XX-11

60165

ENVIRONMENTAL ENGINEERING SCIENCES
DEPARTMENT OF CIVIL AND MINERAL ENGINEERING
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TO: MR. PAUL GALVANI
ROPES AND GRAY

FROM: S.J. EISENREICH
UNIVERSITY OF MINNESOTA

SUBJ: STATISTICAL EVALUATION OF PCB DISTRIBUTION PATTERNS IN THE UPPER ACUSHNET RIVER ESTUARY

Introduction

Brown and Wagner (Sept., 1986) performed a detailed analysis of the PCB patterns exhibited by surficial and subsurface sediment samples taken at 24 locations in the upper part of the Acushnet River Estuary (Figure 1). For most sites, the A sample was collected at 5 - 7.5 cm, and the B sample deeper in the core at 15 - 17.5 cm. It is likely that many samples of A and all of B are anoxic if not anaerobic. The sediment samples were analyzed by high resolution glass capillary gas chromatography (HRGC) using electron capture detection. The analytical procedure yielded about 118 individual PCB congeners or sets of eluting congeners. The PCB congeners were identified, assigned an IUPAC number and given a calculated weight % (concentration) or mole %.

Based on the PCB congeneric patterns, Brown and Wagner (Sept., 1986) concluded that 1) Aroclor 1242 and 1254 PCB mixtures were the dominant mixtures released to the system; 2) PCB mixtures had undergone unquantified degrees of weathering, vertical transport and some dechlorination at sub-surface levels, but little or no aerobic microbial degradation or lateral transport between sediment sites had occurred; 3) dechlorination patterns were different from those observed elsewhere. The objective of this exercise is to apply the statistical techniques of factor and cluster anlaysis to determine the degree of similarity of PCB patterns site to site, and also site to site variations.

Results

The data on the PCB congeneric patterns were organized as follows. Each sample having a site designation (e.g., 2A means surface sediment at site 2) provided for about 118 peaks representing PCB congeners and corresponding to a calculated weight % concentration. An example of Brown and Wagner's data (Sample ID 2A) are given in Table 1. The entire computerized data base is given in the Appendix.
Concentrations represented by peaks 2 and 3 were flagged as inaccurate

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in the orginal report and were deleted from all sample compilations leaving 116 peaks. In the factor analysis, peaks 1, 40, 114, 116 and 118 of the original data sets were deleted because all concentrations were zero. This has no significant effect on the results. In the computer printouts, case or symbol corrsponds to a particular sample designation as follows:

Sample ID (Figure 1)	Site or Case	Sample ID	Site or Case
2 A	1	18A	13
2 B	2	18B	14
5 A	3	19A	15
5 B	4	19B	16
9 A	5	21A	17
9 B	6	21B	18
12A	7	22A	19
12B	8	22B	20
14A	9	24A	21
14B	10	24B	22
17A	11	26A	23
17B	12	26B	24
		Aroclor 1242	25
		Aroclor 1254	26

Statistical analyses (factor; cluster) were performed on the data set described above using SPSS-X, a comprehensive, integrated system for managing, analyzing and displaying information. Calculations were performed on a DEC-VAX-8600 computer in the University of Minnesota Academic Computing Service and System. Data files contain the values of PCB congeneric peak number and weight % concentration of each congener measured for a set of sediment samples with identification numbers as above. The factor analysis procedure is used to identify "factors" which account for the observed correlations in PCB congener patterns at a number of sites.

Principal component analysis (Table 2) showed that > 90 % of the variability of PCB congeneric patterns at all sites could be explained by three factors. Factor 1 included all but 5 samples and consisted of PCB congeneric patterns most similar to Aroclor 1242. Fcator 2 contained two samples and Aroclor 1254. Factor 3 contained only two samples. A simple varimax rotation of factor 1 and factor 2 yielded a graphical representation of the factor analysis. Cases (numbers on Figure 2 corresponding to sample ID's) heavily loaded on horizontal factor 1 were most similar to PCB congeneric distributions in Aroclor 1242. Similarly, cases heavily loaded on vertical factor 2 (numbers 13, 14) were most simialr to Aroclor 1254. Cases not heavily loaded on either (cases 10, 12) were not similar to either factor 1 or 2. Most cases were loaded similarly on factors 1 and 2 but favored horizontal factor 1.

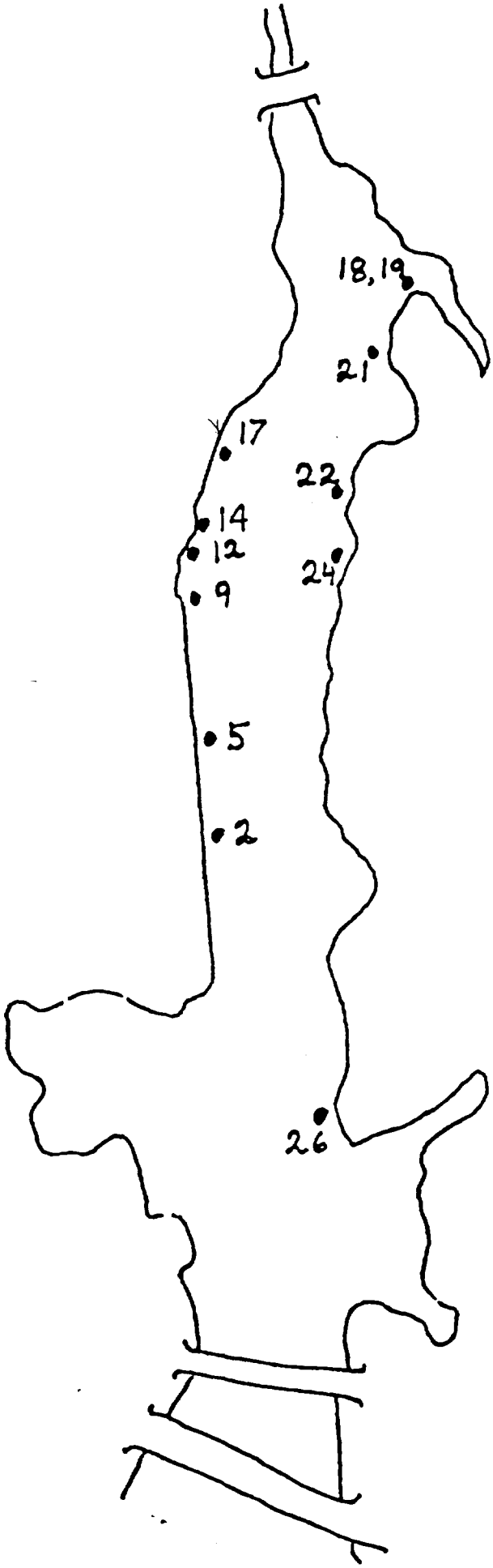
Statistical analysis of these data is somewhat problematic in that the PCB congeneric patterns exhibited by the sediment samples are similar with a few notable exceptions. Inclusion of PCB congeneric patterns

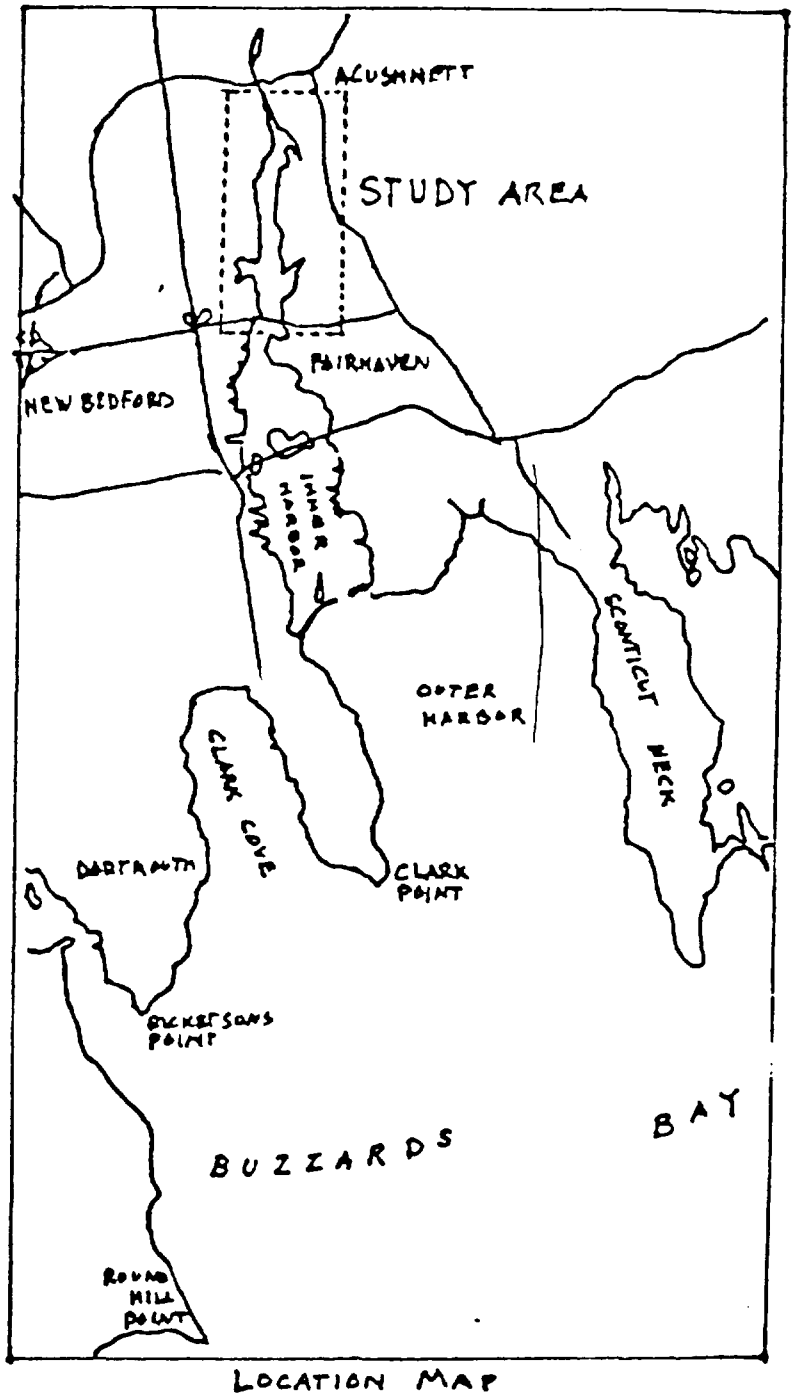
for sediment samples in the inner and outer harbor would greatly facilitate comparisons. The factor analysis plot in Figure 2 demonstrates that 1) PCB profiles at most sites are approximated by linear combinations of Aroclor 1242 and 1254 mixtures; 2) Cases 13 and 14 in Figure 2 corresponding to samples 18A and 18B are similar to unweathered or undegraded Aroclor 1254; 3) Cases 10, 22 and to a lesser extent 24 in Figure 2 corresponding to samples 14B, 24B and 26B are dissimilar to either Aroclor 1242 and 1254. The PCB patterns in these subsurface patterns appear significantly weathered and/or degraded; 4) There is a suggestion that the most altered PCB patterns are relegated to sediment sites to the north; 5) Samples taken deeper in the core (B samples) exhibit PCB patterns more similar to Aroclor 1254 than Aroclor 1242. This could result from a combination of variable Aroclor input strengths, physical weathering or degradation. Other types of factor rotation (quartimax; equamax; oblimum) did not generate different or additional conclusions.

Cluster analysis performed on the above data set using the method of average linkage between two clusters is defined as "the average of the distances between all pairs of cases in which one member of the pair is from each of the clusters". This is the most common and usually the most preferred of several methods. A dendogram is a physical portrayal of the clusters being combined (Figure 3). The distance (length of horizontal lines linking groups) represents the relative difference between clusters which are being combined. Long lengths mean that dissimilar clusters are being combined.

The dendogram shows that 1) Sample 14B exhibits a PCB pattern dissimilar to all others; 2) Samples 18A, 18B, 14B and Aroclor 1254 are all dissimilar to other samples based on PCB congeneric patterns; 3) All other samples are more similar than dissimilar and gather in one large cluster. These PCB profiles then are combinations of Aroclor 1242 and Aroclor 1254 but favoring Aroclor 1242.

These statistical analyses considered with the PCB pattern interpretations of Brown and Wagner support the hypothesis that weathering and/or degradation of PCBs is occuring in the sediments of the Acushnet River estuary upstream of the inner harbor. Unfortunately, the usefulness of factor and cluster analyses to quantify this conclusion is limited by the general similarity of PCB congeneric patterns as altered by *in situ* reactions. That is, these samples exhibit characteristics of PCB microbial dechlorination. However, this process does not alter the whole PCB profile sufficiently to conclusively quantify this process using these procedures. The statistical procedures do, however, support the hypothesis that alterations have occurred resulting in different PCB congener profiles at different depths at the same site and at different sites.





LOCATION MAP

Figure 1. Map of Upper Acushnet River Estuary sediment study area, showing locations of collection sites.

N.B.

2A Table 1A

	18.952
	19.242
	19.510
	19.752
5 -	20.097
	20.417
	20.829
6, 7 -	21.208
8 -	21.532
10 -	22.214
11 -	22.456
13	22.658
14,15 -	23.350
16 -	23.331
17 -	23.947
19 -	24.905
21,22 -	24.938
23,24 -	24.974
25	25.206
31,32 -	25.799
	26.030
37,38 -	26.500
39 -	26.771
42 -	27.146
46,47,48 -	27.739
49 -	28.197
53 -	28.676
58 -	29.243
61 -	29.540
	29.825
69 -	30.345
	30.649
74,75 -	31.106
	31.329
82 -	32.034
	32.315
	32.593
89 -	32.953
	33.184
	33.447
	33.684
95 -	34.072
	34.390
	34.701
102 -	35.006
	35.375
	35.693
	35.974
106 -	36.344
109 -	37.141
110 -	37.483
	38.195
	38.700 Int. std.
	39.174
	39.432
115 -	40.778
	41.802
	42.066
117 -	44.228

98

2A

A-12

Table 1B

RT32:MW24.RES

N.B. 2A

PEAK#	RET. TIME	T-CL:D-CL	IUPAC#	RRT	CONGENERS	WEIGHT %	MOLE %
1	40.64	0:0	000	.0997	BIPHENYL	0.0000	0.0000
2	46.67	1:1	001	.1544	2	0.6544	0.9766
3	50.08	1:0	002	.1937	3	1.9187	2.8512
4	50.62	1:0	003	.1975	4	0.7360	1.0983
5	52.35	2:2	004 010	.2245	22' + 26	0.7358	0.9287
6	54.75	2:1	007 009	.2564	24 + 25	0.3549	0.4479
7	55.58	2:1	006	.2709	23'	1.4954	1.8874
8	56.1	2:1	005 008	.2785	23 + 24'	2.3248	2.9343
9	57.36	2:0	014	.2973	35	0.0427	0.0538
10	57.75	3:3	019	.3045	22'6	0.4094	0.5352
11	58.86	3:2	030	.3165	246	0.0000	0.0043
12	59.15	2:0	011	.3230	33'	0.0000	0.0000
13	59.46	2:0	012 013	.3297	34 + 34'	0.2401	0.3030
14	59.82	3:2 2:0	018 015	.3387	22'5 + 44'	5.6124	6.5957
15	60.02	3:2	017	.3398	22'4	2.0413	3.1071
16	60.72	3:2	024 027	.3508	236 + 23'6	0.4965	0.5429
17	61.34	3:2	016 032	.3625	22'3 + 24'6	2.6799	2.9306
18	62.12	3:1	023	.3770	235	0.0195	0.0213
19	62.32	3:1 4:4	034 054	.3800	2'35 + 22'66'	0.0713	0.0750
20	62.74	3:1	029	.3820	245	0.0512	0.0560
21	63	3:1	026	.3911	234	2.5999	2.8426
22	63.18	3:1	025	.3937	23'4	2.0063	2.1940
23	63.62	3:1	031	.4024	24'5	5.0770	5.5519
24	63.75	3:1 4:3	028 050	.4031	244' + 22'46	6.5779	7.1741
25	64.49	3:1 4:3	021 033	.4170	233' + 234 + 22'56'	3.0649	3.0272
26	65.01	3:1 4:3	022 051	.4267	234' + 22'46'	1.9269	2.0000
27	65.5	4:3	045	.4334	22'36	0.6955	0.6707
28	65.89	3:1	036	.4379	33'5	0.0000	0.0000
29	66.07	4:3	046	.4450	22'36'	0.4779	0.4609
30	66.45	3:1	039	.4488	34'5	0.0000	0.0000
31	66.61	4:2	052 073	.4554	22'55' + 23'5'6	5.4206	5.4273
32	66.98	4:2	049	.4610	22'45	3.5005	3.3755
33	67.21	4:2	047	.4639	22'44'	1.2975	1.2512
34	67.36	4:2	048 075	.4651	22'45 + 244'6	0.9367	0.9033
35	67.6	4:2	065 062	.4665	2346 + 2356	0.0000	0.0000
36	67.83	3:0	035	.4738	33'4	0.1040	0.1138
37	68.26	5:4 4:2	104 044	.4832	22'466' + 22'35'	3.4638	3.3345
38	68.42	4:0 4:2	037 042	.4870	344' + 22'34' + 233'6	2.7200	2.6448
39	69.15	4:2	064 071	.4990	23'34 + 234'6 + 23'4'6 +	2.7125	2.6157
40	69.25	4:1	068	.5040	23'45' 7	0.0000	0.0000
41	69.4	5:4	096	.5057	22'366'	0.1640	0.1432
42	69.69	4:2	040	.5102	22'33'	0.7657	0.7384
43	70.1	5:3 4:1	103 057	.5155	22'45'6 + 233'5	0.2210	0.2082
44	70.46	5:3 4:1	100 067	.5212	22'44'6 + 23'4'5	0.4274	0.3849
45	70.77	4:1	058 063	.5267	233'5' + 234'5	0.2478	0.2390
46	71.11	4:1 5:3	074 094	.5340	244'5 + 22'356'	1.4343	1.2916
47	71.37	4:1	070 061	.5407	23'4'5 + 2'345 + 23457	2.1684	2.0910
48	71.6	4:1 5:3	066 095	.5447	23'44' + 22'356 + 22'35'6	2.5118	2.1778
49	72.1	5:3 4:1	091 098	.5549	22'34'6 + 22'3'46 + 233'4	0.8065	0.7030
50	72.8	4:1	056 060	.5676	233'4' + 2344'	1.8051	1.7408
51	73.2	6:4 5:3	155 084	.5666	22'44'66' + 22'33'61 22'355'	1.5880	1.3624
52	73.4	5:3	089	.5779	22'346'	0.0337	0.0291
53	73.6	5:2	101 090	.5814	22'34'5 + 22'455'	2.6448	2.2817
54	74	5:2	099	.5880	22'44'5	1.6078	1.3871
55	74.6	6:4 5:2	150 112	.5969	22'34'66' + 233'56 + 23'44'6	0.1265	0.1092
56	74.83	5:2	083 109	.6029	22'33'5 + 233'46	0.0000	0.0000
57	75.1	6:4 5:2	152 097	.6062	22'3566' + 22'345 + 22'3'45	0.8464	0.7261
58	75.5	5:2	087 111	.6175	22'345' + 235'55' + 2344'6	1.0760	0.9283
59	75.8	5:2	085 116	.6224	22'344' + 234567	0.4970	0.4287
60	76.1	6:4	136	.6257	22'33'66'	0.3067	0.2393
61	76.3	4:0 5:2	077 110	.6295	33'44' + 233'4'6	4.0402	3.4455
62	76.7	6:3	154	.6349	22'44'56'	0.0374	0.0291
63	77	5:2	082	.6453	22'33'4	0.3629	0.3131
64	77.4	6:3	151	.6499	22'355'6	0.3981	0.3106
65	77.7	6:3 5:1	135 124	.6563	22'33'56' + 2'344'5	0.4359	0.3501
66	77.9	6:3	144	.6584	22'345'6	0.2652	0.2069
67	78.01	5:1 6:3	107 108	.6628	233'4'5 + 233'45' + 22'34'56	0.0000	0.0000
68	78.3	5:1	123	.6658	2'344'5	4.1624	3.6082
69	78.41	6:3 5:1	149 118	.6672	22'34'5'6 + 23'44'5 + 233'45	0.0000	0.0000
70	78.7	6:3	139 140	.6707	22'344'6 + 22'344'6'	0.0034	0.0026
71	79.1	6:3 5:1	134 143	.6796	22'33'56' + 22'3456'+ 2344'5	0.2066	0.2421
72	79.4	5:1 6:3	122 131	.6871	2'35'45' 22'35'46'22'35'55'+	0.1038	0.0859
73	79.9	6:2	146 161	.6955	22'34'55' + 233'45'6	0.3628	0.2831
74	80.3	6:3 5:1	132 105	.7035	22'33'46' + 233'44'	1.0375	0.8255
75	80.52	6:2	153	.7036	22'44'55'	0.0000	0.0000
76	81.2	6:2	168	.7068	23'44'5'6	0.0676	0.0527
77	81.5	6:2	141	.7203	22'3455'	0.2597	0.2026
78	81.7	7:4	179	.7205	22'33'566'	0.0000	0.0000
79	82	6:2	130	.7284	22'33'45'	0.2593	0.2023
80	82.2	6:2	137	.7329	22'344'5	0.0000	0.0000
81	82.35	7:4	176	.7305	22'33'466'	0.0000	0.0000
82	82.7	6:2	138 163	.7403	22'344'5' + 233'4'56 + +2	2.2823	1.7807
83	83	6:2	158	.7429	233'44'6	0.3490	0.2723
84	83.4	6:2	129	.7501	22'33'45	0.2286	0.1783
85	83.9	7:3	178	.7537	22'33'55'6	0.0577	0.0411
86	84.25	6:2	166	.7572	2344'56	0.0000	0.0000
87	84.4	7:3	175	.7611	22'33'45'6	0.0186	0.0133
88	84.7	7:3	187 182	.7653	22'34'55'6 + 22'344'56'	0.1638	0.1167
89	85.1	6:2	128	.7761	22'33'44'	0.5177	0.4039
90	85.4	7:3	183	.7720	22'344'5'6	0.0000	0.0000
91	85.76	6:1	167	.7814	23'44'55'	0.0000	0.0000
92	86.3	7:3	185	.7848	22'3455'6	0.0196	0.0140
93	87	7:3	174 181	.7965	22'33'456' + 22'344'56	0.1520	0.1086
94	87.4	7:3	177	.8031	22'33'4'56	0.1172	0.0837
95	88	7:3 6:1	171 156	.8105	22'33'44'6 + 233'44'5	0.4227	0.3206
96	88.44	6:4	202	.8089	22'33'55'66'	0.0000	0.0000
97	88.5	6:1	157	.8164	233'44'5'	0.0532	0.0415
98	88.8	7:3	173	.8152	22'33'456	0.0044	0.0031
99	89.2	8:4	200 204	.8197	22'33'45'66' + 22'344'566'	0.0051	0.0034
100	89.6	7:2	172 192	.8278	22'33'455' + 233'455'6	0.0666	0.0475
101	90.2	8:4	197	.8293	22'33'44'66'	0.0000	0.0000
102	90.4	7:2	188	.8362	22'344'55'	0.3143	0.2239
103	91	7:2	193	.8397	233'4'55'6	0.0013	0.0009
104	91.44	7:2	191	.8447	233'44'5'6	0.0000	0.0000
105	92.15	8:4	199	.8494	22'33'4566'	0.0000	0.0000
106	93.8	7:2	170	.8740	22'33'44'5	0.2071	0.1475
107	94.3	7:2	190	.8740	233'44'56	0.0537	0.0363
108	95.4	8:3	198	.8845	22'33'455'6	0.0017	0.0011
109	95.9	8:3	201	.8875	22'33'4'55'6	0.0527	0.0345
110	96.8	8:3	196 203	.8935	22'33'44'5'6 + 22'344'55'6	0.0515	0.0337
111	98.6	7:1	189	.9142	233'44'55'	0.0083	0.0059
112	101.1	8:3	195	.9321	22'33'44'56	0.0252	0.0165
113	101.8	9:4	208	.9320	22'33'455'66'	0.0060	0.0037
114	103.29	9:4	207	.9423	22'33'44'566'	0.0000	0.0000
115	105.3	8:2	194	.9620	22'33'44'55'	0.0394	0.0258
116	106.4	8:2	205	.9678	233'44'55'6	0.0000	0.0000
117	114.2	9:3	206	1.010	22'33'44'55'6	0.0570	0.0346

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ANALYSIS NUMBER 1 LISTWISE DELETION OF CASES WITH MISSING VALUES
>WARNING 11302
>The correlation matrix is ill-conditioned.

KAISER-MEYER-OLKIN MEASURE OF SAMPLING ADEQUACY = .85776
BARTLETT TEST OF SPHERICITY = 9174.9623, SIGNIFICANCE = .00000

EXTRACTION 1 FOR ANALYSIS 1, PRINCIPAL-COMPONENTS ANALYSIS (PC)

Table 2

INITIAL STATISTICS:

VARIABLE	COMMUNALITY	*	FACTOR	EIGENVALUE	PCT OF VAR	CUM PCT
SITE1	1.00000	*	1	18.75529	72.1	72.1
SITE2	1.00000	*	2	3.38196	13.0	85.1
SITE3	1.00000	*	3	1.39168	5.4	90.5
SITE4	1.00000	*	4	.74588	2.9	93.4
SITE5	1.00000	*	5	.62700	2.4	95.8
SITE6	1.00000	*	6	.25342	1.0	96.8
SITE7	1.00000	*	7	.18997	.7	97.5
SITE8	1.00000	*	8	.12920	.5	98.0
SITE9	1.00000	*	9	.10798	.4	98.4
SITE10	1.00000	*	10	.10072	.4	98.8
SITE11	1.00000	*	11	.07825	.3	99.1
SITE12	1.00000	*	12	.06632	.3	99.3
SITE13	1.00000	*	13	.05948	.2	99.6
SITE14	1.00000	*	14	.04360	.2	99.7
SITE15	1.00000	*	15	.02112	.1	99.8
SITE16	1.00000	*	16	.01291	.0	99.9
SITE17	1.00000	*	17	.01122	.0	99.9
SITE18	1.00000	*	18	.00904	.0	99.9
SITE19	1.00000	*	19	.00427	.0	100.0
SITE20	1.00000	*	20	.00320	.0	100.0
SITE21	1.00000	*	21	.00238	.0	100.0
SITE22	1.00000	*	22	.00184	.0	100.0
SITE23	1.00000	*	23	.00139	.0	100.0
SITE24	1.00000	*	24	.00099	.0	100.0
SITE25	1.00000	*	25	.00046	.0	100.0
SITE26	1.00000	*	26	.00043	.0	100.0

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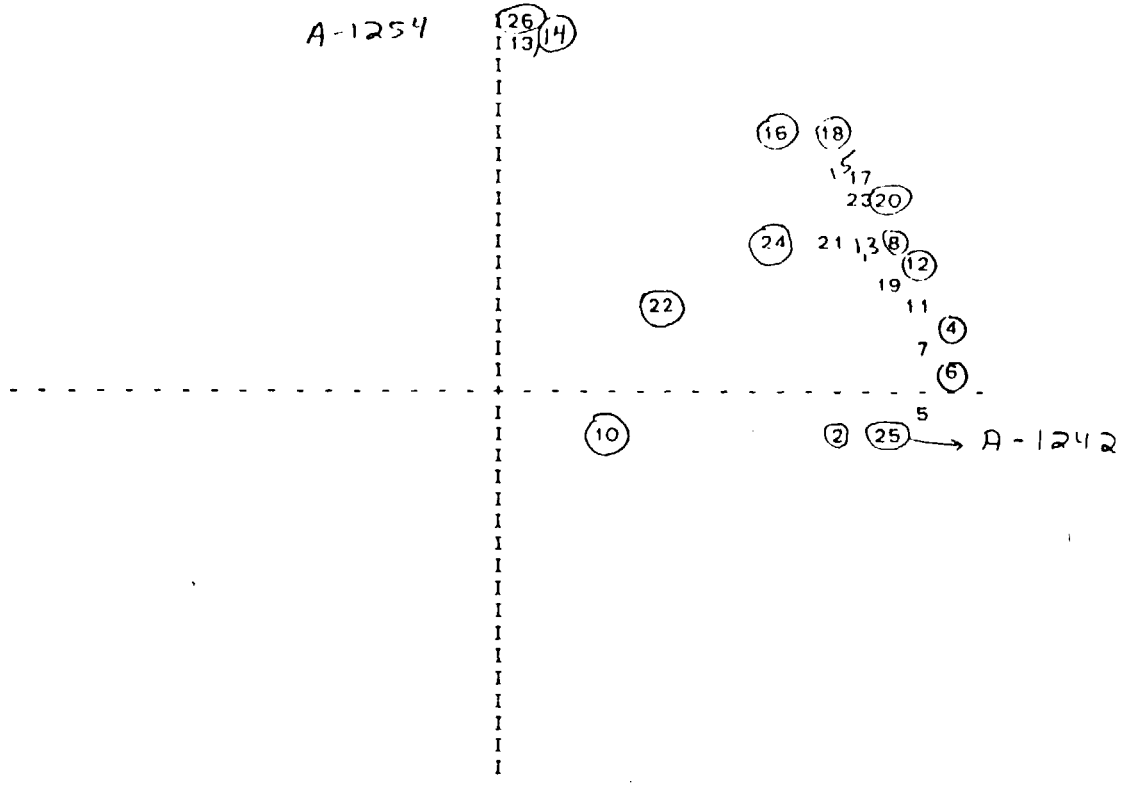
HORIZONTAL FACTOR 1 VERTICAL FACTOR 2



O ≡ subsurface sediment

Figure 2

SYMBOL	VARIABLE	COORDINATES	SYMBOL	VARIABLE	COORDINATES	SYMBOL	VARIABLE	COORDINATES	SYMBOL	VARIABLE	COORDINATES
1	SITE1	(.84382, .39685)	2	SITE2	(.70411,-0.05631)	19	SITE19	(.82311, .26975)	20	SITE20	(.82248, .5079
3	SITE3	(.88692, .35584)	4	SITE4	(.94080, .14740)						
5	SITE5	(.91472,-0.02499)	6	SITE6	(.94705, .04043)						
7	SITE7	(.92912, .12154)	8	SITE8	(.84273, .38320)						
9	SITE9	(.77785, .50526)	10	SITE10	(.25114,-0.08052)	21	SITE21	(.74535, .38461)	22	SITE22	(.36579, .2279
11	SITE11	(.89367, .23336)	12	SITE12	(.91916, .30542)	23	SITE23	(.80478, .51981)	24	SITE24	(.61326, .3768
13	SITE13	(.08901, .91220)	14	SITE14	(.10489, .96395)	25	SITE25	(.84731,-0.07968)	26	SITE26	(.06137, .9524
15	SITE15	(.78310, .55477)	16	SITE16	(.59165, .68185)						
17	SITE17	(.80495, .54050)	18	SITE18	(.69936, .68793)						

* * * * * * * H I E R A R C H I C A L C L U S T E R A N A L Y S I S * * * * * * *

Dendrogram using Average Linkage (Between Groups)

Rescaled Distance Cluster Combine

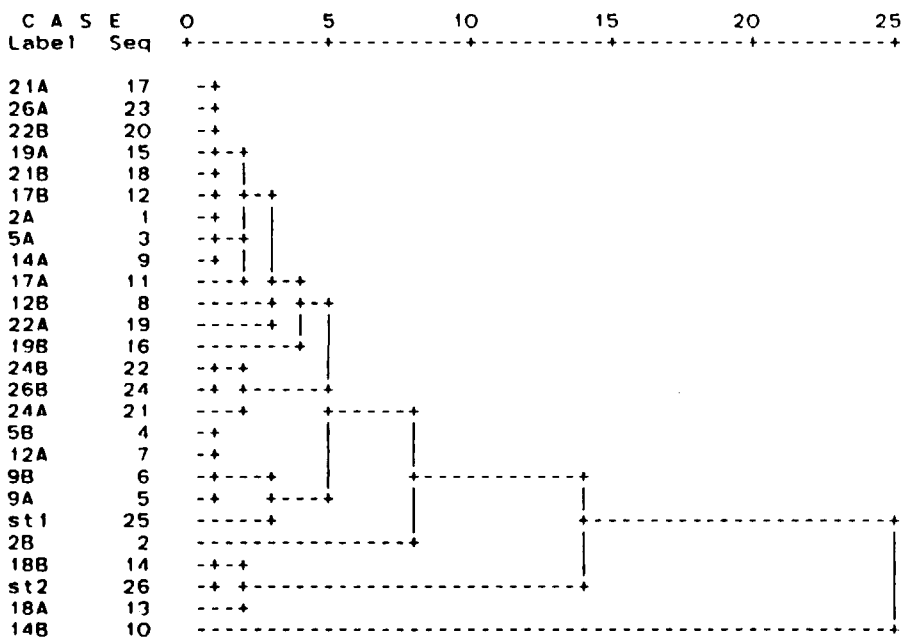


Figure 3

S.E.

```
FFFFFFFFFF    QQQQQQ    DDDDDDDD      666666      333333      222222      888888
FFFFFFFFFF    QQQQQQ    DDDDDDDD      666666      333333      222222      888888
FF          QQ      QQ  DD      DD  66          33      33  22      22  88      88
FF          QQ      QQ  DD      DD  66          33      33  22      22  88      88
FF          QQ      QQ  DD      DD  66                  33          22  88      88
FF          QQ      QQ  DD      DD  66                  33          22  88      88
FFFFFFFF    QQ      QQ  DD      DD  66666666          33          22      888888
FFFFFFFF    QQ      QQ  DD      DD  66666666          33          22      888888
FF          QQ  QQ  QQ  DD      DD  66      66          33      22      88      88
FF          QQ  QQ  QQ  DD      DD  66      66          33      22      88      88
FF          QQ    QQ    DD      DD  66      66  33      33    22        88      88
FF          QQ    QQ    DD      DD  66      66  33      33    22        88      88
FF            QQQQ  QQ  DDDDDDDD      666666      333333    2222222222    888888
FF            QQQQ  QQ  DDDDDDDD      666666      333333    2222222222    888888

EEEEE   AAA         4  4    222    888
E      A   A        4  4   2   2  8   8
E      A   A        4  4       2  8   8
EEEE   A   A        44444     2    888
E      AAAAA           4     2    8   8
E      A   A           4    2     8   8
EEEEE  A   A           4   22222   888
```

DATA FILE

with peak 2 and peak 3 deleted because of uncertain data points.

```
    J   000   BBBB          1    4  4    000    222
    J  0   0  B   B        11    4  4   0   0  2   2
    J  0   0  B   B         1    4  4   0  00      2
    J  0   0  BBBB          1    44444  0 0 0     2
J   J  0   0  B   B         1       4   00  0    2
J   J  0   0  B   B         1       4   0   0   2
 JJJ    000   BBBB        111       4    000   22222
```

Job EA*428 (1402) queued to LCA0 on 7-JAN-1987 10:26 by user FQD6328, UIC [GROUP2,FQD6328], under account FQD6328 at priority 4,
started on printer _VX$LCA0 on 7-JAN-1987 10:26 from queue LCA0.

2A	0.0000	0.7360	0.7358	0.3549	1.4954	2.3248	0.0427		
	0.4894	0.0040	0.0000	0.2401	5.6124	2.8413	0.4965	2.6799	0.0195
	0.0713	0.0512	2.5994	2.0063	5.0770	6.5779	3.0649	1.9269	0.6955
	0.0000	0.4779	0.0000	5.4206	3.5003	1.2975	0.9367	0.0000	0.1040
	3.4618	2.7200	2.7125	0.0000	0.1660	0.7657	0.2210	0.4274	0.2478
	1.4343	2.1684	2.5118	0.8065	1.8051	1.5880	0.0337	2.6448	1.6078
	0.1265	0.0000	0.8464	1.0760	0.4970	0.3067	4.0402	0.0374	0.3629
	0.3981	0.4359	0.2652	0.0000	0.0000	4.1824	0.0034	0.2866	0.1038
	0.3628	1.0375	0.0000	0.0676	0.2597	0.0000	0.2593	0.0000	0.0000
	2.2823	0.3490	0.2286	0.0577	0.0000	0.0186	0.1638	0.5177	0.0000
	0.0000	0.0196	0.1520	0.1172	0.4227	0.0000	0.0532	0.0044	0.0051
	0.0666	0.0000	0.3143	0.0013	0.0000	0.0000	0.2071	0.0537	0.0017
	0.0527	0.0515	0.0083	0.0252	0.0060	0.0000	0.0394	0.0000	0.0570
	0.0000								
2B	0.0000	0.2190	2.3357	0.7154	4.6591	4.9843	0.0000		
	0.9008	0.0353	0.0000	0.4848	10.6696	5.5513	1.0236	2.5019	0.0097
	0.0000	0.0229	3.9378	0.0000	7.6590	0.0000	1.5530	0.8877	0.9487
	0.0164	0.6757	0.5417	0.0000	5.2815	2.2498	0.1569	0.0000	0.1548
	3.0200	0.0000	3.6099	0.0000	0.0000	0.3751	0.1364	0.6115	0.1302
	1.5284	0.0000	3.0889	0.9351	0.9305	1.0031	1.7727	0.0000	1.3881
	0.1360	0.0088	0.5405	0.4292	0.3114	5.2638	0.0000	0.0494	0.1586
	0.2833	0.3034	0.1828	0.0000	0.0000	3.0986	0.0000	0.1929	0.0000
	0.2347	0.4431	0.0000	0.0440	0.0271	0.0000	0.1654	0.0000	0.0000
	1.1715	0.2391	0.1422	0.0286	0.0000	0.0000	0.1570	0.3098	0.0000
	0.1901	0.0194	0.1307	0.0955	0.2656	0.0317	0.0000	0.0000	0.0497
	0.0000	0.2963	0.0135	0.0000	0.0000	0.0137	0.1679	0.0000	0.0345
	0.0000	0.0000	0.0000	0.0156	0.0000	0.0000	0.0484	0.0000	0.0000
	0.0000								
5A	0.0000	0.5671	1.4077	0.3285	2.1489	2.6878	0.0417		
	0.6888	0.0517	0.0000	0.2461	6.2248	3.5465	0.6633	1.9651	0.0085
	0.0000	0.0201	2.4144	2.1623	4.6367	8.1435	1.7975	1.0030	0.8232
	0.0144	0.6079	0.0000	5.3435	4.2329	1.9163	1.0034	0.0000	0.1470
	2.7938	2.7572	3.1721	0.0000	0.3446	0.4715	0.1547	0.4647	0.1585
	1.6219	2.3999	3.2861	0.9294	1.3983	1.1491	0.0000	2.3760	1.7292
	0.1605	0.2698	0.7688	0.6719	0.4157	0.0000	3.2226	0.0541	0.2630
	0.3387	0.3760	0.0000	0.3144	0.0000	3.3770	0.0000	0.2359	0.0927
	0.3087	0.7080	2.7641	0.1818	0.2115	0.0925	0.2064	0.2112	0.0000
	1.6174	0.2948	0.1825	0.0418	0.0111	0.0122	0.1956	0.4307	0.0000
	0.2390	0.0227	0.1593	0.1166	0.3584	0.0457	0.0000	0.0000	0.0000
	0.0797	0.0000	0.3436	0.0000	0.0047	0.0261	0.2130	0.0566	0.0000
	0.0567	0.0721	0.0000	0.0192	0.0000	0.0000	0.0626	0.0000	0.0344
	0.0000								
5B	0.0000	0.1859	1.9829	0.6073	3.9554	4.2315	0.0000		
	0.7647	0.0300	0.0000	0.4116	9.0580	4.7128	0.8690	2.1240	0.0082
	0.0721	0.0194	3.3430	3.3288	6.5021	8.5169	1.3184	0.7537	0.8054
	0.0139	0.5736	0.0000	5.6045	4.4838	1.9100	0.5642	0.0000	0.1314
	2.5639	2.5607	3.0647	0.0000	0.0000	0.3184	0.1158	0.5192	0.1105
	1.2975	1.6986	2.6224	0.7938	0.7899	0.8516	0.0053	1.5999	1.1784
	0.1155	0.1866	0.4589	0.3644	0.2644	0.0000	2.2718	0.0419	0.1346
	0.2405	0.2576	0.0000	0.2126	0.0000	2.3795	0.0000	0.1638	0.0000
	0.1993	0.3761	1.9314	0.0373	0.1421	0.0704	0.1404	0.1329	0.0000
	0.9945	0.2030	0.1207	0.0243	0.0064	0.0000	0.1333	0.2630	0.0000
	0.1614	0.0165	0.1109	0.0811	0.2255	0.0269	0.0000	0.0000	0.0000
	0.0456	0.0000	0.2456	0.0079	0.0000	0.0116	0.1425	0.0000	0.0293
	0.0000	0.0000	0.0000	0.0133	0.0000	0.0000	0.0411	0.0000	0.0000
	0.0000								
9A	0.0000	0.6300	3.7090	1.0615	2.6335	6.3036	0.0761		

	1.1025	0.0396	0.1032	0.2691	10.6706	5.4099	0.8620	3.1957	0.0093
	0.0712	0.0731	1.8321	1.4760	7.1224	8.8730	3.4115	1.4064	0.9739
	0.0472	0.6307	0.0000	4.6361	3.6524	1.6140	1.3541	0.0838	0.1484
	2.5752	2.5047	2.9902	0.0000	0.1831	0.5225	0.0923	0.2580	0.1178
	1.0283	1.6808	2.5554	0.5012	0.9930	0.5428	0.0000	1.1046	0.8522
	0.0853	0.1264	0.3667	0.2874	0.1900	0.0000	1.2809	0.0296	0.1192
	0.1296	0.1455	0.0000	0.1419	0.0000	1.4057	0.0000	0.0925	0.0390
	0.1238	0.2589	0.0000	0.0844	0.0684	0.0145	0.0673	0.0000	0.0000
	0.5495	0.1075	0.0633	0.0229	0.0000	0.0000	0.0634	0.1365	0.0000
	0.0951	0.0062	0.0458	0.0359	0.1273	0.0174	0.0000	0.0000	0.0293
	0.0000	0.0000	0.1063	0.0000	0.0017	0.0219	0.0648	0.0206	0.0047
	0.0000	0.0245	0.0033	0.0000	0.0000	0.0000	0.0171	0.0000	0.0313
	0.0000								
9B	0.0000	0.1944	2.5912	0.6803	4.0734	4.8020	0.0141		
	0.9355	0.0314	0.0956	0.5662	10.2858	5.3183	0.7505	2.4292	0.0086
	0.1036	0.0271	4.7583	4.6048	7.3051	8.7286	1.6258	0.6868	0.7909
	0.0000	0.5365	0.0000	6.0980	4.5941	1.8976	0.7947	0.0000	0.0802
	2.0577	1.7847	3.2115	0.0000	0.3489	0.2324	0.0997	0.2822	0.0770
	1.3660	1.0880	1.7325	0.7058	0.6194	0.6991	0.0000	0.9279	1.0320
	0.1393	0.1249	0.3575	0.2358	0.1759	0.0000	1.8993	0.0329	0.0989
	0.1429	0.1485	0.0000	0.1263	0.0000	1.3905	0.0134	0.0946	0.0361
	0.1302	0.2294	1.1247	0.0725	0.0590	0.0402	0.0667	0.0855	0.0000
	0.5310	0.1128	0.0541	0.0127	0.0022	0.0000	0.0770	0.1363	0.0000
	0.0880	0.0000	0.0481	0.0369	0.1148	0.0161	0.0000	0.0000	0.0000
	0.0257	0.0000	0.1152	0.0000	0.0000	0.0102	0.0689	0.0164	0.0131
	0.0000	0.0227	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000								
12A	0.0000	0.1817	2.6644	0.6218	3.5048	5.0601	0.0000		
	0.8904	0.0293	0.0000	0.4446	9.5386	4.9714	0.7385	2.2150	0.0080
	0.0000	0.0190	3.0359	2.3004	7.1307	8.3519	2.3016	0.6420	0.7393
	0.0000	0.5311	0.0000	5.1017	4.0730	1.6746	0.7199	0.0000	0.1285
	2.0620	2.0319	2.7804	0.0000	0.2236	0.2407	0.0998	0.3585	0.0780
	1.1523	2.3608	4.5069	0.7391	0.8409	0.7607	0.0000	1.5414	1.2273
	0.1345	0.1459	0.4611	0.3250	0.2114	0.0000	2.2467	0.0410	0.1280
	0.1763	0.2083	0.0000	0.1842	0.0000	2.1902	0.0000	0.1264	0.0506
	0.1607	0.3063	1.6060	0.0939	0.0939	0.0000	0.1039	0.0949	0.0000
	0.7312	0.1519	0.0842	0.0000	0.0042	0.0000	0.0891	0.1829	0.0000
	0.1303	0.0053	0.0555	0.0414	0.1624	0.0207	0.0000	0.0000	0.0000
	0.0308	0.0000	0.1413	0.0031	0.0000	0.0114	0.0873	0.0255	0.0000
	0.0198	0.0259	0.0000	0.0000	0.0000	0.0000	0.0148	0.0000	0.0000
	0.0000								
12B	0.0000	0.3959	1.0555	0.2566	2.0845	2.4006	0.1816		
	1.2009	0.0497	0.7136	0.4385	6.6836	3.2348	0.6650	2.0538	0.0058
	0.0767	0.0000	5.2207	3.2748	5.1563	5.2790	1.6806	0.5978	0.4099
	0.0000	0.3964	0.0000	10.0901	7.9677	2.8265	0.0000	0.0849	0.0777
	1.0910	0.9734	3.1172	0.0000	0.5278	0.1194	0.2562	0.4274	0.0348
	0.4782	1.3089	2.3458	1.5482	0.4672	0.9789	0.0000	1.7053	1.7791
	0.5358	0.1218	0.4332	0.3038	0.1706	0.4599	3.3959	0.1749	0.0956
	0.2794	0.2868	0.0000	0.2538	0.0000	3.8944	0.0000	0.1529	0.0686
	0.2475	0.2836	3.3127	0.0739	0.0994	0.0954	0.1298	0.1451	0.0000
	1.0059	0.2049	0.0979	0.0460	0.0092	0.0083	0.2141	0.2354	0.0000
	0.2988	0.0000	0.0787	0.0576	0.2190	0.0000	0.0305	0.0000	0.0000
	0.0473	0.0000	0.2150	0.0101	0.0043	0.0179	0.1374	0.0482	0.0000
	0.0472	0.0710	0.0053	0.0169	0.0000	0.0000	0.0568	0.0000	0.0905
	0.0000								
14A	0.0000	0.3079	0.7181	0.1915	0.9652	1.6132	0.0112		
	0.4590	0.6124	0.3027	0.1793	5.1973	2.7471	0.4755	[illegible]	[illegible]

	0.4580	0.0124	0.3027	0.1793	5.1973	2.7471	[illegible]	[illegible]	[illegible]	[illegible]
	0.0373	0.0482	1.5931	1.5064	4.3751	6.6592	2.1404	1.1944	0.6263	
	0.0115	0.4749	0.0000	4.8062	4.2519	1.9793	1.0056	0.0819	0.1360	
	2.6531	2.7540	2.9125	0.0000	0.3157	0.5073	0.1635	0.4470	0.1829	
	1.6810	3.6159	6.1019	1.1643	1.9073	1.2197	0.0000	3.2153	2.5586	
	0.2537	0.2780	0.9067	0.5315	0.2935	0.0000	3.6996	0.0738	0.1868	
	0.3349	0.3713	0.0000	0.3840	0.0000	4.3068	0.0000	0.2284	0.0943	
	0.3464	0.4995	3.2258	0.0729	0.1470	0.0742	0.1655	0.1566	0.0000	
	1.3445	0.2442	0.1499	0.0302	0.0089	0.0048	0.1626	0.2903	0.0000	
	0.2962	0.0000	0.1209	0.0847	0.2996	0.0000	0.0247	0.0000	0.0000	
	0.0523	0.0000	0.2413	0.0079	0.0037	0.0145	0.1585	0.0476	0.0000	
	0.0383	0.0478	0.0000	0.0000	0.0000	0.0000	0.0376	0.0000	0.0000	
	0.0000									
14B	0.0000	0.0000	0.8087	0.0629	0.4494	0.3936	0.3223			
	0.0708	0.1740	0.0000	0.0000	25.1030	0.7302	0.7725	0.0000	9.2142	
	0.0000	10.2381	0.5286	2.1046	1.2209	1.2214	0.9327	0.1578	0.1769	
	0.0000	0.9850	0.0000	1.2528	1.0753	0.4567	0.2045	0.0717	0.0000	
	0.5305	0.6506	0.5489	0.0000	0.1659	0.1176	0.0000	0.0000	0.0401	
	0.3268	0.5982	0.9011	0.2311	0.4193	0.2727	0.0000	0.5411	0.3710	
	0.0290	0.0325	0.1506	0.1384	0.1111	0.0000	0.6131	0.0000	0.0475	
	0.0595	0.0000	0.0000	0.0631	0.0000	0.6635	0.0000	0.0281	0.0000	
	0.0433	0.1321	0.5343	0.0813	0.0318	0.0000	0.0000	0.0000	0.0000	
	0.2580	0.0345	0.0000	0.0000	0.0000	0.0000	0.0381	0.0515	0.0000	
	0.0000	0.0000	0.0000	0.0000	0.0323	0.0000	0.0000	0.0000	0.0000	
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0139	0.0000	0.0000	
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
	0.0000									
17A	0.0000	0.1759	1.1720	0.6290	2.3448	3.1987	0.0637			
	0.6462	0.0378	0.2593	0.5122	6.4245	3.6265	0.6289	3.0737	0.0078	
	0.1023	0.0551	2.7515	2.2603	5.3080	7.8260	2.8567	2.1839	0.8463	
	0.0263	0.6281	0.0336	4.4960	3.9415	1.8447	0.9782	0.0663	0.1554	
	3.3955	3.1116	0.0277	0.0000	2.8853	0.8068	0.1803	0.5892	0.2554	
	1.4639	2.1928	4.3872	0.9399	1.9387	1.0820	0.0000	2.0530	1.7302	
	0.1806	0.2753	0.7369	0.2434	0.1222	0.0000	2.4760	0.0595	0.0860	
	0.2481	0.2310	0.0000	0.2925	0.0000	2.3465	0.0000	0.1671	0.0620	
	0.2403	0.2001	1.8745	0.1237	0.0751	0.0666	0.0925	0.0000	0.0000	
	0.7104	0.1470	0.0774	0.0268	0.0000	0.0000	0.1161	0.1524	0.0000	
	0.1460	0.0104	0.0588	0.0367	0.1515	0.0182	0.0035	0.0000	0.0000	
	0.0000	0.1401	0.0000	0.0000	0.0029	0.0184	0.0805	0.0296	0.0178	
	0.0000	0.0364	0.0042	0.0050	0.0018	0.0016	0.0266	0.0000	0.0472	
	0.0000									
17B	0.0000	0.1609	1.1259	0.4254	3.1287	2.9266	0.0816			
	0.7039	0.0000	0.3164	0.5436	6.1888	3.4074	0.5623	2.4853	0.0071	
	0.0000	0.0056	4.6769	3.9424	6.0788	6.8832	1.7056	1.6494	0.6757	
	0.0000	0.5094	0.0000	6.2890	5.1212	2.2035	0.5560	0.0856	0.0663	
	3.0281	2.5881	2.4017	0.0000	0.3465	0.5302	0.3064	0.8325	0.1859	
	0.7878	0.9331	1.3157	1.4981	0.7852	1.4601	0.0000	2.2893	2.5669	
	0.3650	0.3100	0.8502	0.1627	0.0494	0.3641	3.4789	0.1225	0.0252	
	0.3973	0.2882	0.0000	0.3805	0.0000	2.7698	0.0000	0.1865	0.0687	
	0.3492	0.0000	3.1224	0.1178	0.0325	0.0997	0.0920	0.0000	0.0000	
	0.7395	0.1345	0.0336	0.0385	0.0000	0.0000	0.1943	0.0574	0.0000	
	0.1821	0.0095	0.0445	0.0305	0.1104	0.0133	0.0000	0.0000	0.0000	
	0.0364	0.1444	0.0139	0.0000	0.0000	0.0000	0.0736	0.0339	0.0235	
	0.0000	0.0521	0.0000	0.0000	0.0000	0.0000	0.0337	0.0000	0.0000	
	0.0000									
18A	0.0000	0.8119	0.0000	0.0421	0.0215	0.1013	0.7059			
	[illegible]	[illegible]	0.6652	0.0000	0.5001	0.2819	0.3630	0.2801	0.0120	

	1.6813	0.0728	0.6652	0.0000	0.5001	0.2819	0.3630	0.2801	0.0120
	0.0394	0.0094	0.2772	0.1576	0.5966	0.8890	0.5589	0.2522	0.1184
	0.0000	0.1318	0.0000	4.3380	2.1587	0.7985	0.3079	0.0420	0.0000
	2.0226	1.0088	0.9208	0.0000	0.0971	0.2448	0.1983	0.1612	0.1251
	0.9078	3.5945	2.6439	1.2191	0.9376	3.1404	0.0000	8.2368	4.1298
	0.2585	0.6844	2.0917	2.7234	1.1893	0.0000	8.9608	0.1145	0.6990
	0.7639	0.9372	0.0000	0.8370	0.0000	12.2911	0.0062	0.5708	0.2160
	0.7468	2.2184	0.0123	0.0000	0.6479	0.0000	0.6563	0.6102	0.0000
	6.4982	0.8310	0.5521	0.0825	0.0000	0.0342	0.2757	1.2071	0.0000
	0.5820	0.0399	0.2914	0.2156	0.9068	0.1175	0.0000	0.0000	0.0047
	0.1072	0.0000	0.6280	0.0000	0.0132	0.0395	0.4055	0.1064	0.0030
	0.0000	0.0876	0.0174	0.0463	0.0056	0.0000	0.0819	0.0023	0.0645
	0.0000								
18B	0.0000	0.5130	0.0000	0.0399	0.0407	0.0960	0.5388		
	1.5036	0.0069	0.5043	0.0896	0.4954	0.2315	0.2293	0.2163	0.0113
	0.0000	0.0000	0.3986	0.2092	0.5480	0.7541	0.4590	0.2279	0.1122
	0.0000	0.1457	0.0000	4.1489	2.3488	0.9249	0.3027	0.0796	0.0000
	1.7682	0.9959	0.8777	0.0000	0.1447	0.2320	0.1691	0.2005	0.1186
	0.8101	3.2057	4.2010	1.1984	0.7977	2.9545	0.0000	7.7980	4.1918
	0.2695	0.6486	1.9166	2.1102	0.9903	0.6173	8.2812	0.0868	0.5470
	0.7239	0.8514	0.0000	0.8066	0.0000	10.4354	0.0059	0.4994	0.1905
	0.7078	1.8592	7.9686	0.0184	0.5650	0.0000	0.6044	0.5218	0.0000
	5.9107	0.7569	0.4875	0.0782	0.0000	0.0000	0.2613	1.1047	0.0000
	0.5709	0.0378	0.2762	0.2043	0.8389	0.0000	0.1055	0.0076	0.0045
	0.1161	0.0000	0.6205	0.0262	0.0167	0.0535	0.3990	0.1045	0.0086
	0.0718	0.0863	0.0165	0.0000	0.0000	0.0000	0.0836	0.0000	0.0612
	0.0000								
19A	0.0000	0.2953	0.4920	0.2182	1.8281	1.5362	0.2032		
	0.9043	0.0675	0.2178	0.3784	4.1293	2.2247	0.4200	1.3073	0.0261
	0.0572	0.0000	4.5787	3.6981	4.2764	4.9398	1.0062	0.8032	0.4845
	0.0110	0.3835	0.0000	7.7312	6.1607	2.4523	0.4356	0.0884	0.0609
	2.8284	2.2997	2.5872	0.0000	1.3021	0.3053	0.3515	0.8410	0.1462
	0.7808	0.8649	4.1571	1.9108	0.5264	1.8003	0.0000	2.8999	3.3200
	0.4654	0.3674	0.8730	0.2411	0.0763	0.4455	4.5406	0.1499	0.0433
	0.4862	0.3632	0.0000	0.4605	0.0000	3.9983	0.0000	0.2327	0.0822
	0.4312	0.0000	4.3988	0.0148	0.0531	0.1169	0.0946	0.0731	0.0000
	1.0118	0.1662	0.0547	0.0450	0.0102	0.0000	0.2256	0.1129	0.0000
	0.2451	0.0109	0.0644	0.0448	0.1602	0.0000	0.0000	0.0000	0.0000
	0.0334	0.0000	0.1840	0.0126	0.0000	0.0108	0.1047	0.0456	0.0000
	0.0367	0.0592	0.0000	0.0105	0.0000	0.0000	0.0464	0.0000	0.0000
	0.0000								
19B	0.0000	0.1633	0.4354	0.1143	1.1277	0.8924	0.4614		
	2.2578	0.0615	0.2408	0.2283	2.5374	1.2360	0.2787	0.7011	0.0072
	0.0475	0.0000	5.3529	3.3929	2.0161	2.1328	0.2586	0.3221	0.2786
	0.0000	0.2784	0.0000	9.8363	7.7913	2.9743	0.0000	0.0688	0.0000
	2.4510	1.6467	2.2644	0.0000	1.2561	0.1425	0.4127	0.7052	0.0917
	0.3639	0.7198	4.7901	2.5802	0.2230	2.3171	0.0000	3.2473	3.6995
	0.5967	0.4195	0.8098	0.2261	0.0660	0.4987	5.5354	0.1658	0.0288
	0.5329	0.4017	0.0000	0.4923	0.0000	5.2368	0.0000	0.2650	0.0909
	0.4638	0.0000	4.8656	0.0211	0.0606	0.1180	0.1868	0.0000	0.0000
	1.1860	0.2034	0.0643	0.0569	0.0132	0.0000	0.2311	0.1852	0.0000
	0.2896	0.0096	0.0665	0.0496	0.2084	0.0236	0.0000	0.0019	0.0029
	0.0370	0.0000	0.2036	0.0167	0.0066	0.0136	0.1214	0.0459	0.0037
	0.0356	0.0486	0.0079	0.0209	0.0017	0.0000	0.0418	0.0000	0.0146
	0.0000								
21A	0.0000	0.1629	0.3799	0.2786	2.0034	1.9016	0.1652		
	0.7694	0.0307	0.3202	0.3984	4.8416	2.5781	0.3905	2.3345	0.0863
	0.0000	0.0057	3.5029	2.8773	4.6007	5.5045	2.1410	1.5706	0.5343
	0.0000	0.4098	0.0000	6.3494	4.7745	1.6430	0.3569	0.0000	0.0576

	3.4375	2.3448	1.8768	0.0000	0.2672	0.6208	0.3776	0.5213	0.2527	
	0.6578	1.5348	1.4991	1.0674	0.5518	2.1458	0.0000	3.0301	2.1228	
	0.3500	0.5621	0.7544	0.4939	0.3078	0.4446	5.1776	0.0827	0.1721	
	0.5218	0.4278	0.0000	0.4909	0.0000	4.4029	0.0000	0.2680	0.0937	
	0.4712	0.5404	3.5757	0.0327	0.1647	0.1121	0.1751	0.3000	0.0000	
	1.9577	0.2667	0.1359	0.0603	0.0094	0.0206	0.2304	0.4316	0.0000	
	0.2212	0.0000	0.1611	0.1328	0.3222	0.0000	0.0359	0.0000	0.0000	
	0.0553	0.0000	0.3256	0.0111	0.0053	0.0119	0.1937	0.0572	0.0000	
	0.0633	0.0780	0.0000	0.0163	0.0000	0.0000	0.0607	0.0000	0.0000	
	0.0000									
21B	0.0000	0.0000	0.1943	0.0000	1.5887	1.4111	0.1971			
	0.8162	0.0209	0.1911	0.3622	3.9661	2.0511	0.3317	1.8473	0.0515	
	0.0000	0.0338	3.3152	2.8374	3.6514	4.6692	1.6587	1.2594	0.4506	
	0.0000	0.3628	0.0000	6.4591	4.8940	2.0740	0.1638	0.0000	0.0343	
	3.2011	2.0967	1.6931	0.0000	0.2292	0.5274	0.4128	0.4124	0.2245	
	0.6709	1.4821	4.5961	1.3914	0.4767	2.3532	0.0000	3.8582	2.8465	
	0.3945	0.5850	0.9545	0.5773	0.3453	0.5026	5.8806	0.0986	0.1711	
	0.5942	0.5105	0.0000	0.5656	0.0000	5.3392	0.0000	0.3153	0.1118	
	0.5415	0.5672	4.3999	0.0139	0.1966	0.1137	0.2312	0.2778	0.0000	
	2.1740	0.3282	0.1622	0.0465	0.0067	0.0061	0.2383	0.4581	0.0000	
	0.2786	0.0201	0.1640	0.1364	0.3845	0.0000	0.0000	0.0000	0.0000	
	0.0623	0.0000	0.3550	0.0133	0.0047	0.0162	0.2179	0.0628	0.0000	
	0.0635	0.0780	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0695	
	0.0000									
22A	0.0000	0.1788	1.8474	0.6258	3.6053	3.7617	0.0518			
	0.6729	0.0240	0.5275	0.6458	7.7802	4.0730	0.7558	2.2552	0.0079	
	0.0000	0.0312	4.2447	3.9792	6.7142	0.0000	1.5510	1.2869	0.8371	
	0.0268	0.6678	0.0000	6.5243	5.4083	2.4557	0.6858	0.0000	0.1264	
	3.3986	2.7855	3.1865	0.0000	0.3026	0.3756	0.1834	0.8122	0.1417	
	1.2172	1.5195	2.8810	1.3346	0.7778	1.2812	0.0000	2.5772	2.5649	
	0.2648	0.2656	0.7702	0.1613	0.0520	0.3019	3.2463	0.0756	0.0280	
	0.3312	0.2904	0.0000	0.3393	0.0000	3.0904	0.0000	0.1865	0.0664	
	0.3019	0.7141	0.0082	0.0128	0.0603	0.0000	0.1023	0.0541	0.0000	
	0.7371	0.1678	0.0580	0.0390	0.0000	0.0113	0.1518	0.1367	0.0000	
	0.2159	0.0105	0.0572	0.0407	0.1598	0.0203	0.0000	0.0021	0.0062	
	0.0000	0.0000	0.1699	0.0107	0.0044	0.0168	0.0941	0.0352	0.0000	
	0.0334	0.0417	0.0058	0.0076	0.0037	0.0000	0.0333	0.0000	0.0480	
	0.0000									
22B	0.0000	0.2878	1.0549	0.3133	2.1700	2.5527	0.1251			
	1.1835	0.0155	0.2122	0.4358	5.2932	2.9675	0.5146	1.7649	0.0127	
	0.0697	0.0301	2.7851	2.3245	4.6411	6.1712	1.5501	1.0728	0.6043	
	0.0000	0.5023	0.0000	5.3698	4.5004	2.2694	0.5821	0.0000	0.1102	
	2.5414	2.2074	2.2498	0.0000	0.2287	0.2836	0.2213	0.9160	0.1140	
	1.0217	1.6774	3.0157	1.6542	0.6877	1.4797	0.0000	3.6442	3.8795	
	0.3986	0.2830	0.9949	0.1477	0.0233	0.4083	3.9785	0.1298	0.0113	
	0.4357	0.3574	0.0000	0.4338	0.0000	4.7672	0.0000	0.2201	0.0801	
	0.4048	0.0000	3.9986	0.0165	0.0404	0.1139	0.1152	0.0000	0.0033	
	0.7672	0.1546	0.0400	0.0501	0.0116	0.0091	0.2144	0.0532	0.0647	
	0.2606	0.0127	0.0440	0.0273	0.0000	0.0000	0.0159	0.0000	0.0050	
	0.0353	0.0000	0.1758	0.0000	0.0058	0.0165	0.0790	0.0404	0.0000	
	0.0358	0.0577	0.0046	0.0123	0.0015	0.0000	0.0452	0.0000	0.0729	
	0.0000									
24A	0.0000	0.2903	1.1125	0.3273	1.2557	1.9774	0.0315			
	0.4064	0.0741	0.0000	0.2367	4.7663	1.9854	0.3244	1.4966	2.0186	
	0.0492	1.7587	1.5021	1.4824	3.0373	4.4639	2.4927	1.0633	0.4826	
	0.0000	0.6127	0.0000	3.2542	2.8620	1.3375	0.5995	0.1159	0.1967	
	2.0145	2.0330	0.0428	0.0000	2.2401	0.4361	0.1542	0.3998	0.1629	
	1.0803	1.9277	3.4967	0.7563	1.4314	0.9298	0.0000	1.8887	1.5774	
	0.1629	0.2214	0.6420	0.3251	0.2462	0.2085	2.3193	0.1064	0.1221	
	0.2731	0.2495	0.0000	0.2867	0.0000	2.5241	0.0000	0.1514	0.0566	

	0.2294	0.3425	2.2283	0.0437	0.1060	0.0849	0.0996	0.1437	0.0000
	0.9401	0.1733	0.0841	0.0253	0.0000	0.0000	0.1533	0.2257	0.0000
	0.1533	0.0000	0.0993	0.0743	0.1852	0.0255	0.0000	0.0000	0.0000
	0.0411	0.0000	0.2221	0.0062	0.0000	0.0257	0.1229	0.0347	0.0000
	0.0429	0.0545	0.0000	0.0000	0.0000	0.0000	0.0371	0.0000	0.0000
	0.0000								
24B	0.0000	0.4533	0.8056	0.0000	0.6116	0.9726	0.1204		
	0.2644	0.0610	0.0000	0.1408	4.3399	0.9547	0.1228	0.6370	4.4895
	0.0805	4.6927	0.7791	1.1676	1.2709	1.8292	2.6990	0.3570	0.2247
	0.0000	1.2265	0.0000	1.7458	1.5511	0.6825	0.2929	0.1541	0.1780
	0.7927	0.9189	0.7815	0.0000	0.6353	0.1367	0.1218	0.2081	0.0748
	0.4809	0.8588	1.6462	0.4063	0.4928	0.5052	0.0000	1.0796	0.8777
	0.0974	0.1091	0.3412	0.1645	0.1513	0.1357	1.1837	0.0468	0.0562
	0.1777	0.1516	0.0000	0.1610	0.0000	1.4642	0.0000	0.0841	0.0449
	0.1741	0.2101	1.5006	0.0434	0.0696	0.0572	0.0484	0.1122	0.0000
	0.6227	0.1082	0.0490	0.0165	0.0000	0.0000	0.1055	0.1483	0.0000
	0.0912	0.0111	0.0704	0.0544	0.1157	0.0000	0.0151	0.0000	0.0000
	0.0314	0.0000	0.1604	0.0051	0.0000	0.0315	0.0881	0.0000	0.0000
	0.0282	0.0372	0.0000	0.0000	0.0000	0.0000	0.0247	0.0000	0.0000
	0.0000								
26A	0.0000	0.1441	0.3362	0.1905	1.6242	1.6181	0.1253		
	0.6053	0.0155	0.0000	0.2686	5.0834	2.1214	0.3280	1.8892	0.5154
	0.0000	0.5570	2.7283	2.4568	3.8075	5.1767	1.8798	1.3618	0.4918
	0.0000	0.5147	0.0000	5.2788	4.1827	1.5275	0.4859	0.0000	0.0849
	2.9014	2.2956	1.8451	0.0000	0.3769	0.5588	0.3378	0.3219	0.2236
	0.7763	1.6883	1.7183	0.9785	0.8163	1.7451	0.0000	2.6727	1.9507
	0.2960	0.4628	0.7247	0.4774	0.3096	0.3831	4.2425	0.0813	0.1692
	0.4491	0.3820	0.0000	0.4345	0.0000	3.7356	0.0000	0.2338	0.0829
	0.4093	0.5132	3.0922	0.0310	0.1506	0.1141	0.1748	0.2734	0.0000
	1.6382	0.2458	0.1203	0.0533	0.0100	0.0182	0.2093	0.3452	0.0000
	0.2121	0.0191	0.1405	0.0000	0.2966	0.0000	0.0361	0.0025	0.0000
	0.0516	0.0000	0.2881	0.0086	0.0000	0.0196	0.1698	0.0506	0.0000
	0.0560	0.0690	0.0000	0.0000	0.0000	0.0000	0.0554	0.0000	0.0644
	0.0000								
26B	0.0000	0.2106	0.4210	0.1146	0.7939	1.1270	0.1983		
	0.3132	0.0340	0.1553	0.2576	4.9873	1.0308	0.1540	0.7305	2.5102
	0.0612	2.8411	1.0190	1.7049	2.1175	2.8142	1.0799	0.6549	0.2764
	0.0000	0.7521	0.0000	2.7489	2.4144	1.1045	0.4792	0.0817	0.1737
	1.4292	1.6028	1.3605	0.0000	0.4751	0.2756	0.1774	0.2626	0.1112
	0.7888	1.5419	2.0262	0.7043	1.0782	0.8431	1.6952	0.0000	1.4223
	0.1584	0.1986	0.5662	0.4012	0.2875	0.2118	2.2266	0.0742	0.1401
	0.2693	0.2514	0.0000	0.2791	0.0000	2.5634	0.0000	0.1684	0.0293
	0.2792	0.4204	2.2208	0.0242	0.1290	0.0797	0.1132	0.1824	0.0000
	1.0849	0.1796	0.0952	0.0458	0.0109	0.0166	0.1728	0.2563	0.0118
	0.1867	0.0186	0.1164	0.0939	0.2369	0.0000	0.0338	0.0006	0.0000
	0.0596	0.0000	0.0000	0.0081	0.0034	0.0231	0.1337	0.0429	0.0000
	0.0524	0.0559	0.0084	0.0345	0.0054	0.0010	0.0441	0.0009	0.0533
	0.0000								
st1	0.0000	0.5821	2.6513	1.0110	1.3246	6.4203	0.0562		
	0.9339	0.0678	0.1908	0.1356	10.3164	4.5678	0.8044	5.1472	0.0085
	0.0376	0.0878	1.2132	0.8741	6.8249	8.0705	6.2847	2.8852	1.0357
	0.0000	0.7089	0.0000	3.3107	2.6369	1.1026	1.4475	0.0000	0.1143
	3.2675	3.2813	3.0837	0.0000	0.2189	1.0032	0.0569	0.2601	0.2498
	1.6201	3.4439	3.6298	0.4240	3.9991	0.4144	0.0444	0.5782	0.3776
	0.0185	0.1168	0.2801	0.3863	0.2602	0.0000	0.7194	0.0000	0.2164
	0.0114	0.0371	0.0000	0.0706	0.0188	0.5094	0.0000	0.0630	0.0072
	0.0104	0.3005	0.0000	0.0223	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0793	0.0132	0.0090	0.0000	0.0000	0.0000	0.0000	0.0148	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0093	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0182	0.0000	0.0000	0.0000

0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000