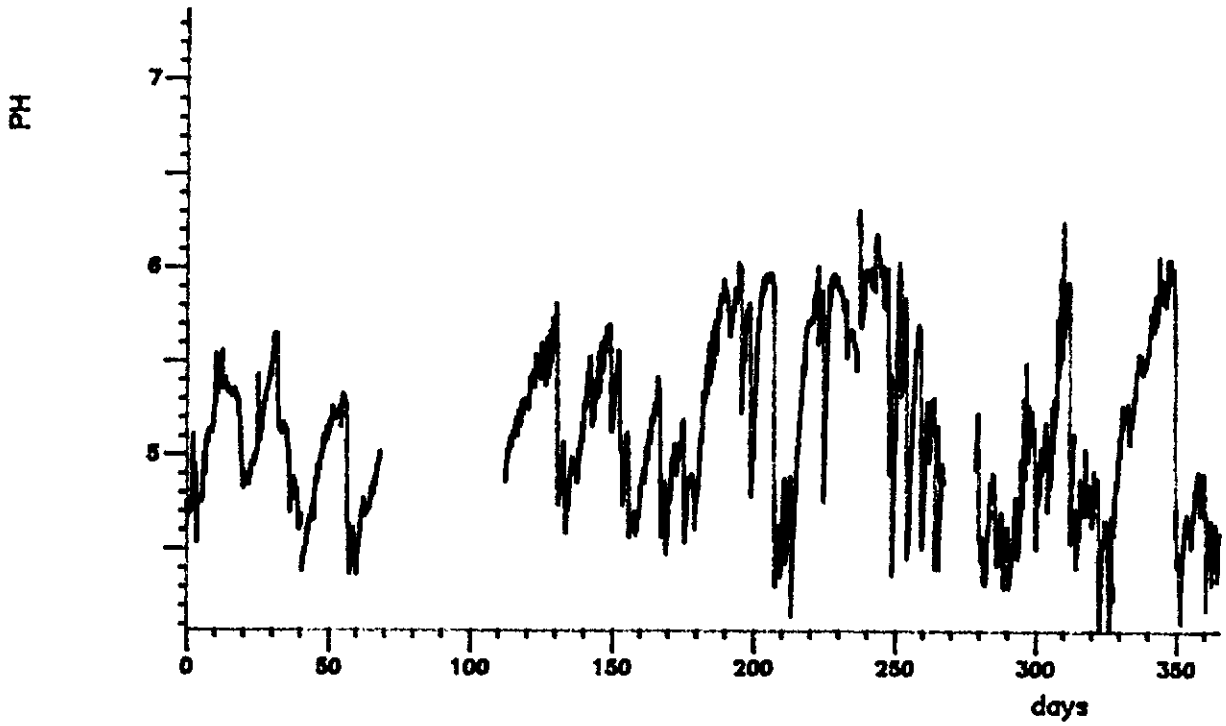
LI8 1987


Stage (m)
1.2
1.0
0.8
0.6
0.4
0.2
0
0
50
100
150
200
250
300
350

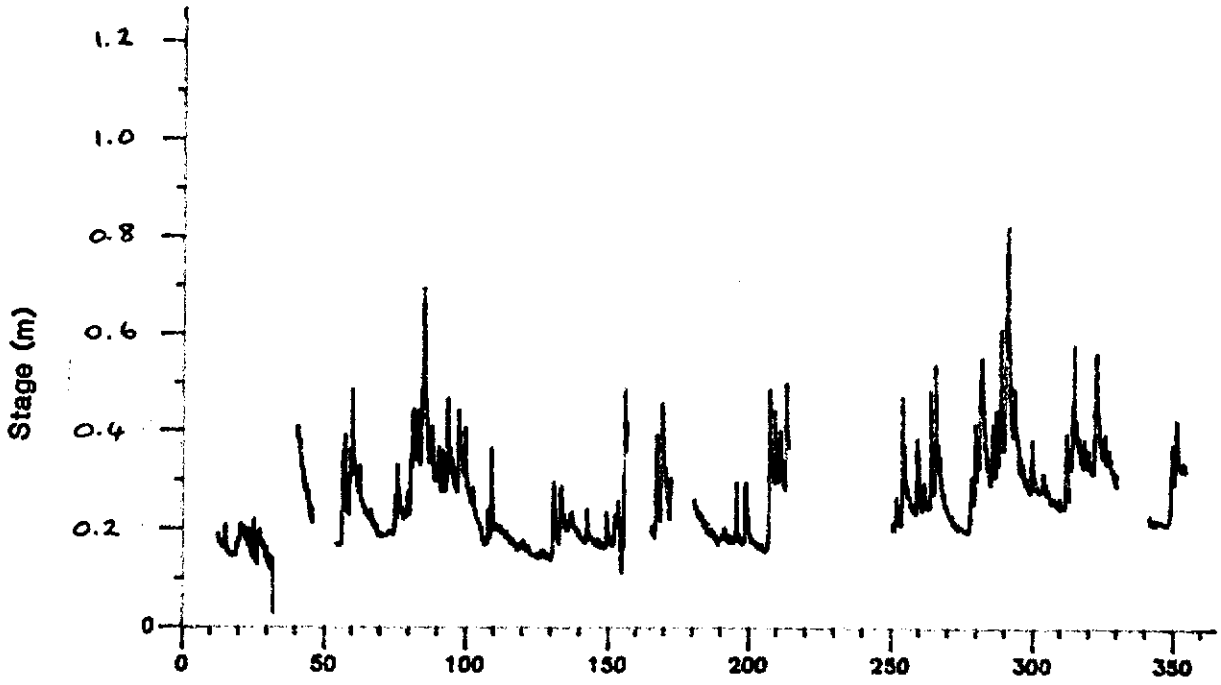

PH
7
6
5
4
3
2
0
50
100
150
200
250
300
350
days

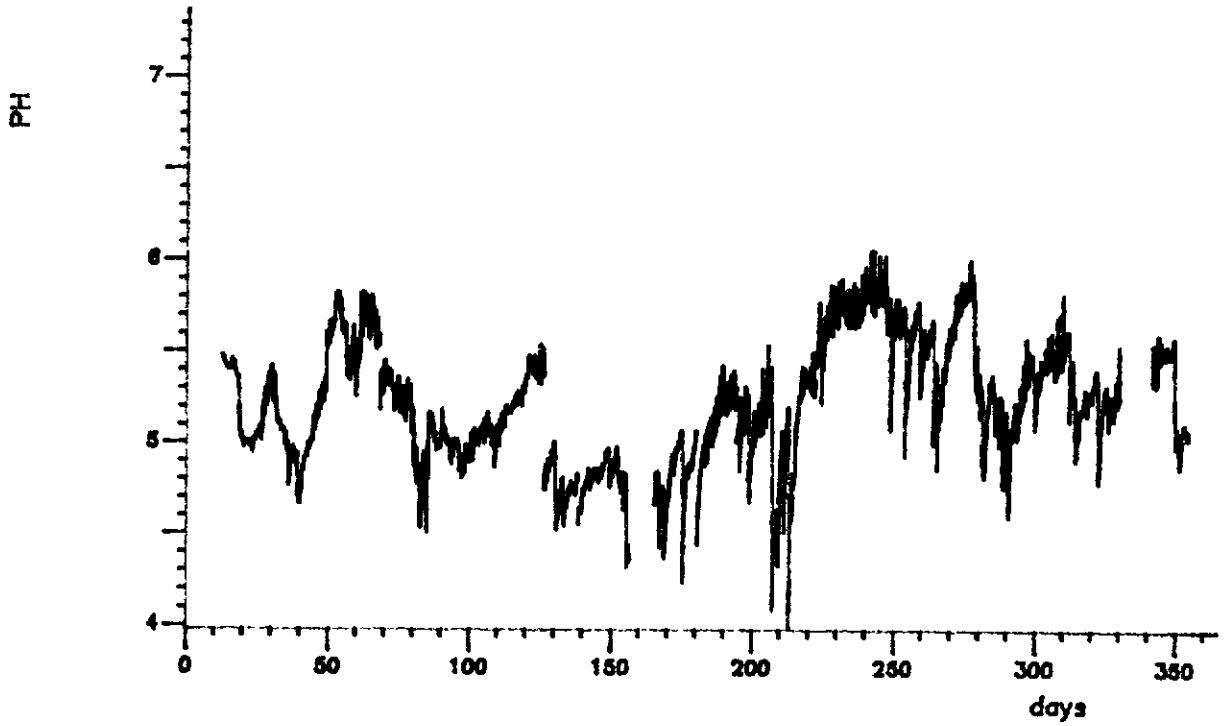
Cl2 1987


Stage (m)
1.2
1.0
0.8
0.6
0.4
0.2
0
0
50
100
150
200
250
300
350

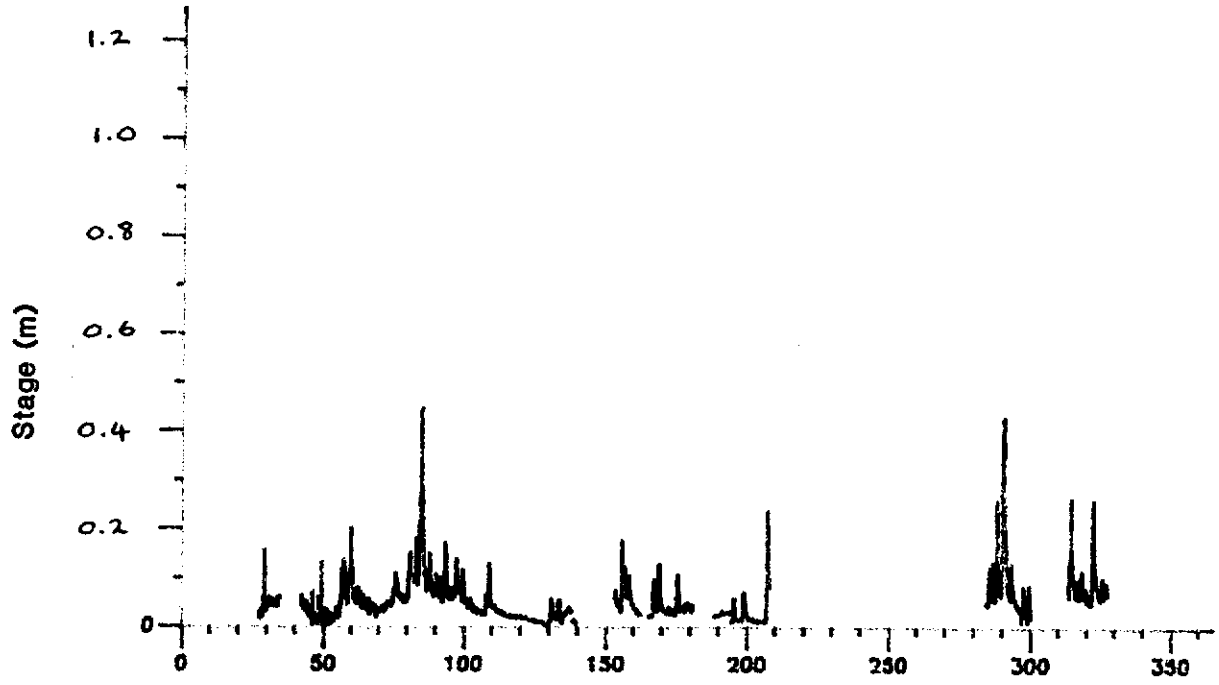

PH
7
6
5
0
50
100
150
200
250
300
350
days

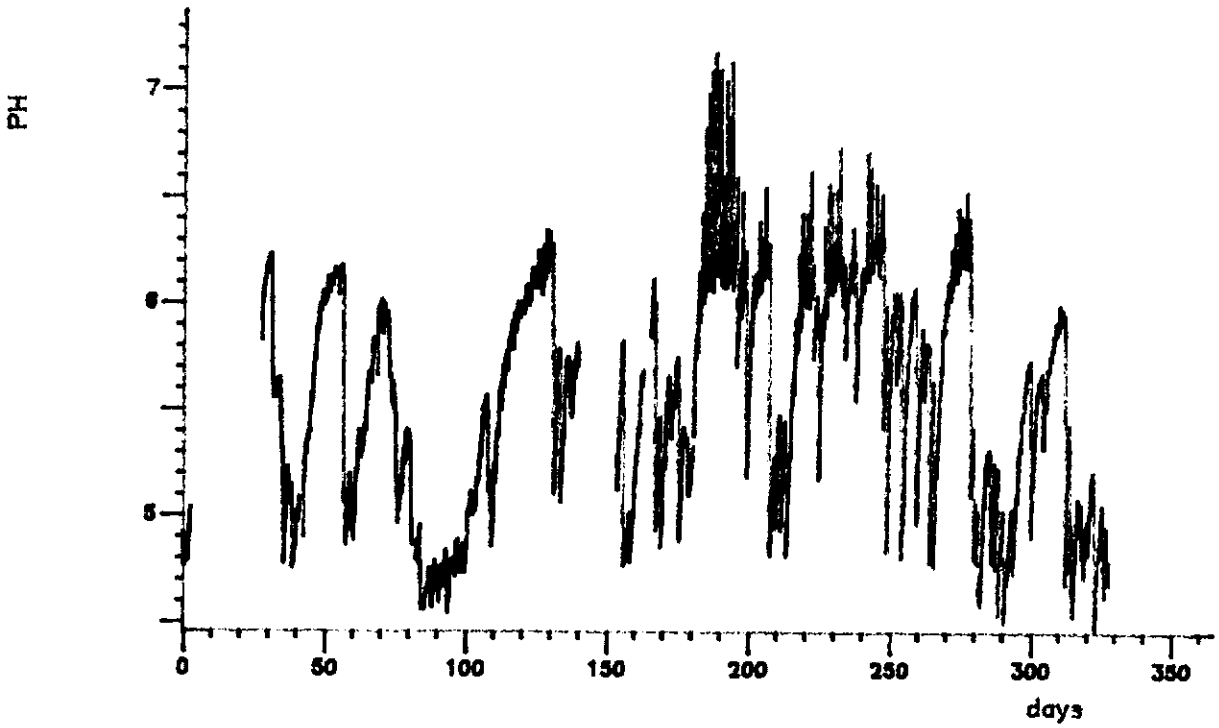
CI3 1987


Stage (m)
1.2
1.0
0.8
0.6
0.4
0.2
0
0
50
100
150
200
250
300
350

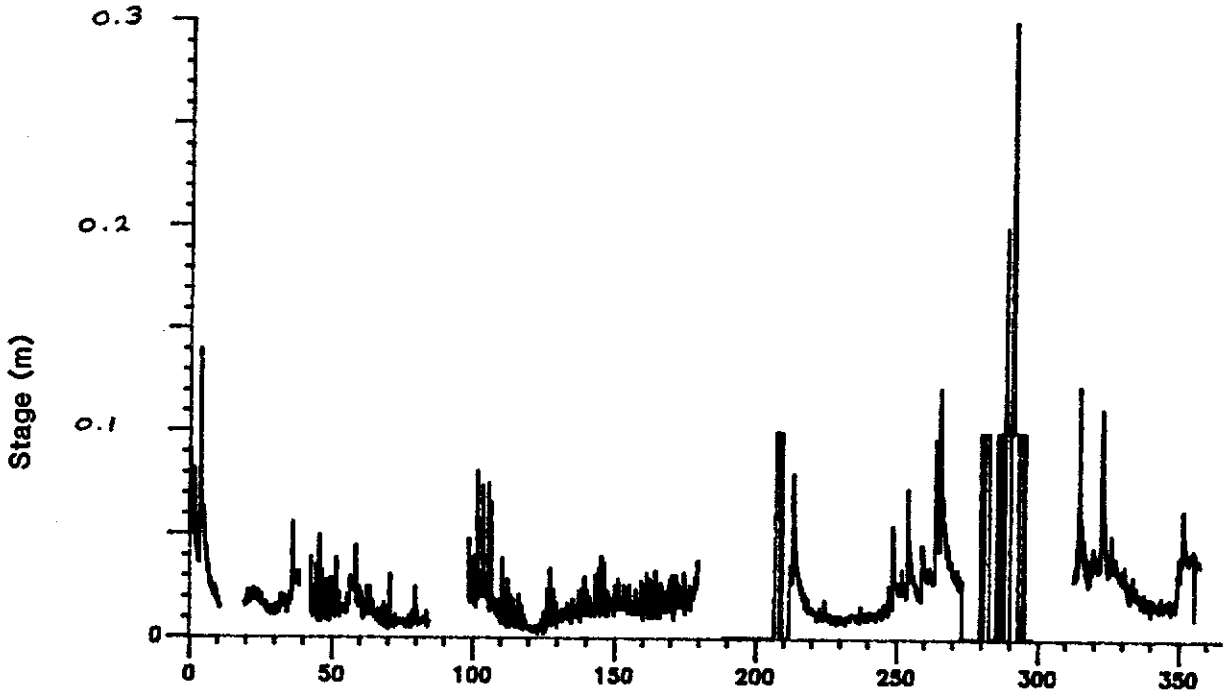

PH
7
6
5
4
0
50
100
150
200
250
300
350
days

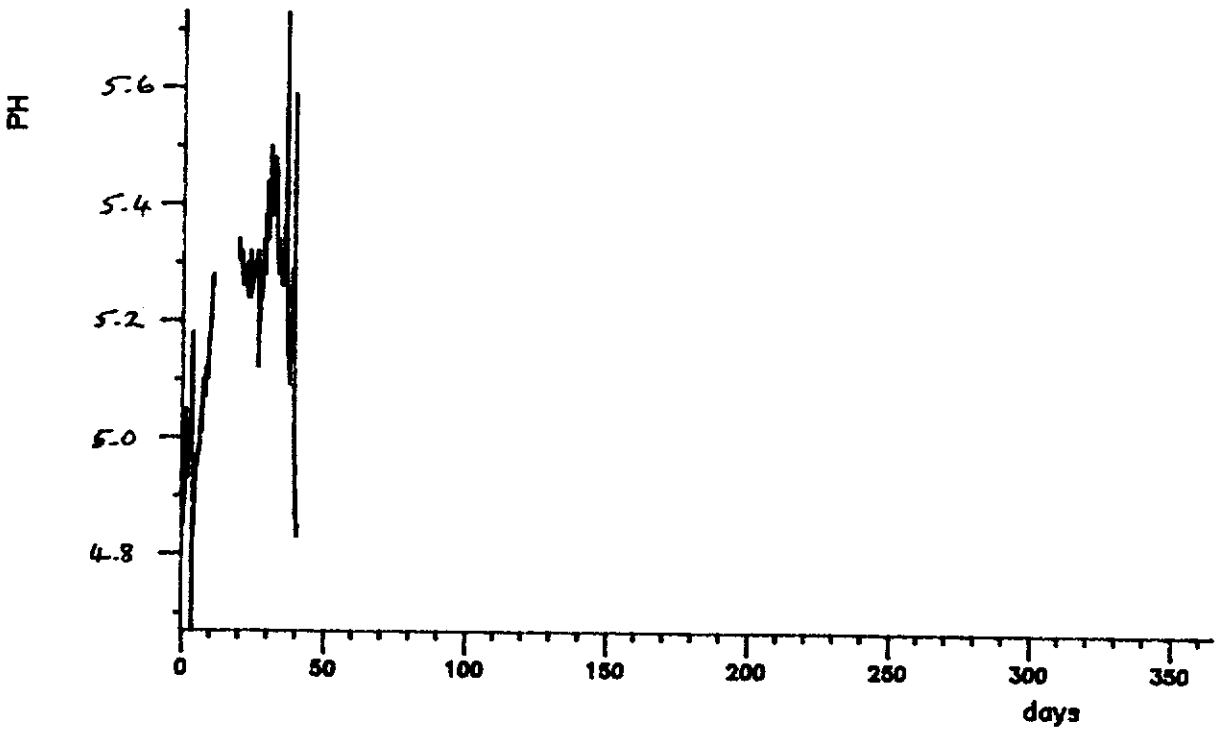
Cl4 1987


Stage (m)
1.2
1.0
0.8
0.6
0.4
0.2
0
0
50
100
150
200
250
300
350

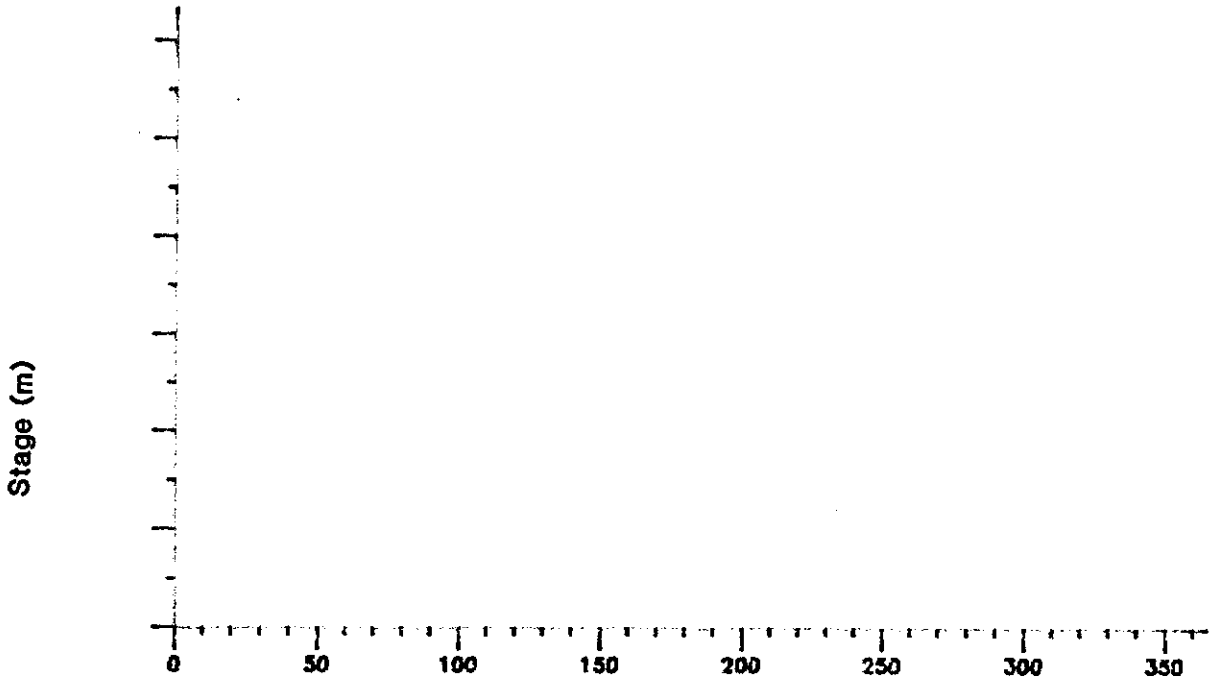

PH
7
6
5
0
50
100
150
200
250
300
350
days

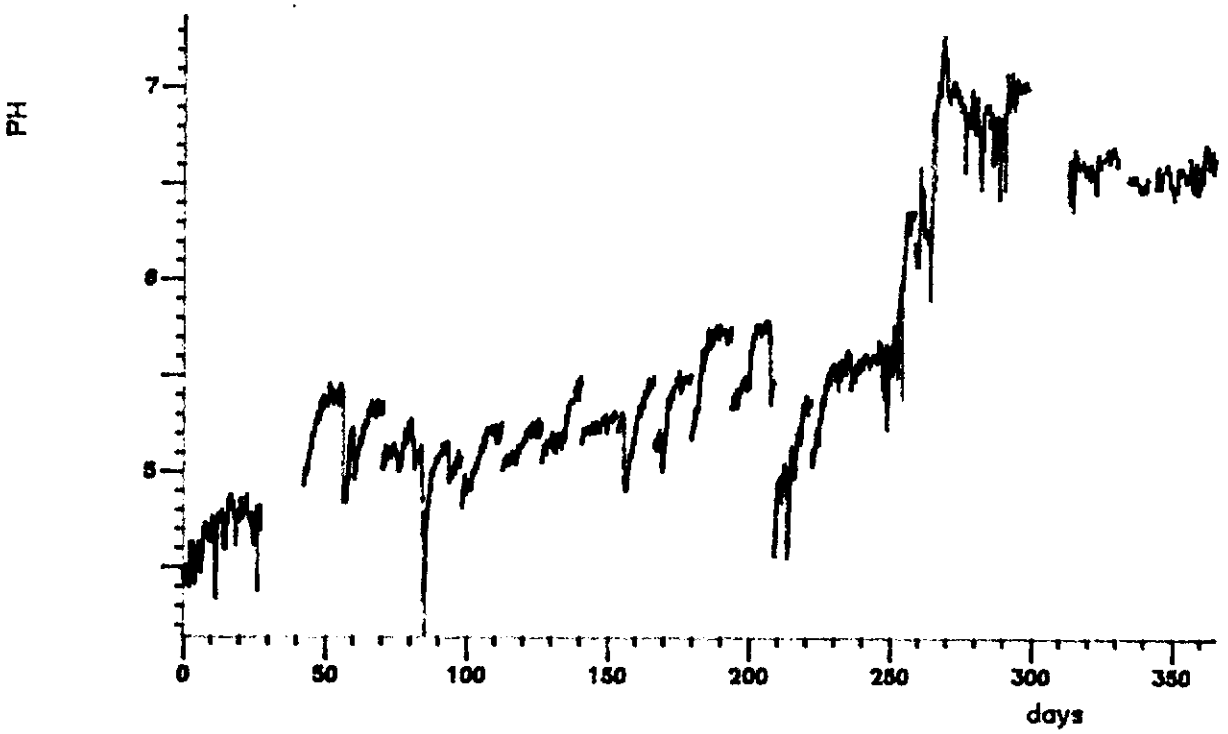
CI5 1987


Stage (m)
0.3
0.2
0.1
0
0
50
100
150
200
250
300
350

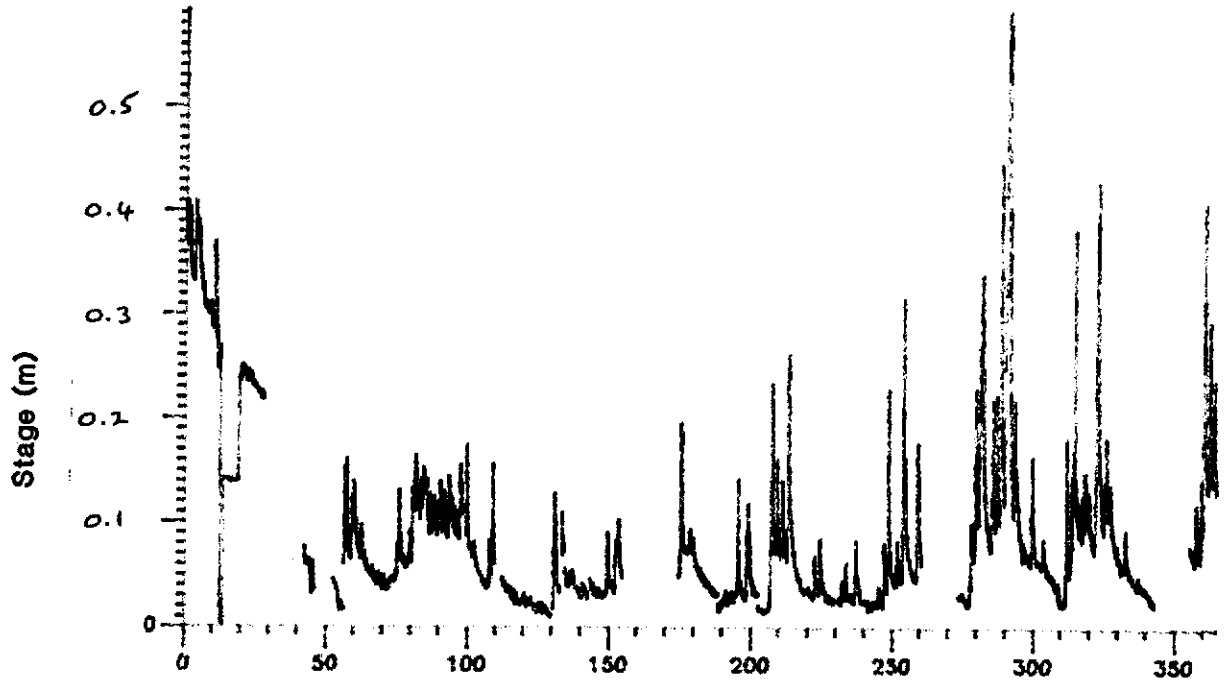

PH
5.6
5.4
5.2
5.0
4.8
0
50
100
150
200
250
300
350
days

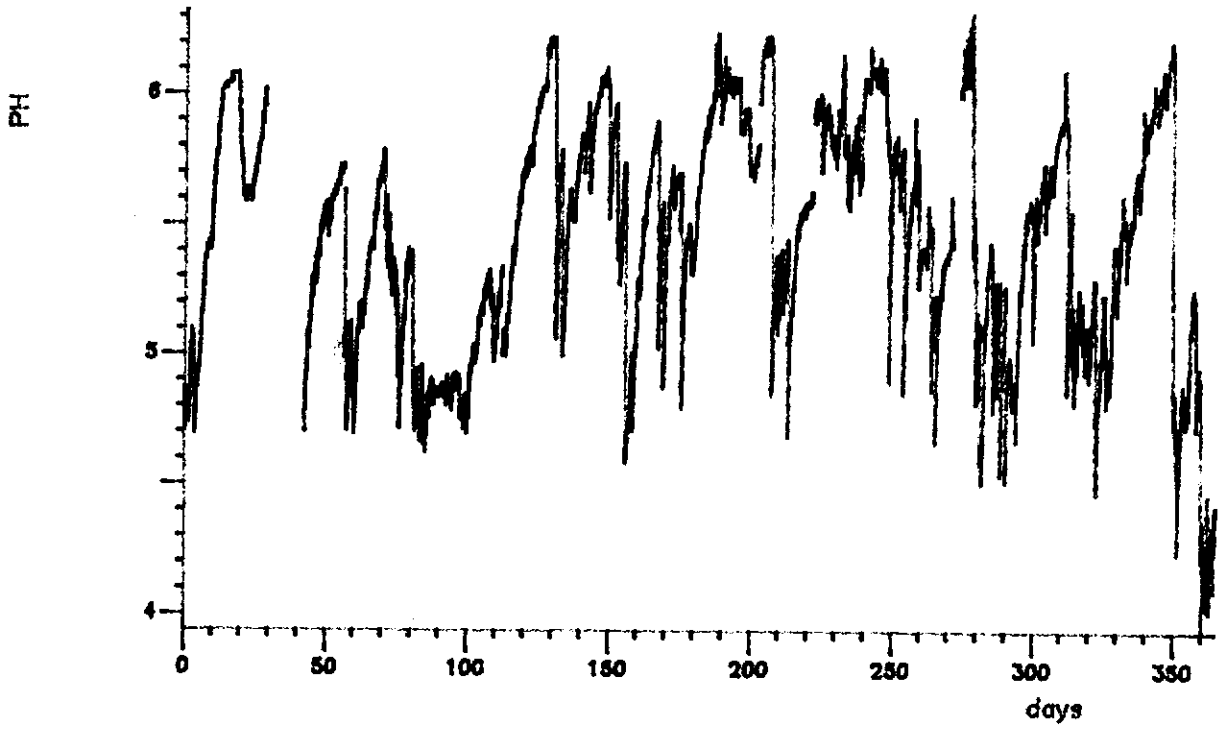
C5X 1987


Stage (m)
0
50
100
150
200
250
300
350

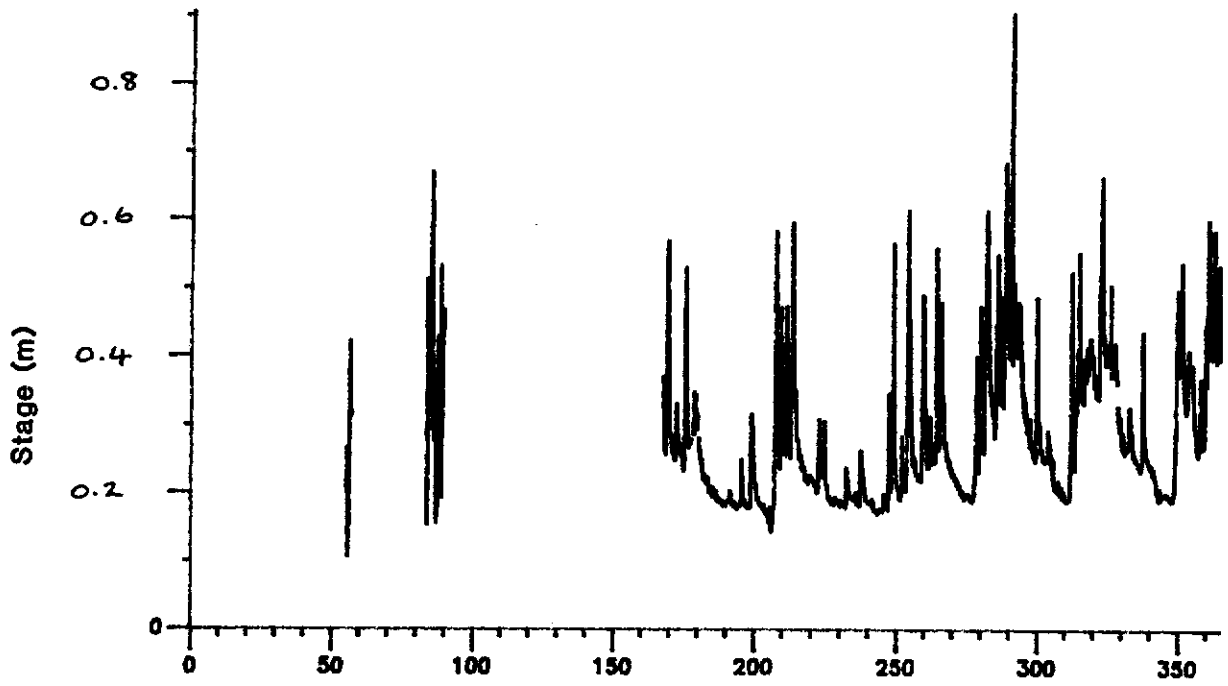

PH
7
6
5
0
50
100
150
200
250
300
350
days

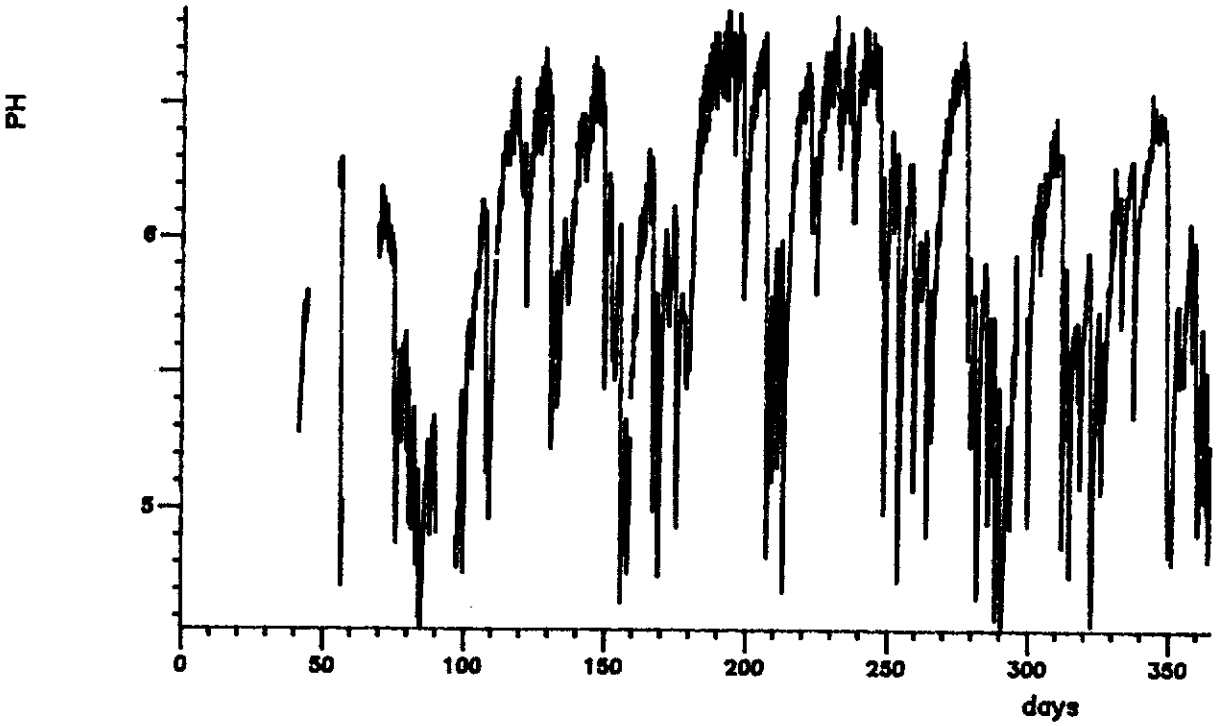
C16 1987


Stage (m)
0.5
0.4
0.3
0.2
0.1
0
0
50
100
150
200
250
300
350

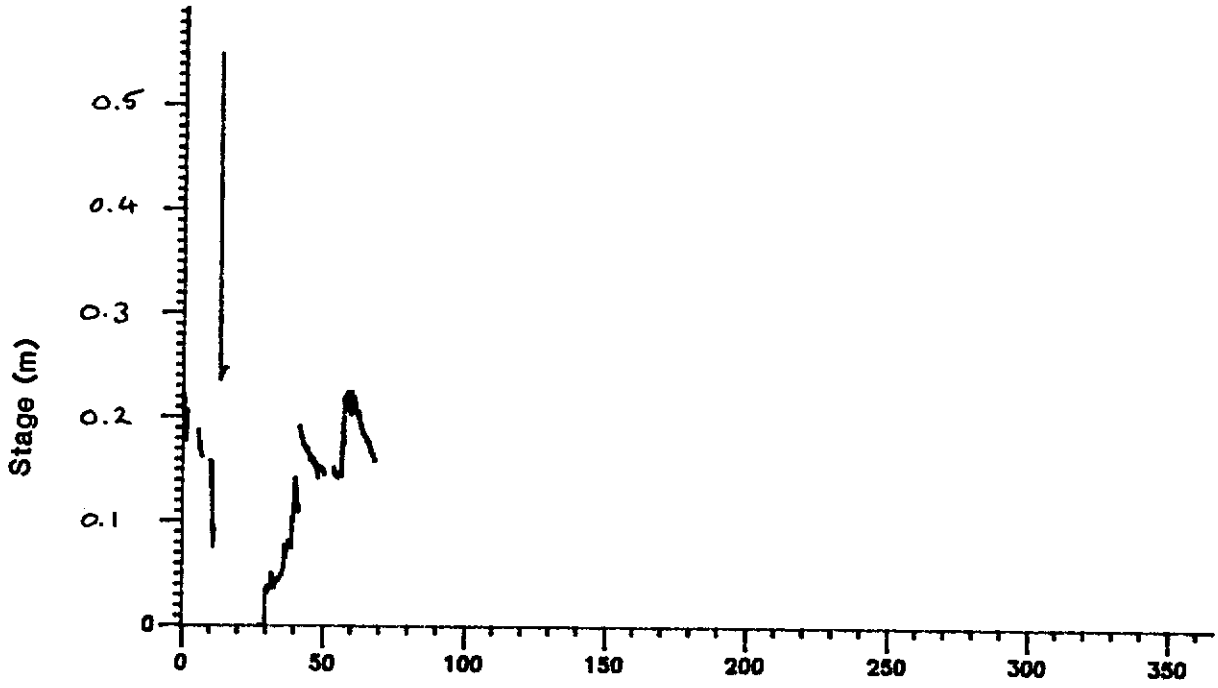

PH
6
5
4
0
50
100
150
200
250
300
350
days

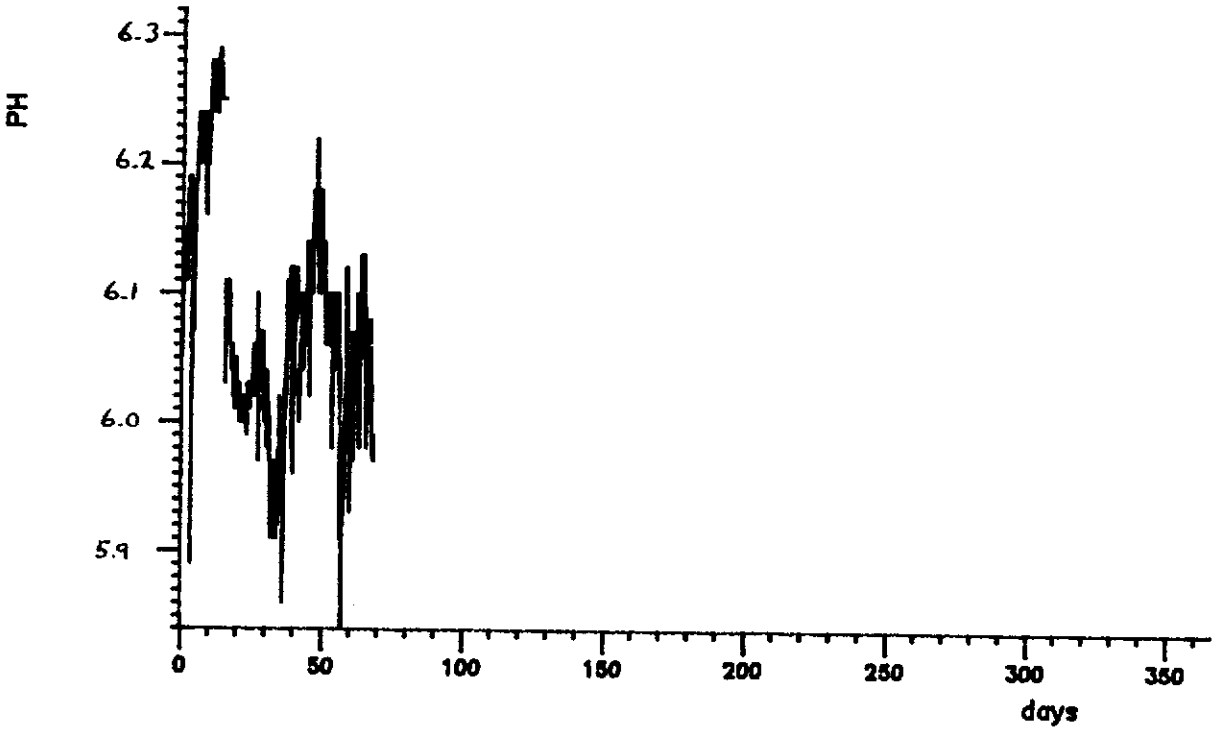
UC4 1987


Stage (m)
0.8
0.6
0.4
0.2
0
0
50
100
150
200
250
300
350

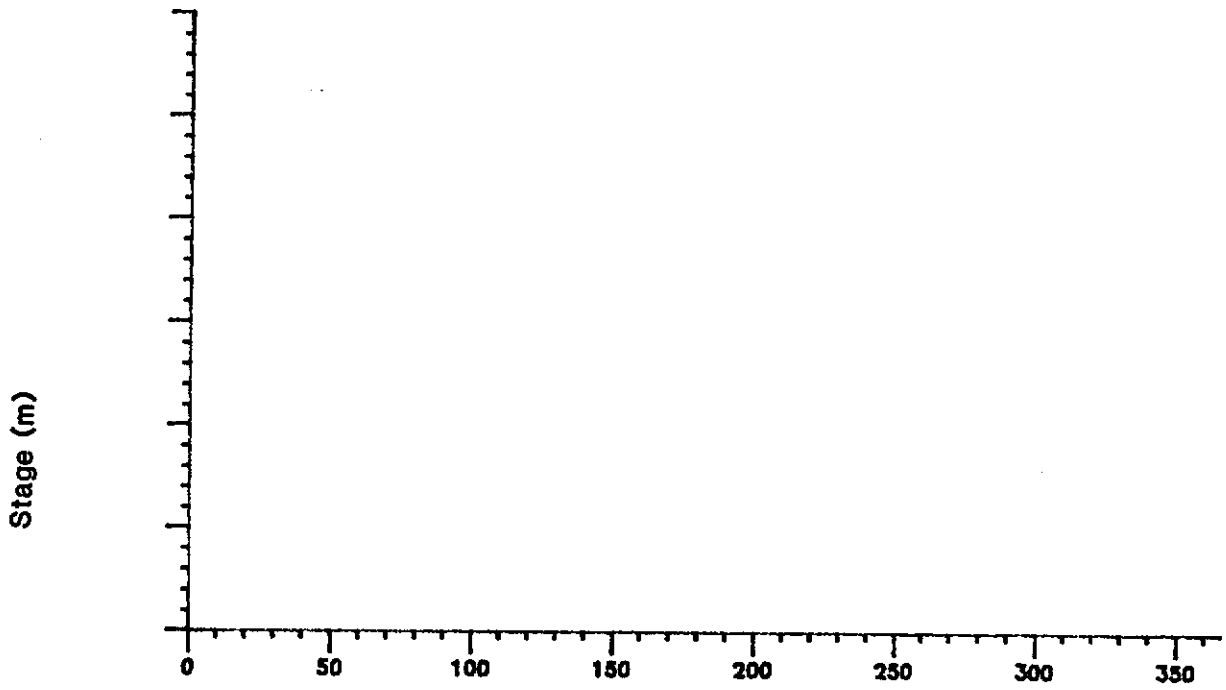

PH
6
5
0
50
100
150
200
250
300
350
days

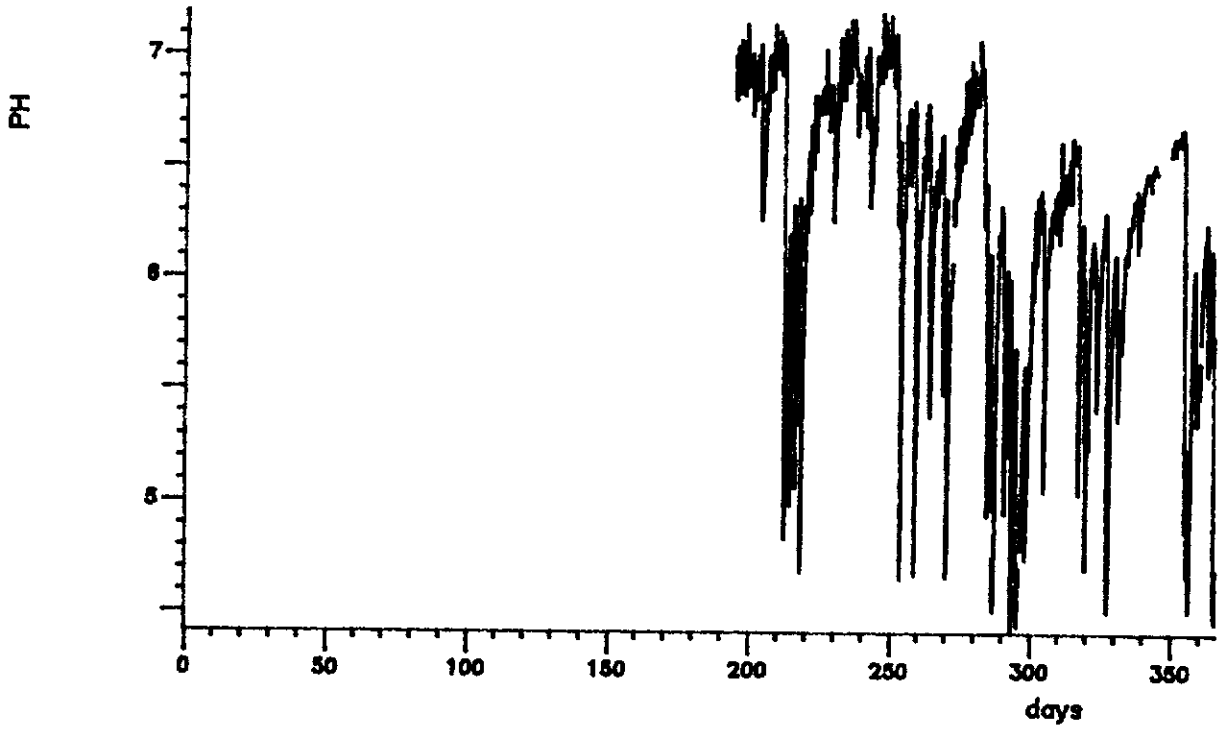
GI1 1987


Stage (m)
0.5
0.4
0.3
0.2
0.1
0
0
50
100
150
200
250
300
350

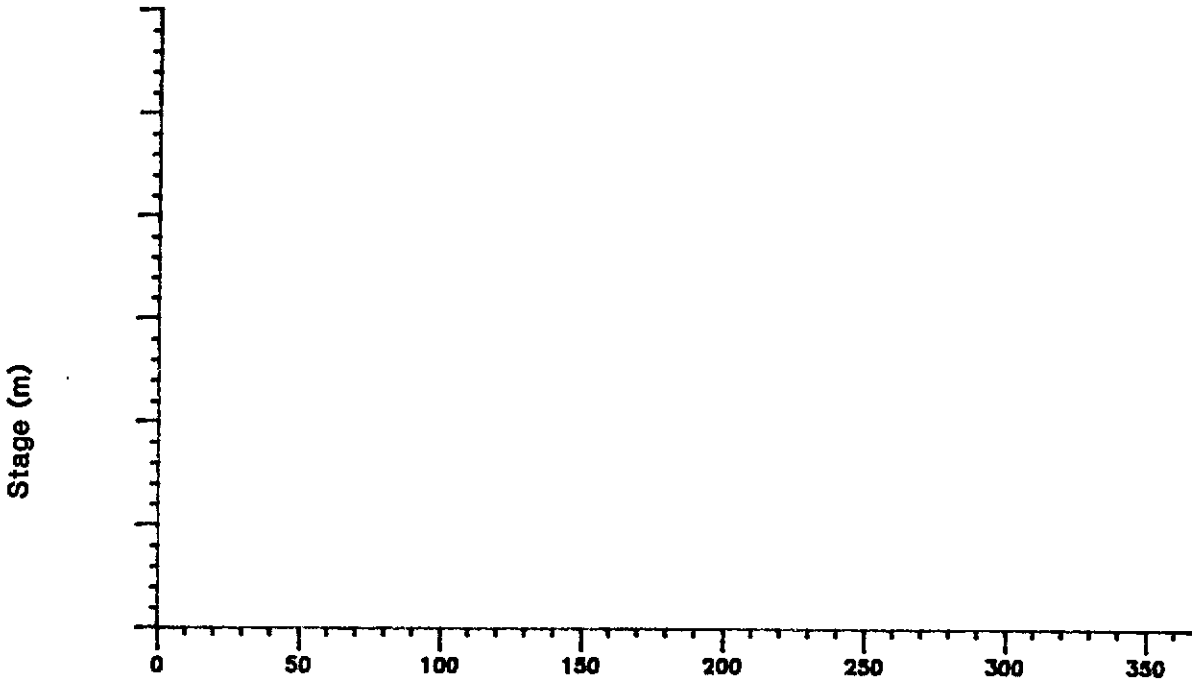

PH
6.3
6.2
6.1
6.0
5.9
0
50
100
150
200
250
300
350
days

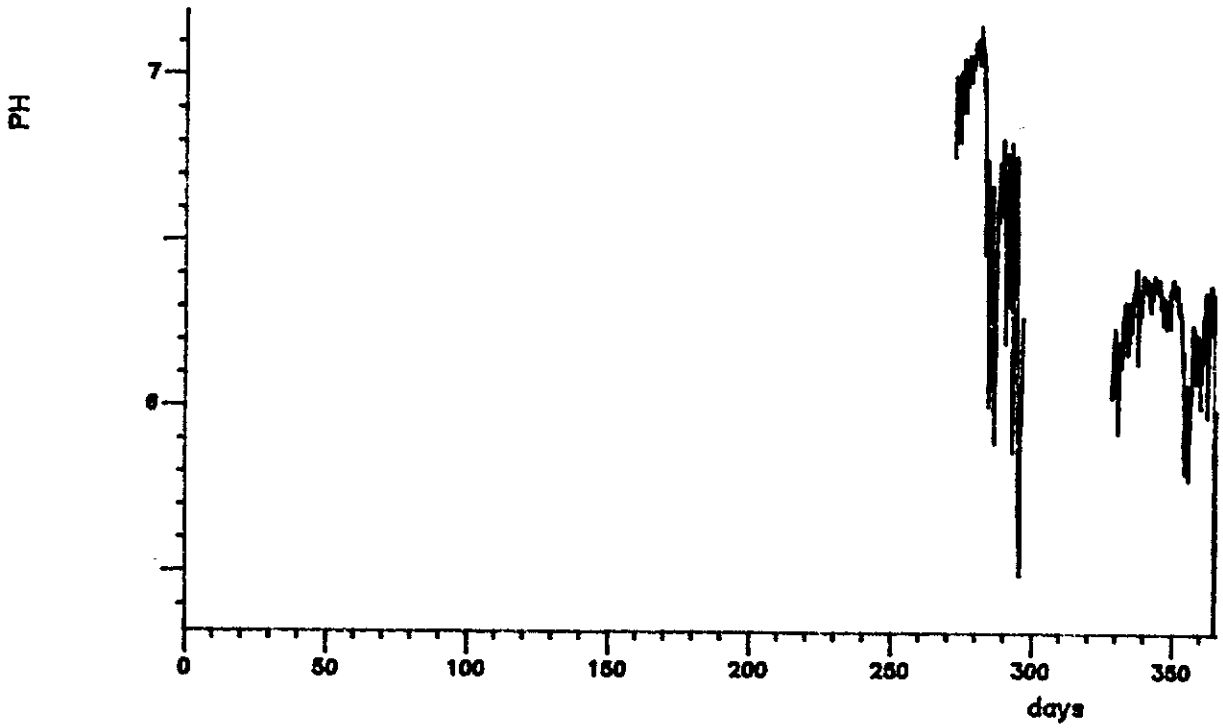
BI1 1987

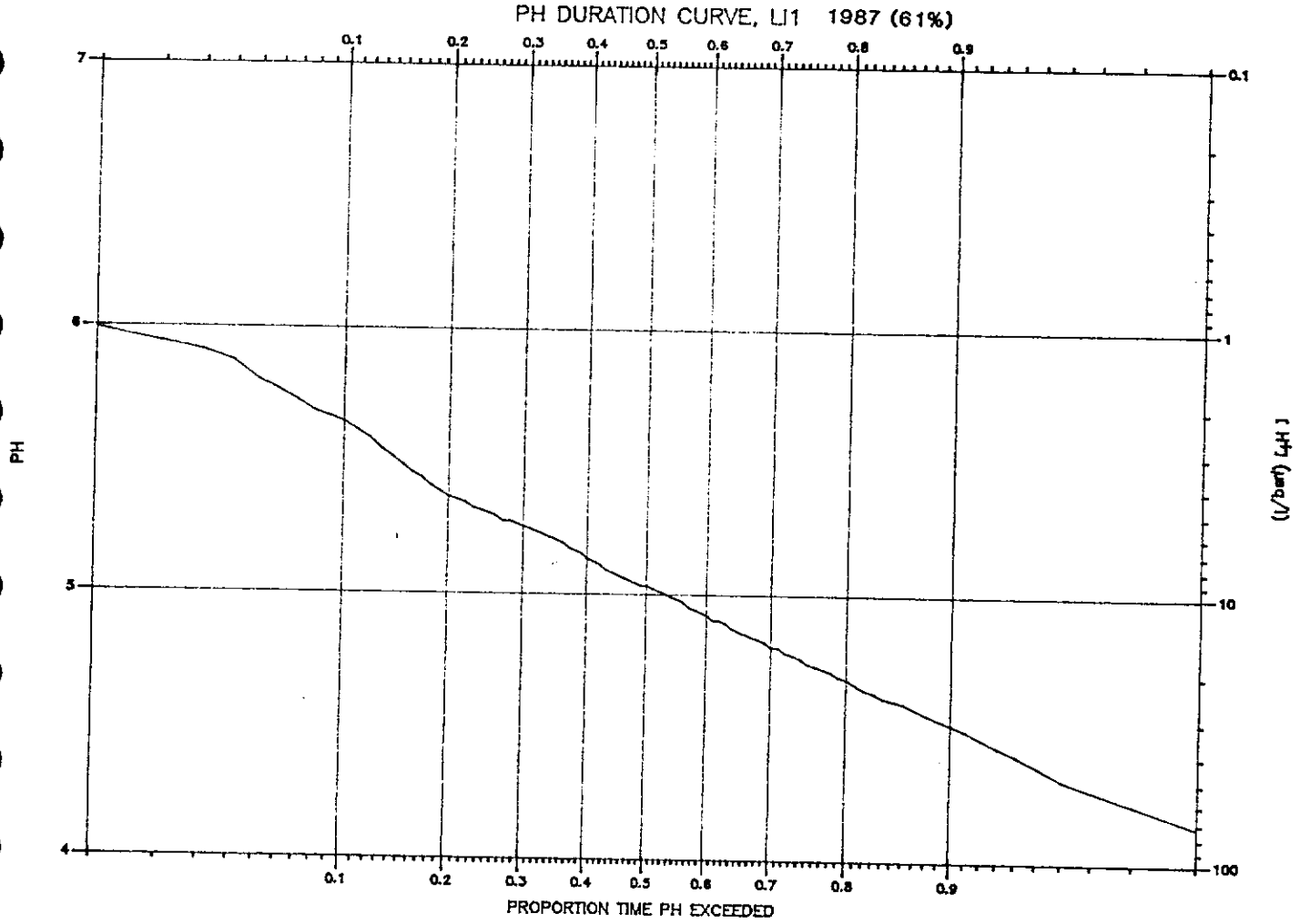

Stage (m)
0
50
100
150
200
250
300
350

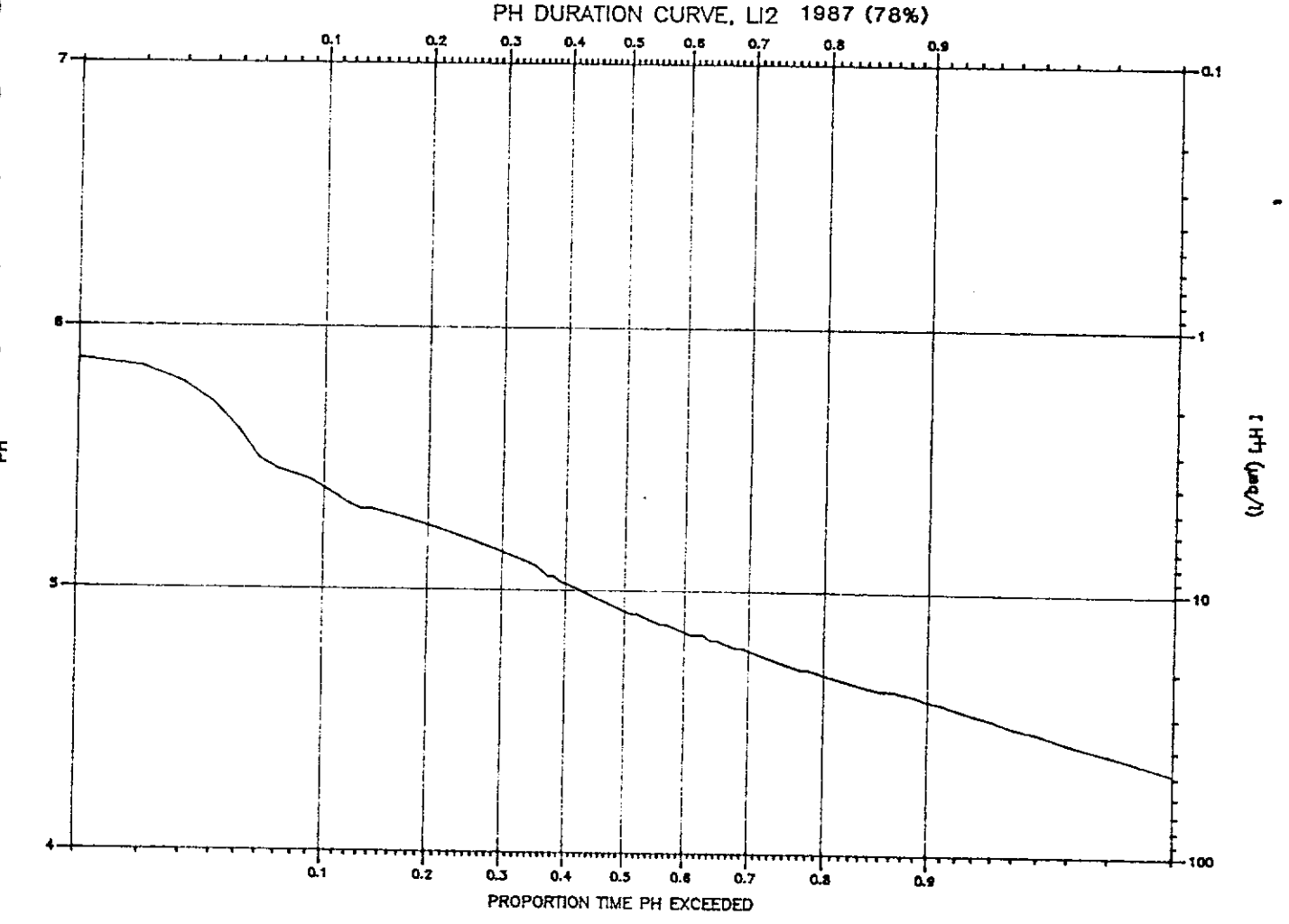

PH
7
6
5
0
50
100
150
200
250
300
350
days

BI2 1987

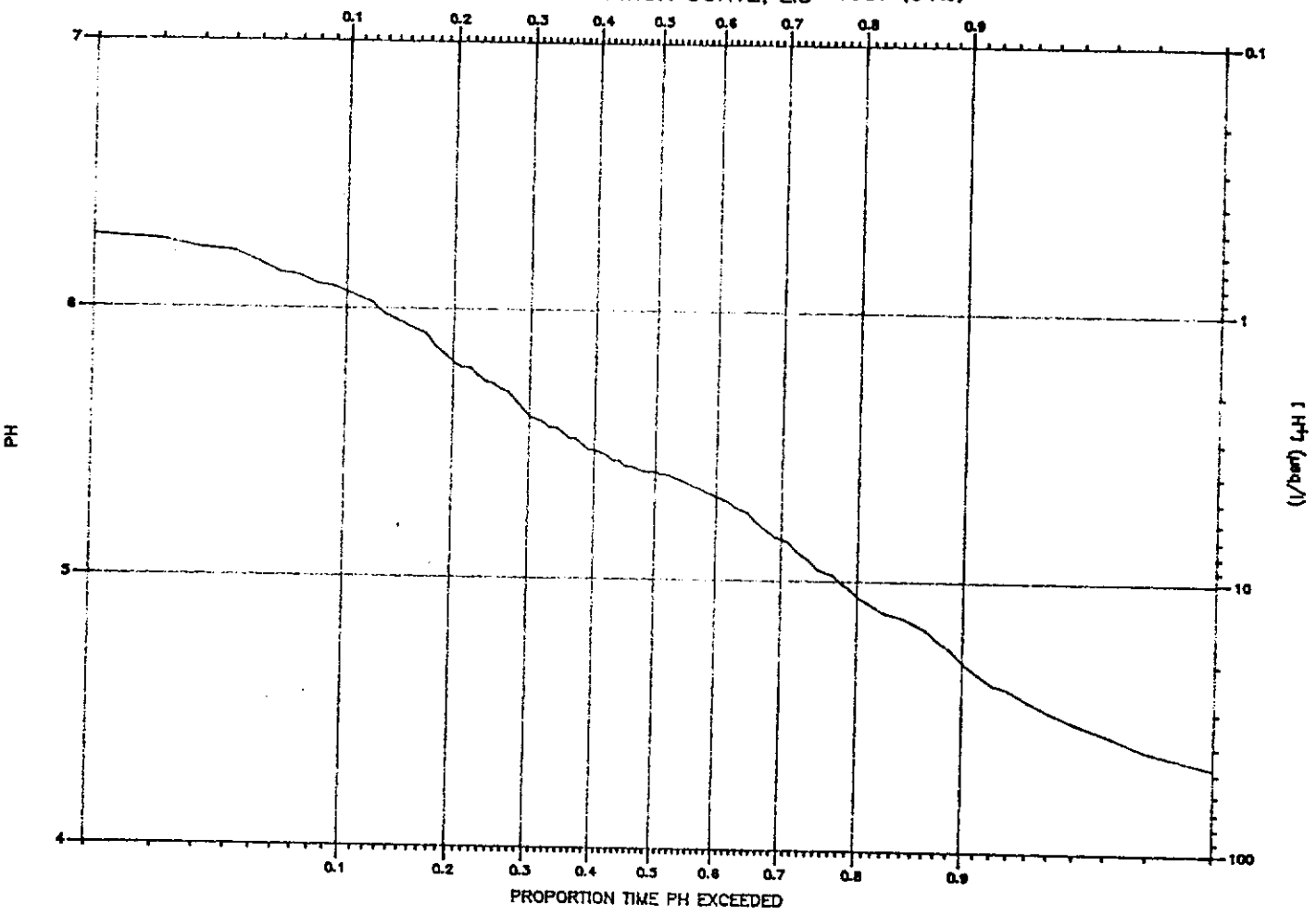

Stage (m)
0
50
100
150
200
250
300
350


PH
7
6
0
50
100
150
200
250
300
350
days

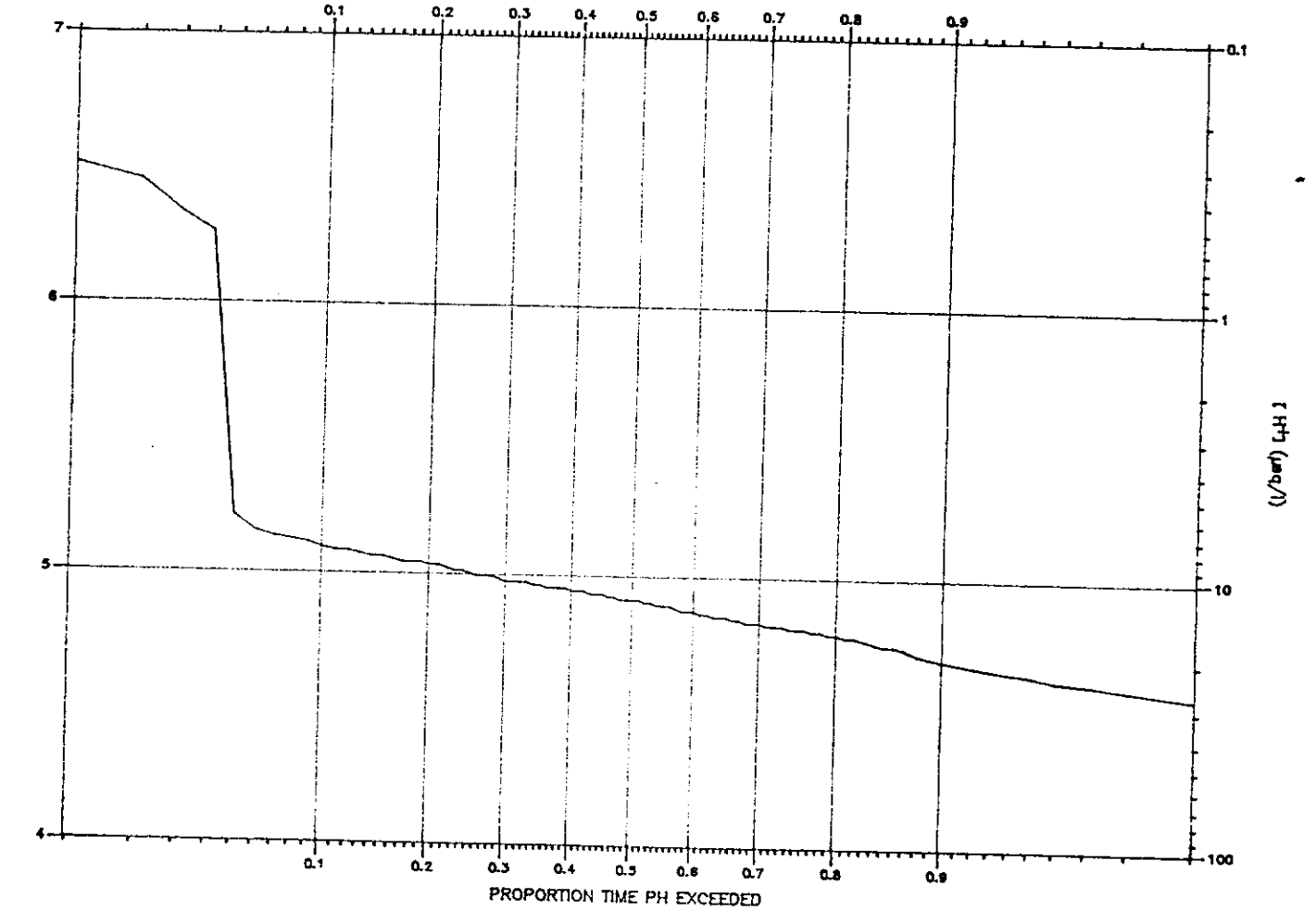

PH DURATION CURVE, LI1 1987 (61%)
PH
7
6
5
4
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
10
100
PROPORTION TIME PH EXCEEDED

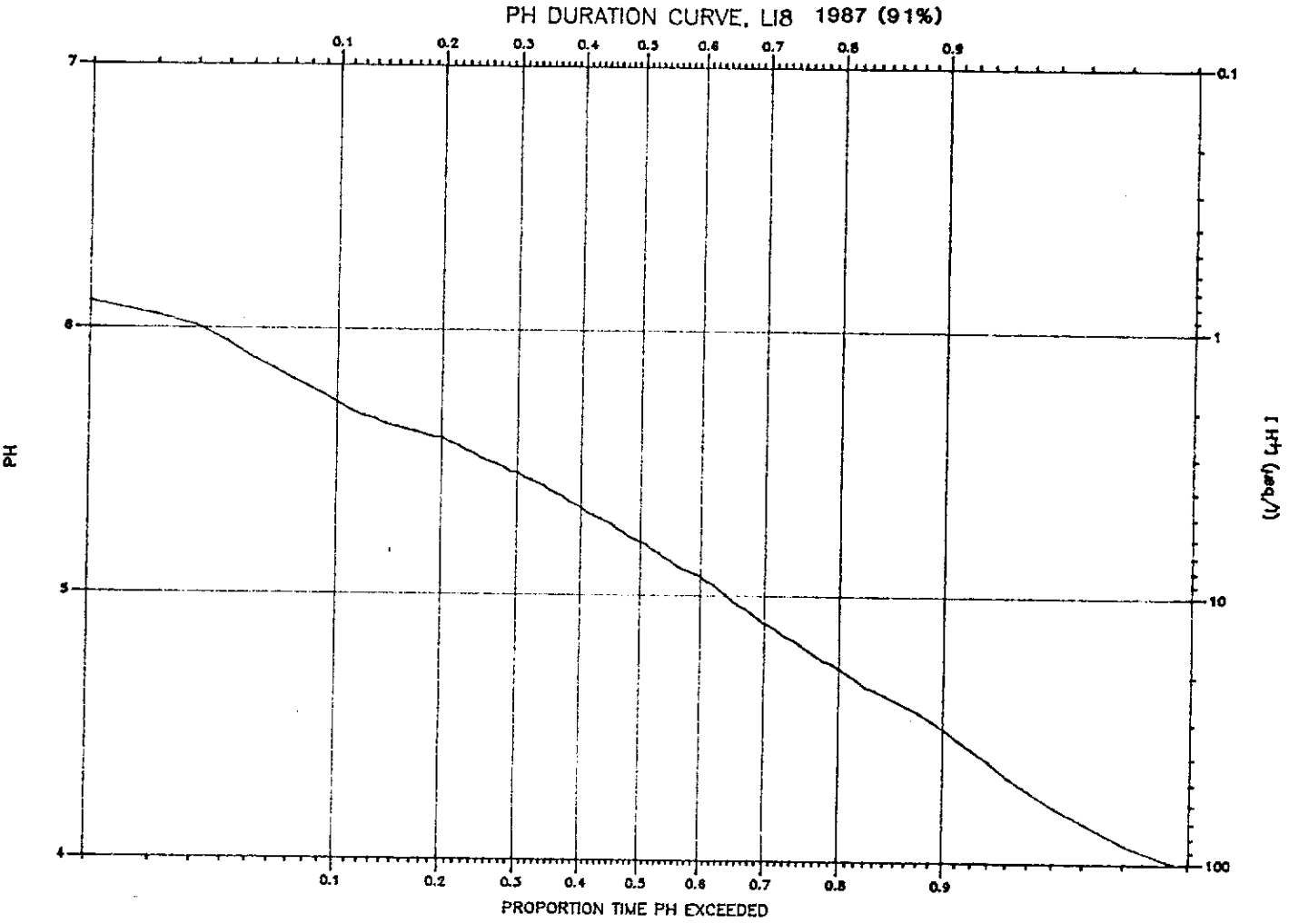

PH DURATION CURVE, LI2 1987 (78%)
PH
7
6
5
4
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
10
100
PROPORTION TIME PH EXCEEDED

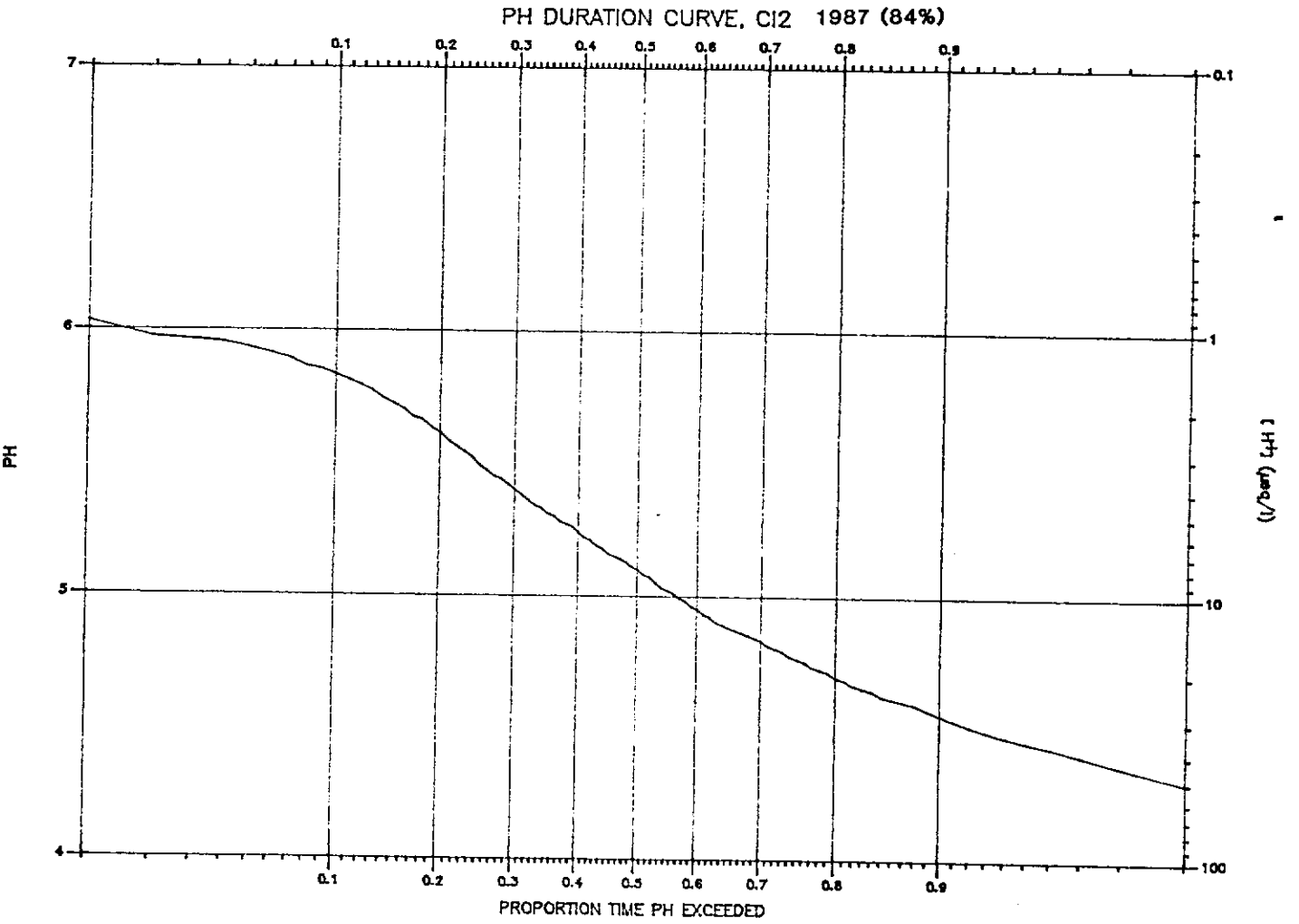
PH DURATION CURVE, LI3 1987 (31%)

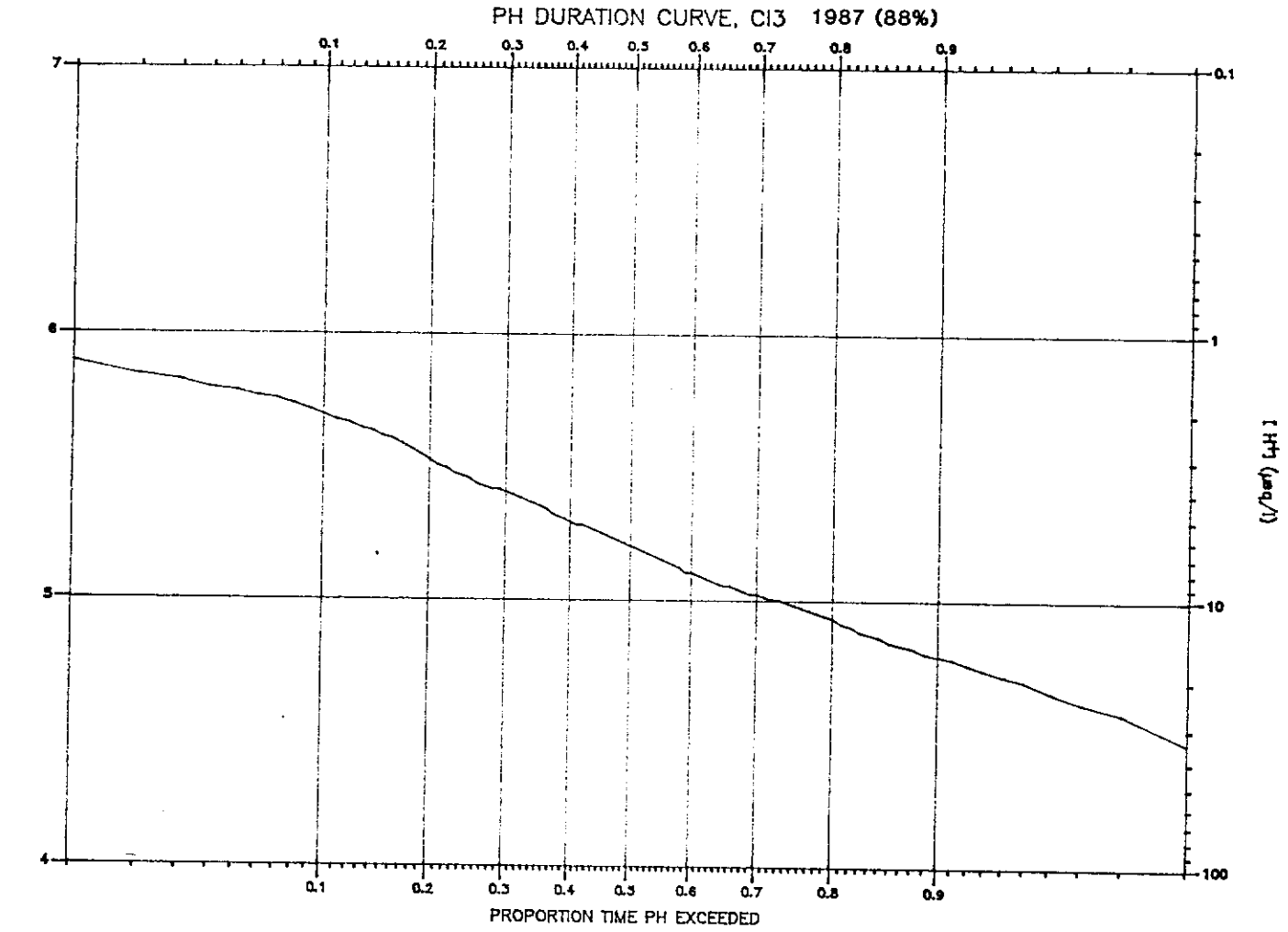


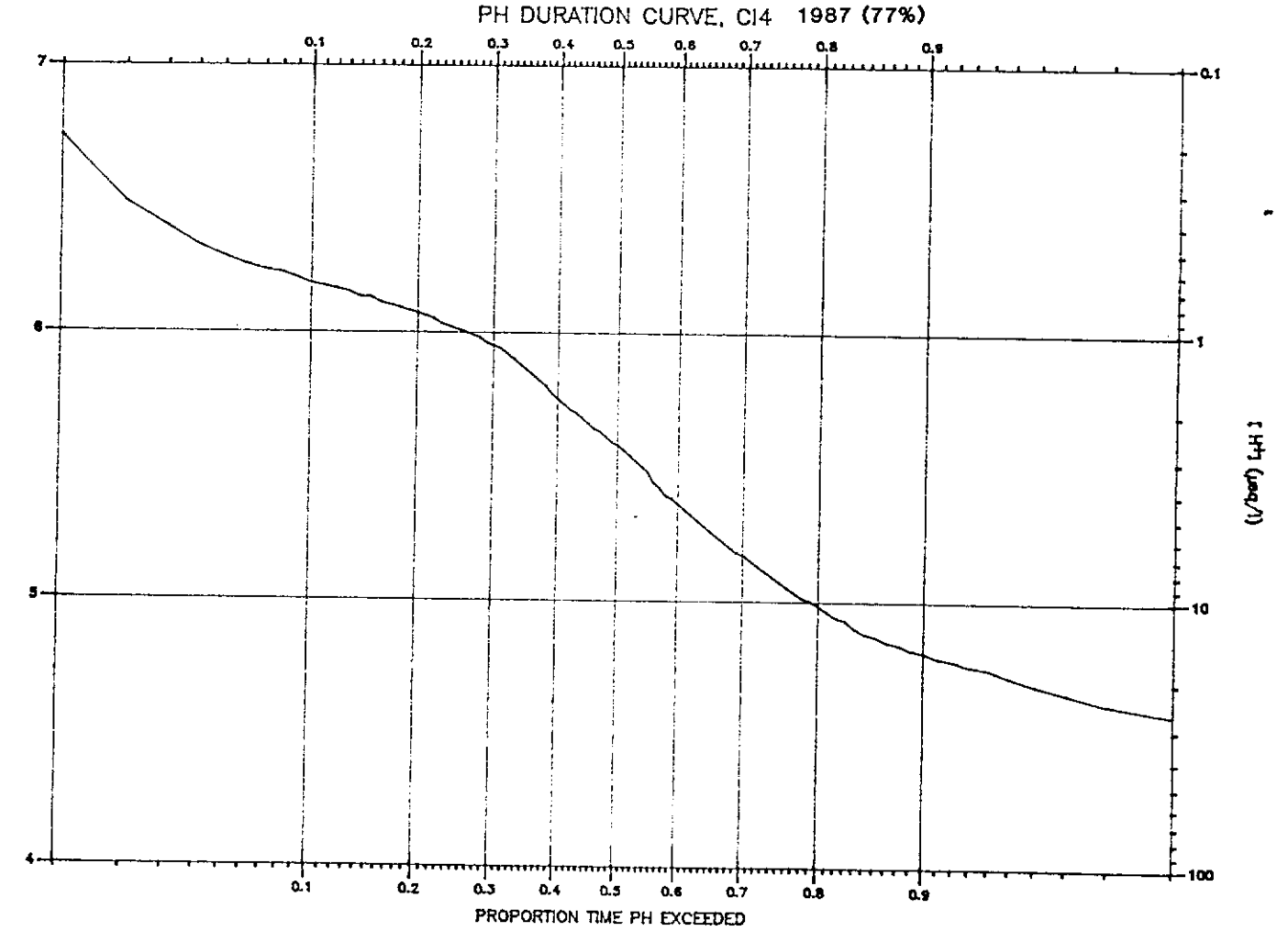
PH DURATION CURVE, LI4 1987 (87%)

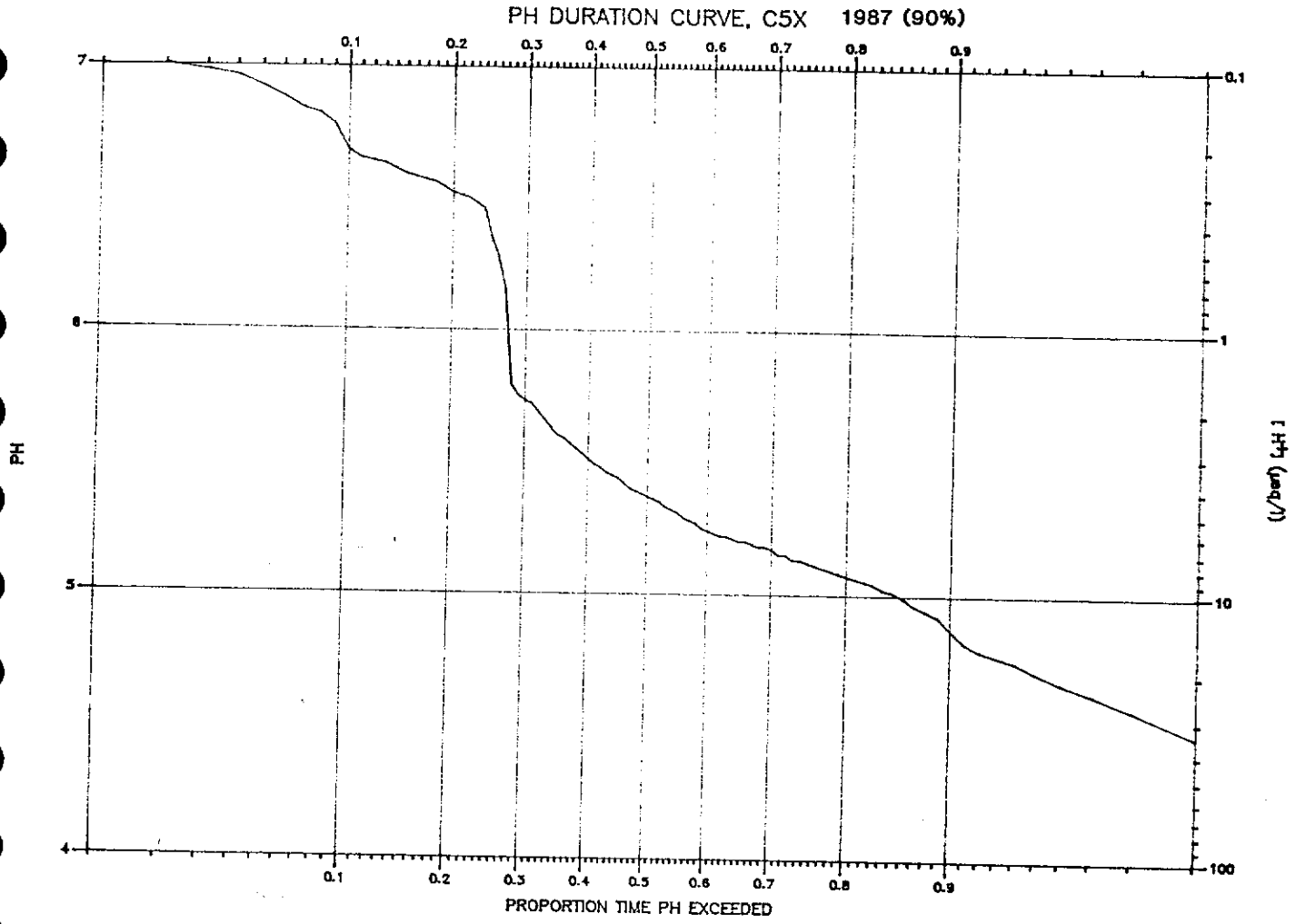


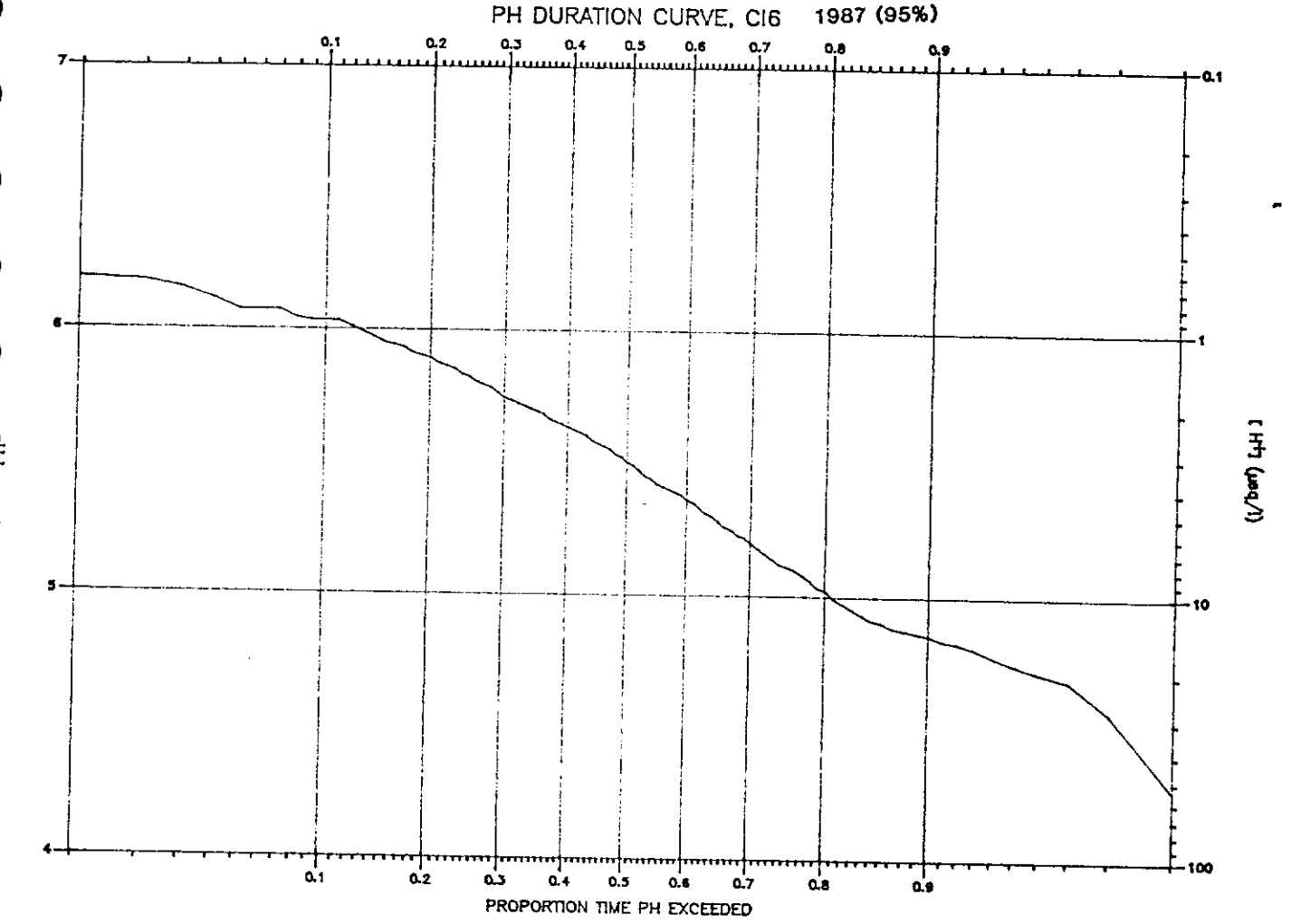

PH DURATION CURVE, LI8 1987 (91%)
PH
PROPORTION TIME PH EXCEEDED
[H+] (µeq/l)
7
6
5
4
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
10
100

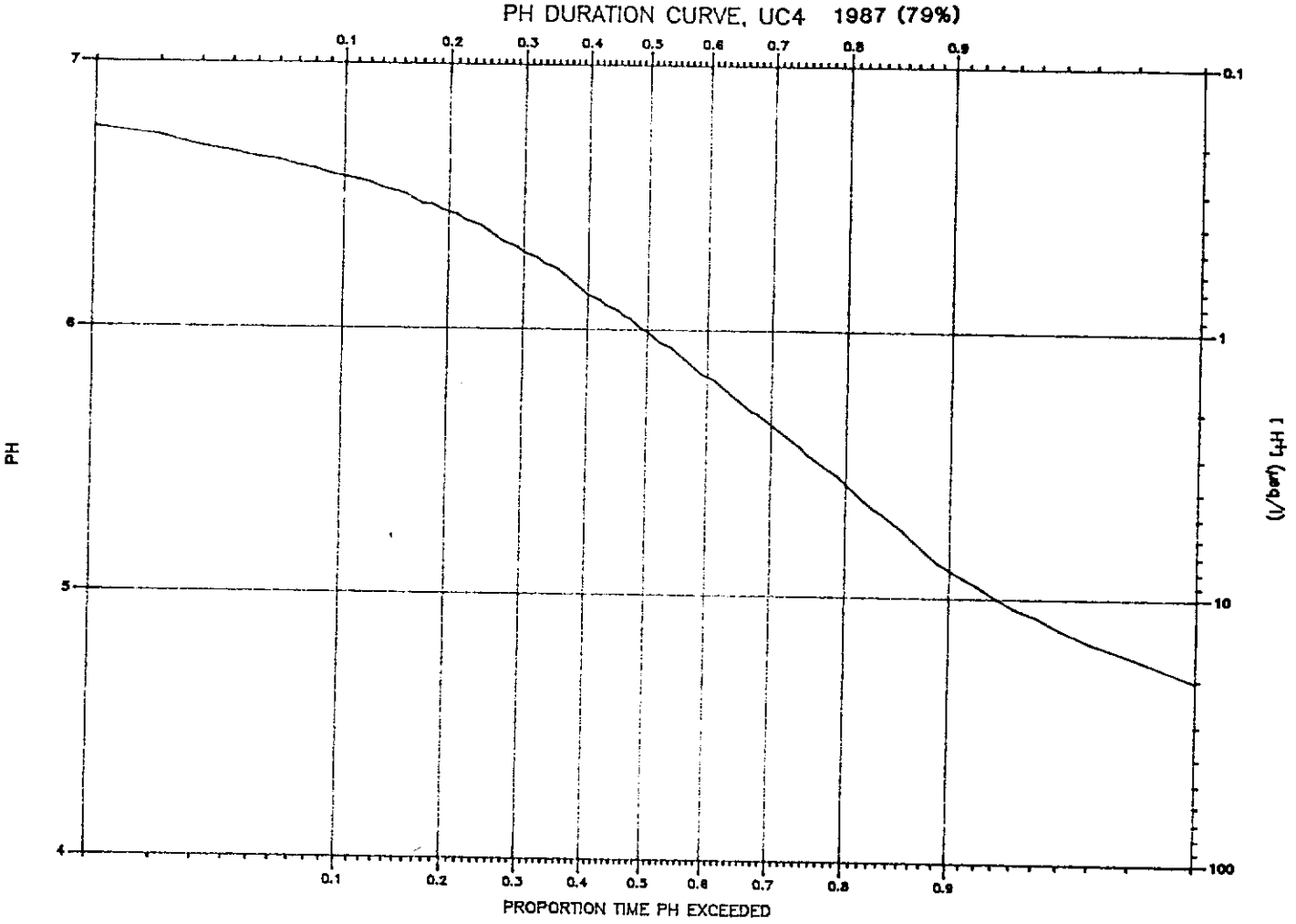

PH DURATION CURVE, CI2 1987 (84%)
PH
PROPORTION TIME PH EXCEEDED
[H+] (µeq/l)
7
6
5
4
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
10
100

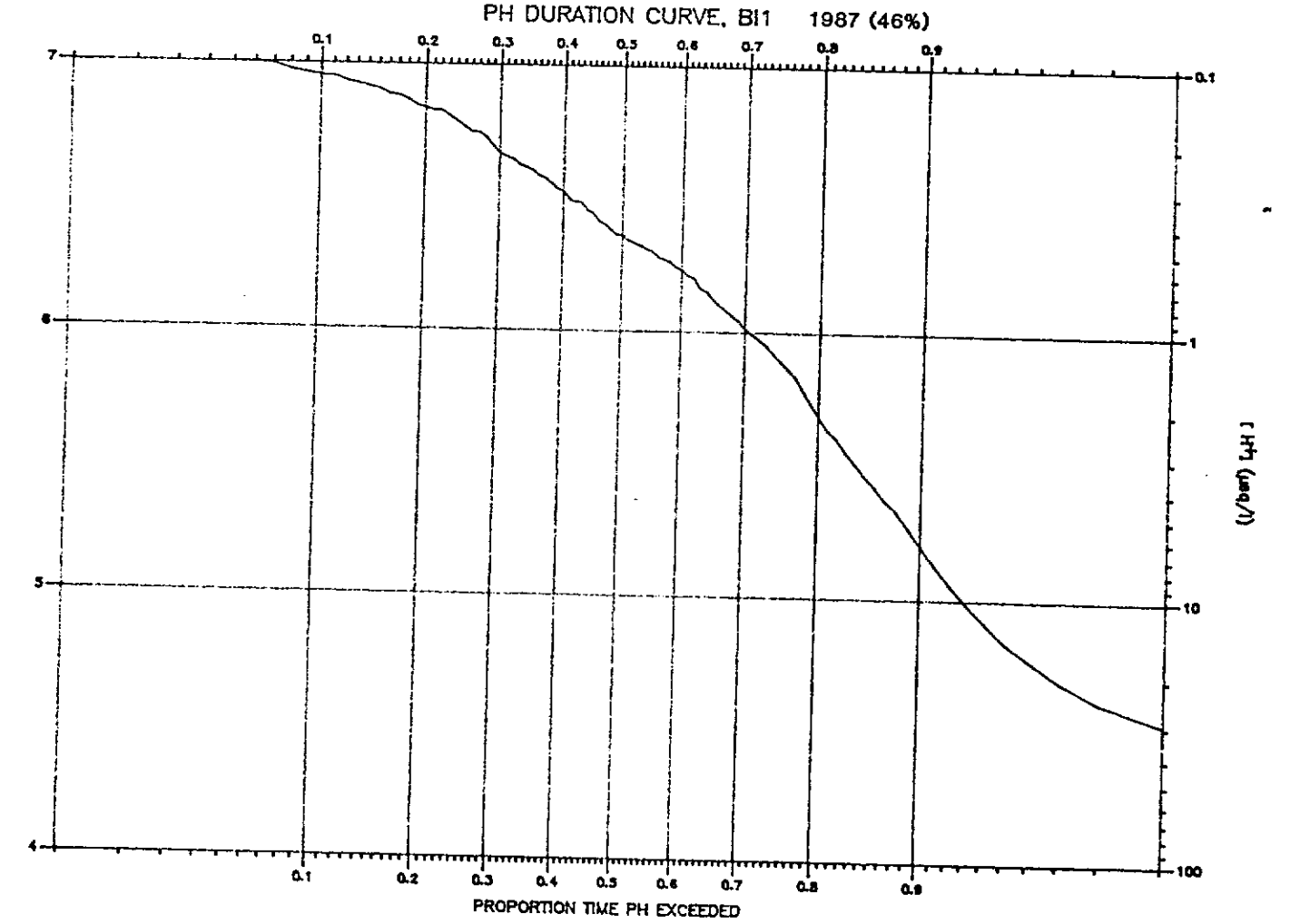

PH DURATION CURVE, CI3 1987 (88%)
PH
7
6
5
4
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
10
100
(1/barf) [H+]
PROPORTION TIME PH EXCEEDED


PH DURATION CURVE, CI4 1987 (77%)
PH
7
6
5
4
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
10
100
(1/barf) [H+]
PROPORTION TIME PH EXCEEDED


PH DURATION CURVE, C5X 1987 (90%)
PH
7
6
5
4
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
PROPORTION TIME PH EXCEEDED
1
10
100
(l/bar) [H+]


PH DURATION CURVE, CI6 1987 (95%)
PH
7
6
5
4
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
PROPORTION TIME PH EXCEEDED
1
10
100
(l/bar) [H+]


PH DURATION CURVE, UC4 1987 (79%)
PH
7
6
5
4
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
PROPORTION TIME PH EXCEEDED
[H+] (µ/ber)
1
10
100


PH DURATION CURVE, BI1 1987 (46%)
PH
7
6
5
4
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
PROPORTION TIME PH EXCEEDED
[H+] (µ/ber)
1
10
100

Section 8

Auto-sampler trigger tipping bucket raingauge data

Llyn Brianne Acid Waters Project

Availability of hourly rainfall data from auto-sampler tipping bucket gauges (%)

Month	LI1	LI2	LI3	LI4	LI8	CI2	CI3	CI4	CI5	C5X	CI6	GI1	UC4	BI1
Jun 1986		3			33				29				33	
Jul	90	100	13		100		6	93	100			90	100	
Aug	100	100	100	35	100		100	100	100			100	100	
Sep	82	99	96	100	94		100	100	97			100	98	
Oct	99	99	99	100	99		100	89	99		74	100	99	
Nov	83	83	100	100	100		99	87	100		97	99	10	
Dec	99	99	100	92	96	48	100	100	100		95	100		
Jan 1987	100	100	100	39	3	100	100	100		1	99	99	100	
Feb	100	100	100	100	100	100	100	100			100	100	100	64
Mar	89	100	25	100	100	53	100	100			100	53	24	100
Apr	97	100		100	100	23	99	100			100	93		100
May	100	100		100	100	100	99	100			100	100		99
Jun	72	75		71	95	100	100	100			97	96		100
Jul	74	74	26	74	71	99	100	99			97	90		100
Aug	100	100	53	100	100	99	97	99			100	100		100
Sep	85	98		67	97	100	99	100			88	88		100
Oct	97	97	61	97	99	99	100	100			99	97		99
Nov	100	93	100	100	100	97	85	78			100	98		87
Dec	99		85	98	100	100	37				98	99		99
Jan 1988	99		87	100	100	100	32				99	99		99
Feb	98		100	100	100	100	100				100	98		100
Mar	99		89	98	98	98	98				98	98		98

Llyn Brianne Acid Waters Project

Example listing of hourly rainfall from autosampler-trigger tipping bucket gauges

yymmddhr	LI1	LI2	LI3	LI4	LI8	CI2	CI3	CI4	CI5	C5X	CI6	GI1	UC4
87051107	.0	.0		.0	.0	.0	.0	.2		.0	.0		.0
87051108	.0	.0		.0	.0	.0	.0	.0		.2	.0		.0
87051109	.2	.0		.0	.0	.0	.0	.0		.6	.0		.0
87051110	.0	.0		.0	.0	.2	.2	.2		1.8	.4		.0
87051111	.4	.0		.0	.2	.6	.4	.8		3.4	1.0		.8
87051112	1.8	.0		1.2	1.0	2.4	1.8	2.4		1.4	2.8		2.4
87051113	3.4	.0		2.2	1.2	3.8	3.2	4.2		2.0	4.2		3.6
87051114	1.6	.0		1.4	.8	1.0	1.0	1.2		1.8	1.2		.6
87051115	2.2	.4		1.2	.6	2.0	2.0	2.2		.4	2.2		2.0
87051116	2.4	.8		1.8	.8	2.0	2.0	2.4		.0	2.2		3.2
87051117	1.0	.8		.8	1.0	.4	.4	.4		1.8	.2		1.0
87051118	.0	.8		.0	1.0	.0	.0	.0		2.2	.0		.0
87051119	1.6	.8		1.2	.8	2.0	1.8	2.6		1.6	2.6		1.6
87051120	2.2	.8		1.6	.8	2.4	2.2	3.0		1.2	2.8		2.6
87051121	1.2	.6		1.0	.6	1.8	1.6	2.0		.8	1.8		2.0
87051122	1.0	.2		.4	.4	1.2	1.2	1.6		.2	1.6		.8
87051123	.6	.2		.4	.2	.8	.6	1.0		.2	.8		.6
87051200	.8	.2		.4	.2	.4	.4	.8		.2	.6		.0
87051201	.4	.2		.2	.2	.2	.2	.4		.4	.4		.0
87051202	.4	.2		.2	.4	.4	.4	.4		1.2	.6		.4
87051203	.8	.2		.8	.8	.4	.4	.8		.0	.4		1.0
87051204	1.4	.2		.8	1.8	.8	1.0	1.6		.0	1.6		1.6