

US EPA ARCHIVE DOCUMENT

CATALOG DOCUMENTATION

National Surface Water Survey: Eastern Lake Survey-Phase I
ELSDS4 - Chemical Survey

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1. DATA SET IDENTIFICATION

1.1 Title of Catalog Document
ELSDS4_M 1984

1.2 Authors of the Catalog Entry
U.S. EPA NHEERL Western Ecology Division
Corvallis, OR

1.3 Catalog Revision Date
May 1998

1.4 Data Set Name
ELSDS4

1.5 Task Group
National Acid Precipitation Assessment Program (NAPAP)- Aquatic Effects
Research Program

1.6 Data Set Identification Code
151

1.7 Version
001

1.8 Requested Acknowledgment

This research was funded as apart of the National Acid Precipitation Assessment Program (NAPAP) by the U.S. Environmental Protection Agency (EPA). If you publish these data or use them for analyses in publications, EPA requires a standard statement for work it has supported:

"Although the data described in this article have been funded wholly or in part by the U.S. Environmental Protection Agency, it has not been subjected to Agency review, and therefore does not necessarily reflect the views of the Agency and no official endorsement of the conclusions should be inferred."

2. INVESTIGATOR INFORMATION

2.1 Principal Investigator
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2.2 Investigation Participant - Sample Collection

John Baker, Coordinator

3. DATA SET ABSTRACT

3.1 Abstract of the Data Set

The Eastern Lake Survey-Phase I (ELS-I), conducted in the fall of 1984, was the first part of a long-term effort by the U.S. Environmental Protection Agency known as the National Surface Water Survey. It was designed to synoptically quantify the acid-base status of surface waters in the United States in areas expected to exhibit low buffering capacity. The effort was in support of the National Acid Precipitation Assessment Program (NAPAP). The survey involved a three-month field effort in which 1612 probability sample lakes and 186 special interest lakes in the northeast, southeast, and upper midwest regions of the United States were sampled.

3.2 Keywords for the Data Set

Aluminum, alkalinity, acid neutralizing capacity, calcium, dissolved inorganic carbon, dissolved organic carbon, chloride, color, specific conductance, iron, potassium, magnesium, manganese, ammonium, sodium, sulfate, nitrate, pH, total phosphorus, silica, turbidity, water chemistry

4. OBJECTIVES AND INTRODUCTION

4.1 Program Objective

The ELS-I had three primary objectives. (1) To determine the percentage (by number and area) and location of lakes that are acidic in potentially sensitive regions of the eastern United States, (2) to determine the percentage (by number and area) and location of lakes that have low acid neutralizing capacity in potentially sensitive regions of the eastern United States, and (3) to determine the chemical characteristics of lake populations in potentially sensitive regions of the eastern United States and provide the data base for selecting lakes for further study.

4.2 Data Set Objective

This data set is part of the National Surface Water Survey (NSWS) and the National Acid Precipitation Assessment Program (NAPAP). The data set contributes to the quantification of the extent, location, and characteristics of sensitive and acidic lakes and streams in the eastern United States sampled during the fall season.

4.3 Data Set Background Discussion

Efforts to assess the impact of acid deposition on aquatic resources have previously been limited to single-factor indices. Acidification of surface waters, however, depends on the acid neutralizing capacity (ANC) generated both within the lake and its watershed. Hence, the response of an aquatic ecosystem to acidic deposition is a composite of many factors. Water chemistry in lakes is analyzed to understand the chemical habitat within which biota must exist so that we can understand the biological potential of the system.

4.4 Summary of Data Set Parameters

Water chemistry parameters are reported for one sample taken at the deepest part of the lake. These include: aluminum, alkalinity, acid neutralizing capacity, calcium, carbonate, color, specific conductance, dissolved inorganic carbon, dissolved organic carbon, bicarbonate, potassium, magnesium, ammonium, sodium, nitrate, total nitrogen, pH, total phosphorus, silica, total suspended solids, and turbidity. In addition to chemical characteristics of lakes, data were collected on lake characteristics- e.g. location, elevation, depth, area, etc.

5. DATA ACQUISITION AND PROCESSING METHODS

5.1 Data Acquisition

5.1.1 Sampling Objective

To obtain a single grab sample of lake water for the purposes of chemical analysis during the fall season, just after lake turnover, from the center and deepest part of the lake.

5.1.2 Sample Collection Methods Summary

A 6.2-L Van Dorn acrylic plastic sample bottle was filled from a depth of 1.5 m. Two 60-ml syringes and one 4-L polyethylene Cubitainer were filled from the Van Dorn bottle.

5.1.3 Sampling Start Date

October 7, 1984

5.1.4 Sampling End Date

December 14, 1984

5.1.5 Platform

Helicopter

5.1.6 Sampling Gear

A 6.2-L Van Dorn acrylic plastic sample bottle was filled from a depth of 1.5 m from the center of the lake. If site depth was < 3.0 m and a clean (free from sediment, plants or other large particulate matter) sample could not be obtained at 1.5 m, a sample was collected at 0.5 m.

5.1.7 Manufacturer of Instruments

NA

5.1.8 Key Variables

NA

5.1.9 Sampling Method Calibration

NA

5.1.10 Sample Collection Quality Control

Linthurst, R.A., D.H. Landers, J.M. Eilers, D.F. Brakke, W.S. Overton, E.P. Meier, and R.E. Crowe. Characteristics of Lakes in the Eastern United States. Volume I. Population Descriptions and Physico-Chemical Relationships. EPA/600/4-86/007a, U.S. Environmental Protection Agency, Washington, DC, 1986, 136 pp.

5.1.11 Sample Collection Method Reference

See Linthurst et al. (1986).

5.1.12 Sample Collection Method Deviations

NA

5.2 Data Preparation and Sample Processing

5.2.1 Sample Processing Objective

See Linthurst et al. (1986).

5.2.2 Sample Processing Methods Summary

See Linthurst et al. (1986).

5.2.3 Sample Processing Method Calibration

See Linthurst et al. (1986).

5.2.4 Sample Processing Quality Control
See Linthurst et al. (1986).

5.2.5 Sample Processing Method Reference
See Linthurst et al. (1986).

6. DATA MANIPULATIONS

6.1 Name of New or Modified Values
None.

6.2 Data Manipulation Description
See Linthurst et al. (1986).

7. DATA DESCRIPTION

7.1 Description of Parameters

#	Parameter SAS Name	Data Type	Len	Format	Parameter Label
8	AIRTMP	Num	8		AIR TEMP (DEG C)
81	ALEX11	Num	8		EXT. ALUMINUM (UG/L)
82	ALEX11F	Char	12		FLAG FOR ***ALEX11
102	ALKA11	Num	8		ALKALINITY (UEQ/L)
103	ALKA11F	Char	12		FLAG FOR ***ALKA11
150	ALKANEW	Num	8		UPDATED ANC VALUES (1987)
151	ALKANEWF	Char	2		FLAG FOR ALKANEW
112	ALTL11	Num	8		TOTAL ALUMINUM (UG/L)
113	ALTL11F	Char	12		FLAG FOR ***ALTL11
51	ANDEF	Num	8		CATSUM - ANSUM (UEQ/L)
47	ANSUM	Num	8		SUM OF ANIONS (UEQ/L)
42	ANSUMF	Char	18		FLAG FOR ANSUM
29	BAT_ID	Char	6		BATCH ID
31	BAT_IDF	Char	6		FLAG FOR ***BAT_ID
149	BNSTAR	Num	8		POPULATION SIZE BY STRATA
69	CA11	Num	8		CALCIUM (MG/L)
70	CA11F	Char	12		FLAG FOR ***CA11
54	CA16	Num	8		CALCIUM (UEQ/L)
48	CATSUM	Num	8		SUM OF CATIONS (UEQ/L)
43	CATSUMF	Char	18		FLAG FOR CATSUM
83	CL11	Num	8		CHLORIDE (MG/L)
84	CL11F	Char	12		FLAG FOR ***CL11
57	CL16	Num	8		CHLORIDE (UEQ/L)
55	C0316	Num	8		CARBONATE ALKALINITY (UEQ/L)
56	C0316F	Char	12		FLAG FOR ***C0316
40	COLVAL	Num	8		COLOR (PCU)
41	COLVALF	Char	6		FLAG FOR ***COLVAL
114	CONCAL	Num	8		CALC. SP. COND. (US)
44	CONCALF	Char	18		FLAG FOR ***CONCAL
104	COND11	Num	8		CONDUCTIVITY-ANAL LAB (US)
105	COND11F	Char	12		FLAG FOR ***COND11
15	CONTOP	Num	8		SP. COND. (UPPER HYDROLAB SAMPLE), (US)
16	CONTOPF	Char	6		FLAG FOR ***CONTOP
24	CON_60	Num	8		CONDUCTIVITY AT .6*DEPTH (US)
17	CON_B	Num	8		SP. COND. (LOWER HYDROLAB SAMPLE), (US)
115	COUNTY	Char	5		FIPS CODE(ST,COUNTY)
3	DATSMP	Num	8	DATE	DATE SAMPLED FORM 1
106	DICE11	Num	8		EQUIL DIC-ANAL LAB (MG/L)
107	DICE11F	Char	12		FLAG FOR ***DICE11
108	DICI11	Num	8		INITIAL DIC-ANAL LAB (MG/L)
109	DICI11F	Char	12		FLAG FOR ***DICI11

7.1 Description of Parameters, continued

#	Parameter SAS Name	Data Type	Len	Format	Parameter Label
34	DICVAL	Num	8		DIC - FIELD LAB (MG/L)
35	DICVALF	Char	6		FLAG FOR ***DICVAL
118	DISM	Num	8		DISTANCE FROM COAST (KM)
92	DOC11	Num	8		DOC-ANAL LAB (MG/L)
93	DOC11F	Char	12		FLAG FOR ***DOC11
22	DP_60	Num	8		DEPTH .6*BOTTOM (M)
12	DP_B	Num	8		DEPTH AT BOTTOM-1.5M (M)
11	DP_TOP	Num	8		DEPTH AT SURFACE (1.5M) (M)
122	ELEV	Num	8		LAKE ELEVATION (M) (SUBREG 1D CORRECTED)
79	FE11	Num	8		IRON (UG/L)
80	FE11F	Char	12		FLAG FOR ***FE11
90	FTL11	Num	8		FLUORIDE (MG/L)
91	FTL11F	Char	12		FLAG FOR ***FTL11
63	FTL16	Num	8		FLUORIDE (UEQ/L)
65	H16	Num	8		HYDROGEN (UEQ/L) FROM PHAC
66	H16F	Char	12		FLAG FOR ***H16
52	HC0316	Num	8		HCO3 (UEQ/L)
53	HC0316F	Char	12		FLAG FOR ***HC0316
134	HDEP	Num	8		HYDROGEN ION DEPOSITION (G/M**2/YR)
5	HYD_ID	Char	2		HYDROLAB ID FORM 1
28	INLETS	Num	8		INLETS (#)
124	IN_OUT	Char	6		PRESENCE/ABSENCE OF INLETS/OUTLETS
73	K11	Num	8		POTASSIUM (MG/L)
74	K11F	Char	12		FLAG FOR ***K11
60	K16	Num	8		POTASSIUM (UEQ/L)
68	LABNAM	Char	30		LABORATORY FOR ANALYSIS
116	LAKEID1	Char	7		ERLD-UMD ID/ALSC WSHED-POND ID
117	LAKEID1T	Char	4		TAG FOR LAKEID1
119	LAKENAME	Char	30		LAKE NAME
1	LAKE_ID	Char	10		LAKE ID
123	LAKE_SIZ	Num	4		LAKE SURFACE AREA (HA)
125	LAKE_TYP	Char	10		LAKE TYPE (LAKE, POND, RESERVOIR, ETC)
142	LAKE_VOL	Num	8		CALC LAKE VOL (10**6 CU M)
131	LAT	Char	10		LATITUDE
126	LAT_DD	Num	4		LATITUDE (DECIMAL DEGREES)
132	LONG	Char	11		LONGITUDE
127	LONG_DD	Num	4		LONGITUDE (DECIMAL DEGREES)
129	MAP_BIG	Char	25		MAP SHEET NAME (1:250,000 SCALE)
130	MAP_SML	Char	40		MAP SHEET NAME, 15 OR 7.5 QUAD
71	MG11	Num	8		MAGNESIUM (MG/L)
72	MG11F	Char	12		FLAG FOR ***MG11
58	MG16	Num	8		MAGNESIUM (UEQ/L)
77	MN11	Num	8		MANGANESE (UG/L)
78	MN11F	Char	12		FLAG FOR ***MN11
75	NA11	Num	8		SODIUM (MG/L)
76	NA11F	Char	12		FLAG FOR ***NA11
61	NA16	Num	8		SODIUM (UEQ/L)
2	NEWSR	Char	10		NEW SUBREGION CODE (FIXED 8/23/89)
94	NH411	Num	8		AMMONIUM (MG/L)
95	NH411F	Char	12		FLAG FOR ***NH411
64	NH416	Num	8		AMMONIUM (UEQ/L)
87	NO311	Num	8		NITRATE (MG/L)
67	NO311F	Char	14		FLAG FOR ***NO311
59	NO316	Num	8		NITRATE (UEQ/L)
135	NO3DEP	Num	8		NITRATE DEPOSITION (G/M**2/YR)
50	ORGION	Num	8		ORGANIC ANION (UEQ/L)
46	ORGIONF	Char	18		FLAG FOR ***ORGION
27	OUTLET	Num	8		OUTLETS (#)
100	PHAC11	Num	8		PH-ACIDITY INITIAL

7.1 Description of Parameters, continued

#	Parameter SAS Name	Data Type	Len	Format	Parameter Label
101	PHAC11F	Char	12		FLAG FOR ***PHAC11
98	PHAL11	Num	8		PH-ALKALINITY INITIAL
99	PHAL11F	Char	12		FLAG FOR ***PHAL11
96	PHEQ11	Num	8		PH-AIR EQUILIBRATED
97	PHEQ11F	Char	12		FLAG FOR ***PHEQ11
36	PHSTVL	Num	8		PH - FIELD LAB
37	PHSTVLF	Char	6		FLAG FOR ***PHSTVL
25	PH_60	Num	8		PH AT .6*DEPTH
20	PH_B	Num	8		PH AT BOTTOM-1.5M
18	PH_TOP	Num	8		PH AT SURFACE (1.5M)
19	PH_TOPF	Char	6		FLAG FOR ***PH_TOP
137	PRECIP	Num	8		PRECIPITATION (M/YR)
110	PTL11	Num	8		TOTAL PHOSPHORUS (UG/L)
111	PTL11F	Char	12		FLAG FOR ***PTL11
148	REGION	Char	1		NSWS REGION
147	REG_SPC	Char	16		REG SPEC LTM NRC DEW DER SAMPLE CLASS
140	RT	Num	8		RESIDENCE TIME (YR) (RECALC NOV 85)
138	RUNIN	Num	8		ANNUAL RUNOFF INCHES FROM DIGIT MAP
141	RUNOFF	Num	8		SURFACE WATER RUNOFF (M/YR)
30	SAM_ID	Char	6		SAMPLE ID
33	SAM_IDF	Char	6		FLAG FOR ***SAM_ID
9	SECDIS	Num	8		SECCHI DISAPPEAR DEPTH (M)
144	SECMEAN	Num	8		SECCHI, MEAN DEPTH (M)
10	SECREA	Num	8		SECCHI REAPPEAR DEPTH (M)
88	SI0211	Num	8		SILICA (MG/L)
89	SI0211F	Char	12		FLAG FOR ***SI0211
7	SITDPM	Num	8		SITE DEPTH (M)
85	S0411	Num	8		SULFATE (MG/L)
86	S0411F	Char	12		FLAG FOR ***S0411
62	S0416	Num	8		SULFATE (UEQ/L)
136	S04DEP	Num	8		SULFATE DEPOSITION (G/M**2/YR)
49	SOBC	Num	8		SUM OF BASE CATIONS (UEQ/L)
45	SOBCF	Char	18		FLAG FOR ***SOBC
120	ST	Char	2		STATE (TWO-LETTER ABBREV)
32	STA_ID	Char	6		STATION ID FORM 2
145	STRAT	Char	6		STRATIFICATION (NONE, WEAK, STRONG)
133	STRATA	Char	3		NSWS STRATA
152	SUBREG	Char	7		REGION + SUB_RGN
128	SUB_RGN	Char	1		NSWS SUBREGION
4	TIMSMP	Num	8	TIME	TIME SAMPLED (24 H) HH:MM
21	TMPDF1	Num	8		TEMP DIF TOP-BOTTOM (DEG C)
26	TMPDF2	Num	8		TEMP DIF TOP-.6*DEPTH (DEG C)
13	TMPTOP	Num	8		TEMPERATURE AT SURFACE (1.5M) (DEG C)
23	TMP_60	Num	8		TEMPERATURE AT .6*DEPTH (DEG C)
14	TMP_B	Num	8		TEMPERATURE AT BOTTOM-1.5M (DEG C)
38	TURVAL	Num	8		TURBIDITY - FIELD LAB (NTU)
39	TURVALF	Char	6		FLAG FOR ***TURVAL
143	WALA	Num	8		WATERSHED AREA/LAKE AREA
139	WEIGHT1	Num	8		POP. EXTRAPOLATION FACTOR
121	WSHD	Num	8		WATERSHED AREA (HA)
146	WS_DIS	Char	8		D)WELL I)ND L)OG M)INE R)OAD S)TOCK
6	WS_OTH	Char	25		DISTURB W/I 100M - OTHER

7.1.6 Precision to which values are reported

7.1.1.7 Minimum Value in Data Set

Name	Min
AIRTMP	-10
ALEX11	0
ALKA11	-209.12
ALKANEW	-108.4
ALTL11	0
ANDEF	-576.702
ANSUM	24.17
BNSTAR	19
CA11	0.187
CA16	9.331
CATSUM	54.35
CL11	0.04
CL16	1.128
C0316	0
COLVAL	0
CONCAL	7.259
COND11	7.8
CONTOP	0
CON_60	8
CON_B	0
DATΣMP	9046
DICE11	0
DICI11	0.148
DICVAL	0.158
DISM	1
DOC11	0
DP_60	4
DP_B	1.5
DP_TOP	0
ELEV	0.6096
FE11	0
FTL11	0.001
FTL16	0.053
H16	0.0015
HC0316	0.052
HDEP	0.007
INLETS	0
K11	0.004
K16	0.102
LAKE_SIZ	0.8999996185
LAKE_VOL	0.005
LAT_DD	27.208328247
LONG_DD	-67.172729492
MG11	0.102
MG16	8.391
MN11	0
NA11	0.06
NA16	2.61
NH411	0
NH416	0
N0311	0
N0316	0
N03DEP	0.62
ORGION	0
OUTLET	0
PHAC11	3.81
PHAL11	3.8
PHEQ11	3.82
PHSTVL	3.81
PH_60	4.62

7.1.7 Minimum Value in Data Set, continued

Name	Min
PH_B	3.99
PH_TOP	3.6
PRECIP	0.654
PTL11	0
RT	0.000174611
RUNIN	2
RUNOFF	0.0508
SECDIS	0.1
SECMEAN	0.05
SECREA	0
SI0211	0
SITDPM	0.5
S0411	0.1
S0416	2.082
S04DEP	0.68
SOBC	33.955
TIMSMP	27600
TMPDF1	0
TMPDF2	0
TMPTOP	0.7
TMP_60	4
TMP_B	1.4
TURVAL	0
WALA	1.73
WEIGHT1	1
WSHED	5

7.1.7 Maximum Value in Data Set

Name	Max
AIRTMP	27
ALEX11	446
ALKA11	4046.6
ALKANEW	4112.8
ALTL11	1357.4
ANDEF	510.042
ANSUM	5986.79
BNSTAR	6332
CA11	60.94
CA16	3040.906
CATSUM	5410.09
CL11	94.7
CL16	2671.487
C0316	93.421
COLVAL	345
CONCAL	667.128
COND11	543
CONTOP	486
CON_60	286
CON_B	623
DATSMP	9114
DICE11	46.908
DICI11	49.834
DICVAL	48.99
DISM	121
DOC11	48.22
DP_60	78
DP_B	58.5
DP_TOP	2

7.1.7 Maximum Value in Data Set, continued

Name	Max
ELEV	1213
FE11	2638
FTL11	0.5867
FTL16	30.884
H16	154.8817
HC0316	4051.282
HDEP	0.088
INLETS	168
K11	24.98
K16	638.739
LAKE_SIZ	89357.75
LAKE_VOL	8458.247
LAT_DD	48.574981689
LONG_DD	-94.066650391
MG11	32.533
MG16	2676.165
MN11	2030
NA11	58.549
NA16	2546.881
NH411	1.63
NH416	90.367
NO311	30.6
NO316	493.578
NO3DEP	2.07
ORGIION	261.9665063
OUTLET	5
PHAC11	8.82
PHAL11	8.78
PHEQ11	8.93
PHSTVL	9.36
PH_60	8.11
PH_B	8.84
PH_TOP	9.28
PRECIP	1.959
PTL11	833
RT	14.650931927
RUNIN	40
RUNOFF	1.016
SECDIS	11.5
SECMEAN	11.45
SECREA	11.4
SI0211	22.6
SITDPM	119
S0411	119
S0416	2477.58
S04DEP	4.17
SOBC	5408.42
TIMSMP	62340
TMPDF1	8.7
TMPDF2	7.5
TMPTOP	21.9
TMP_60	15.3
TMP_B	21.1
TURVAL	290
WALA	16843.71
WEIGHT1	82.558
WSHED	551300

7.2 Data Record Example

7.2.1 Column Names for Example Records

AIRTMP ALEX11 ALEX11F ALKA11 ALKA11F ALKANEW ALKANEF ALTL11 ALTL11F ANDEF ANSUM
 ANSUMF BAT_ID BAT_IDF BNSTAR CA11 CA11F CA16 CATSUM CATSUMF CL11 CL11F CL16 C0316
 C0316F COLVAL COLVALF CONCAL CONCALF COND11 COND11F CONTOP CONTOPF CON_60 CON_B
 COUNTY DATSMP DICE11 DICE11F DICI11 DICI11F DICVAL DICVALF DISM DOC11 DOC11F
 DP_60 DP_B DP_TOP ELEV FE11 FE11F FTL11 FTL11F FTL16 H16 H16F HC0316 HC0316F
 HDEP HYD_ID INLETS IN_OUT K11 K11F K16 LABNAM LAKEID1 LAKEID1T LAKENAME LAKE_ID
 LAKE_SIZ LAKE_TYP LAKE_VOL LAT LAT_DD LONG LONG_DD MAP_BIG MAP_SML MG11 MG11F
 MG16 MN11 MN11F NA11 NA11F NA16 NEWSR NH411 NH411F NH416 N0311 N0311F N0316
 N03DEP ORGION ORGIONF OUTLET PHAC11 PHAC11F PHAL11 PHAL11F PHEQ11 PHEQ11F PHSTVL
 PHSTVLF PH_60 PH_B PH_TOP PH_TOPF PRECIP PTL11 PTL11F REGION REG_SPC RT RUNIN
 RUNOFF SAM_ID SAM_IDF SECDIS SECMEAN SECREA SIO211 SIO211F SITDPM S0411 S0411F
 S0416 S04DEP SOBC SOBCF ST STA_ID STRAT STRATA SUBREG SUB_RGN TIMSMP TMPDF1
 TMPDF2 TMPTOP TMP_60 TMP_B TURVAL TURVALF WALA WEIGHT1 WSHED WS_DIS WS_OTH

7.2.2 Example Data Records

8,208.3," ",-9.9," ",-21.7," ",386.6," ",-33.235,154.01,"HON5Z1","210"," ",
 711,1.188," ",59.281,120.77," ",0.285," ",8.04,0,"Z1",10," ",23.886,"HON5Z1",
 23.7,"B5",23," ",.,22,"36043",250CT84,0.129,"Z1",0.41,"Z1",0.436," ",.,1.57," ",
 .,7.2,1.5,645.3,13,"B5Z1",0.0542," ",2.853,16.2181," ",0.882,"Z1",0.043,"B",.,
 "NI/0",0.248," ",6.341,"EMSI","04-504"," ",,"HAWK POND","1A1-003",12.799995422,
 "POND",0.434,"43-57'25'N",43.956939697,"74-57'30'W",74.958312988,"UTICA",
 "15' BIG MOOSE",0.198," ",16.287,33," ",0.402," ",17.487,"1A",0.093," ",5.156,
 0.606,"HON5",9.775,1.25,11.33051865," ",1,4.79," ",4.73," ",4.79," ",4.8," ",.,
 4.55,4.5," ",0.909,0,"Z0","1","REG/",0.5778232349,30,0.762,"14"," ",5.6,5.5,5.4,
 0.836," ",7.3,6.362," ",132.457,2.1,99.397," ",,"NY","2","MIXED","1A1","1A","A",
 10:51,0.2,.,11.5,.,11.3,0.4," ",7.5,9.633,96," ",," "

5,163.3," ",-11.3," ",-24.8," ",273.1," ",-21.441,125.99,"HON5Z1","210"," ",
 711,0.902," ",45.01,104.55,"Z1",0.266," ",7.504,0,"HOZ1",5," ",22.066,"HON5Z1",
 22.7,"B5",26," ",.,20,"36043",250CT84,0.128,"Z1",0.377,"HOZ1",0.428," ",.,1.06,
 " ",.,8.2,1.5,612.7,30,"B5",0.0436," ",2.295,20.893," ",0.633,"HOZ1",0.044,"B",
 .,"NI/NO",0.291," ",7.441,"EMSI","04-500"," ",,"EVERGREEN LAKE","1A1-004",19.5,
 "LAKE",0.661,"43-55'00'N",43.916656494,"75-01'00'W",75.016662598,"UTICA",
 "15' NUMBER FOUR",0.201," ",16.534,52," ",0.308," ",13.398,"1A",0.023,"Z1",
 1.275,0.544,"HON5",8.775,1.28,7.3902792543," ",.,4.68," ",4.71," ",4.69," ",
 4.67," ",.,4.44,4.46," ",0.906,0,"Z0","1","REG/",1.1303419242,30,0.762,"11",
 " ",6.5,6.25,6,0.363," ",7.3,5.129," ",106.786,2.14,82.383," ",,"NY","2","MIXED",
 "1A1","1A","A",10:32,0.1,.,12.2,.,12.1,0.2," ",3.74,9.633,73," ",," "

8. GEOGRAPHIC AND SPATIAL INFORMATION

8.1 Minimum Longitude

-93 Degrees 05 Minutes 50 Seconds (-93.09716797 Decimal Degrees)

8.2 Maximum Longitude

-67 Degrees 10 Minutes 22 Seconds (-67.17271949 Decimal Degrees)

8.3 Minimum Latitude

40 Degrees 48 Minutes 22 Seconds (40.80609131 Decimal Degrees)

8.4 Maximum Latitude

48 Degrees 34 Minutes 30 Seconds (48.57498169 Decimal Degrees)

8.5 Name of Area or Region

Upper Midwest (Michigan, Minnesota, and Wisconsin), Northeast (Maine, New Hampshire, Vermont, New York Pennsylvania, Connecticut, Massachusetts, Rhode Island, and New Jersey) Southeast (Virginia, North Carolina, South Carolina, Tennessee, Georgia, and Florida).

9. QUALITY CONTROL / QUALITY ASSURANCE

9.1 Data Quality Objectives

9.2 Quality Assurance Procedures
See Linthurst et al. (1986).

9.3 Unassessed Errors
NA

10. DATA ACCESS

10.1 Data Access Procedures

10.2 Data Access Restrictions

10.3 Data Access Contact Persons

10.4 Data Set Format

10.5 Information Concerning Anonymous FTP

10.6 Information Concerning Gopher and WWW

10.7 EMAP CD-ROM Containing the Data

11. REFERENCES

Brakke, D.F., D.H. Landers, and J.M. Eilers. 1988. Chemical and physical characteristics of lakes in the northeastern U.S. *Environ. Sci. Technol.* 22:155-163.

Eilers, J.M., D.F. Brakke, and D.H. Landers. 1987. Chemical and physical characteristics of lakes in the upper Midwest. *Environ. Sci. Technol.* 22:164-172.

Eilers, J.M., D.H. Landers, and D.F. Brakke. 1987. Chemical and physical characteristics of lakes in the Southeastern U.S. *Environ. Sci. Technol.* 22:172-177.

Kanciruk, P., J.M. Eilers, R.A. McCord, D.H. Landers, D.F. Brakke, and R.A. Linthurst, 1986. Characteristics of Lakes in the Eastern United States. Volume III: Data Compendium of Site Characteristics and Chemical Variables. EPA-600/4-86-007C, U.S. Environmental Protection Agency, Washington, D.C.

Landers, D.H., W.S. Overton, R.A. Linthurst, and D.F. Brakke. 1988. EPA's Eastern Lake Survey: Regional estimates of lake chemistry. *Environ. Sci. Technol.* 22:128-135.

Landers, D.H., J.M. Eilers, D.F. Brakke, and P.E. Kellar. 1987. Characteristics of acidic lakes in the eastern United States. *Verh. Int. Verein. Limnol.* 23:152-162.

Linthurst, R.A., and W.S. Overton. 1985. Response to ASA Coordinating Committee's comment on Project 3B: National Surface Water Survey, National Lake Survey, Phase I Research Plan. *J. Amer. Stat. Assoc.* 39:260-274.

Linthurst, R.A., D.H. Landers, J.M. Eilers, D.F. Brakke, W.S. Overton, E.P. Meier, and R.E. Crowe, 1986. Characteristics of Lakes in the Eastern United States. Volume I: Population Descriptions and Physico-Chemical Relationships. EPA-600/4-86-007A, U.S. Environmental Protection Agency, Washington, D.C.

Linthurst, R.A., D.H. Landers, J.M. Eilers, P.E. Kellar, D.F. Brakke, W.S. Overton, R. Crowe, E.P. Meier, P. Kanciruk, and D.S. Jefferies. 1986. Regional chemical characteristics of lakes in North America- II: Eastern United States. *Water, Air, Soil Pollut.* 31:123-129.

Overton, W.S., P. Kanciruk, L.A. Hook, J.M. Eilers, D.H. Landers, D.J. Blick, Jr., D.F. Brakke, R.A. Linthurst, and M.S. DeHaan, 1986. Characteristics of Lakes in the Eastern United States. Volume II: Lakes Sampled and Descriptive Statistics for Physical and Chemical Variables. EPA-600/4-86-007B, U.S. Environmental Protection Agency, Washington, D.C.

12. TABLE OF ACRONYMS

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