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ANNUAL REPORT

PREIMPOUNDMENT WATER QUALITY STUDY SAYLORVILLE RESERVOIR DES MOINES RIVER, IOWA

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INTRODUCTION

The Saylorville Dam and Reservoir, presently under construction, will be located in the reach of the Des Moines River between Boone and Saylorville, Iowa. The dam site is situated about 11 miles upstream from Des Moines, Iowa. This project is one of four large reservoir projects in Iowa of the Rock Island District of the US Army Corps of Engineers. The other three are: the Coralville Dam and Reservoir, already completed on the Iowa River near Iowa City; the Red Rock Dam and Reservoir on the Des Moines River southeast of Des Moines, and the Rathbun Dam and Reservoir on the Chariton River near Centerville, Iowa. The water quality changes which may take place in these large impoundments are of interest for many reasons, including potential effects upon wildlife, recreational and water supply uses, and water quality control purposes. The object of this study is to determine the existing water quality and its variations in the Saylorville Reservoir area under natural river conditions prior to completion of construction and impounding of water in the conservation storage pool.

The Corps of Engineers, Rock Island District, contracted with the Engineering Research Institute at Iowa State University to carry out the preimpoundment study.

PROJECT SCOPE

A major part of the study is a weekly sampling program conducted on the reach of the river indicated above. This weekly program includes taking grab samples at five points along the river and analyzing these samples for selected chemical, physical, and biological constituents. Special studies are conducted periodically to provide additional data concerning the variability of water quality.

The data collected are reported monthly and summarized in this annual report. Here, errors occurring in computing or reporting laboratory results in the monthly reports are corrected. Other hydrologic data have been obtained from the US Geological Survey and the US Weather Bureau as daily stage and discharge measurements for the River at Boone and at Saylorville and precipitation measurements in the reservoir area at Boone and Des Moines.

A continuously-recording water quality monitor was installed at Boone, Station 1, in May, 1968. Unfortunately, this station has not operated consistently and no data from its operation are included in this report. A summary of the difficulties encountered with the station is included in Appendix B.

FIELD OPERATIONS

Sampling Stations

The five regular sampling stations are listed below with a station description and river mileage.

Station	Miles*	Description
1	259.0	2 mi northwest of Boone, Iowa, County Road H, Boone Co.
2	235.4	2 mi west of Madrid, Iowa, State Route 89, Boone Co.
3	227.0	5 mi southeast of Madrid, Iowa, County Road X, Polk Co.
4	218.4	2 mi south of Polk City, Iowa, County Road S, Polk Co.
5	211.4	2 mi east of Camp Dodge, below Saylorville Dam, 66th Street Bridge, Polk Co.

*Miles above junction with Mississippi River.

Figure 1 shows the locations of the sampling stations.

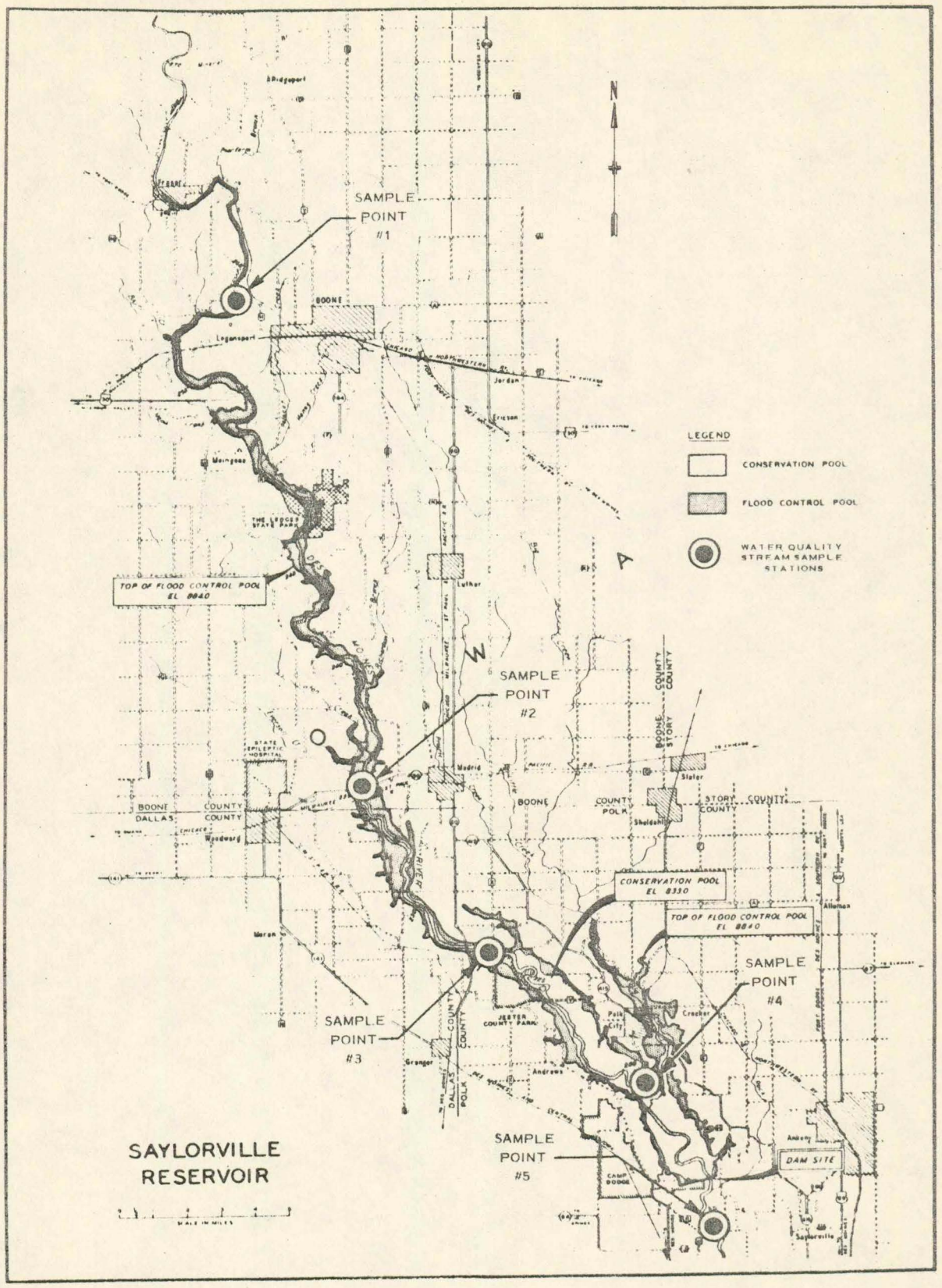

Fig. 1. Preimpoundment water quality network, Saylorville Reservoir.

Sampling Methods

For each week of the study, sampling proceeded in the upstream direction, beginning at Station 5 and ending at Station 1. Samples were obtained in one of three ways: from the bridges when the water was sufficiently deep; by wading when the river was shallow; and through holes drilled in the ice when the river was frozen. Three samples were taken from areas evenly distributed across the river and composited to obtain a representative cross-sectional sample. A DO dunker was used to collect the dissolved oxygen samples as well as the acid-preserved samples for nitrogen determinations. The DO dunker is a commercial sampler of the type described in Standard Methods[1].

Three BOD bottles full of river water were collected at each station and set with acid for laboratory nitrogen analyses. In addition, four liters of water from each station were returned to the laboratory in polyethylene jugs for the other analyses. Plankton samples were also collected at each station in one-liter bottles which already contained a preservative. When necessary, samples were iced to prevent degradation.

Field Analyses

Several analyses were performed in the field to prevent the occurrence of significant changes in certain parameters either during the sample run or prior to delivery of samples to the laboratory. These analyses included temperature, pH, carbon dioxide, dissolved oxygen, alkalinity (phenolphthalien and total), calcium, and total hardness.

LABORATORY ANALYSIS

Analytical Methods

Table 1 lists both the source and method of analysis for each parameter in the required and supplementary analyses. Some changes were made in certain tests during the year but the methods listed are those used the majority of the time.

The precision and accuracy of these tests are discussed in their reference source. The problems of obtaining accurate results have been summarized in several recent reports of the US Public Health Service[2] and the US Geological Survey[3].

Table 1. Methods of analysis of water qualtiy parameters, Saylorville Reservoir preimpoundment studies.

Parameter	Method	Reference
1. Temperature	Mercury-filled centigrade thermometer, - 20° to + 110°C	SMEWW[a], p. 311, 433
2. Turbidity	Hach turbidimeter	Hach Chem. Co.
3. pH	Electrometrically	SMEWW, p. 225, 422
4. Dissolved oxygen	Winkler, azide modification	SMEWW, p. 406
5. Carbon dioxide	Titrimetric	SMEWW, p. 82
6. Chemical oxygen demand	Dichromate reflux	SMEWW, p. 510
7. Organic nitrogen	Kjeldahl, Nesslerization	SMEWW, p. 208, 193
8. Ammonia nitrogen	Direct Nesslerization	SNEWW, p. 193
9. Nitrite nitrogen	1-naphthylamine-sulfanilic acid method	Hach Chem. Co. Catalog 10, p. 42
10. Nitrate nitrogen	Cadmium reduction method with 1-naphtylamine-sulfanilic acid	Hach.Chem. Co. Catalog 10, p. 41
11. Orthophosphate	Stannous chloride	SMEWW, p. 234
12. Biochemical oxygen demand	Incubation, 20°C, 5 day	SMEWW, p. 415

Table 1. Continued

	Parameter	Method	Reference
13.	Chlorophyll *a* and *b*	Filtration, extraction in 90% acetone, spectrophotometric determinations	J. Marine Research 11: 156-172, 1952; 21: 155-163, 1963
14.	Total solids	Evaporation and weighing	SMEWW, p. 423
15.	Volatile solids	Ignition and Weighing	SMEWW, p. 423
16.	Fixed solids	Subtraction of volatile solids from total solids	SMEWW, p. 423
17.	Phenolphthalein alkalinity	Electrometric titration using a pH meter	SMEWW, p. 49
18.	Total alkalinity	Electrometric titration using a pH meter	SMEWW, p. 49
19.	Total carbon	Total carbon analyzer	
20.	Inorganic carbon	Alkalinity computations	SMEWW, p. 52
21.	Total organic carbon	Subtraction of inorganic from total carbon	
22.	Chlorides	ASTM designation: D 512-67	ASTM[b] (1967 Ed.) p. 25 Method C
23.	Total hardness	EDTA titration	Hach Chem. Co. Catalog 10, p. 28
24.	Calcium hardness	EDTA titration	Hach Chem. Co. Catalog 10, p. 36
25.	Iron	1, 10-phenanthroline colorimetric method	Hach Chem. Co. Catalog 10, p. 36
26.	Silica	Molybdate colorimetric method	Hach Chem. Co. Catalog 10, p. 60
27.	Plankton counts	Sedgewick-Rafter counts	FWPCA[c]

[a] Standard Methods for Examination of Water and Waste Water (12th ed., 1965).

[b] 1967 Book of ASTM Standards, Part 23, Industrial Water; Atmospheric Analysis.

[c] Weber, Cornelius I., "Methods of Collection and Analysis of Plankton and Periphyton Samples in the Water Pollution Surveillance System," Water Pollution Surveillance System Applications and Development Report 19, Publication Division of Pollution Surveillance, Federal Water Pollution Control Administration, Dept. of Interior, 1014 Broadway, Cincinnati, Ohio, 1966.

Correction of Results From Chlorophyll Measurements

Introduction

One of the required analyses made weekly at each station in the Preimpoundment Study Area is a determination of the amount of chlorophyll that can be extracted from the phytoplankton in the water. This determination is far easier to make than the Standard Water Pollution Surveillance System Plankton Count and has been used by many aquatic biologists as a measure of the total phytoplankton. Whereas an expert is needed to make a plankton count, little training is needed to make a chlorophyll measurement.

Background

The green color of the chloroplasts in algae is caused by the presence of chlorophyll pigments such as chlorophyll _a_. One part of the chlorophyll _a_ molecule is a light sensitive structure; the other end is a lipid-soluble tail[4]. See Fig. 2. The chlorophyll molecules are closely packed in the lamellae of the chloroplasts with their tails imbedded in a layer of lipids and the light sensitive structures forming a light sensitive layer that can be oriented toward a source of light. Chlorophyll _b_ is a yellowish green pigment that differs from chlorophyll _a_ only insofar as an aldehyde group has replaced a methyl group in the light sensitive part of the molecule. The ratio of chlorophyll _a_ to chlorophyll _b_ is usually greater than three to one. Diatoms and brown algae contain chlorophyll _c_ in addition to chlorophyll _a_. The molecular structure of chlorlphyll _c_ has not been determined but chlorophyll _c_ has been obtained in crystal form and the absorption spectra of each of the chlorophylls is known[5,6]. See Fig. 3.

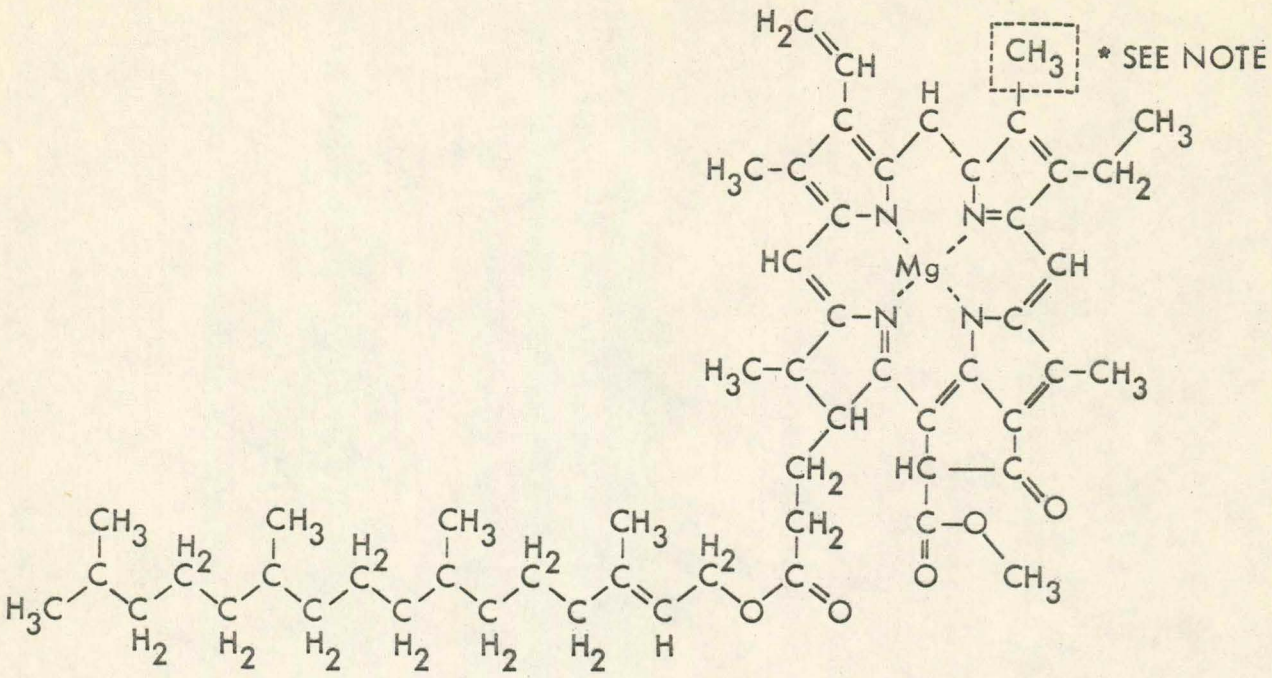

Fig. 2. Molecular structure of chlorophylls a and b. *Note: the methyl group in chlorophyll a is replaced by an aldehyde group in chlorophyll b.

Method of Analysis[7]

The chlorophylls can be extracted from phytoplankton with an aqueous solution containing 90% acetone. The plankton are concentrated from water by filtration on a membrane filter. The filter and phytoplankton are ground in a tissue grinder in the presence of the acetone solution and a small amount of magnesium carbonate. The magnesium carbonate serves both as a buffer and as a source of magnesium to prevent the conversion of chlorophyll into pheophytin. After centrifuging to bring down the solids, the amount of chlorophyll extracted by the acetone can be determined by measuring the absorbance at 665, 645 and 630 nanometers, the wavelengths of the absorption maxima for chlorophylls a, b and c respectively. The absorbance measurements can be corrected for turbidity by subtracting the

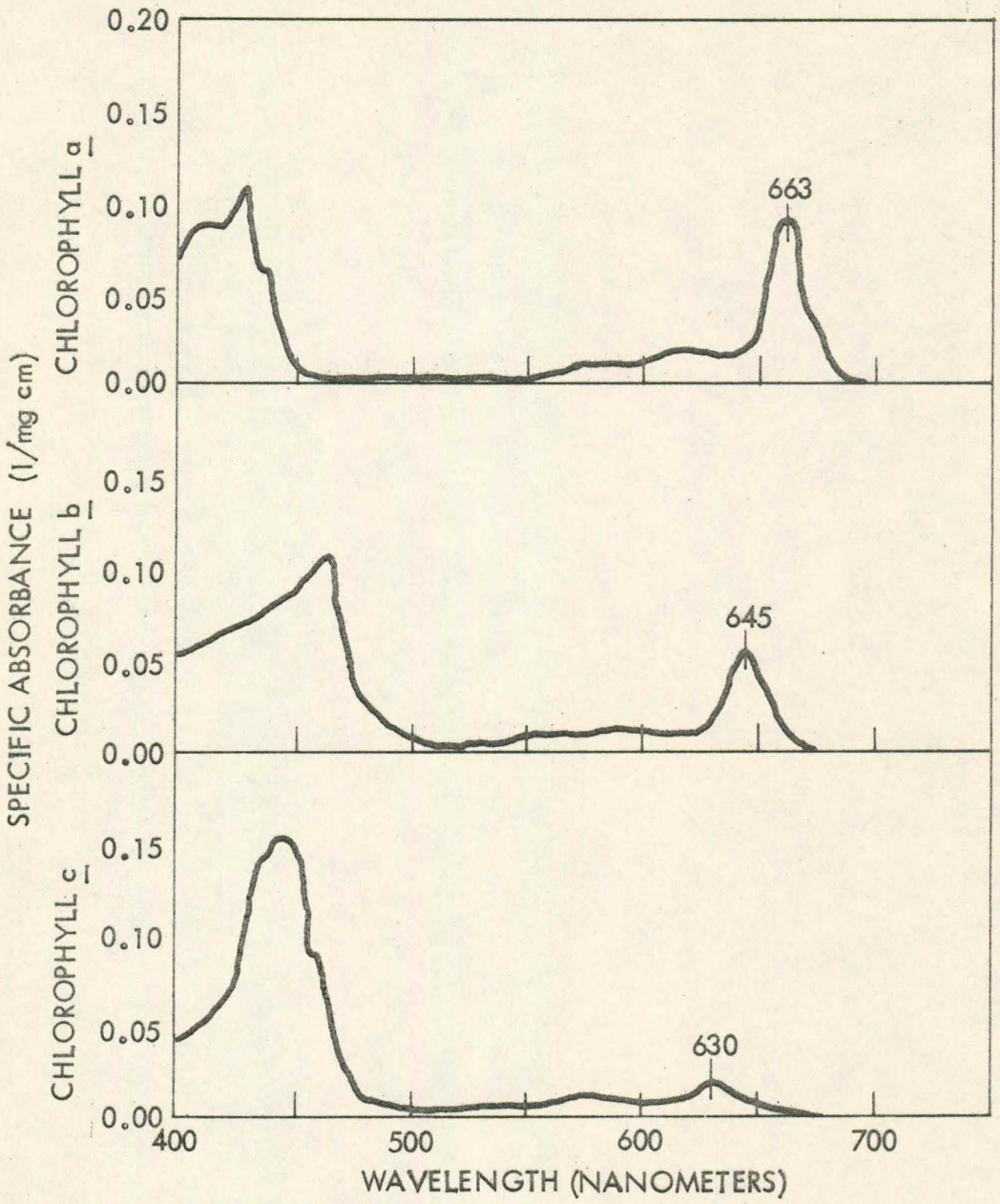

Fig. 3. Absorption spectra of chlorophylls a, b and c.

absorbance of the extract measured at 750 nanometers from each of the other absorbance measurements. The concentration of chlorophylls a, b and c can be calculated using the following equations:

$$C_a = 11.6D_{665} - 0.14D_{630} - 1.31D_{645} \quad (1)$$

$$C_b = 20.7D_{645} - 4.34D_{665} - 4.42D_{630} \quad (2)$$

$$C_c = 55.0D_{630} - 16.3D_{645} - 4.64D_{665} \quad (3)$$

where

$C_{a,\ b\ and\ c}$ = concentrations of chlorophylls a, b and c in the extract in mg/l, and

$D_{665,\ etc.}$ = the absorbance at the indicated wavelength after subtracting the absorbance of the turbidity measured at 750 nanometers.

The amount of chlorophyll in the original water sample was computed by using the following equation:

$$\text{chlorophyll a, b or c} = \left(\frac{V}{v}\right)\left(C_{a,\ b\ or\ c}\right) \quad (4)$$

where

chlorophyll a, b or c = concentration of chlorophyll a, b or c in the original water sample in mg/l,

V = 1 liter,

v = volume of sample filtered in liters, and

$C_{a,\ b\ or\ c}$ = concentration of chlorophylls a, b or c in the extract in mg/l.

Discrepancies in Results

The chlorophyll results previously reported appeared to be untrustworthy for the following reasons:

- The concentration of chlorophyll in comparison to the COD was much too high,

- Chlorophyll a was the least abundant form of cholorphyll in the samples and chlorophyll c was the most abundant. This is opposite to the order expected.

As an example, on May 17, 1968, the following results were reported for Station 1[8].

COD = 62.8 mg/l

chlorophyll a = 33 mg/l

chlorophyll b = 77 mg/l

chlorophyll c = 234 mg/l

total chlorophyll = 344 mg/l

total phytoplankton* = 122,536/ml.

Chlorophyll a has the formula $C_{55}H_{72}O_5N_4Mg$. Based on this formula, the Theoretical Oxygen Demand (TOD) should have been about 820 mg/l. Since the lipid soluble tail of the chlorophyll, at least, should be relatively easy to oxidize, the Chemical Oxygen Demand (COD) should have been at least half as great as the TOD. The results do not agree very well.

Based on the plankton count, the expected chlorophyll concentration should have been much lower. Assuming rod shaped plankton cells, 10μ in diameter and 10μ-long on the average, the volume of plankton collected would have been 0.10 cc/l. If the density of the plankton cells was about the same as the density of water, the mass of plankton collected would have been about 100 mg/l. Assuming that the dry weight was 5% and that the chlorophyll concentration was about 5% of the dry weight, the chlorophyll concentration should have been 0.25 mg/l.

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*The plankton counts were made by Mrs. Barbara Gudmunson as a part of her doctoral research.

Errors in the Equations

In rechecking the accuracy of the equations given in the chlorophyll method being used, Eq. (4) was found to be in error in that it did not account for the volume of extract. The corrected equation is:

$$\text{chlorophyll } \underline{a}, \underline{b} \text{ or } \underline{c} = \left(\frac{EV}{v}\right)\left(C_{a,\ b \text{ or } c}\right) \qquad (4a)$$

where

chlorophyll $\underline{a}$, $\underline{b}$ or $\underline{c}$ = concentration of chlorophyll $\underline{a}$, $\underline{b}$ or $\underline{c}$ in the original water sample in mg/l,

E = volume of extract in liters,

V = 1 liter,

v = volume of sample filtered in liters, and

$C_{a,\ b \text{ or } c}$ = concentration of chlorophylls $\underline{a}$, $\underline{b}$ or $\underline{c}$ in the extract in mg/l.

Since the volume of extract was 7 ml, the corrected values of chlorophyll are 0.007 times the values previously given:

chlorophyll $\underline{a}$ = 0.23 mg/l

chlorophyll $\underline{b}$ = 0.54 mg/l

chlorophyll $\underline{c}$ = 1.64 mg/l

total chlorophyll = 2.41 mg/l.

The corrected concentration of chlorophyll $\underline{a}$ is in the right range now but the other chlorophyll concentrations are still too high.

Wave Length Error

In an effort to obtain the typical absorption spectra of chlorophyll on the spectrophotometer being used in the analyses, samples of water and algae from Lake LaVerne (a pond on the Iowa State University campus) were filtered and extracted. The spectra of the extract was determined with the Beckman Model B spectrophotometer in use in the Engineering Research

Institute Analytical Services Laboratory. In addition, the spectra of a reagent blank was also run. The reagent blank contained a ground-up membrane filter pad, magnesium carbonate and 7 ml of 90% acetone. These spectra provided two surprises:

- The spectra for the chlorophyll was relatively simple, having two absorbance peaks. One peak was at 422 nanometers and the other was at 640 nanometers.
- The absorbance due to turbidity was about 50% greater at the wavelength corresponding to the absorption maxima of chlorophyll a than it was at 750 nanometers.

Since chlorophyll a should have been the most abundant form of chlorophyll present in the samples, the spectrophotometer wavelength settings were obviously not calibrated correctly. The spectra for the chlorophyll in the lake water samples is shown in Fig. 4. The spectra for the turbidity curve (reagent blank) has been adjusted to match the absorbance at 750 nanometers and was superimposed on the chlorophyll spectra. Assuming that the peaks were caused by chlorophyll a, the wavelength settings were too low by 8 nanometers at 430 nanometers and by 23 nanometers at 663 nanometers. An independent check on the wavelength settings was made at an intermediate setting by running the spectra for $KMnO_4$. The spectrophotometer was found to be indicating too low a wavelength by 15 nanometers at 530 nanometers. Based on these observations, the relationship between the actual wavelength (W) in nanometers and the indicated setting (S) in nanometers is:

$$W = (1.07)S - 22. \qquad (5)$$

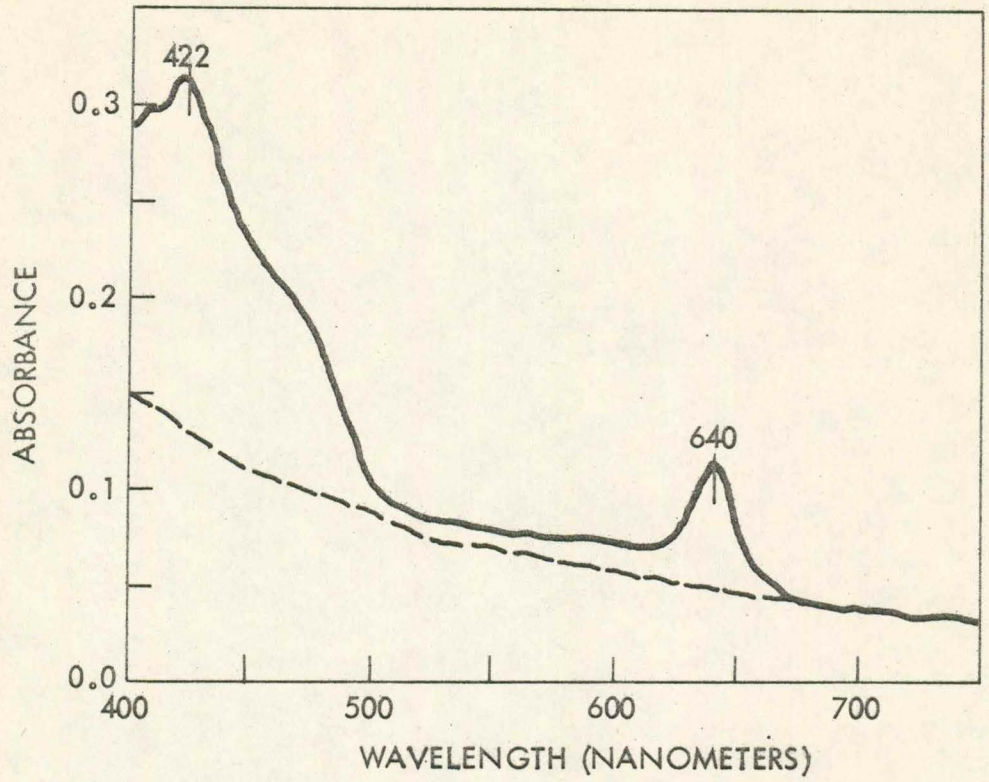

Fig. 4. Absorption spectra of chlorophyll extracted from Lake LaVerne water sample (solid line) and turbidity (dashed line).

Spectral Band Correction

When the spectra of chlorophyll a was superimposed (matching peak heights) on the spectra of the chlorophyll extracted from the lake water sample, the spectra of the lake water chlorophyll was found to be much broader than the spectra of chlorophyll a. See Fig. 5. The spectra for chlorophyll a was determined using a Beckman Model DU spectrophotometer[6]. The Beckman DU employs a diffraction grating in its monochromator and passes a polychromatic light whose band width is about 0.4 to 2 nanometers. This band width is so narrow that the observed absorption spectra of chlorophyll a is not noticeably distorted from a monochromatic spectra.

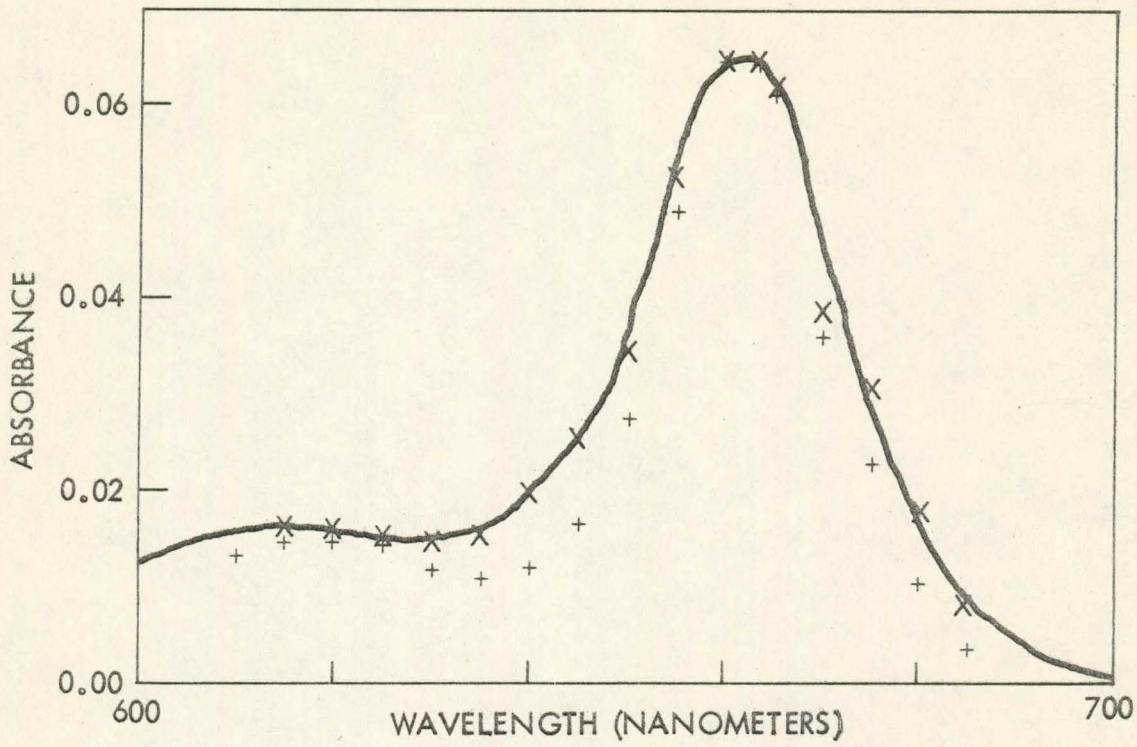

Fig. 5. Absorption spectra of chlorophyll from Lake LaVerne sample (continuous line) compared with monochromatic spectra for chlorophyll *a* (crosses) and 30 nanometer band width polychromatic spectra for chlorophyll *a* (x's).

The Beckman Model B spectrophotometer employs a prism in its monochrometer and passes a polychromatic light whose band width varies from 5 to 30 nanometers in the part of the spectrum used for chlorophyll measurements. The monochromatic spectra for chlorophyll *a* can be corrected mathematically for a finite band width and when this is done for a 30 nanometer band width, the derived polychromatic spectra for chlorophyll *a* matches the observed spectra for the lake water chlorophyll. See Fig. 5. It is apparent that the lake water chlorophyll was primarily chlorophyll *a*.

Salvaging Previous Data

Based on the assumed 30 nanometer band width for the Beckman B monochrometer, specific absorption coefficients have been recalculated for chlorophylls a, b and c at the wavelengths used in previous chlorophyll determinations. See Table 2. Since chlorophylls b and c should be present in concentrations that are less than one-third of that of chlorophyll a, chlorophyll b will have a negligible effect on the absorbance at a wavelength of 645 nanometers or greater and chlorophyll c will have a negligible effect at any of the wavelengths used.

Table 2. Specific absorption coefficients of chlorophylls a, b and c at the wavelengths used in previous chlorophyll tests using the miscalibrated Beckman Model B spectrophotometer.

Indicated wavelength, nanometers	Actual wavelength, nanometers	Specific absorption coefficient, 1/mg cm		
		Chlorophyll a	Chlorophyll b	Chlorophyll c
630	651	0.041	0.038	0.003
645	667	0.056	0.009	0.001
665	688	0.005	0.000	0.000
750	778	0.000	0.000	0.000

To correct the readings for turbidity, an approximate method was used. In the original method the turbidity was assumed to have the same absorbance at all of the wavelengths used — in the new method, the slope of the turbidity spectra is used in calculating the absorbance caused by the turbidity at each wavelength used in calculating a chlorophyll concentration. The slope of the turbidity spectra may be estimated by

using the absorbances of the extract at indicated wavelengths of 665 and 750 nanometers. By assuming that a line through these two points would be parallel to the turbidity line but too high by the amount indicated by the specific absorption coefficient of chlorophyll a at an indicated wavelength of 665 nanometers, the ordinate of this line at an indicated wavelength of 645 nanometers can be calculated and subtracted from the absorbance reading at this same wavelength. The difference when divided by 0.061 1/mg (the difference in the specific absorption coefficients at 645 and 665 nanometers multiplied by 1 cm, the length of the light path in the cuvette) is the concentration of chlorophyll a in the extract. Based on the data cited earlier for Station 1 on May 17, 1968, the concentration of chlorophyll a by these calculations would be 1.4 mg/l in the extract. Using this value, the turbidity curve was offset from the ordinate used in the calculations by:

offset = (1.4 mg/l)(0.005 1/mg cm)(1 cm) = 0.007 absorbance units.

Next, the absorbance of the turbidity at 630 nanometers was determined by calculating the ordinate at that wavelength of a point on the line through the absorbance values at 665 and 750 nanometers. The turbidity offset, 0.007 absorbance units, was subtracted from this ordinate value to determine the absorbance due to turbidity. Next, the contribution of chlorophyll a at 630 nanometers — (1.4 mg/l)(0.041 1/mg cm)(1 cm) = 0.057 absorbance units — was added to the estimated absorbance of the turbidity. The sum of the turbidity absorbance and the chlorophyll a absorbance was subtracted from the observed absorbance at 630 nanometers and the difference was the contribution of chlorophyll b to the absorbance at that wavelength. That difference divided by 0.038 1/mg (0.3 mg/l for

the data cited) is the concentration of chlorophyll b in the extract. Based on Eq. (4a), the concentration of chlorophyll in the sample filtered was:

$$\text{chlorophyll } a = \frac{(0.077)(1)}{(50)} (1.4) = 0.20 \text{ mg/l}$$

$$\text{chlorophyll } b = \frac{(0.007)(1)}{(50)} (0.3) = 0.04 \text{ mg/l}$$

$$\text{total chlorophyll} = 0.24 \text{ mg/l.}$$

The calculations described above for determining the chlorophyll concentration in the extract can be made using the following equations:

$$C_a = 19.6A_{645} - 24.2A_{665} + 4.60A_{750} \quad (6)$$

$$C_b = 26.3A_{630} - 18.6A_{645} - 14.2A_{665} + 6.50A_{750} \quad (7)$$

where

$C_{a \text{ or } b}$ = concentration of chlorophyll a or b in the extract in mg/l

A = the absorbance at the indicated wavelength.

A computer program based on Eqs. (4a), (6) and (7) has been written to calculate the concentration of chlorophylls a and b using absorbance data collected over the past two years. In addition, the computer averages the concentrations for a given station and day of record and calculates the standard deviation, reporting the latter statistic as a percentage of the average value.

Chlorophyll versus Plankton

Using the computer program, chlorophyll values have been recomputed for the past two years of record. In general, the chlorophyll and plankton records agree reasonably well. See Fig. 6. When chlorophyll a is plotted

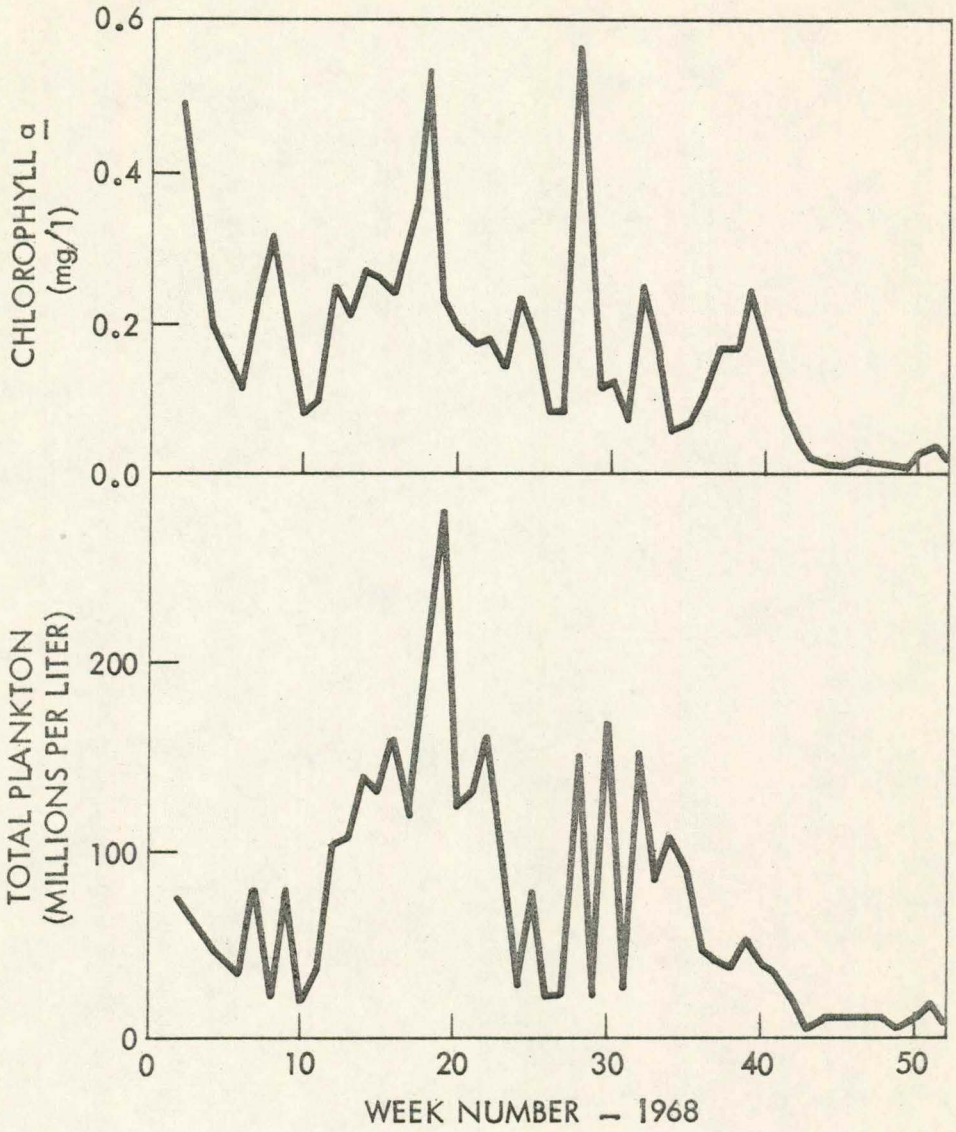

Fig. 6. Chlorophyll a and total plankton in the Des Moines River at Station 1 during 1968.

against the total plankton count, the data is scattered (Fig. 7) but a straight line passing through the origin and the mean coordinates of the plotted data indicates that the results are close to the expected values. The equation of the line is:

$$C = (0.00227)P \qquad (8)$$

where

C = the concentration of chlorophyll *a* in mg/l,

P = the total plankton count in millions per liter.

For the total plankton count of 122,536 cells per milliliters at Station 1 on May 17, 1968, the predicted concentration of chlorophyll *a* would be:

$C = (0.00227)(122.5) = 0.28$ mg/l.

This value checks closely with the expected value, 0.25 mg/l, and is also reasonably close to the measured value, 0.20 mg/l.

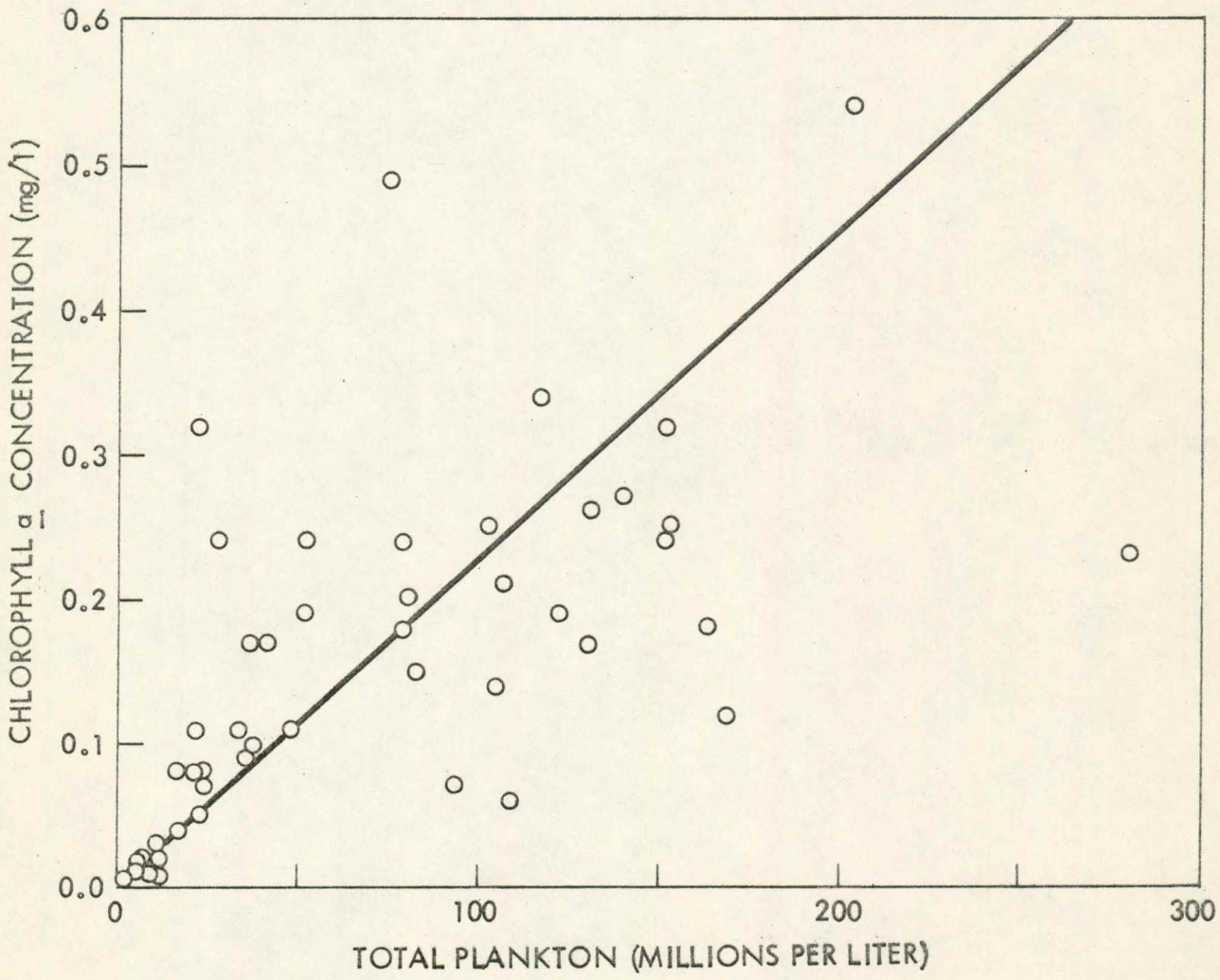

Fig. 7. Chlorophyll *a* as a function of total plankton in the Des Moines River at Station 1 during 1968.

Recommendations

The measurement of chlorophyll a provides a practical means for determining the amount of phytoplankton activity in a body of water. The method used is relatively inexpensive and can be performed by an ordinary laboratory technician using standard apparatus found in an analytical laboratory. Because the results can be obtained in a relatively short time — about 10 min under field laboratory conditions — the chlorophyll a determination is an extremely useful survey technique.

The problem with the chlorophyll method used in the Preimpoundment Study was not so much a failure of the technique as it was a failure of the analysts to calibrate their instruments. The estimated specific absorption coefficients for the Beckman Model B spectrophotometer are probably very close to the actual values but measured values should be obtained at the earliest practical date. Chlorophyll a and b can be purchased or prepared to provide the standards for use in calibrating the instrument. Chlorophyll c is not commercially available and must be prepared by the analyst.

PLANKTON STUDY

During the calender year 1968, one-liter samples were taken from the river at Station 1 every week and from the other four stations every other week. The data is presented in Table VI and Plot VI in the Appendix.

Water samples were taken from three points across the river, mixed, and preserved immediately with thimersal (merthiolate). Sedgwick-Rafter counts (for phytoplankton density) were made by an Iowa State University botany department phycologist. The method used conforms to that adapted from Standard Methods[9] by the Water Pollution Surveillance System[10] and was chosen partly because the system has no sampling station on the Des Moines River or any other place in central Iowa.

REFERENCES

1. Standard Methods for the Examination of Water and Wastewater, XII ed., American Public Health Association, New York, p. 405 (1965).

2. "Water Nutrients," No. 1, Study Number 27, Public Health Service Publication No. 999-WP-42. US Dept. Health, Education, and Welfare, Public Health Service, Cincinnati, Ohio (1966).

3. Hem, John D., "Study and Interpretation of the Chemical Characteristics of Natural Water," Geological Survey Water-Supply Paper 1473. US Dept. Interior, Washington, D.C. (1959).

4. Hendricks, S. B., "How Light Interacts with Living Matter," Scientific American 219, p. 175 (1968).

5. Parsons, T. R. and Strickland, J. D. H., "Discussion of Spectrophotometric Determination of Marine-Plant Pigments, with Revised Equations for Ascertaining Chlorophylls and Carotenoids," J. Marine Research 21, p. 155 (1963).

6. Richards, F. A., "The Estimation and Characterization of Plankton Populations by Pigment Analysis. I. The Absorption Spectra of Some Pigments Occurring in Diatoms, Dinoflagellates, and Brown Algae," J. Marine Research 11, p. 147 (1952).

7. Raschke, R. L., "Chlorophyll Determination: An Estimate of Standing Crop," unpublished paper, Iowa State University, Ames, Iowa (ca. 1967).

8. Baumann, E. R. and Dougal, M. D., "Annual Report: Preimpoundment Water Quality Study, Saylorville Reservoir, Des Moines River, Iowa," Engineering Research Institute, Iowa State University, Ames, Iowa. Contract DACW25-67-C-0064, Project 685-S, ERI Report 346 (1968).

9. "Water Resources Data for Iowa, 1967," US Dept. Interior Geological Survey, Water Resources Div., District Office, Iowa City, Iowa, pp. 649-668 (1967).

10. Weber, Cornelius I., "Methods of Collection and Analysis of Plankton and Periphyton Samples in the Water Pollution Surveillance System," Water Pollution Surveillance System Applications and Development Report 19, Pub. Division of Pollution Surveillance, Fed. Water Pollution Control Ad., US Dept. Interior, Cincinnati, Ohio (1966).

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The field and laboratory studies were made by Engineering Research Institute personnel under the supervision of the principal investigator. The following personnel contributed significantly to the successful development of the investigations: Dr. C. S. Oulman (Associate Professor of Civil Engineering), Merwin D. Dougal (Assistant Professor of Civil Engineering), John Shouse (Research Technician), James Merideth (Research Graduate Assistant), Mrs. Barbara R. Gudmundson (Phycologist), Robert Schuler (Supervisor, Analytical Laboratory, Engineering Research Institute), and numerous chemical technicians employed on a part-time basis.

APPENDIX A. TABLES AND PLOTS

TABLE I- 1. REQUIRED ANALYSES

** TEMPERATURE - DEGREES CENTIGRADE **

WEEK	DATE 1968-69	* STA.1	** STA.2	** STA.3	*** STA.4	** STA.5
1	JULY 5	24.0	24.0	23.8	23.5	23.3
2	JULY 12	28.5	90000.0	27.8	26.5	26.0
3	JULY 19	25.0	25.9	27.0	26.5	26.0
4	JULY 26	28.0	27.4	27.4	27.0	26.5
5	AUG. 2	24.4	25.0	24.8	25.0	24.5
6	AUG. 9	25.9	24.7	23.9	24.5	24.8
7	AUG. 16	27.5	28.0	27.0	26.5	25.5
8	AUG. 23	29.5	30.2	29.6	28.5	28.0
9	AUG. 29	22.0	22.3	22.0	21.5	20.1
10	SEPT 4	22.0	22.0	21.2	21.0	20.7
11	SEPT 12	19.5	20.0	20.0	17.8	17.5
12	SEPT 18	19.5	19.5	18.4	18.7	90000.0
13	SEPT 25	90000.0	21.0	20.0	90000.0	19.2
14	OCT. 2	19.2	20.5	21.0	20.5	90000.0
15	OCT. 10	12.5	13.5	13.0	13.0	12.8
16	OCT. 16	20.0	21.0	20.8	20.8	20.5
17	OCT. 23	11.2	10.8	11.3	12.7	11.3
18	OCT. 30	7.2	8.9	8.6	8.8	8.8
19	NOV. 7	8.0	8.0	8.5	8.1	7.1
20	NOV. 13	2.8	4.5	4.0	3.3	2.8
21	NOV. 21	4.8	3.9	3.6	4.0	4.0
22	NOV. 28	3.0	3.0	2.2	3.2	2.0
23	DEC. 5	0.7	0.9	0.5	0.4	0.2
24	DEC. 11	1.2	1.2	1.2	1.1	1.1
25	DEC. 19	0.3	0.2	0.2	0.6	1.1
26	DEC. 26	0.0	0.0	0.0	0.0	0.0
27	JAN. 2	0.0	0.0	0.0	0.0	0.0
28	JAN. 9	0.0	0.0	0.0	0.0	0.0
29	JAN. 15	0.0	0.0	0.0	0.0	0.0
30	JAN. 22	0.0	0.0	0.0	0.0	0.0
31	JAN. 31	0.0	0.0	0.0	0.0	0.0
32	FEB. 5	0.0	0.0	0.0	0.0	0.0
33	FEB. 14	0.0	0.0	0.0	0.0	0.0
34	FEB. 20	0.0	0.0	0.0	0.0	0.0
35	FEB. 27	0.0	0.0	0.0	0.0	0.0
36	MAR. 6	0.0	0.0	0.0	0.0	0.0
37	MAR. 12	0.0	0.0	0.0	0.0	0.0
38	MAR. 20	0.0	0.0	0.0	0.0	0.0
39	MAR. 26	1.0	1.8	1.0	90000.0	1.0
40	APR. 2	90000.0	1.5	1.9	1.6	2.0
41	APR. 9	9.0	9.5	9.8	9.0	9.1
42	APR. 16	12.0	13.0	13.1	13.2	10.6
43	APR. 23	13.2	14.7	15.0	14.1	13.2
44	MAY 1	14.7	14.2	13.9	13.7	13.5
45	MAY 8	16.0	16.2	16.1	16.6	16.9
46	MAY 15	18.0	18.0	18.0	17.6	17.8
47	MAY 22	14.5	15.0	14.5	15.0	14.0
48	MAY 29	25.5	25.4	25.0	24.1	23.7
49	JUNE 4	19.0	18.5	18.0	18.0	18.0
50	JUNE 11	22.0	22.5	22.5	22.5	21.5
51	JUNE 19	23.0	22.0	24.0	22.2	22.0
52	JUNE 27	20.2	20.6	20.5	20.2	19.7
53	JULY 3	20.7	21.0	21.0	90000.0	21.6
54	JULY 9	20.3	20.2	20.3	21.2	20.3

** NOTE ** -0. OR -0.01 INDICATES TRACE AMOUNT
90000. INDICATES NO MEASUREMENT

TABLE I- 2. REQUIRED ANALYSES

** TURBIDITY - JACKSON TURBIDITY UNITS**

WEEK	DATE 1968-69	* STA.1	** STA.2	** STA.3	** STA.4	** STA.5
1	JULY 5	54.	75.	83.	89.	89.
2	JULY 12	23.	30.	34.	30.	32.
3	JULY 19	230.	300.	270.	265.	195.
4	JULY 26	38.	44.	52.	47.	52.
5	AUG. 2	43.	55.	58.	62.	63.
6	AUG. 9	47.	53.	54.	67.	94.
7	AUG. 16	29.	29.	29.	32.	29.
8	AUG. 23	18.	20.	20.	20.	20.
9	AUG. 29	13.	17.	14.	17.	15.
10	SEPT 4	78.	97.	127.	48.	38.
11	SEPT 12	27.	26.	28.	28.	28.
12	SEPT 18	33.	28.	28.	23.	20.
13	SEPT 25	50.	60.	50.	52.	57.
14	OCT. 2	66.	53.	56.	62.	64.
15	OCT. 10	49.	58.	57.	62.	60.
16	OCT. 16	32.	61.	55.	55.	63.
17	OCT. 23	83.	92.	100.	100.	100.
18	OCT. 30	36.	40.	41.	48.	46.
19	NOV. 7	25.	29.	32.	35.	39.
20	NOV. 13	15.	17.	16.	17.	19.
21	NOV. 21	11.	14.	15.	13.	15.
22	NOV. 28	11.	13.	13.	13.	13.
23	DEC. 5	10.	12.	10.	12.	12.
24	DEC. 11	6.	8.	10.	10.	11.
25	DEC. 19	9.	19.	14.	12.	13.
26	DEC. 26	2.	3.	4.	3.	3.
27	JAN. 2	2.	3.	2.	2.	2.
28	JAN. 9	3.	3.	3.	5.	3.
29	JAN. 15	2.	1.	2.	1.	1.
30	JAN. 22	1.	1.	2.	2.	3.
31	JAN. 31	1.	2.	2.	1.	1.
32	FEB. 5	0.	1.	0.	1.	1.
33	FEB. 14	1.	1.	1.	1.	1.
34	FEB. 20	1.	1.	1.	2.	1.
35	FEB. 27	11.	13.	1.	10.	8.
36	MAR. 6	0.	1.	1.	1.	1.
37	MAR. 12	1.	1.	2.	1.	1.
38	MAR. 20	91.	143.	163.	157.	79.
39	MAR. 26	76.	116.	153.	90000.	158.
40	APR. 2	40.	55.	63.	66.	67.
41	APR. 9	63.	76.	84.	69.	68.
42	APR. 16	91.	98.	98.	94.	91.
43	APR. 23	60.	62.	70.	65.	62.
44	MAY 1	47.	53.	51.	50.	55.
45	MAY 8	49.	66.	78.	113.	152.
46	MAY 15	27.	31.	33.	34.	37.
47	MAY 22	29.	32.	35.	44.	51.
48	MAY 29	24.	25.	26.	39.	29.
49	JUNE 4	37.	28.	24.	28.	24.
50	JUNE 11	92.	77.	93.	88.	78.
51	JUNE 19	45.	38.	40.	45.	45.
52	JUNE 27	31.	18.	7.	31.	12.
53	JULY 3	49.	74.	76.	90000.	69.
54	JULY 9	90000.	90000.	90000.	90000.	90000.

** NOTE ** -0. OR -0.01 INDICATES TRACE AMOUNT
90000. INDICATES NO MEASUREMENT

TABLE I- 3. REQUIRED ANALYSES

** PH - NEG. LOG OF HYDROGEN ION CONC.**

WEEK	DATE 1968-69	* STA.1	** STA.2	** STA.3	'** STA.4	** STA.5
1	JULY 5	8.1	8.1	8.2	8.1	8.1
2	JULY 12	9.5	90000.0	9.5	9.3	8.9
3	JULY 19	90000.0	90000.0	90000.0	90000.0	90000.0
4	JULY 26	8.6	8.6	8.6	8.5	8.5
5	AUG. 2	8.2	8.2	8.2	8.2	8.2
6	AUG. 9	8.8	8.8	8.6	8.3	8.2
7	AUG. 16	8.6	8.4	8.1	7.9	8.3
8	AUG. 23	8.4	8.3	8.3	8.1	8.2
9	AUG. 29	8.6	8.6	8.3	8.3	8.4
10	SEPT 4	8.2	7.9	8.0	8.2	8.3
11	SEPT 12	8.8	7.0	7.0	7.3	7.6
12	SEPT 18	8.6	8.2	8.1	8.0	8.2
13	SEPT 25	8.9	9.0	8.9	8.7	8.7
14	OCT. 2	8.6	8.6	8.5	8.5	8.5
15	OCT. 10	8.5	8.6	8.6	8.5	8.4
16	OCT. 16	8.5	8.5	8.5	8.5	8.5
17	OCT. 23	8.3	8.3	8.2	8.3	8.3
18	OCT. 30	8.3	8.3	8.3	8.3	8.3
19	NOV. 7	8.4	8.5	8.4	8.4	8.3
20	NOV. 13	8.5	8.6	8.5	8.5	8.4
21	NOV. 21	8.5	8.5	8.4	8.4	8.4
22	NOV. 28	8.3	8.3	8.3	8.3	8.3
23	DEC. 5	8.4	8.4	8.3	8.3	8.3
24	DEC. 11	8.4	8.5	8.5	8.5	8.5
25	DEC. 19	8.3	8.3	8.4	8.4	8.4
26	DEC. 26	8.0	8.0	8.1	8.2	8.2
27	JAN. 2	8.0	8.0	8.0	8.0	8.0
28	JAN. 9	7.8	7.8	7.9	7.9	7.8
29	JAN. 15	8.2	8.2	8.2	8.1	8.1
30	JAN. 22	8.0	7.9	7.9	7.9	7.9
31	JAN. 31	7.8	7.9	7.9	7.9	7.9
32	FEB. 5	7.8	7.8	7.7	7.7	7.7
33	FEB. 14	7.6	7.6	7.6	7.6	7.6
34	FEB. 20	7.8	7.8	7.8	7.8	7.8
35	FEB. 27	8.1	8.0	8.0	8.0	8.0
36	MAR. 6	7.8	7.8	7.8	7.7	7.7
37	MAR. 12	7.6	7.6	7.6	7.6	7.6
38	MAR. 20	7.8	7.8	7.8	7.9	7.9
39	MAR. 26	7.9	7.9	8.0	90000.0	7.7
40	APR. 2	8.1	8.0	8.0	8.1	8.3
41	APR. 9	8.1	8.1	8.1	8.1	8.1
42	APR. 16	8.0	8.0	8.0	8.0	8.0
43	APR. 23	8.3	8.3	8.3	8.2	8.1
44	MAY 1	8.6	8.6	8.6	8.6	8.6
45	MAY 8	8.4	8.4	8.4	8.3	8.3
46	MAY 15	8.6	8.6	8.6	8.6	8.6
47	MAY 22	8.4	8.4	8.4	8.4	8.4
48	MAY 29	8.6	8.6	8.6	8.6	8.6
49	JUNE 4	8.6	8.6	8.6	8.6	8.6
50	JUNE 11	8.4	8.4	8.5	8.4	8.4
51	JUNE 19	8.6	8.6	8.5	8.5	8.4
52	JUNE 27	7.8	7.7	7.8	8.1	8.1
53	JULY 3	8.0	8.0	8.0	90000.0	8.0
54	JULY 9	8.0	8.0	8.0	8.1	8.1

** NOTE ** -0. OR -0.01 INDICATES TRACE AMOUNT
90000. INDICATES NO MEASUREMENT

TABLE I- 4. REQUIRED ANALYSES

** DISSOLVED OXYGEN - MG/L **

WEEK	DATE 1968-69	* STA.1	** STA.2	** STA.3	** STA.4	** STA.5
1	JULY 5	8.0	7.7	7.5	7.3	7.5
2	JULY 12	22.3	17.4	14.2	12.3	9.6
3	JULY 19	5.9	4.9	5.0	5.6	5.9
4	JULY 26	14.4	12.5	11.0	8.6	7.8
5	AUG. 2	9.6	9.0	8.6	8.0	7.4
6	AUG. 9	14.8	12.0	10.7	7.4	5.7
7	AUG. 16	12.6	9.5	7.5	6.4	5.6
8	AUG. 23	7.0	7.5	6.9	6.1	6.1
9	AUG. 29	11.3	10.4	9.8	8.8	9.0
10	SEPT 4	7.7	6.5	7.0	7.6	7.5
11	SEPT 12	13.3	10.5	9.8	9.0	8.4
12	SEPT 18	11.5	10.1	10.3	9.3	8.6
13	SEPT 25	20.1	18.1	15.6	13.4	11.3
14	OCT. 2	11.9	11.8	11.4	10.1	9.7
15	OCT. 10	90000.0	10.2	9.8	9.5	9.2
16	OCT. 16	8.1	8.4	8.2	8.2	8.1
17	OCT. 23	9.5	9.5	9.3	9.4	9.3
18	OCT. 30	11.5	11.3	11.3	11.1	11.1
19	NOV. 7	11.8	11.5	11.6	11.4	11.3
20	NOV. 13	13.7	13.6	13.5	13.3	13.3
21	NOV. 21	14.2	14.0	13.9	14.0	13.7
22	NOV. 28	13.7	13.6	13.4	13.3	13.2
23	DEC. 5	14.4	14.3	14.2	14.1	14.0
24	DEC. 11	14.6	14.6	14.6	14.5	14.6
25	DEC. 19	14.9	14.3	14.2	14.3	14.2
26	DEC. 26	13.1	13.5	13.5	13.6	13.7
27	JAN. 2	12.2	12.0	11.8	11.9	12.0
28	JAN. 9	11.1	11.1	11.1	10.9	10.9
29	JAN. 15	10.5	10.2	10.0	10.0	9.5
30	JAN. 22	11.1	10.2	10.1	10.1	10.1
31	JAN. 31	10.2	10.2	10.2	10.1	10.1
32	FEB. 5	10.3	9.9	9.6	9.5	9.4
33	FEB. 14	10.4	10.3	10.3	10.3	10.3
34	FEB. 20	10.3	10.3	10.3	10.3	10.2
35	FEB. 27	9.3	9.2	9.2	9.2	9.4
36	MAR. 6	10.0	9.6	8.6	8.5	8.4
37	MAR. 12	10.4	10.3	10.2	10.1	10.0
38	MAR. 20	10.9	11.0	11.0	11.1	11.3
39	MAR. 26	12.4	12.0	11.8	90000.0	11.5
40	APR. 2	12.6	12.7	12.4	11.9	12.3
41	APR. 9	10.2	10.1	10.1	10.1	10.1
42	APR. 16	9.1	8.9	8.9	8.7	8.6
43	APR. 23	10.0	10.1	10.0	10.0	9.9
44	MAY 1	10.0	10.0	9.9	9.8	9.8
45	MAY 8	8.5	8.2	8.0	7.9	7.7
46	MAY 15	10.1	10.4	10.7	10.8	10.9
47	MAY 22	10.2	9.9	9.7	9.6	9.4
48	MAY 29	9.5	9.1	9.1	8.9	8.6
49	JUNE 4	9.9	9.8	9.7	9.5	9.3
50	JUNE 11	8.2	8.4	8.2	8.3	8.1
51	JUNE 19	9.3	8.8	8.6	8.4	8.3
52	JUNE 27	7.1	7.0	7.8	7.5	7.3
53	JULY 3	6.8	6.4	6.3	90000.0	6.4
54	JULY 9	7.6	7.4	7.0	7.4	7.0

** NOTE ** -0. OR -0.01 INDICATES TRACE AMOUNT

90000. INDICATES NO MEASUREMENT

TABLE I- 5. REQUIRED ANALYSES

** CARBON DIOXIDE - MG/L **

WEEK	DATE 1968-69	* STA.1	** STA.2	** STA.3	'** STA.4	** STA.5
1	JULY 5	-0.0	-0.0	-0.0	-0.0	-0.0
2	JULY 12	0.0	0.0	0.0	0.0	0.0
3	JULY 19	0.0	0.0	0.0	0.0	0.0
4	JULY 26	0.0	0.0	0.0	0.0	0.0
5	AUG. 2	0.0	0.0	0.0	0.0	0.0
6	AUG. 9	0.0	0.0	0.0	0.0	0.0
7	AUG. 16	0.0	0.0	0.0	0.0	0.0
8	AUG. 23	0.0	0.0	0.0	0.0	0.0
9	AUG. 29	0.0	0.0	0.0	0.0	0.0
10	SEPT 4	0.0	0.0	0.0	0.0	0.0
11	SEPT 12	0.0	90000.0	90000.0	90000.0	90000.0
12	SEPT 18	0.0	-0.0	-0.0	-0.0	-0.0
13	SEPT 25	0.0	0.0	0.0	0.0	0.0
14	OCT. 2	0.0	0.0	0.0	0.0	0.0
15	OCT. 10	0.0	0.0	0.0	0.0	0.0
16	OCT. 16	0.0	0.0	0.0	0.0	0.0
17	OCT. 23	0.0	0.0	0.0	0.0	0.0
18	OCT. 30	0.0	0.0	0.0	0.0	0.0
19	NOV. 7	0.0	0.0	0.0	0.0	0.0
20	NOV. 13	0.0	0.0	0.0	0.0	0.0
21	NOV. 21	0.0	0.0	0.0	0.0	0.0
22	NOV. 28	0.0	0.0	0.0	0.0	0.0
23	DEC. 5	0.0	0.0	0.0	0.0	0.0
24	DEC. 11	0.0	0.0	0.0	0.0	0.0
25	DEC. 19	0.0	0.0	0.0	0.0	0.0
26	DEC. 26	0.0	0.0	0.0	0.0	0.0
27	JAN. 2	4.9	4.9	4.9	5.0	5.0
28	JAN. 9	6.7	6.3	5.8	6.3	4.8
29	JAN. 15	3.7	4.6	4.0	5.3	7.0
30	JAN. 22	8.3	7.8	8.2	9.0	8.1
31	JAN. 31	9.8	9.3	8.6	8.9	9.3
32	FEB. 5	8.6	8.6	8.6	8.6	8.6
33	FEB. 14	9.4	9.0	9.2	9.4	9.0
34	FEB. 20	10.3	9.9	10.3	10.3	10.2
35	FEB. 27	3.4	6.0	5.4	5.8	5.4
36	MAR. 6	9.0	8.5	9.0	8.5	8.5
37	MAR. 12	9.9	9.9	9.9	9.9	10.3
38	MAR. 20	2.0	2.7	2.2	2.5	2.7
39	MAR. 26	1.8	0.9	0.9	90000.0	1.3
40	APR. 2	2.1	2.7	2.5	1.3	1.2
41	APR. 9	0.9	1.3	0.9	0.9	0.9
42	APR. 16	1.8	1.8	1.7	1.8	1.8
43	APR. 23	0.0	0.0	0.0	0.4	1.8
44	MAY 1	0.0	0.0	0.0	0.0	0.0
45	MAY 8	0.0	0.0	0.0	0.0	0.0
46	MAY 15	0.0	0.0	0.0	0.0	0.0
47	MAY 22	0.0	0.0	0.0	0.0	0.0
48	MAY 29	0.0	0.0	0.0	0.0	0.0
49	JUNE 4	0.0	0.0	0.0	0.0	0.0
50	JUNE 11	0.0	0.0	0.0	0.0	0.0
51	JUNE 19	0.0	0.0	0.0	0.0	0.0
52	JUNE 27	8.0	12.0	9.0	3.0	3.0
53	JULY 3	3.0	4.0	3.0	90000.0	4.0
54	JULY 9	2.2	2.6	2.2	2.6	1.8

** NOTE ** -0. OR -0.01 INDICATES TRACE AMOUNT
90000. INDICATES NO MEASUREMENT

TABLE I- 6. REQUIRED ANALYSES

** CHEMICAL OXYGEN DEMAND - MG/L **

WEEK	DATE 1968-69	* STA.1	** STA.2	** STA.3	** STA.4	** STA.5
1	JULY 5	38.0	36.0	46.0	40.0	36.0
2	JULY 12	62.7	72.5	58.0	53.2	50.4
3	JULY 19	78.8	91.6	79.2	95.6	77.2
4	JULY 26	47.6	38.9	50.4	34.0	14.4
5	AUG. 2	29.6	32.2	38.0	36.0	42.4
6	AUG. 9	43.6	52.5	59.5	49.2	48.0
7	AUG. 16	53.2	46.8	37.2	39.6	57.6
8	AUG. 23	35.2	32.0	30.4	32.0	33.4
9	AUG. 29	36.7	35.4	25.6	29.9	28.4
10	SEPT 4	35.6	54.4	41.6	90000.0	90000.0
11	SEPT 12	31.9	47.6	49.6	50.2	51.3
12	SEPT 18	43.9	41.2	46.3	38.0	31.7
13	SEPT 25	55.9	66.3	69.4	51.0	45.6
14	OCT. 2	34.1	17.8	28.6	35.3	35.3
15	OCT. 10	24.9	24.5	13.6	13.2	13.4
16	OCT. 16	8.3	10.2	90000.0	20.8	21.8
17	OCT. 23	23.1	31.5	35.3	33.5	32.2
18	OCT. 30	19.1	20.6	21.4	21.3	22.0
19	NOV. 7	21.9	18.0	18.4	18.5	18.5
20	NOV. 13	18.2	18.1	17.6	18.4	18.5
21	NOV. 21	12.6	14.5	13.6	17.3	21.7
22	NOV. 28	13.9	12.7	13.9	10.8	4.5
23	DEC. 5	8.2	11.7	14.0	9.0	5.8
24	DEC. 11	84.4	14.0	19.2	15.8	17.9
25	DEC. 19	6.1	23.4	8.2	14.6	21.4
26	DEC. 26	12.3	14.6	13.8	15.0	15.4
27	JAN. 2	13.0	12.6	11.5	11.0	12.6
28	JAN. 9	14.6	20.4	19.7	17.5	14.0
29	JAN. 15	14.0	9.0	18.0	12.1	11.8
30	JAN. 22	2.7	9.5	14.9	15.0	14.5
31	JAN. 31	10.2	14.1	17.7	18.5	16.6
32	FEB. 5	9.9	9.9	14.7	14.3	14.3
33	FEB. 14	8.8	8.0	14.2	5.0	0.0
34	FEB. 20	3.9	4.7	7.8	13.9	19.5
35	FEB. 27	37.2	35.3	36.0	39.5	37.2
36	MAR. 6	17.9	21.7	15.6	28.2	27.0
37	MAR. 12	20.4	20.0	17.3	20.8	16.8
38	MAR. 20	81.0	77.0	75.0	73.0	85.0
39	MAR. 26	51.0	48.0	52.0	90000.0	51.0
40	APR. 2	22.0	23.0	36.0	35.0	33.0
41	APR. 9	36.0	38.0	39.0	34.0	32.0
42	APR. 16	45.4	47.3	43.1	45.0	40.4
43	APR. 23	35.3	31.9	28.1	27.7	25.4
44	MAY 1	44.0	44.4	39.6	40.5	42.0
45	MAY 8	39.0	38.8	46.3	47.1	50.2
46	MAY 15	35.9	17.0	26.0	20.1	5.3
47	MAY 22	35.1	43.3	37.4	31.8	34.7
48	MAY 29	46.6	41.2	24.1	29.5	24.3
49	JUNE 4	34.0	32.1	29.4	25.9	34.0
50	JUNE 11	61.3	44.0	44.1	33.7	40.1
51	JUNE 19	27.4	30.1	25.4	22.2	15.1
52	JUNE 27	58.3	94.8	80.9	67.8	125.7
53	JULY 3	34.9	37.8	856.9	90000.0	27.8
54	JULY 9	37.2	43.8	49.5	51.5	36.8

** NOTE ** -0. OR -0.01 INDICATES TRACE AMOUNT
90000. INDICATES NO MEASUREMENT

TABLE I- 7. REQUIRED ANALYSES

** ORGANIC NITROGEN - MG/L N-NITROGEN **

WEEK	DATE 1968-69	* STA.1	** STA.2	** STA.3	'** STA.4	** STA.5
1	JULY 5	0.70	0.45	0.85	0.87	0.75
2	JULY 12	0.0	0.0	0.0	0.0	0.0
3	JULY 19	0.55	0.11	0.10	0.80	0.65
4	JULY 26	0.86	0.96	1.51	1.14	1.11
5	AUG. 2	0.89	0.84	0.70	1.31	1.01
6	AUG. 9	1.80	2.25	2.01	2.51	1.75
7	AUG. 16	0.83	1.18	1.50	1.13	1.08
8	AUG. 23	0.87	1.02	1.08	1.37	1.29
9	AUG. 29	0.63	0.76	0.22	1.11	0.81
10	SEPT 4	0.91	1.91	1.73	1.51	4.31
11	SEPT 12	1.67	1.80	1.28	13.00	1.37
12	SEPT 18	0.32	7.26	6.83	1.25	1.28
13	SEPT 25	1.10	1.66	3.68	1.19	4.71
14	OCT. 2	1.10	0.92	0.35	0.78	1.12
15	OCT. 10	0.01	0.01	0.01	0.01	0.01
16	OCT. 16	0.45	3.09	4.27	3.34	3.34
17	OCT. 23	0.76	0.80	0.81	0.62	0.74
18	OCT. 30	1.53	0.86	0.01	0.06	0.96
19	NOV. 7	0.62	0.48	0.79	0.76	0.81
20	NOV. 13	0.28	0.15	0.46	0.15	0.18
21	NOV. 21	0.01	0.62	0.58	0.55	0.01
22	NOV. 28	1.09	0.63	0.71	0.59	0.36
23	DEC. 5	0.01	0.34	0.19	0.39	0.17
24	DEC. 11	0.28	0.73	0.01	0.50	0.39
25	DEC. 19	0.19	1.00	0.50	0.68	0.0
26	DEC. 26	0.34	0.56	0.50	0.0	0.17
27	JAN. 2	0.25	0.46	0.41	0.57	0.79
28	JAN. 9	0.0	0.0	0.09	0.0	0.0
29	JAN. 15	0.0	0.0	0.0	0.0	0.0
30	JAN. 22	0.10	0.20	0.32	0.32	0.17
31	JAN. 31	0.0	0.0	0.0	0.0	0.0
32	FEB. 5	0.0	0.0	0.0	0.0	0.0
33	FEB. 14	0.0	0.0	0.0	0.0	0.0
34	FEB. 20	0.0	0.0	0.21	0.0	0.0
35	FEB. 27	1.31	1.08	1.20	1.05	1.41
36	MAR. 6	0.16	0.18	0.27	0.04	0.0
37	MAR. 12	0.0	0.0	0.0	0.0	0.0
38	MAR. 20	-0.01	-0.01	0.48	0.02	0.88
39	MAR. 26	-0.01	-0.01	-0.01	90000.00	-0.01
40	APR. 2	0.40	0.28	0.11	0.42	0.16
41	APR. 9	90000.00	90000.00	90000.00	90000.00	90000.00
42	APR. 16	0.14	0.01	0.12	0.01	0.17
43	APR. 23	1.45	0.68	0.62	0.61	0.44
44	MAY 1	1.22	0.53	1.60	1.22	1.30
45	MAY 8	0.51	0.08	0.32	1.30	1.44
46	MAY 15	0.0	0.0	0.0	0.0	0.0
47	MAY 22	0.31	0.04	0.26	0.37	0.33
48	MAY 29	0.0	0.0	0.0	0.0	0.23
49	JUNE 4	0.55	0.42	0.49	1.03	0.57
50	JUNE 11	0.14	0.17	0.0	0.02	0.08
51	JUNE 19	0.13	0.17	0.41	0.68	0.90
52	JUNE 27	3.77	2.04	2.91	1.98	1.61
53	JULY 3	0.15	0.10	0.73	90000.00	0.77
54	JULY 9	90000.00	90000.00	90000.00	90000.00	90000.00

** NOTE ** -0. OR -0.01 INDICATES TRACE AMOUNT
90000. INDICATES NO MEASUREMENT

TABLE I- 8. REQUIRED ANALYSES

** AMMONIA NITROGEN - MG/L N-NITROGEN **

WEEK	DATE 1968-69	* STA.1	** STA.2	** STA.3	*** STA.4	** STA.5
1	JULY 5	0.19	0.14	0.14	0.05	0.11
2	JULY 12	0.27	0.27	0.31	0.26	0.34
3	JULY 19	0.63	0.33	0.28	0.44	0.25
4	JULY 26	0.30	0.30	0.30	0.22	0.25
5	AUG. 2	0.43	0.30	0.29	0.26	0.24
6	AUG. 9	0.43	0.31	0.36	0.33	0.36
7	AUG. 16	0.29	0.16	0.19	0.17	0.12
8	AUG. 23	0.13	0.31	0.19	0.06	0.11
9	AUG. 29	0.18	0.16	0.12	0.12	0.01
10	SEPT 4	0.42	0.32	0.27	0.16	0.15
11	SEPT 12	-0.01	-0.01	0.09	0.14	0.21
12	SEPT 18	-0.01	-0.01	-0.01	-0.01	0.06
13	SEPT 25	0.03	0.04	0.04	0.11	0.01
14	OCT. 2	0.20	0.13	0.07	0.17	0.19
15	OCT. 10	0.70	90000.00	0.63	0.47	0.49
16	OCT. 16	0.99	0.26	0.28	0.24	0.32
17	OCT. 23	0.15	0.11	0.14	0.13	0.13
18	OCT. 30	0.49	0.66	0.77	0.81	0.53
19	NOV. 7	0.47	0.59	0.82	0.73	0.76
20	NOV. 13	0.22	0.27	0.21	0.21	0.21
21	NOV. 21	0.13	0.01	0.06	0.15	0.01
22	NOV. 28	0.01	0.16	0.08	0.11	0.03
23	DEC. 5	0.01	0.01	0.01	0.01	0.01
24	DEC. 11	0.17	0.14	0.18	0.12	0.09
25	DEC. 19	0.06	0.08	0.08	0.11	0.31
26	DEC. 26	0.56	0.06	0.03	0.28	0.47
27	JAN. 2	0.33	0.39	0.28	0.21	0.21
28	JAN. 9	0.45	0.26	0.39	0.35	0.46
29	JAN. 15	0.50	0.68	0.54	0.66	0.62
30	JAN. 22	0.18	0.0	0.0	0.0	0.0
31	JAN. 31	0.76	0.63	0.68	0.68	0.62
32	FEB. 5	0.82	0.67	0.65	0.40	0.40
33	FEB. 14	0.67	0.42	0.48	0.38	0.46
34	FEB. 20	0.38	0.37	0.29	0.53	0.38
35	FEB. 27	0.0	0.0	0.0	0.0	0.0
36	MAR. 6	0.90	0.72	0.88	1.00	1.17
37	MAR. 12	0.92	0.80	0.77	0.91	0.97
38	MAR. 20	1.44	1.07	0.78	0.69	0.62
39	MAR. 26	0.59	0.61	0.65	90000.00	0.68
40	APR. 2	0.40	0.38	0.39	0.34	0.37
41	APR. 9	0.43	0.42	0.56	0.39	0.47
42	APR. 16	0.27	0.32	0.27	0.29	0.25
43	APR. 23	0.29	0.17	0.19	0.18	0.17
44	MAY 1	0.27	0.29	0.28	0.38	0.38
45	MAY 8	0.22	0.22	0.16	0.21	0.21
46	MAY 15	0.22	0.15	0.14	0.14	0.21
47	MAY 22	0.46	0.37	0.14	0.11	0.15
48	MAY 29	1.17	0.61	1.09	1.82	0.65
49	JUNE 4	0.30	0.33	0.37	0.27	0.31
50	JUNE 11	0.56	0.35	0.54	0.42	0.49
51	JUNE 19	0.34	0.33	0.36	0.39	0.38
52	JUNE 27	0.27	0.24	0.24	0.25	0.21
53	JULY 3	0.22	0.36	0.29	90000.00	0.38
54	JULY 9	0.44	0.67	0.75	0.47	0.43

** NOTE ** -0. OR -0.01 INDICATES TRACE AMOUNT
90000. INDICATES NO MEASUREMENT

TABLE I- 9. REQUIRED ANALYSES

** NITRITE NITROGEN - MG/L N-NITROGEN **

WEEK	DATE 1968-69	* STA.1	** STA.2	** STA.3	*** STA.4	** STA.5
1	JULY 5	0.02	0.02	0.01	0.01	0.01
2	JULY 12	-0.01	-0.01	-0.01	-0.01	-0.01
3	JULY 19	0.04	0.06	0.03	0.01	0.01
4	JULY 26	-0.01	0.01	0.01	0.01	0.01
5	AUG. 2	0.02	0.01	0.01	0.01	0.01
6	AUG. 9	0.01	0.01	0.01	0.01	0.01
7	AUG. 16	-0.01	-0.01	-0.01	-0.01	-0.01
8	AUG. 23	-0.01	-0.01	-0.01	-0.01	-0.01
9	AUG. 29	-0.01	-0.01	-0.01	-0.01	-0.01
10	SEPT 4	-0.01	-0.01	-0.01	-0.01	-0.01
11	SEPT 12	-0.01	-0.01	-0.01	-0.01	-0.01
12	SEPT 18	-0.01	-0.01	-0.01	-0.01	-0.01
13	SEPT 25	-0.01	-0.01	-0.01	-0.01	-0.01
14	OCT. 2	-0.01	-0.01	-0.01	-0.01	-0.01
15	OCT. 10	0.05	0.04	0.05	0.04	0.04
16	OCT. 16	0.07	0.10	0.62	0.00	0.01
17	OCT. 23	0.01	0.00	0.00	0.01	0.12
18	OCT. 30	0.04	0.03	0.05	0.03	0.05
19	NOV. 7	0.04	0.03	0.04	0.04	0.04
20	NOV. 13	0.01	0.01	0.01	0.01	0.01
21	NOV. 21	0.01	0.01	0.01	0.01	0.01
22	NOV. 28	0.01	0.01	0.01	0.01	0.01
23	DEC. 5	0.01	0.01	0.01	0.01	0.01
24	DEC. 11	0.01	0.01	0.01	0.01	0.01
25	DEC. 19	0.01	0.02	0.02	0.03	0.03
26	DEC. 26	0.02	0.02	0.03	0.02	0.02
27	JAN. 2	0.02	0.03	0.03	0.03	0.03
28	JAN. 9	0.04	0.03	0.02	0.03	0.02
29	JAN. 15	0.05	0.05	0.04	0.05	0.03
30	JAN. 22	0.03	0.03	0.03	0.04	0.03
31	JAN. 31	0.04	0.03	0.04	0.03	0.04
32	FEB. 5	0.06	0.07	0.08	0.05	0.06
33	FEB. 14	0.06	0.05	0.05	0.04	0.05
34	FEB. 20	0.03	0.02	0.04	0.06	0.04
35	FEB. 27	0.02	0.02	0.02	0.02	0.02
36	MAR. 6	0.03	0.03	0.03	0.02	0.02
37	MAR. 12	0.02	0.02	0.02	0.02	0.02
38	MAR. 20	0.03	0.04	0.02	0.01	0.01
39	MAR. 26	0.01	0.01	0.05	90000.00	0.04
40	APR. 2	0.05	0.01	0.04	0.01	0.04
41	APR. 9	0.02	0.02	0.01	0.02	0.03
42	APR. 16	0.04	0.04	0.04	0.03	0.04
43	APR. 23	0.01	0.01	0.01	0.01	0.01
44	MAY 1	0.01	0.01	0.01	0.01	0.01
45	MAY 8	0.01	0.01	0.01	0.01	0.01
46	MAY 15	0.01	0.01	0.01	0.01	0.01
47	MAY 22	0.01	0.01	0.01	0.01	0.01
48	MAY 29	0.04	0.03	0.03	0.03	0.04
49	JUNE 4	0.01	0.01	0.0	0.0	0.0
50	JUNE 11	0.22	0.02	0.01	0.01	0.01
51	JUNE 19	0.01	0.01	0.01	0.01	0.01
52	JUNE 27	0.04	0.03	0.03	0.03	0.03
53	JULY 3	0.03	0.03	0.03	90000.00	0.03
54	JULY 9	0.04	0.03	0.03	0.03	0.02

** NOTE ** -0. OR -0.01 INDICATES TRACE AMOUNT
90000. INDICATES NO MEASUREMENT

TABLE I-10. REQUIRED ANALYSES

** NITRATE NITROGEN - MG/L N-NITROGEN **

WEEK	DATE 1968-69	* STA.1	** STA.2	** STA.3	*** STA.4	** STA.5
1	JULY 5	11.43	12.33	12.33	11.88	12.80
2	JULY 12	90000.00	90000.00	90000.00	90000.00	90000.00
3	JULY 19	5.94	5.44	2.94	2.25	1.94
4	JULY 26	5.85	5.31	5.69	5.65	5.37
5	AUG. 2	3.97	5.31	4.75	4.76	4.12
6	AUG. 9	1.30	0.65	0.56	0.50	1.06
7	AUG. 16	0.09	0.10	0.07	0.09	0.06
8	AUG. 23	0.10	0.10	0.09	0.06	0.05
9	AUG. 29	-0.01	-0.01	-0.01	0.04	0.03
10	SEPT 4	-0.01	0.18	0.04	0.02	0.02
11	SEPT 12	0.04	0.04	0.07	0.03	0.06
12	SEPT 18	0.07	0.03	0.02	0.02	0.01
13	SEPT 25	0.06	0.04	0.14	0.04	0.03
14	OCT. 2	5.05	5.10	4.75	4.80	4.55
15	OCT. 10	5.65	4.08	5.90	3.38	3.00
16	OCT. 16	0.78	0.57	0.77	0.66	0.85
17	OCT. 23	14.00	13.00	12.50	16.90	14.80
18	OCT. 30	3.90	4.60	4.40	9.40	9.70
19	NOV. 7	7.00	7.00	6.50	7.40	6.60
20	NOV. 13	7.40	7.10	7.40	7.00	8.50
21	NOV. 21	10.25	7.00	6.62	9.00	7.50
22	NOV. 28	5.38	4.62	7.50	4.25	6.00
23	DEC. 5	5.75	6.00	5.50	8.00	6.88
24	DEC. 11	9.91	7.93	6.89	8.19	7.15
25	DEC. 19	8.06	7.65	6.63	9.09	10.38
26	DEC. 26	3.84	4.92	3.45	9.06	7.42
27	JAN. 2	6.20	9.31	5.92	4.76	8.75
28	JAN. 9	5.00	5.37	3.64	6.37	5.43
29	JAN. 15	5.72	3.25	3.79	3.86	6.94
30	JAN. 22	4.47	3.80	4.34	4.72	4.91
31	JAN. 31	5.49	5.09	4.56	7.05	6.81
32	FEB. 5	4.78	5.06	4.43	6.25	6.08
33	FEB. 14	5.75	5.43	5.70	5.81	5.32
34	FEB. 20	3.72	3.05	2.25	4.50	3.27
35	FEB. 27	3.13	3.51	4.23	3.61	3.44
36	MAR. 6	4.95	4.86	4.86	4.66	3.82
37	MAR. 12	3.60	3.56	3.04	4.25	4.26
38	MAR. 20	2.16	2.06	1.70	2.56	2.35
39	MAR. 26	5.29	4.79	5.04	90000.00	4.17
40	APR. 2	6.57	5.24	5.56	7.06	4.52
41	APR. 9	6.64	6.08	6.33	6.35	5.69
42	APR. 16	3.65	3.54	4.13	4.67	4.39
43	APR. 23	4.94	5.11	4.44	5.27	4.90
44	MAY 1	2.99	3.42	3.45	3.28	4.08
45	MAY 8	5.80	6.00	5.58	6.28	5.67
46	MAY 15	5.10	5.04	4.52	5.04	4.35
47	MAY 22	9.29	7.89	7.45	9.66	9.00
48	MAY 29	8.74	10.08	9.56	9.47	9.77
49	JUNE 4	8.70	8.70	9.48	8.02	8.60
50	JUNE 11	7.17	7.33	7.40	7.53	6.01
51	JUNE 19	4.26	4.26	4.36	4.38	11.20
52	JUNE 27	9.00	7.48	10.18	10.35	10.55
53	JULY 3	7.25	8.45	7.25	90000.00	8.43
54	JULY 9	5.68	4.83	4.90	4.85	5.55

** NOTE ** -0. OR -0.01 INDICATES TRACE AMOUNT
90000. INDICATES NO MEASUREMENT

TABLE I-11. REQUIRED ANALYSES
** ORTHO-PHOSPHATE - MG/L **

WEEK	DATE 1968-69	* STA.1	** STA.2	** STA.3	*** STA.4	** STA.5
1	JULY 5	0.54	0.45	0.51	0.40	0.39
2	JULY 12	-0.01	-0.01	-0.01	-0.01	-0.01
3	JULY 19	0.35	0.27	0.17	0.0	0.0
4	JULY 26	0.04	0.0	0.26	0.46	0.24
5	AUG. 2	0.50	0.48	0.45	0.54	0.49
6	AUG. 9	0.05	-0.01	-0.01	-0.01	0.13
7	AUG. 16	-0.01	-0.01	-0.01	-0.01	-0.01
8	AUG. 23	-0.01	-0.01	-0.01	-0.01	-0.01
9	AUG. 29	-0.01	-0.01	-0.01	-0.01	-0.01
10	SEPT 4	-0.01	0.73	0.18	-0.01	-0.01
11	SEPT 12	-0.01	-0.01	-0.01	-0.01	-0.01
12	SEPT 18	0.18	0.18	0.24	0.08	0.13
13	SEPT 25	0.12	0.03	0.03	0.03	0.03
14	OCT. 2	0.56	0.51	0.48	0.55	0.54
15	OCT. 10	0.93	0.98	0.78	0.87	0.80
16	OCT. 16	0.63	0.71	0.63	0.72	0.50
17	OCT. 23	0.54	0.55	0.53	0.47	0.46
18	OCT. 30	1.20	0.60	0.60	1.20	0.60
19	NOV. 7	0.18	0.20	0.25	0.24	0.22
20	NOV. 13	0.99	0.85	0.96	0.95	1.02
21	NOV. 21	0.08	0.08	0.08	0.08	0.08
22	NOV. 28	0.30	0.35	0.37	0.43	0.44
23	DEC. 5	0.04	0.07	0.05	0.04	0.04
24	DEC. 11	0.04	0.06	0.04	0.04	0.04
25	DEC. 19	0.84	0.92	1.52	0.36	0.57
26	DEC. 26	0.82	0.88	1.05	1.15	0.97
27	JAN. 2	0.62	0.72	0.70	0.69	0.70
28	JAN. 9	0.80	0.80	0.90	0.83	0.80
29	JAN. 15	0.25	1.68	1.66	1.52	1.68
30	JAN. 22	0.08	0.08	0.09	0.09	0.10
31	JAN. 31	0.11	0.11	0.12	0.11	0.12
32	FEB. 5	1.01	1.00	0.96	0.99	1.00
33	FEB. 14	1.83	1.84	1.88	1.84	1.85
34	FEB. 20	1.02	1.02	1.06	0.97	0.99
35	FEB. 27	2.08	2.12	2.04	2.04	2.06
36	MAR. 6	1.23	1.30	1.43	1.48	1.64
37	MAR. 12	1.57	1.72	1.78	1.72	1.78
38	MAR. 20	0.85	0.76	0.80	0.63	0.79
39	MAR. 26	0.89	0.80	0.92	90000.00	0.75
40	APR. 2	0.72	0.73	0.72	0.70	0.78
41	APR. 9	0.25	0.26	0.26	0.26	0.27
42	APR. 16	0.26	0.21	0.23	0.23	0.22
43	APR. 23	0.36	0.28	0.32	0.28	0.31
44	MAY 1	0.17	0.14	0.14	0.14	0.17
45	MAY 8	0.25	0.23	0.31	0.34	0.31
46	MAY 15	0.25	0.23	0.22	0.28	0.22
47	MAY 22	0.40	0.40	0.40	0.40	0.50
48	MAY 29	0.20	0.20	0.40	0.30	0.30
49	JUNE 4	0.11	0.14	0.21	0.11	0.13
50	JUNE 11	0.44	0.42	0.44	0.45	0.44
51	JUNE 19	0.30	0.30	0.40	0.40	0.40
52	JUNE 27	0.40	0.40	0.40	0.40	0.40
53	JULY 3	0.53	0.48	0.43	90000.00	0.49
54	JULY 9	0.50	0.40	0.40	0.50	0.30

** NOTE ** -0. OR -0.01 INDICATES TRACE AMOUNT
90000. INDICATES NO MEASUREMENT

TABLE I-12. REQUIRED ANALYSES

BIOCHEMICAL OXYGEN DEMAND 5-DAY-MG/L

WEEK	DATE 1968-69	* STA.1	** STA.2	** STA.3	*** STA.4	** STA.5
1	JULY 5	10.6	9.6	5.0	10.0	10.3
2	JULY 12	17.3	20.6	20.2	18.8	19.0
3	JULY 19	11.5	16.3	15.1	21.4	20.6
4	JULY 26	7.4	8.6	7.7	5.7	7.7
5	AUG. 2	3.5	3.6	4.3	3.9	3.1
6	AUG. 9	11.2	15.5	16.4	14.6	11.6
7	AUG. 16	15.5	14.6	13.0	11.2	8.6
8	AUG. 23	8.0	7.7	6.2	6.4	5.4
9	AUG. 29	9.6	7.1	7.3	7.4	7.8
10	SEPT 4	8.4	9.3	11.8	8.2	4.2
11	SEPT 12	18.3	21.7	17.6	17.2	15.5
12	SEPT 18	14.8	13.3	10.6	9.6	8.9
13	SEPT 25	17.5	14.2	17.3	16.9	16.6
14	OCT. 2	6.2	4.0	4.8	5.0	3.7
15	OCT. 10	2.1	4.7	5.8	7.4	4.9
16	OCT. 16	13.1	12.2	12.2	12.1	13.1
17	OCT. 23	9.2	10.6	8.0	6.1	6.2
18	OCT. 30	3.2	6.1	5.2	5.4	5.0
19	NOV. 7	3.9	3.5	5.1	4.4	3.4
20	NOV. 13	3.6	3.2	2.3	3.4	3.6
21	NOV. 21	3.8	3.0	3.7	3.6	4.0
22	NOV. 28	3.4	4.2	3.5	4.1	3.5
23	DEC. 5	3.1	2.2	3.6	5.1	5.5
24	DEC. 11	1.2	1.4	3.2	2.3	2.8
25	DEC. 19	4.9	4.6	5.0	3.9	3.1
26	DEC. 26	2.4	5.0	4.5	4.2	2.9
27	JAN. 2	3.4	2.2	2.6	2.7	3.3
28	JAN. 9	3.5	3.5	2.5	3.6	3.0
29	JAN. 15	2.5	1.2	1.2	2.6	1.1
30	JAN. 22	2.2	1.1	1.0	2.7	0.0
31	JAN. 31	3.1	2.7	3.0	2.8	2.8
32	FEB. 5	2.4	1.9	1.9	2.3	1.9
33	FEB. 14	4.8	7.3	4.3	5.7	3.8
34	FEB. 20	2.6	0.4	0.6	1.6	1.5
35	FEB. 27	10.5	10.3	12.9	12.6	11.8
36	MAR. 6	3.6	5.1	7.5	7.7	13.4
37	MAR. 12	1.3	1.9	1.4	1.4	1.6
38	MAR. 20	20.7	21.7	21.1	21.6	20.7
39	MAR. 26	8.9	8.9	12.3	90000.0	10.5
40	APR. 2	5.0	5.6	5.2	6.1	4.5
41	APR. 9	4.3	4.0	4.1	4.7	4.1
42	APR. 16	4.1	4.4	5.0	4.6	5.6
43	APR. 23	5.0	5.3	6.1	7.7	6.2
44	MAY 1	7.7	9.5	9.7	8.0	8.6
45	MAY 8	8.4	7.2	8.7	6.3	6.5
46	MAY 15	1.3	2.2	3.0	3.6	3.9
47	MAY 22	2.2	2.8	5.0	3.8	3.7
48	MAY 29	4.5	5.0	6.2	5.9	6.4
49	JUNE 4	4.3	4.9	4.5	5.5	6.5
50	JUNE 11	1.8	3.2	3.7	3.2	4.4
51	JUNE 19	7.0	5.2	5.1	4.6	5.6
52	JUNE 27	4.6	6.6	5.3	5.7	5.7
53	JULY 3	2.5	4.1	22.3	90000.0	3.1
54	JULY 9	3.0	5.3	5.1	5.5	5.0

** NOTE ** -0. OR -0.01 INDICATES TRACE AMOUNT

90000. INDICATES NO MEASUREMENT

TABLE I-13. REQUIRED ANALYSES

** CHLOROPHYLL A - MG/L **

WEEK	DATE 1967-68	* STA.1	** STA.2	** STA.3	*** STA.4	** STA.5
1	JULY 6	90000.00	90000.00	90000.00	90000.00	90000.00
2	JULY 13	0.18	0.13	0.13	0.14	0.07
3	JULY 20	0.28	0.08	0.30	0.27	0.14
4	JULY 27	0.12	0.08	0.09	0.05	0.12
5	AUG. 3	0.09	0.03	0.07	0.03	0.13
6	AUG. 10	0.09	0.12	0.11	0.16	0.17
7	AUG. 17	0.07	0.05	0.05	0.00	0.06
8	AUG. 24	0.01	0.07	0.12	0.04	0.06
9	AUG. 31	0.26	0.35	0.34	0.32	0.29
10	SEP. 8	0.19	0.21	0.20	0.20	0.15
11	SEP. 16	0.24	0.17	0.13	0.14	0.18
12	SEP. 23	0.44	0.23	0.34	0.0	0.06
13	SEP. 30	0.00	0.09	0.01	0.12	0.24
14	OCT. 7	0.26	0.24	0.21	0.14	0.18
15	OCT. 14	0.37	0.29	0.30	0.24	0.33
16	OCT. 21	0.18	0.13	0.04	0.14	0.10
17	OCT. 28	0.20	0.19	0.17	0.16	0.15
18	NOV. 4	0.26	0.38	0.39	0.41	0.38
19	NOV. 9	0.34	0.41	0.32	0.35	0.24
20	NOV. 16	0.88	0.58	0.46	0.23	0.09
21	NOV. 24	0.20	0.24	0.25	0.18	0.15
22	DEC. 1	90000.00	90000.00	90000.00	90000.00	90000.00
23	DEC. 8	0.21	0.22	0.27	0.22	0.28
24	DEC. 15	0.36	0.50	0.36	0.16	0.25
25	DEC. 22	0.18	0.28	0.26	0.26	0.27
26	DEC. 29	0.41	0.43	0.39	0.28	0.28
27	JAN. 5	0.31	0.53	0.53	0.64	0.62
28	JAN. 12	0.49	0.56	0.47	0.54	0.52
29	JAN. 19	0.16	0.22	0.33	0.39	0.42
30	JAN. 26	0.19	0.34	0.47	0.48	0.52
31	FEB. 2	0.09	0.17	0.24	0.29	0.37
32	FEB. 9	0.11	0.13	0.18	0.19	0.21
33	FEB. 16	0.24	0.30	0.31	0.28	0.28
34	FEB. 23	0.32	0.42	0.49	0.31	0.46
35	MAR. 1	0.20	0.31	0.42	0.41	0.47
36	MAR. 8	0.08	0.14	0.22	0.26	0.21
37	MAR. 15	0.10	0.18	0.22	0.25	0.26
38	MAR. 22	0.25	0.45	0.25	0.26	0.31
39	MAR. 29	0.21	0.22	0.21	0.19	0.18
40	APR. 5	0.28	0.25	0.27	0.10	0.22
41	APR. 12	0.26	0.13	0.20	0.16	0.14
42	APR. 20	0.24	0.24	0.29	0.25	0.31
43	APR. 27	0.34	0.24	0.32	0.33	0.29
44	MAY 3	0.54	0.56	0.86	0.65	0.54
45	MAY 10	0.23	0.23	0.17	0.19	0.13
46	MAY 17	0.19	0.19	0.17	0.18	0.13
47	MAY 24	0.17	0.17	0.12	0.12	0.09
48	JUNE 1	0.18	0.12	0.09	0.07	0.13
49	JUNE 7	0.14	0.15	0.09	0.03	0.09
50	JUNE 14	0.24	0.22	0.20	0.20	0.10
51	JUNE 21	0.18	0.14	0.12	0.12	0.09
52	JUNE 28	0.08	0.07	0.11	0.16	0.13

** NOTE ** -0. OR -0.01 INDICATES TRACE AMOUNT

90000. INDICATES NO MEASUREMENT

TABLE I-13. REQUIRED ANALYSES

** CHLOROPHYLL A - MG/L **

WEEK	DATE 1968-69	* STA.1	** STA.2	** STA.3	*** STA.4	** STA.5
1	JULY 5	0.08	0.09	0.07	0.07	0.06
2	JULY 12	0.32	0.40	0.36	0.27	0.33
3	JULY 19	0.11	0.16	0.63	0.61	0.56
4	JULY 26	0.12	0.15	0.16	0.11	0.14
5	AUG. 2	0.07	0.09	0.11	0.07	0.08
6	AUG. 9	0.25	0.28	0.27	0.18	0.11
7	AUG. 16	0.15	0.12	0.08	0.08	0.06
8	AUG. 23	0.06	0.05	0.04	0.04	0.04
9	AUG. 29	0.06	0.06	0.04	0.05	0.11
10	SEPT 4	0.11	0.07	0.10	90000.00	0.08
11	SEPT 12	0.17	0.11	0.10	0.09	0.10
12	SEPT 18	0.17	0.14	0.08	0.09	0.07
13	SEPT 25	0.24	0.36	0.22	0.19	0.16
14	OCT. 2	0.17	0.14	0.18	0.13	0.15
15	OCT. 10	0.09	0.14	0.10	0.11	0.10
16	OCT. 16	0.05	0.05	0.06	0.05	0.05
17	OCT. 23	0.02	0.02	0.02	0.02	0.02
18	OCT. 30	0.01	0.01	0.01	0.01	0.01
19	NOV. 7	0.01	0.01	0.01	0.01	0.01
20	NOV. 13	0.02	0.01	0.01	0.02	0.02
21	NOV. 21	90000.00	90000.00	90000.00	90000.00	90000.00
22	NOV. 28	90000.00	90000.00	90000.00	90000.00	90000.00
23	DEC. 5	0.01	0.00	0.01	0.00	0.00
24	DEC. 11	0.03	0.02	0.04	0.03	0.05
25	DEC. 19	0.04	0.03	0.03	0.03	0.0
26	DEC. 26	0.02	0.02	0.03	0.02	0.03
27	JAN. 2	0.01	0.01	0.01	0.01	0.01
28	JAN. 9	0.00	0.01	0.00	0.01	0.00
29	JAN. 15	0.0	0.00	0.00	0.00	0.00
30	JAN. 22	0.00	0.00	0.00	0.00	0.00
31	JAN. 31	0.00	0.00	0.00	0.0	0.0
32	FEB. 5	0.0	0.0	0.0	0.0	0.0
33	FEB. 14	0.0	0.0	0.0	0.0	0.0
34	FEB. 20	0.0	0.0	0.0	0.00	0.0
35	FEB. 27	0.0	0.00	0.0	0.0	0.00
36	MAR. 6	0.0	0.0	0.0	0.0	0.0
37	MAR. 12	0.00	0.00	0.0	0.00	0.00
38	MAR. 20	0.00	0.00	0.00	0.00	0.00
39	MAR. 26	0.00	0.00	0.00	90000.00	0.00
40	APR. 2	0.00	0.01	0.0	0.0	0.00
41	APR. 9	0.01	0.01	0.01	0.01	0.00
42	APR. 16	0.01	0.01	0.01	0.01	0.01
43	APR. 23	0.04	0.03	0.03	0.03	0.04
44	MAY 1	0.17	0.13	0.14	0.15	0.16
45	MAY 8	0.02	0.02	0.02	0.01	0.01
46	MAY 15	0.09	0.09	0.09	0.10	0.10
47	MAY 22	0.03	0.03	0.03	0.04	0.04
48	MAY 29	0.05	0.06	0.07	0.04	0.05
49	JUNE 4	0.08	0.08	0.05	0.07	0.07
50	JUNE 11	0.0	0.0	0.0	0.0	0.0
51	JUNE 19	0.02	0.03	0.02	0.02	0.03
52	JUNE 27	0.02	0.02	0.02	0.03	0.02
53	JULY 3	0.0	0.0	0.01	90000.00	0.01
54	JULY 9	90000.00	90000.00	90000.00	90000.00	90000.00

** NOTE ** -0. OR -0.01 INDICATES TRACE AMOUNT

90000. INDICATES NO MEASUREMENT

TABLE I-14. REQUIRED ANALYSES

** CHLOROPHYLL B - MG/L **

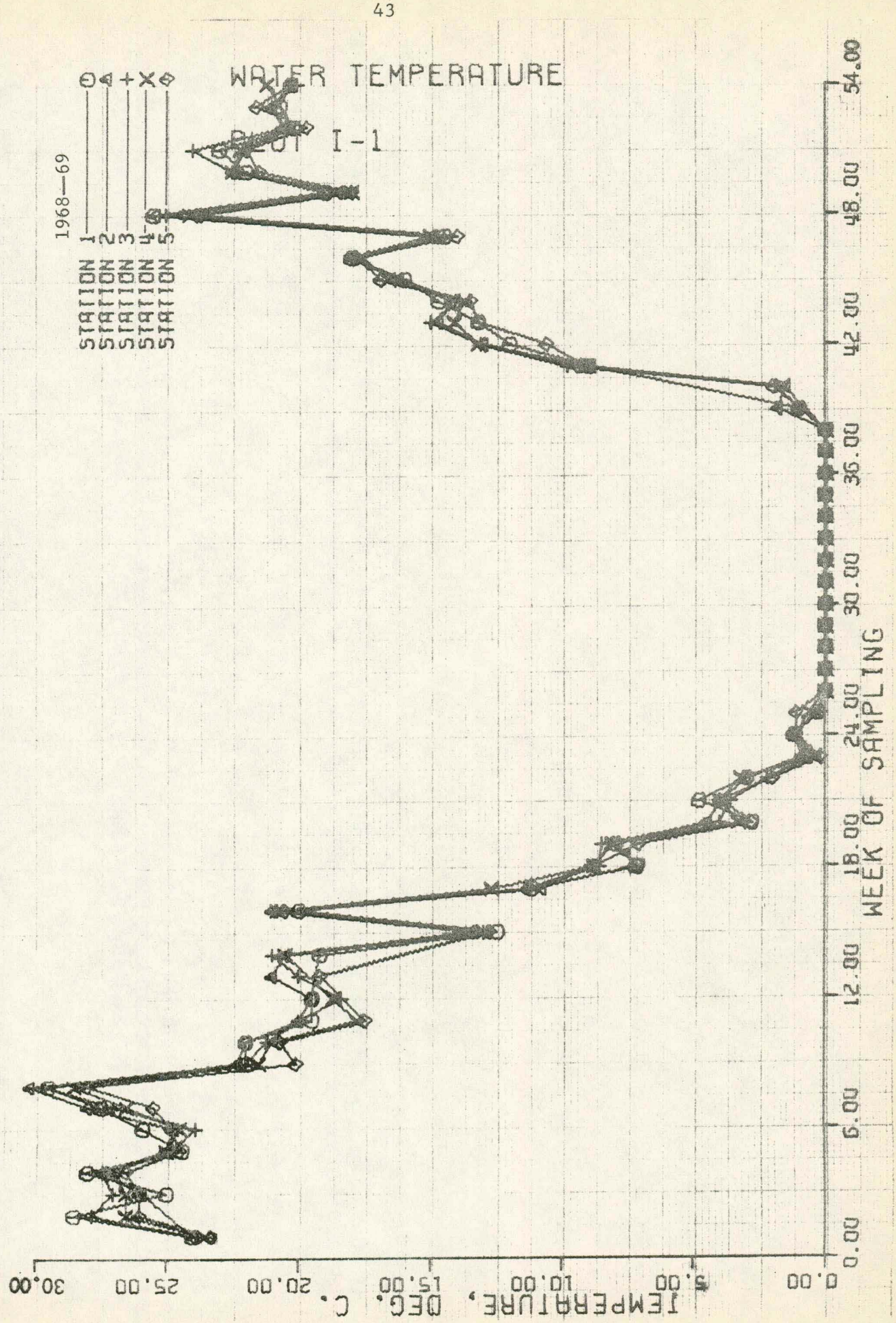
WEEK	DATE 1967-68	* STA.1	** STA.2	** STA.3	'** STA.4	** STA.5
1	JULY 6	90000.00	90000.00	90000.00	90000.00	90000.00
2	JULY 13	0.0	0.0	0.0	0.0	0.0
3	JULY 20	0.0	0.0	0.0	0.0	0.0
4	JULY 27	0.0	0.0	0.0	0.0	0.0
5	AUG. 3	0.0	0.0	0.02	0.0	0.0
6	AUG. 10	0.03	0.0	0.0	0.0	0.0
7	AUG. 17	0.0	0.0	0.0	0.0	0.01
8	AUG. 24	0.0	0.0	0.0	0.0	0.0
9	AUG. 31	0.0	0.0	0.0	0.0	0.0
10	SEP. 8	0.0	0.0	0.0	0.0	0.0
11	SEP. 16	0.0	0.0	0.0	0.0	0.0
12	SEP. 23	0.0	0.0	0.0	0.0	0.0
13	SEP. 30	0.02	0.0	0.0	0.0	0.0
14	OCT. 7	0.0	0.0	0.0	0.0	0.0
15	OCT. 14	0.0	0.0	0.0	0.0	0.0
16	OCT. 21	0.0	0.0	0.0	0.0	0.17
17	OCT. 28	0.0	0.0	0.0	0.0	0.0
18	NOV. 4	0.0	0.0	0.0	0.0	0.0
19	NOV. 9	0.0	0.0	0.0	0.0	0.0
20	NOV. 16	0.0	0.0	0.0	0.14	0.03
21	NOV. 24	0.13	0.09	0.11	0.05	0.04
22	DEC. 1	90000.00	90000.00	90000.00	90000.00	90000.00
23	DEC. 8	0.04	0.13	0.15	0.14	0.13
24	DEC. 15	0.18	0.25	0.17	0.09	0.14
25	DEC. 22	0.09	0.10	0.10	0.11	0.13
26	DEC. 29	0.12	0.14	0.13	0.09	0.11
27	JAN. 5	0.24	0.24	0.30	0.35	0.28
28	JAN. 12	0.18	0.27	0.29	0.28	0.32
29	JAN. 19	0.08	0.12	0.14	0.18	0.17
30	JAN. 26	0.09	0.18	0.24	0.25	0.25
31	FEB. 2	0.05	0.08	0.11	0.15	0.16
32	FEB. 9	0.04	0.05	0.08	0.09	0.10
33	FEB. 16	0.15	0.15	0.14	0.15	0.17
34	FEB. 23	0.14	0.20	0.26	0.16	0.26
35	MAR. 1	0.09	0.16	0.23	0.25	0.28
36	MAR. 8	0.06	0.07	0.10	0.12	0.12
37	MAR. 15	0.04	0.03	0.06	0.06	0.07
38	MAR. 22	0.05	0.25	0.10	0.09	0.21
39	MAR. 29	0.02	0.05	0.07	0.09	0.07
40	APR. 5	0.14	0.17	0.10	0.07	0.26
41	APR. 12	0.03	0.04	0.02	0.07	0.04
42	APR. 20	0.08	0.14	0.11	0.07	0.08
43	APR. 27	0.13	0.03	0.13	0.11	0.06
44	MAY 3	0.20	0.22	0.34	0.12	0.19
45	MAY 10	0.10	0.11	0.20	0.09	0.08
46	MAY 17	0.04	0.08	0.04	0.03	0.06
47	MAY 24	0.05	0.04	0.04	0.06	0.0
48	JUNE 1	0.03	0.03	0.04	0.07	0.32
49	JUNE 7	0.07	0.04	0.07	0.00	0.03
50	JUNE 14	0.11	0.09	0.11	0.07	0.16
51	JUNE 21	0.0	0.00	0.0	0.0	0.0
52	JUNE 28	0.03	0.00	0.01	0.03	0.02

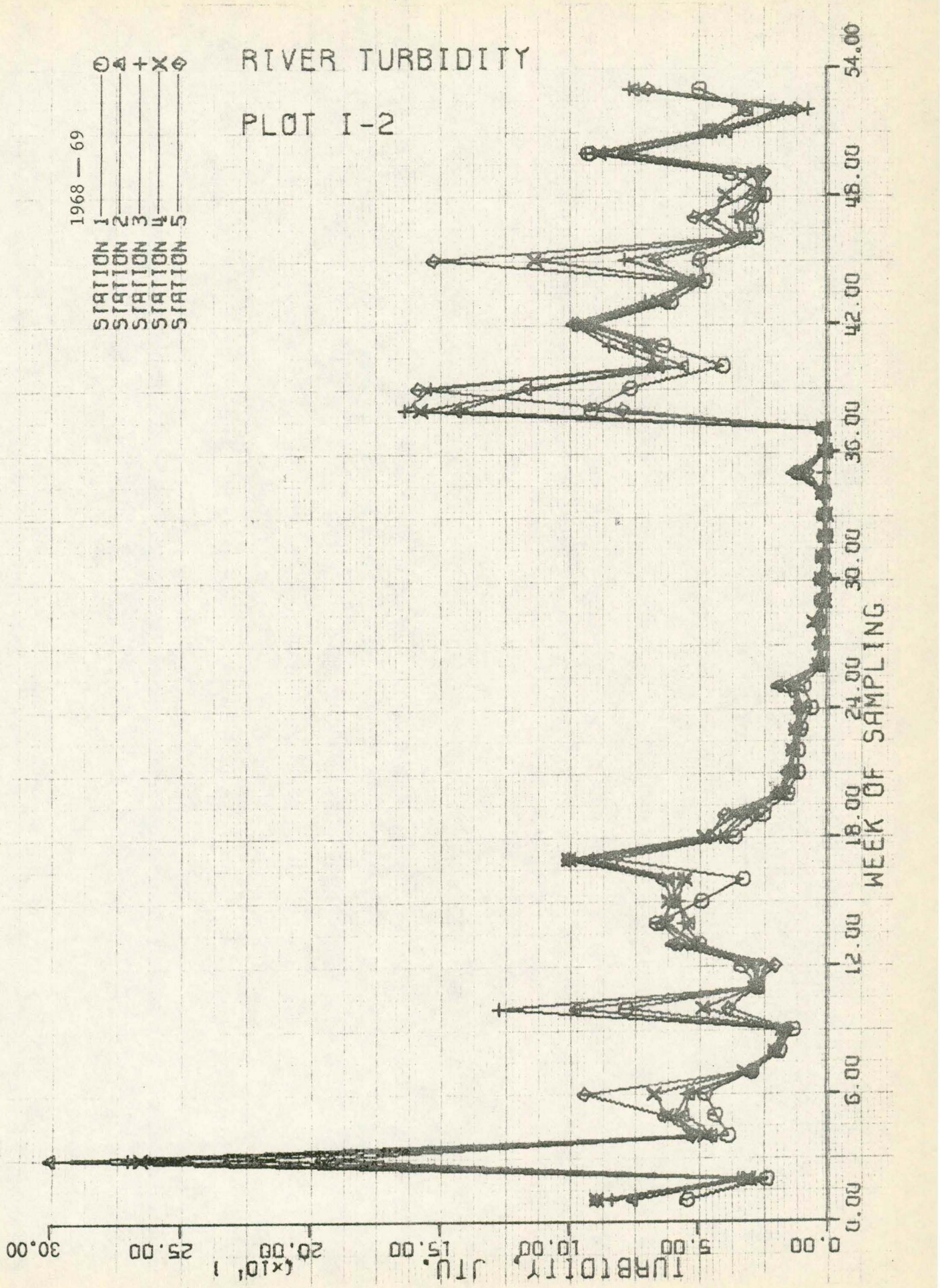
** NOTE ** -0. OR -0.01 INDICATES TRACE AMOUNT
90000. INDICATES NO MEASUREMENT

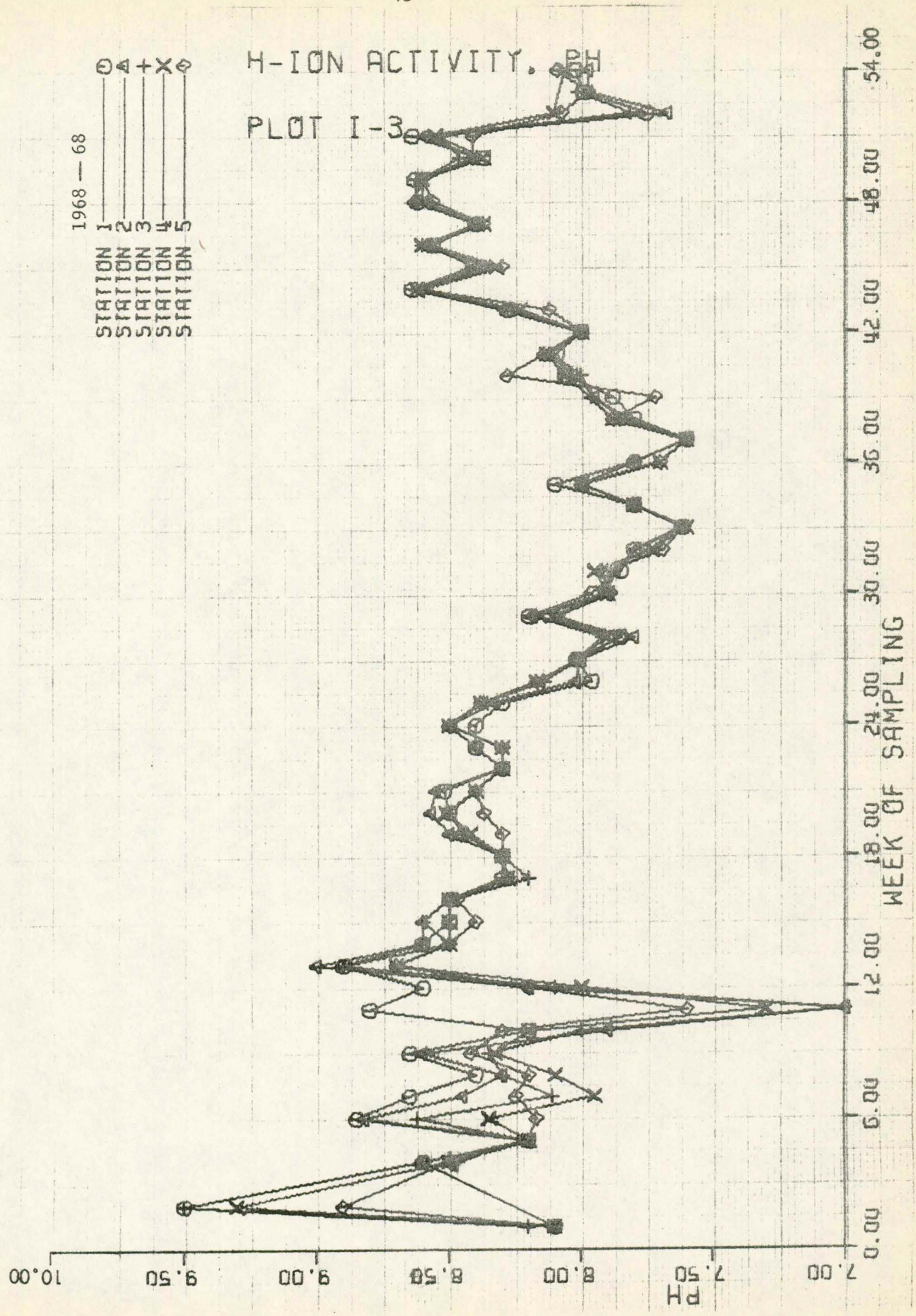
TABLE I-14. REQUIRED ANALYSES
** CHLOROPHYLL B - MG/L **

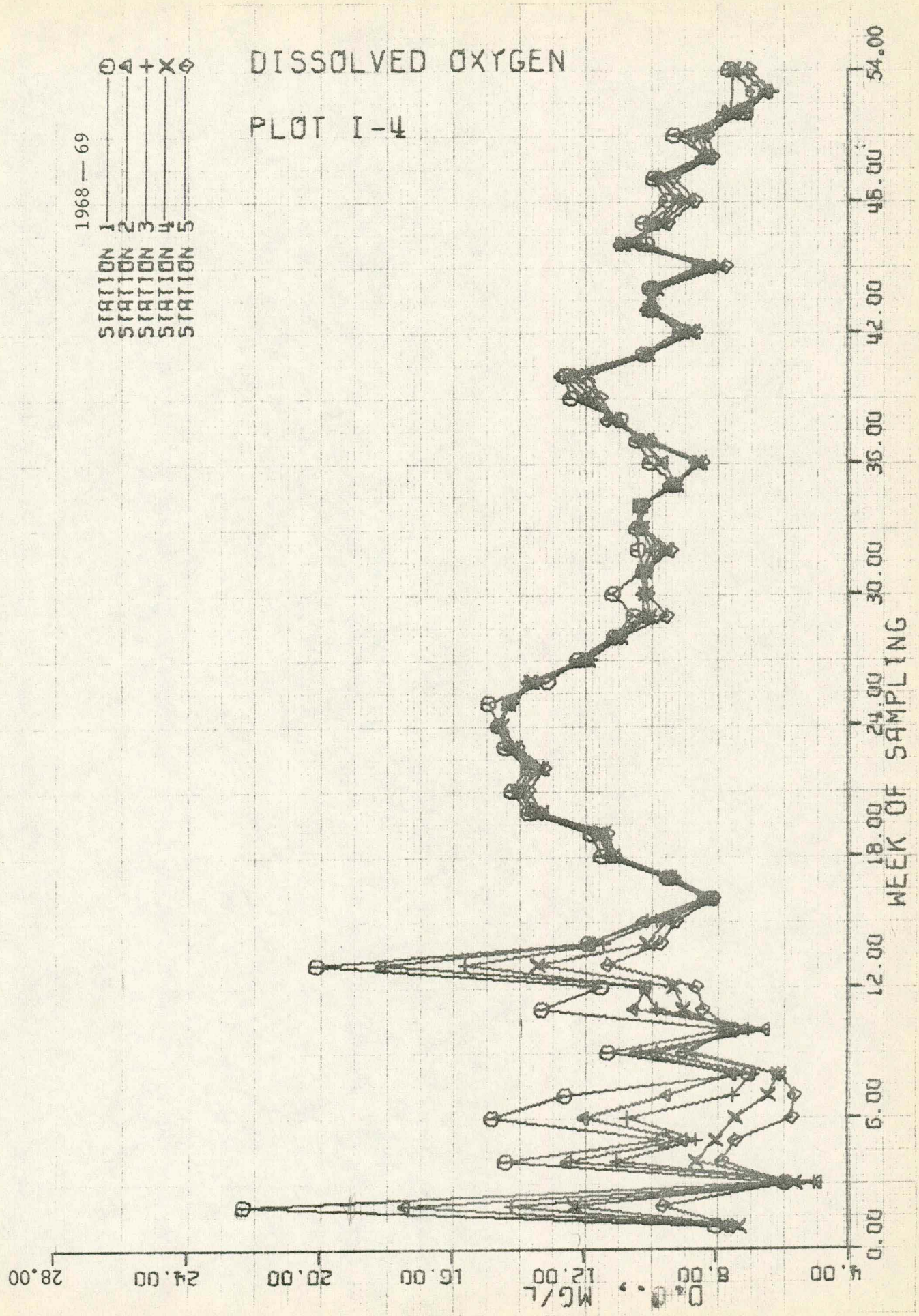
WEEK	DATE 1968-69	* STA.1	** STA.2	** STA.3	*** STA.4	** STA.5
1	JULY 5	0.01	0.04	0.02	0.0	0.00
2	JULY 12	0.08	0.14	0.14	0.10	0.05
3	JULY 19	0.06	0.04	0.18	0.10	0.03
4	JULY 26	0.04	0.05	0.01	0.04	0.03
5	AUG. 2	0.03	0.03	0.02	0.03	0.02
6	AUG. 9	0.05	0.04	0.03	0.00	0.0
7	AUG. 16	0.0	0.00	0.0	0.0	0.0
8	AUG. 23	0.01	0.01	0.0	0.0	0.0
9	AUG. 29	0.00	0.02	0.01	0.02	0.05
10	SEPT 4	0.03	0.02	0.02	90000.00	0.01
11	SEPT 12	0.05	0.04	0.03	0.02	0.02
12	SEPT 18	0.03	0.01	0.01	0.00	0.0
13	SEPT 25	0.01	0.04	0.08	0.04	0.03
14	OCT. 2	0.03	0.03	0.03	0.04	0.05
15	OCT. 10	0.0	0.0	0.02	0.02	0.02
16	OCT. 16	0.01	0.00	0.01	0.00	0.0
17	OCT. 23	0.00	0.0	0.0	0.00	0.0
18	OCT. 30	0.00	0.00	0.0	0.0	0.00
19	NOV. 7	0.00	0.00	0.00	0.01	0.0
20	NOV. 13	0.01	0.00	0.00	0.00	0.01
21	NOV. 21	90000.00	90000.00	90000.00	90000.00	90000.00
22	NOV. 28	90000.00	90000.00	90000.00	90000.00	90000.00
23	DEC. 5	0.00	0.01	0.00	0.00	0.00
24	DEC. 11	0.01	0.01	0.02	0.01	0.0
25	DEC. 19	0.02	0.01	0.02	0.02	0.0
26	DEC. 26	0.00	0.00	0.01	0.01	0.01
27	JAN. 2	0.00	0.01	0.00	0.0	0.01
28	JAN. 9	0.00	0.0	0.0	0.01	0.00
29	JAN. 15	0.00	0.00	0.00	0.00	0.00
30	JAN. 22	0.00	0.0	0.0	0.00	0.00
31	JAN. 31	0.0	0.0	0.0	0.00	0.0
32	FEB. 5	0.00	0.00	0.0	0.0	0.00
33	FEB. 14	0.0	0.0	0.0	0.0	0.0
34	FEB. 20	0.0	0.00	0.0	0.00	0.0
35	FEB. 27	0.0	0.0	0.0	0.0	0.0
36	MAR. 6	0.0	0.0	0.00	0.0	0.00
37	MAR. 12	0.00	0.00	0.00	0.00	0.00
38	MAR. 20	0.00	0.0	0.0	0.00	0.00
39	MAR. 26	0.01	0.0	0.00	90000.00	0.00
40	APR. 2	0.00	0.00	0.0	0.0	0.0
41	APR. 9	0.0	0.01	0.00	0.00	0.0
42	APR. 16	0.00	0.01	0.00	0.00	0.0
43	APR. 23	0.01	0.01	0.0	0.00	0.01
44	MAY 1	0.00	0.03	0.02	0.03	0.00
45	MAY 8	0.02	0.02	0.02	0.01	0.01
46	MAY 15	0.01	0.01	0.02	0.01	0.02
47	MAY 22	0.01	0.01	0.01	0.01	0.01
48	MAY 29	0.02	0.03	0.03	0.02	0.02
49	JUNE 4	0.06	0.05	0.02	0.03	0.03
50	JUNE 11	0.0	0.0	0.0	0.0	0.0
51	JUNE 19	0.01	0.02	0.01	0.02	0.0
52	JUNE 27	0.0	0.0	0.01	0.03	0.03
53	JULY 3	0.0	0.0	0.01	90000.00	0.0
54	JULY 9	90000.00	90000.00	90000.00	90000.00	90000.00

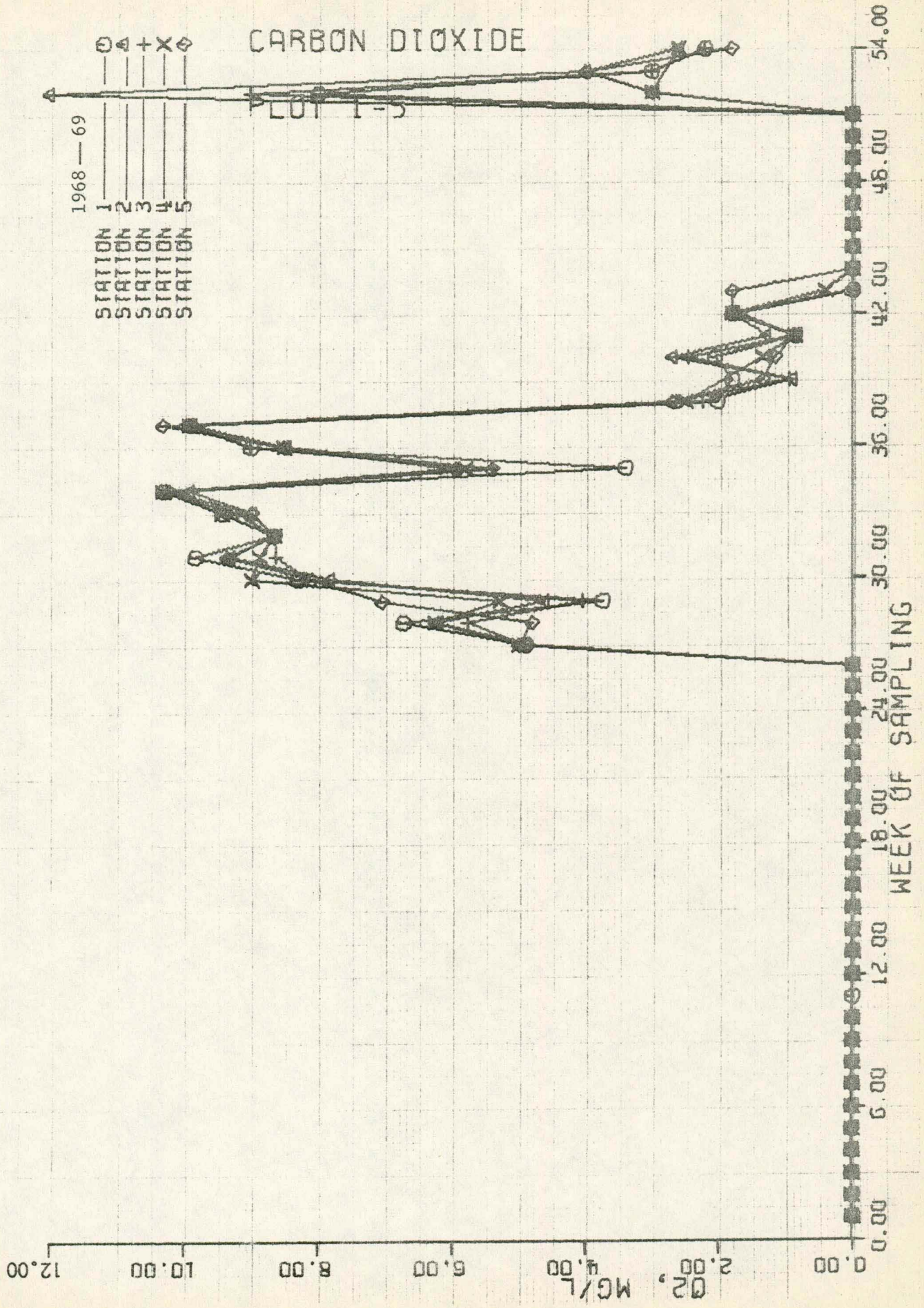
** NOTE ** -0. OR -0.01 INDICATES TRACE AMOUNT
90000. INDICATES NO MEASUREMENT

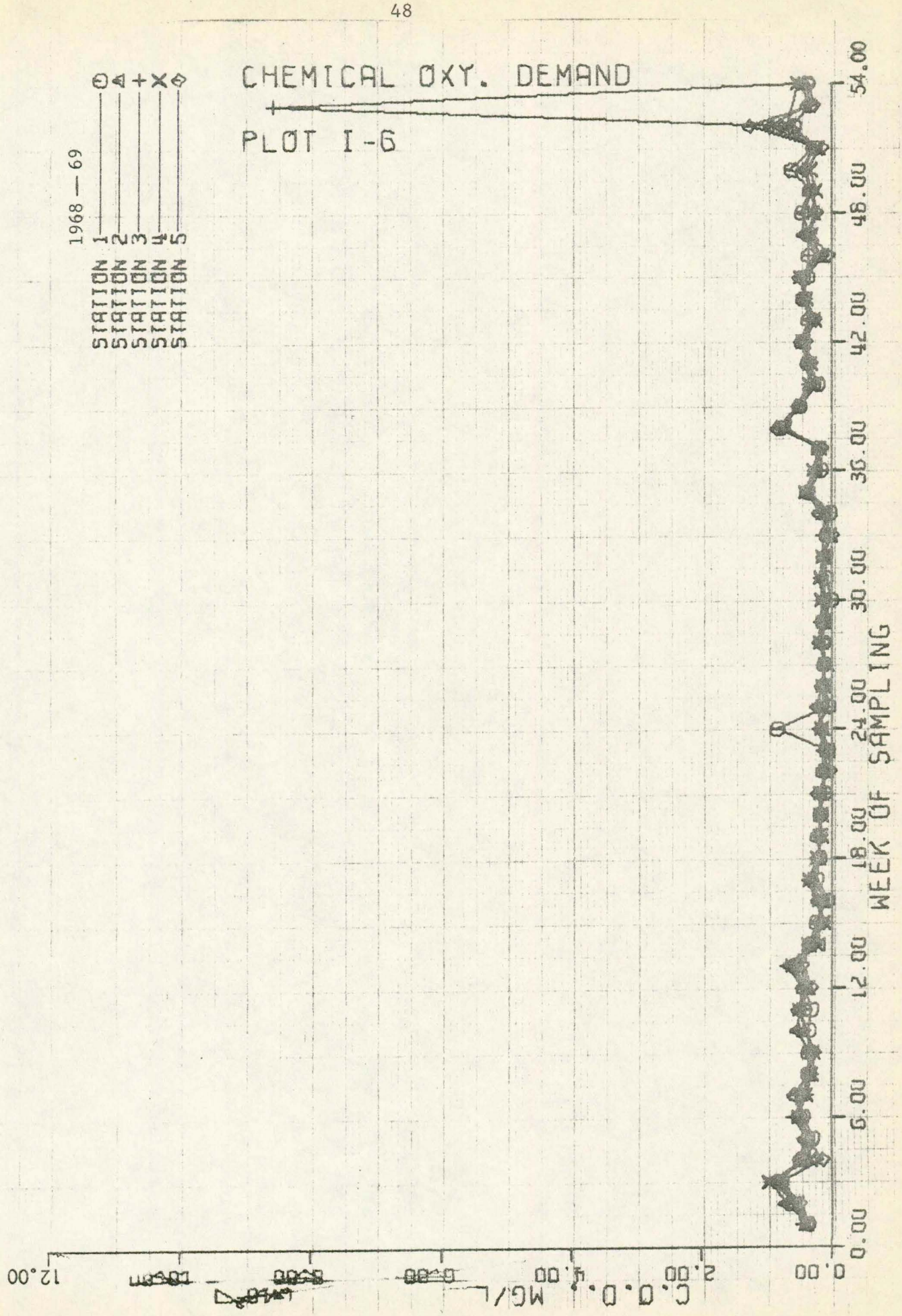

WATER TEMPERATURE
PLOT I-1
1968—69
STATION 1
STATION 2
STATION 3
STATION 4
STATION 5
TEMPERATURE, DEG. C.
0.00
5.00
10.00
15.00
20.00
25.00
30.00
WEEK OF SAMPLING
0.00
6.00
12.00
18.00
24.00
30.00
36.00
42.00
48.00
54.00

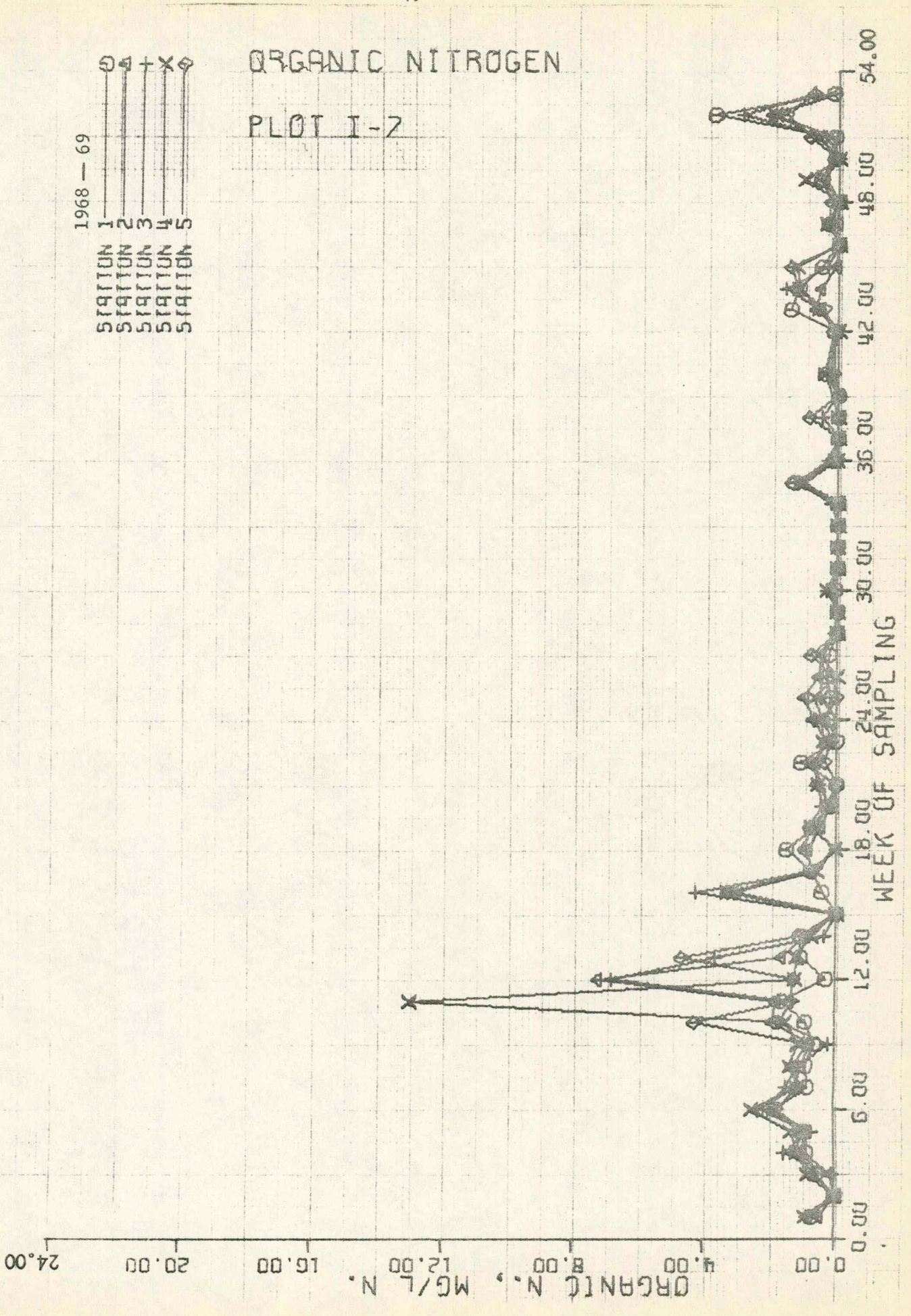

RIVER TURBIDITY
PLOT I-2
1968 — 69
STATION 1
STATION 2
STATION 3
STATION 4
STATION 5
TURBIDITY, JTU.
(x10')
0.00
5.00
10.00
15.00
20.00
25.00
30.00
0.00
6.00
12.00
18.00
24.00
30.00
36.00
42.00
48.00
54.00
WEEK OF SAMPLING

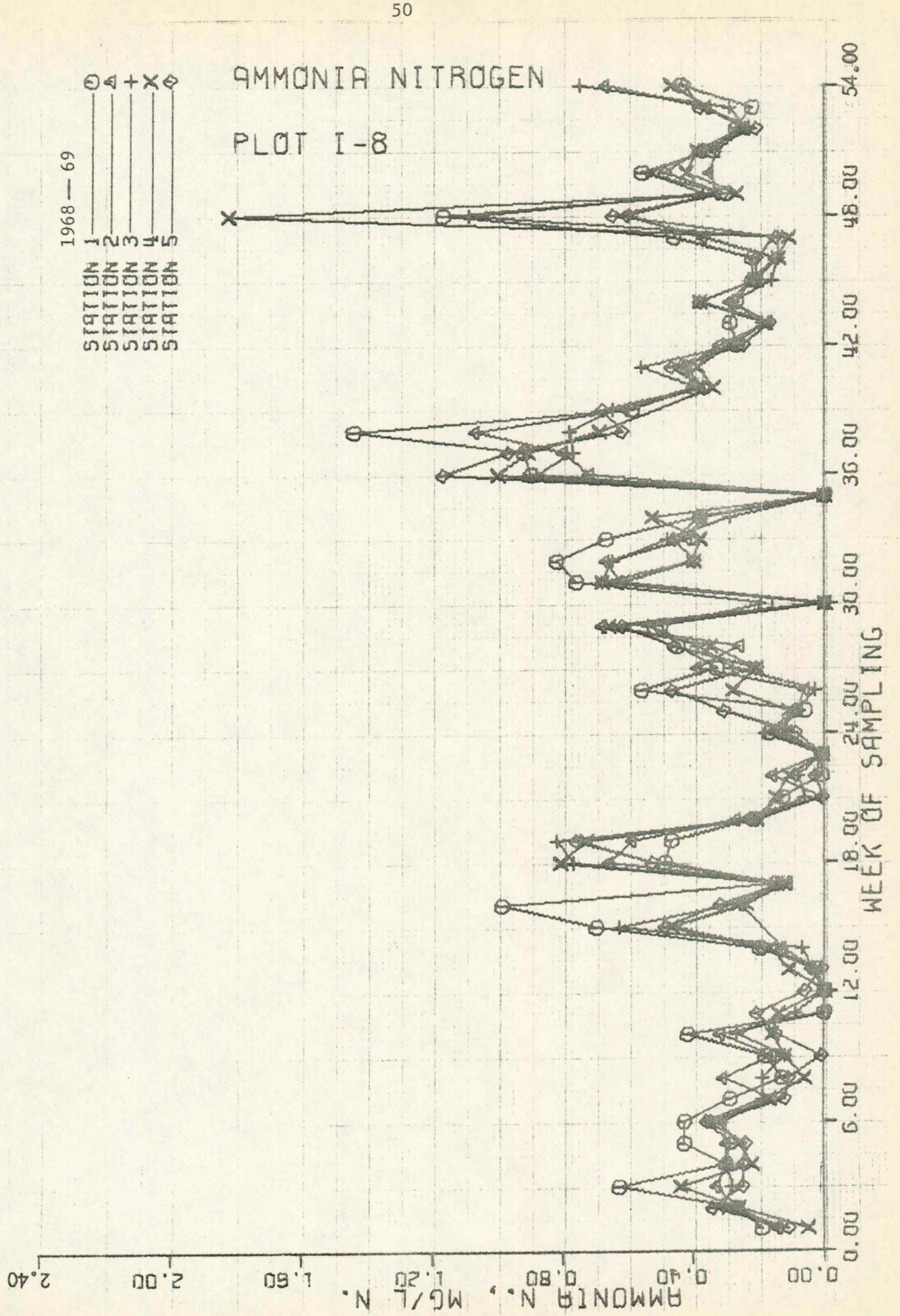

H-ION ACTIVITY, PH
PLOT I-3
1968 — 68
STATION 1
STATION 2
STATION 3
STATION 4
STATION 5
PH
7.00
7.50
8.00
8.50
9.00
9.50
10.00
WEEK OF SAMPLING
0.00
6.00
12.00
18.00
24.00
30.00
36.00
42.00
48.00
54.00

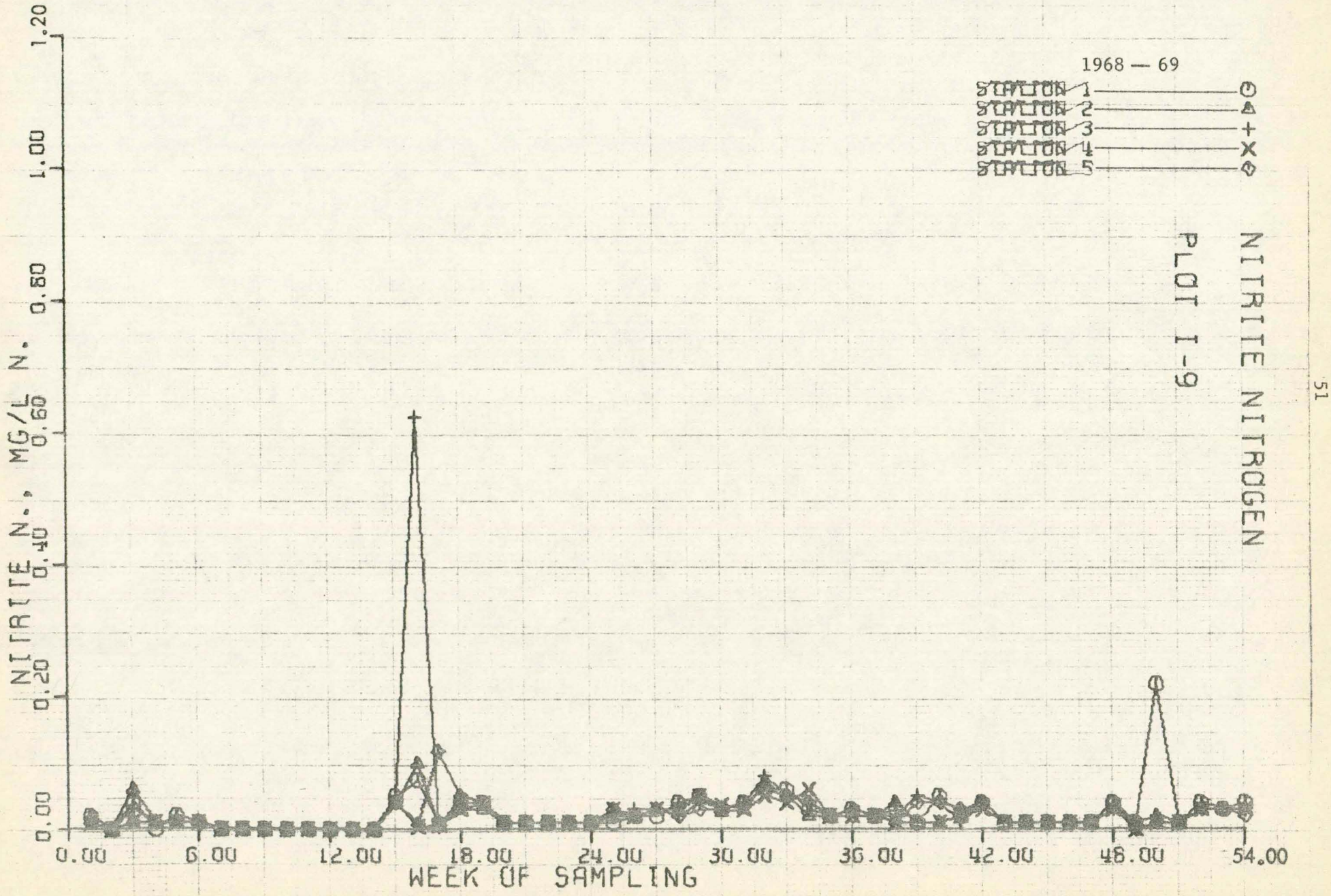

DISSOLVED OXYGEN
PLOT I-4
1968 — 69
STATION 1
STATION 2
STATION 3
STATION 4
STATION 5
D.O., MG/L
4.00
8.00
12.00
16.00
20.00
24.00
28.00
0.00
6.00
12.00
18.00
24.00
30.00
36.00
42.00
46.00
54.00
WEEK OF SAMPLING

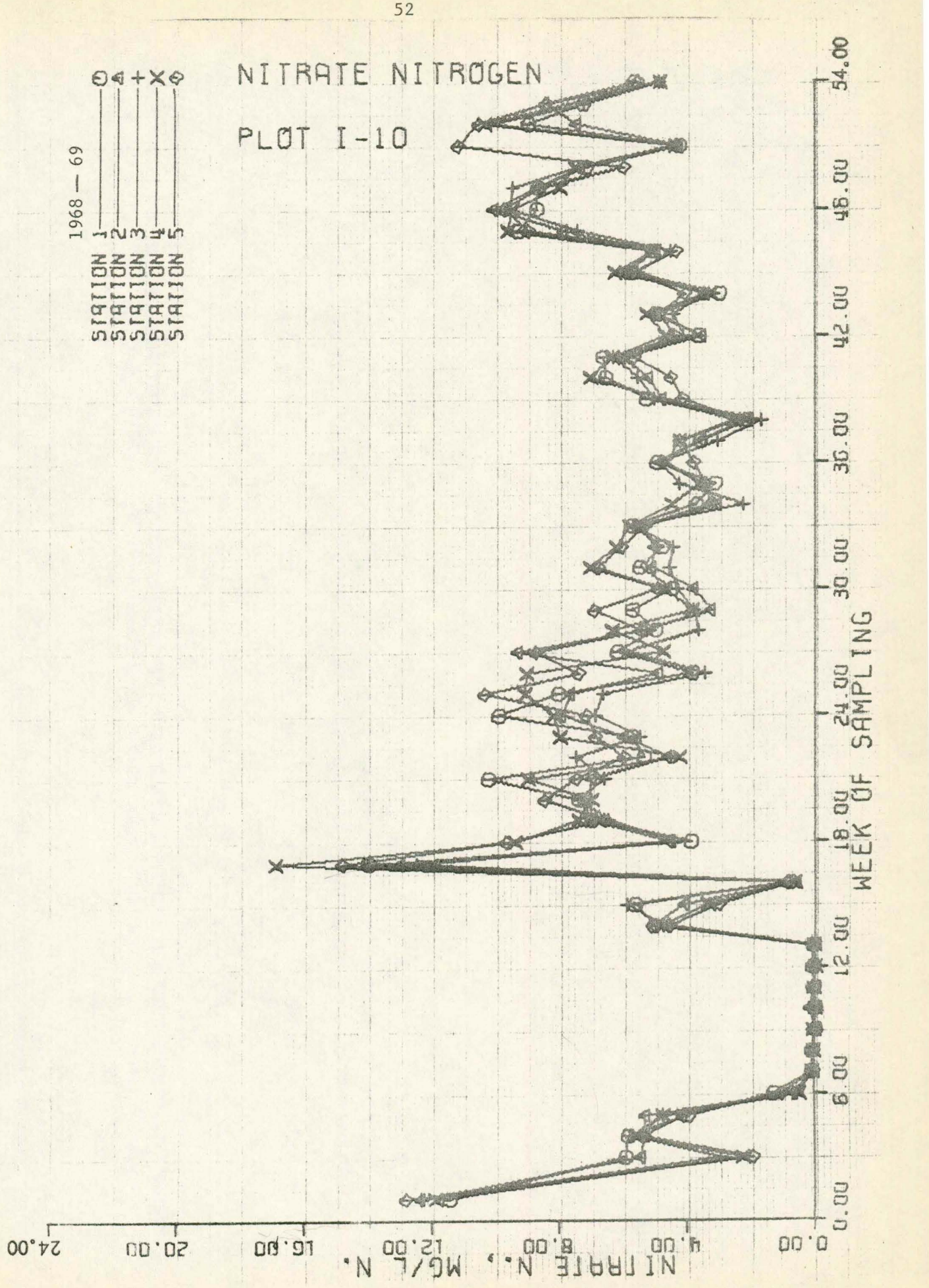

CARBON DIOXIDE
PLOT 1-5
1968—69
STATION 1
STATION 2
STATION 3
STATION 4
STATION 5
O2, MG/L
0.00
2.00
4.00
6.00
8.00
10.00
12.00
WEEK OF SAMPLING
0.00
6.00
12.00
18.00
24.00
30.00
36.00
42.00
48.00
54.00

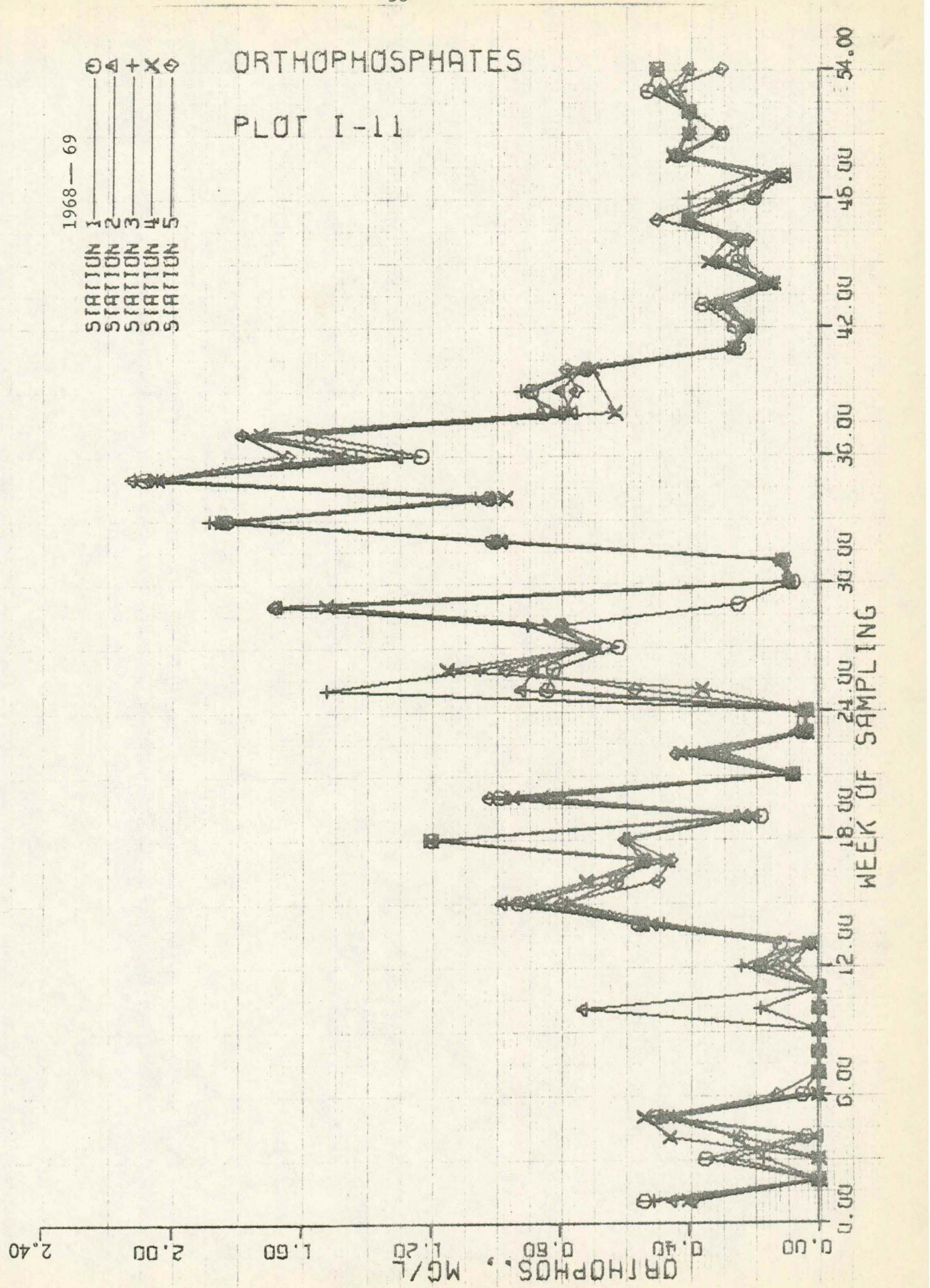

CHEMICAL OXY. DEMAND
PLOT I-6
1968 — 69
STATION 1
STATION 2
STATION 3
STATION 4
STATION 5
C.O.D. MG/L
0.00
2.00
4.00
6.00
12.00
18.00
24.00
30.00
36.00
42.00
48.00
54.00
WEEK OF SAMPLING

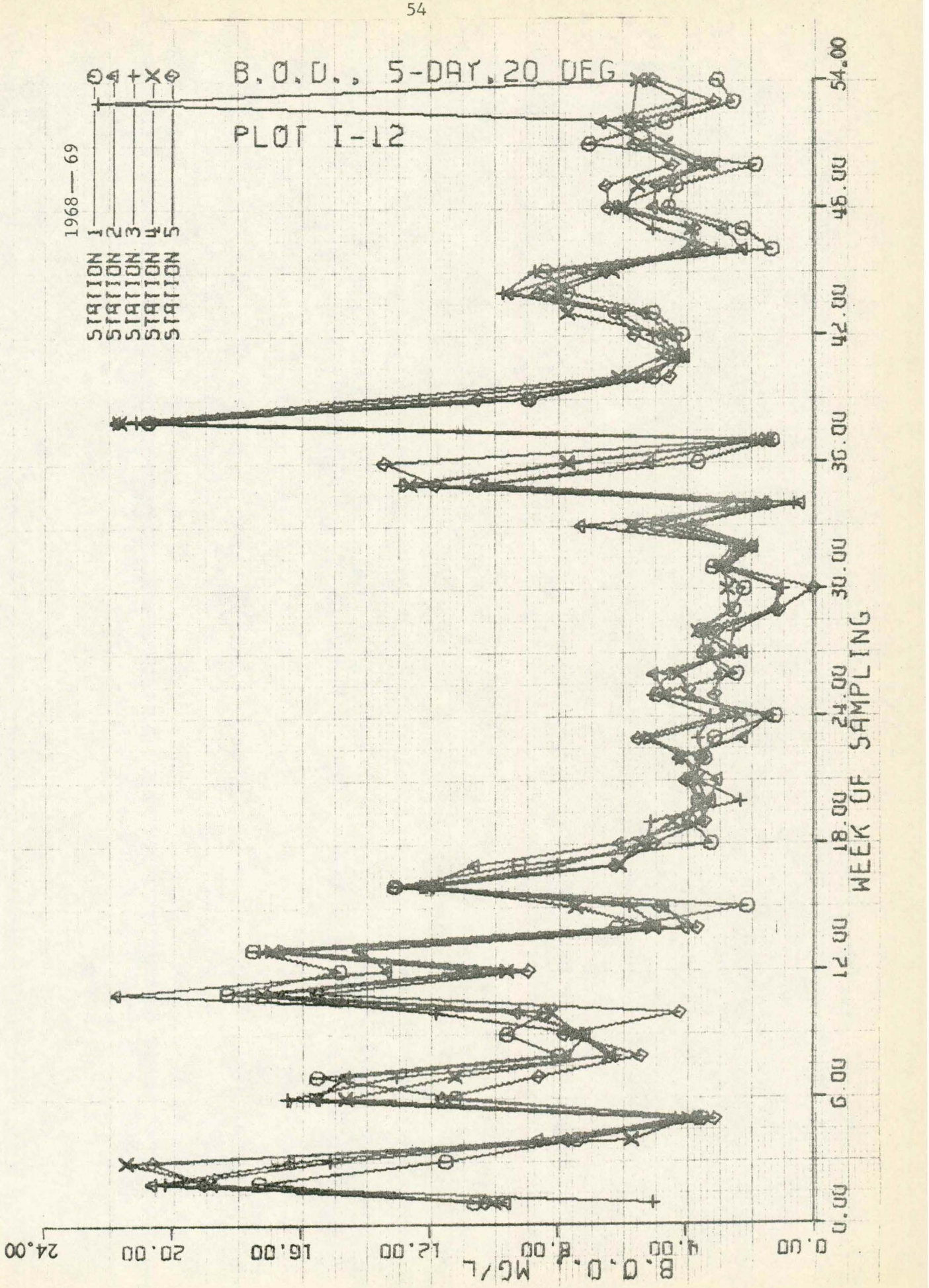

ORGANIC NITROGEN
PLOT I-Z
1968 — 69
STATION 1
STATION 2
STATION 3
STATION 4
STATION 5
ORGANIC N., MG/L N.
0.00
4.00
8.00
12.00
16.00
20.00
24.00
WEEK OF SAMPLING
0.00
6.00
12.00
18.00
24.00
30.00
36.00
42.00
48.00
54.00

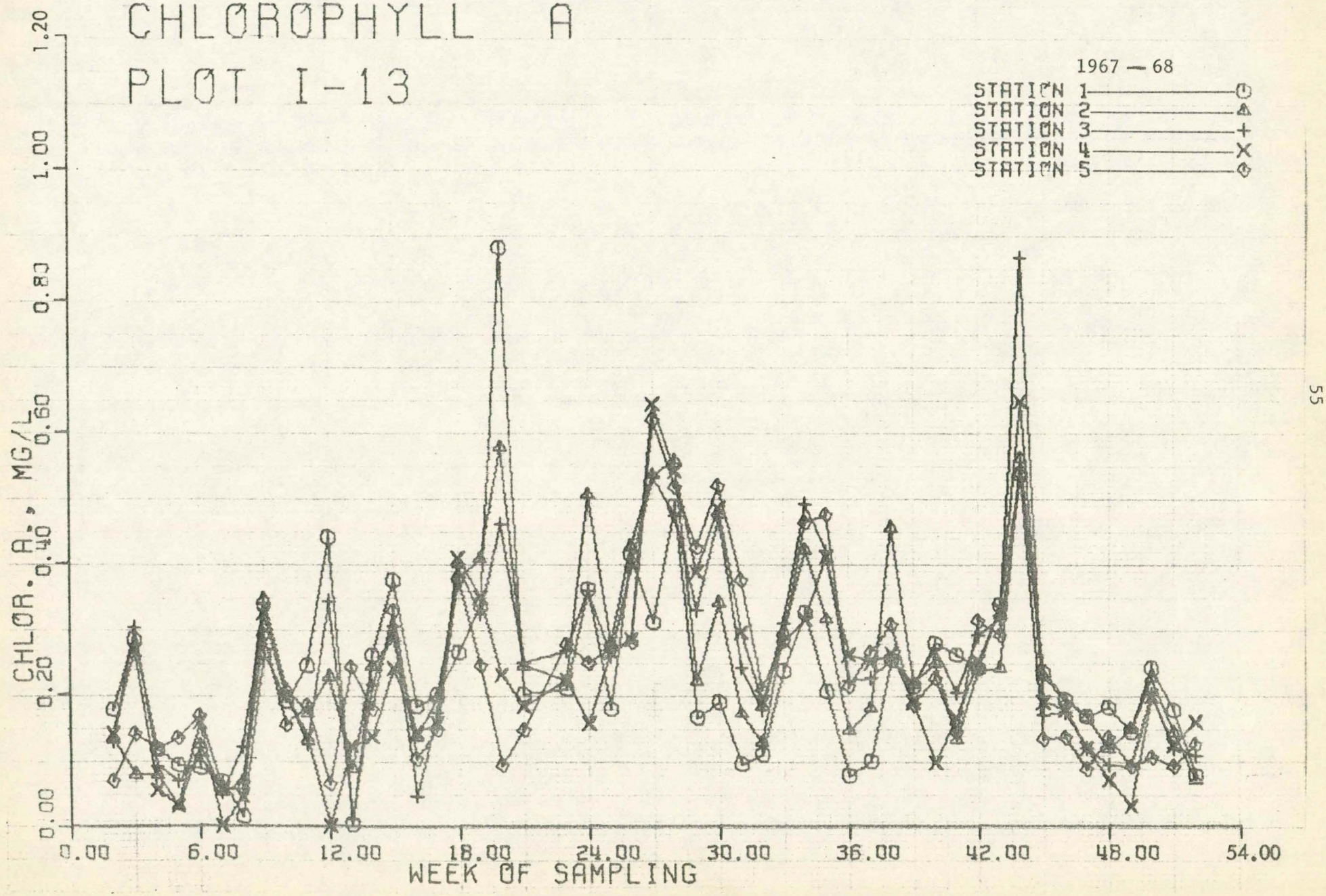

AMMONIA NITROGEN
PLOT I-8
1968 — 69
STATION 1
STATION 2
STATION 3
STATION 4
STATION 5
AMMONIA N., MG/L N.
0.00
0.40
0.80
1.20
1.60
2.00
2.40
0.00
6.00
12.00
18.00
24.00
30.00
36.00
42.00
48.00
54.00
WEEK OF SAMPLING

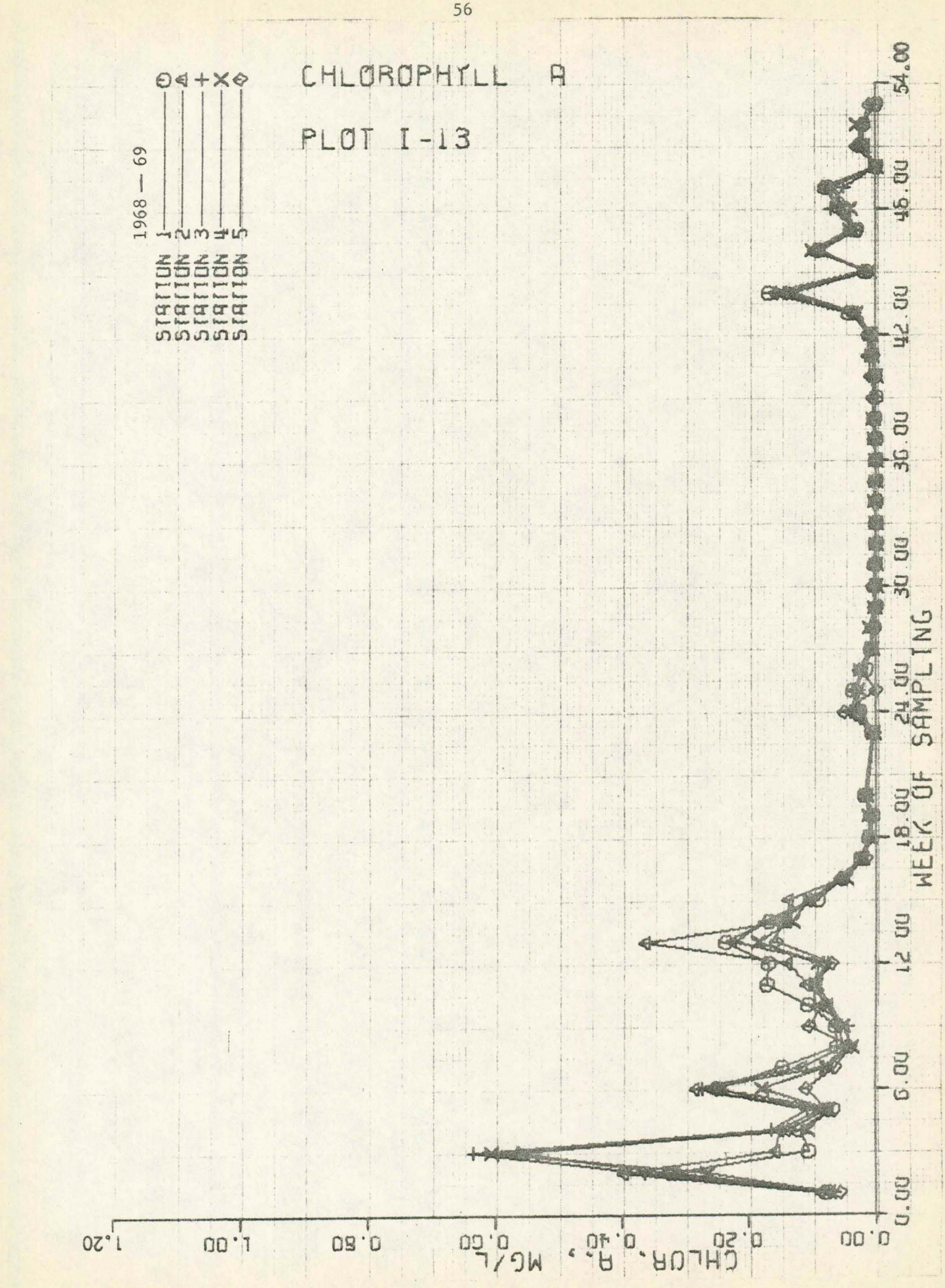

1968 — 69
STATION 1
STATION 2
STATION 3
STATION 4
STATION 5
NITRITE NITROGEN
PLOT I-9
NITRITE N., MG/L N.
0.00
0.20
0.40
0.60
0.80
1.00
1.20
0.00
6.00
12.00
18.00
24.00
30.00
36.00
42.00
48.00
54.00
WEEK OF SAMPLING

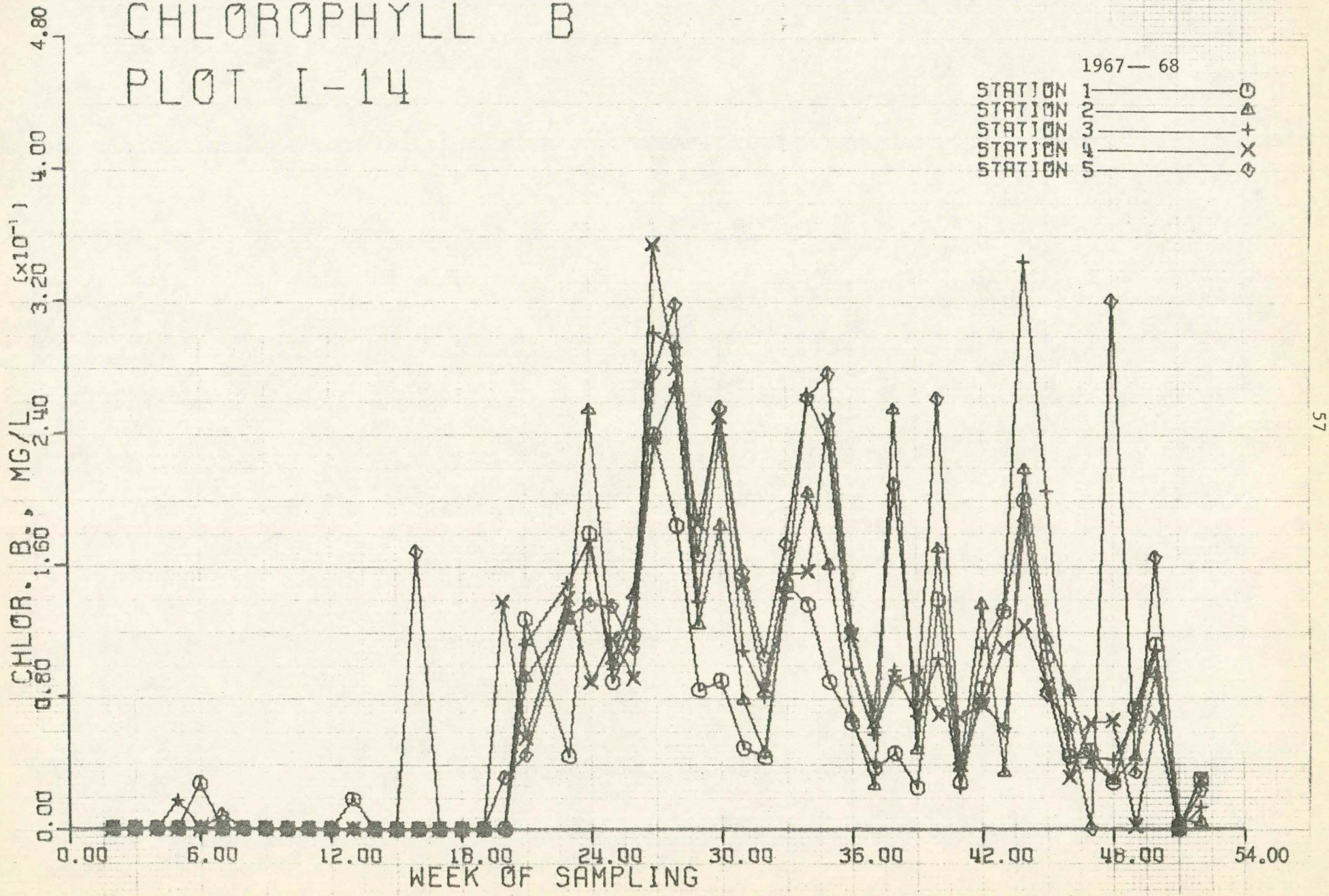

NITRATE NITROGEN
PLOT I-10
1968 — 69
STATION 1
STATION 2
STATION 3
STATION 4
STATION 5
NITRATE N., MG/L N.
0.00
4.00
8.00
12.00
16.00
20.00
24.00
WEEK OF SAMPLING
0.00
6.00
12.00
18.00
24.00
30.00
36.00
42.00
46.00
54.00


ORTHOPHOSPHATES
PLOT I-11
1968— 69
STATION 1
STATION 2
STATION 3
STATION 4
STATION 5
ORTHOPHOS., MG/L
0.00
0.40
0.80
1.20
1.60
2.00
2.40
WEEK OF SAMPLING
0.00
6.00
12.00
18.00
24.00
30.00
36.00
42.00
46.00
54.00


B.O.D., 5-DAY, 20 DEG
PLOT I-12
1968 — 69
STATION 1
STATION 2
STATION 3
STATION 4
STATION 5
B.O.D. MG/L
0.00
4.00
8.00
12.00
16.00
20.00
24.00
WEEK OF SAMPLING
0.00
6.00
12.00
18.00
24.00
30.00
36.00
42.00
46.00
54.00


CHLOROPHYLL A
PLOT I-13
1967 — 68
STATION 1
STATION 2
STATION 3
STATION 4
STATION 5
CHLOR. A., MG/L
0.00
0.20
0.40
0.60
0.80
1.00
1.20
0.00
6.00
12.00
18.00
24.00
30.00
36.00
42.00
48.00
54.00
WEEK OF SAMPLING


CHLOROPHYLL A
PLOT I-13
1968 — 69
STATION 1
STATION 2
STATION 3
STATION 4
STATION 5
CHLOR. A., MG/L
0.00
0.20
0.40
0.60
0.80
1.00
1.20
0.00
6.00
12.00
18.00
24.00
30.00
36.00
42.00
46.00
54.00
WEEK OF SAMPLING


CHLOROPHYLL B
PLOT I-14
1967— 68
STATION 1
STATION 2
STATION 3
STATION 4
STATION 5
CHLOR. B., MG/L (x10⁻¹)
0.00
0.80
1.60
2.40
3.20
4.00
4.80
0.00
6.00
12.00
18.00
24.00
30.00
36.00
42.00
48.00
54.00
WEEK OF SAMPLING

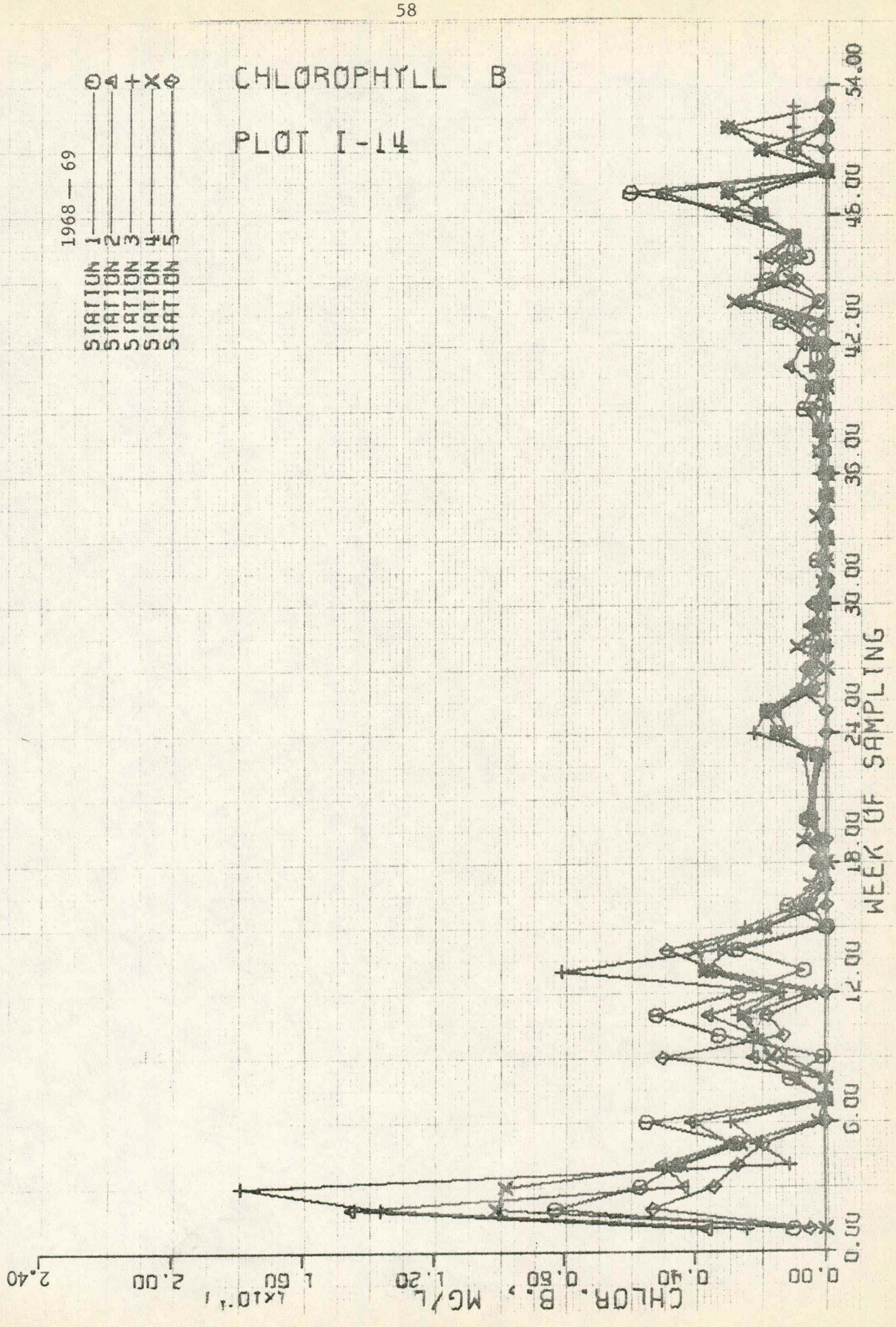

CHLOROPHYLL B
PLOT I-14
1968 — 69
STATION 1
STATION 2
STATION 3
STATION 4
STATION 5
CHLOR. B., MG/L
1X10-1
0.00
0.40
0.80
1.20
1.60
2.00
2.40
0.00
6.00
12.00
18.00
24.00
30.00
36.00
42.00
46.00
54.00
WEEK OF SAMPLING

TABLE II- 1. SUPPLEMENTARY ANALYSES
** TOTAL SOLIDS - MG/L **

WEEK	DATE 1968-69	* STA.1	** STA.2	** STA.3	'** STA.4	** STA.5
1	JULY 5	692.	743.	793.	790.	782.
2	JULY 12	90000.	90000.	90000.	90000.	90000.
3	JULY 19	90000.	90000.	90000.	90000.	90000.
4	JULY 26	90000.	90000.	90000.	90000.	90000.
5	AUG. 2	90000.	90000.	90000.	90000.	90000.
6	AUG. 9	630.	631.	567.	570.	667.
7	AUG. 16	90000.	90000.	90000.	90000.	90000.
8	AUG. 23	90000.	90000.	90000.	90000.	90000.
9	AUG. 29	90000.	90000.	90000.	90000.	90000.
10	SEPT 4	90000.	90000.	90000.	90000.	90000.
11	SEPT 12	522.	492.	470.	475.	497.
12	SEPT 18	90000.	90000.	90000.	90000.	90000.
13	SEPT 25	90000.	90000.	90000.	90000.	90000.
14	OCT. 2	90000.	90000.	90000.	90000.	90000.
15	OCT. 10	90000.	90000.	90000.	90000.	90000.
16	OCT. 16	90000.	90000.	90000.	90000.	90000.
17	OCT. 23	90000.	90000.	90000.	90000.	90000.
18	OCT. 30	90000.	90000.	90000.	90000.	90000.
19	NOV. 7	90000.	90000.	90000.	90000.	90000.
20	NOV. 13	90000.	90000.	90000.	90000.	90000.
21	NOV. 21	90000.	90000.	90000.	90000.	90000.
22	NOV. 28	90000.	90000.	90000.	90000.	90000.
23	DEC. 5	90000.	90000.	90000.	90000.	90000.
24	DEC. 11	90000.	90000.	730.	771.	741.
25	DEC. 19	90000.	90000.	90000.	90000.	90000.
26	DEC. 26	90000.	90000.	90000.	90000.	90000.
27	JAN. 2	713.	730.	739.	737.	746.
28	JAN. 9	800.	744.	784.	780.	835.
29	JAN. 15	90000.	90000.	90000.	90000.	90000.
30	JAN. 22	658.	610.	681.	666.	667.
31	JAN. 31	763.	757.	739.	772.	739.
32	FEB. 5	642.	649.	688.	689.	731.
33	FEB. 14	636.	667.	676.	689.	690.
34	FEB. 20	639.	664.	662.	741.	705.
35	FEB. 27	501.	526.	491.	512.	527.
36	MAR. 6	614.	636.	644.	618.	637.
37	MAR. 12	667.	701.	710.	724.	667.
38	MAR. 20	1093.	1403.	1679.	1199.	1387.
39	MAR. 26	490.	540.	539.	90000.	577.
40	APR. 2	489.	504.	583.	579.	582.
41	APR. 9	526.	520.	474.	459.	382.
42	APR. 16	528.	597.	560.	564.	526.
43	APR. 23	560.	541.	516.	508.	480.
44	MAY 1	607.	596.	584.	571.	560.
45	MAY 8	659.	682.	761.	842.	874.
46	MAY 15	90000.	90000.	90000.	90000.	90000.
47	MAY 22	578.	581.	622.	599.	675.
48	MAY 29	652.	600.	592.	626.	648.
49	JUNE 4	637.	593.	584.	568.	615.
50	JUNE 11	1262.	921.	967.	927.	918.
51	JUNE 19	608.	743.	737.	727.	729.
52	JUNE 27	1080.	1454.	2878.	1695.	1612.
53	JULY 3	562.	588.	546.	90000.	506.
54	JULY 9	644.	676.	773.	799.	654.

** NOTE ** -0. OR -0.01 INDICATES TRACE AMOUNT
90000. INDICATES NO MEASUREMENT

TABLE II- 2. SUPPLEMENTARY ANALYSES
** VOLATILE SOLIDS - MG/L **

WEEK	DATE 1968-69	* STA.1	** STA.2	** STA.3	*** STA.4	** STA.5
1	JULY 5	312.	307.	294.	301.	219.
2	JULY 12	90000.	90000.	90000.	90000.	90000.
3	JULY 19	90000.	90000.	90000.	90000.	90000.
4	JULY 26	90000.	90000.	90000.	90000.	90000.
5	AUG. 2	90000.	90000.	90000.	90000.	90000.
6	AUG. 9	187.	182.	197.	205.	90000.
7	AUG. 16	90000.	90000.	90000.	90000.	90000.
8	AUG. 23	90000.	90000.	90000.	90000.	90000.
9	AUG. 29	90000.	90000.	90000.	90000.	90000.
10	SEPT 4	90000.	90000.	90000.	90000.	90000.
11	SEPT 12	167.	156.	144.	154.	162.
12	SEPT 18	90000.	90000.	90000.	90000.	90000.
13	SEPT 25	90000.	90000.	90000.	90000.	90000.
14	OCT. 2	90000.	90000.	90000.	90000.	90000.
15	OCT. 10	90000.	90000.	90000.	90000.	90000.
16	OCT. 16	90000.	90000.	90000.	90000.	90000.
17	OCT. 23	90000.	90000.	90000.	90000.	90000.
18	OCT. 30	90000.	90000.	90000.	90000.	90000.
19	NOV. 7	90000.	90000.	90000.	90000.	90000.
20	NOV. 13	90000.	90000.	90000.	90000.	90000.
21	NOV. 21	90000.	90000.	90000.	90000.	90000.
22	NOV. 28	90000.	90000.	90000.	90000.	90000.
23	DEC. 5	90000.	90000.	90000.	90000.	90000.
24	DEC. 11	90000.	90000.	350.	331.	348.
25	DEC. 19	90000.	90000.	90000.	90000.	90000.
26	DEC. 26	90000.	90000.	90000.	90000.	90000.
27	JAN. 2	213.	211.	223.	211.	193.
28	JAN. 9	211.	166.	208.	168.	231.
29	JAN. 15	90000.	90000.	90000.	90000.	90000.
30	JAN. 22	163.	130.	140.	159.	163.
31	JAN. 31	204.	217.	270.	279.	276.
32	FEB. 5	171.	169.	209.	212.	193.
33	FEB. 14	126.	180.	257.	258.	223.
34	FEB. 20	166.	188.	213.	217.	204.
35	FEB. 27	162.	164.	159.	177.	178.
36	MAR. 6	132.	149.	176.	185.	176.
37	MAR. 12	189.	206.	191.	176.	189.
38	MAR. 20	189.	248.	219.	225.	237.
39	MAR. 26	113.	126.	170.	90000.	154.
40	APR. 2	120.	105.	203.	193.	195.
41	APR. 9	163.	156.	153.	160.	116.
42	APR. 16	171.	178.	98.	93.	136.
43	APR. 23	159.	142.	99.	89.	126.
44	MAY 1	169.	163.	166.	129.	131.
45	MAY 8	156.	149.	206.	231.	188.
46	MAY 15	90000.	90000.	90000.	90000.	90000.
47	MAY 22	76.	89.	120.	85.	170.
48	MAY 29	272.	289.	211.	208.	230.
49	JUNE 4	178.	164.	221.	218.	283.
50	JUNE 11	287.	264.	257.	264.	288.
51	JUNE 19	235.	219.	208.	262.	279.
52	JUNE 27	240.	304.	521.	352.	341.
53	JULY 3	138.	140.	155.	90000.	135.
54	JULY 9	175.	167.	173.	205.	161.

** NOTE ** -0. OR -0.01 INDICATES TRACE AMOUNT
90000. INDICATES NO MEASUREMENT

TABLE II- 3. SUPPLEMENTARY ANALYSES

** FIXED SOLIDS - MG/L **

WEEK	DATE 1968-69	* STA.1	** STA.2	** STA.3	*** STA.4	** STA.5
1	JULY 5	380.	436.	499.	489.	563.
2	JULY 12	90000.	90000.	90000.	90000.	90000.
3	JULY 19	90000.	90000.	90000.	90000.	90000.
4	JULY 26	90000.	90000.	90000.	90000.	90000.
5	AUG. 2	90000.	90000.	90000.	90000.	90000.
6	AUG. 9	443.	449.	370.	365.	90000.
7	AUG. 16	90000.	90000.	90000.	90000.	90000.
8	AUG. 23	90000.	90000.	90000.	90000.	90000.
9	AUG. 29	90000.	90000.	90000.	90000.	90000.
10	SEPT 4	90000.	90000.	90000.	90000.	90000.
11	SEPT 12	355.	336.	326.	321.	335.
12	SEPT 18	90000.	90000.	90000.	90000.	90000.
13	SEPT 25	90000.	90000.	90000.	90000.	90000.
14	OCT. 2	90000.	90000.	90000.	90000.	90000.
15	OCT. 10	90000.	90000.	90000.	90000.	90000.
16	OCT. 16	90000.	90000.	90000.	90000.	90000.
17	OCT. 23	90000.	90000.	90000.	90000.	90000.
18	OCT. 30	90000.	90000.	90000.	90000.	90000.
19	NOV. 7	90000.	90000.	90000.	90000.	90000.
20	NOV. 13	90000.	90000.	90000.	90000.	90000.
21	NOV. 21	90000.	90000.	90000.	90000.	90000.
22	NOV. 28	90000.	90000.	90000.	90000.	90000.
23	DEC. 5	90000.	90000.	90000.	90000.	90000.
24	DEC. 11	90000.	90000.	380.	420.	393.
25	DEC. 19	90000.	90000.	90000.	90000.	90000.
26	DEC. 26	90000.	90000.	90000.	90000.	90000.
27	JAN. 2	503.	531.	521.	530.	556.
28	JAN. 9	588.	578.	577.	613.	604.
29	JAN. 15	90000.	90000.	90000.	90000.	90000.
30	JAN. 22	494.	483.	544.	493.	504.
31	JAN. 31	559.	540.	469.	493.	469.
32	FEB. 5	471.	480.	479.	477.	538.
33	FEB. 14	510.	487.	419.	431.	467.
34	FEB. 20	473.	476.	449.	524.	501.
35	FEB. 27	339.	362.	332.	335.	349.
36	MAR. 6	482.	487.	468.	433.	461.
37	MAR. 12	478.	495.	519.	548.	478.
38	MAR. 20	904.	1155.	860.	987.	1150.
39	MAR. 26	377.	414.	369.	90000.	423.
40	APR. 2	369.	399.	380.	385.	382.
41	APR. 9	362.	364.	313.	298.	266.
42	APR. 16	357.	419.	462.	471.	390.
43	APR. 23	401.	399.	417.	418.	354.
44	MAY 1	438.	433.	418.	442.	429.
45	MAY 8	503.	533.	555.	611.	686.
46	MAY 15	90000.	90000.	90000.	90000.	90000.
47	MAY 22	502.	492.	502.	514.	505.
48	MAY 29	381.	371.	383.	421.	419.
49	JUNE 4	459.	430.	363.	350.	332.
50	JUNE 11	975.	657.	708.	662.	630.
51	JUNE 19	473.	523.	531.	465.	450.
52	JUNE 27	840.	1150.	2357.	1343.	1271.
53	JULY 3	423.	418.	391.	90000.	371.
54	JULY 9	469.	508.	600.	594.	493.

** NOTE ** -0. OR -0.01 INDICATES TRACE AMOUNT

90000. INDICATES NO MEASUREMENT

TABLE II- 4. SUPPLEMENTARY ANALYSES

** PHENOL. ALKALINITY - MG/L CACO3 **

WEEK	DATE 1968-69	* STA.1	** STA.2	** STA.3	*** STA.4	** STA.5
1	JULY 5	13.	10.	11.	12.	11.
2	JULY 12	20.	22.	13.	11.	8.
3	JULY 19	0.	0.	0.	0.	0.
4	JULY 26	15.	12.	12.	10.	8.
5	AUG. 2	4.	0.	0.	0.	0.
6	AUG. 9	18.	10.	6.	2.	90000.
7	AUG. 16	7.	3.	0.	0.	0.
8	AUG. 23	0.	90000.	0.	0.	0.
9	AUG. 29	90000.	90000.	1.	1.	8.
10	SEPT 4	0.	0.	0.	0.	-0.
11	SEPT 12	14.	0.	0.	0.	0.
12	SEPT 18	11.	0.	0.	0.	0.
13	SEPT 25	15.	19.	14.	10.	10.
14	OCT. 2	9.	13.	14.	8.	4.
15	OCT. 10	2.	7.	13.	14.	11.
16	OCT. 16	90000.	90000.	90000.	90000.	90000.
17	OCT. 23	0.	0.	0.	0.	0.
18	OCT. 30	0.	0.	0.	0.	0.
19	NOV. 7	6.	9.	9.	7.	3.
20	NOV. 13	8.	11.	7.	8.	7.
21	NOV. 21	8.	9.	3.	5.	5.
22	NOV. 28	0.	0.	0.	1.	3.
23	DEC. 5	5.	2.	2.	2.	1.
24	DEC. 11	2.	7.	5.	6.	4.
25	DEC. 19	1.	2.	1.	2.	1.
26	DEC. 26	0.	0.	0.	0.	0.
27	JAN. 2	0.	0.	0.	0.	0.
28	JAN. 9	0.	0.	0.	0.	0.
29	JAN. 15	0.	0.	0.	0.	0.
30	JAN. 22	0.	0.	0.	0.	0.
31	JAN. 31	0.	0.	0.	0.	0.
32	FEB. 5	0.	0.	0.	0.	0.
33	FEB. 14	0.	0.	0.	0.	0.
34	FEB. 20	0.	0.	0.	0.	0.
35	FEB. 27	0.	0.	0.	0.	0.
36	MAR. 6	0.	0.	0.	0.	0.
37	MAR. 12	0.	0.	0.	0.	0.
38	MAR. 20	-0.	-0.	-0.	-0.	-0.
39	MAR. 26	-0.	-0.	-0.	90000.	-0.
40	APR. 2	-0.	-0.	-0.	-0.	-0.
41	APR. 9	-0.	-0.	-0.	-0.	-0.
42	APR. 16	0.	0.	0.	0.	0.
43	APR. 23	0.	0.	0.	0.	0.
44	MAY 1	15.	13.	14.	13.	15.
45	MAY 8	3.	2.	1.	0.	0.
46	MAY 15	8.	8.	8.	8.	8.
47	MAY 22	3.	3.	2.	1.	1.
48	MAY 29	11.	10.	10.	11.	9.
49	JUNE 4	12.	11.	10.	10.	9.
50	JUNE 11	2.	3.	5.	2.	3.
51	JUNE 19	9.	7.	6.	9.	4.
52	JUNE 27	0.	0.	0.	0.	0.
53	JULY 3	0.	0.	0.	90000.	0.
54	JULY 9	0.	0.	0.	0.	0.

** NOTE ** -0. OR -0.01 INDICATES TRACE AMOUNT
90000. INDICATES NO MEASUREMENT

TABLE II- 5. SUPPLEMENTARY ANALYSES

** TOTAL ALKALINITY - MG/L CACO3 **

WEEK	DATE 1968-69	* STA.1	** STA.2	** STA.3	*** STA.4	** STA.5
1	JULY 5	240.	235.	232.	231.	227.
2	JULY 12	138.	118.	114.	112.	105.
3	JULY 19	154.	162.	166.	142.	133.
4	JULY 26	214.	198.	208.	209.	198.
5	AUG. 2	219.	210.	217.	219.	218.
6	AUG. 9	166.	136.	126.	127.	121.
7	AUG. 16	122.	114.	112.	109.	101.
8	AUG. 23	141.	156.	145.	156.	161.
9	AUG. 29	90000.	90000.	137.	180.	183.
10	SEPT 4	146.	126.	144.	161.	170.
11	SEPT 12	146.	140.	134.	132.	136.
12	SEPT 18	156.	141.	147.	156.	162.
13	SEPT 25	149.	133.	125.	124.	126.
14	OCT. 2	257.	246.	245.	245.	232.
15	OCT. 10	217.	246.	261.	266.	268.
16	OCT. 16	90000.	90000.	90000.	90000.	90000.
17	OCT. 23	253.	260.	257.	259.	262.
18	OCT. 30	252.	253.	250.	252.	247.
19	NOV. 7	262.	264.	265.	262.	260.
20	NOV. 13	271.	270.	269.	269.	272.
21	NOV. 21	286.	287.	284.	283.	282.
22	NOV. 28	278.	278.	276.	278.	282.
23	DEC. 5	287.	287.	287.	287.	283.
24	DEC. 11	316.	314.	311.	310.	304.
25	DEC. 19	316.	290.	308.	326.	317.
26	DEC. 26	344.	356.	356.	358.	350.
27	JAN. 2	348.	347.	348.	348.	348.
28	JAN. 9	339.	345.	347.	346.	340.
29	JAN. 15	363.	350.	344.	340.	338.
30	JAN. 22	316.	312.	311.	311.	310.
31	JAN. 31	333.	329.	329.	331.	330.
32	FEB. 5	366.	367.	369.	369.	370.
33	FEB. 14	351.	348.	348.	346.	345.
34	FEB. 20	326.	325.	326.	328.	319.
35	FEB. 27	242.	234.	236.	244.	266.
36	MAR. 6	301.	302.	302.	303.	305.
37	MAR. 12	313.	314.	314.	314.	318.
38	MAR. 20	154.	160.	153.	163.	163.
39	MAR. 26	108.	108.	107.	90000.	107.
40	APR. 2	181.	175.	173.	171.	168.
41	APR. 9	310.	312.	309.	307.	306.
42	APR. 16	139.	139.	139.	139.	139.
43	APR. 23	180.	180.	180.	180.	179.
44	MAY 1	178.	183.	185.	185.	185.
45	MAY 8	200.	199.	195.	193.	189.
46	MAY 15	221.	217.	223.	224.	224.
47	MAY 22	207.	205.	204.	203.	199.
48	MAY 29	255.	256.	256.	257.	256.
49	JUNE 4	263.	262.	259.	258.	257.
50	JUNE 11	309.	305.	293.	297.	293.
51	JUNE 19	236.	233.	232.	233.	234.
52	JUNE 27	162.	189.	207.	236.	216.
53	JULY 3	185.	187.	186.	90000.	184.
54	JULY 9	178.	182.	178.	185.	193.

** NOTE ** -0. OR -0.01 INDICATES TRACE AMOUNT
90000. INDICATES NO MEASUREMENT

TABLE II- 6. SUPPLEMENTARY ANALYSES

** TOTAL CARBON - MG/L C **

WEEK	DATE 1968-69	* STA.1	** STA.2	** STA.3	*** STA.4	** STA.5
1	JULY 5	66.	66.	63.	66.	66.
2	JULY 12	52.	48.	48.	50.	46.
3	JULY 19	66.	85.	65.	68.	66.
4	JULY 26	65.	63.	70.	64.	67.
5	AUG. 2	69.	71.	78.	79.	78.
6	AUG. 9	65.	61.	62.	62.	62.
7	AUG. 16	45.	46.	43.	41.	41.
8	AUG. 23	47.	54.	54.	51.	52.
9	AUG. 29	90000.	90000.	90000.	90000.	90000.
10	SEPT 4	54.	69.	73.	59.	60.
11	SEPT 12	53.	54.	50.	47.	88.
12	SEPT 18	61.	65.	64.	76.	67.
13	SEPT 25	58.	58.	58.	59.	55.
14	OCT. 2	80.	79.	76.	74.	76.
15	OCT. 10	80.	82.	83.	85.	87.
16	OCT. 16	85.	85.	81.	83.	83.
17	OCT. 23	82.	88.	86.	89.	94.
18	OCT. 30	90000.	90000.	90000.	90000.	90000.
19	NOV. 7	90000.	90000.	90000.	90000.	90000.
20	NOV. 13	90000.	90000.	90000.	90000.	90000.
21	NOV. 21	74.	75.	74.	73.	74.
22	NOV. 28	72.	72.	71.	72.	75.
23	DEC. 5	75.	75.	75.	75.	75.
24	DEC. 11	80.	82.	78.	78.	77.
25	DEC. 19	81.	75.	81.	80.	85.
26	DEC. 26	88.	90.	92.	90.	90.
27	JAN. 2	89.	84.	85.	87.	92.
28	JAN. 9	75.	81.	76.	87.	84.
29	JAN. 15	90.	88.	88.	88.	87.
30	JAN. 22	74.	74.	76.	73.	78.
31	JAN. 31	88.	86.	87.	88.	87.
32	FEB. 5	90000.	90000.	90000.	90000.	90000.
33	FEB. 14	90000.	90000.	90000.	90000.	90000.
34	FEB. 20	78.	78.	72.	77.	81.
35	FEB. 27	67.	75.	67.	72.	69.
36	MAR. 6	79.	80.	81.	80.	81.
37	MAR. 12	82.	82.	79.	81.	82.
38	MAR. 20	67.	66.	72.	75.	86.
39	MAR. 26	45.	34.	33.	90000.	36.
40	APR. 2	45.	56.	47.	44.	47.
41	APR. 9	47.	48.	56.	48.	45.
42	APR. 16	48.	47.	50.	49.	47.
43	APR. 23	53.	52.	56.	54.	53.
44	MAY 1	56.	55.	55.	58.	58.
45	MAY 8	63.	65.	65.	64.	67.
46	MAY 15	67.	70.	67.	67.	68.
47	MAY 22	69.	69.	68.	68.	70.
48	MAY 29	90000.	90000.	90000.	90000.	90000.
49	JUNE 4	71.	72.	73.	72.	72.
50	JUNE 11	81.	77.	75.	76.	76.
51	JUNE 19	80.	80.	76.	78.	75.
52	JUNE 27	85.	110.	67.	112.	124.
53	JULY 3	67.	70.	380.	90000.	64.
54	JULY 9	69.	68.	70.	71.	69.

** NOTE ** -0. OR -0.01 INDICATES TRACE AMOUNT

90000. INDICATES NO MEASUREMENT

TABLE II- 7. SUPPLEMENTARY ANALYSES

** INORGANIC CARBON - MG/L C **

WEEK	DATE 1968-69	* STA.1	** STA.2	** STA.3	*** STA.4	** STA.5
1	JULY 5	55.	54.	53.	53.	52.
2	JULY 12	28.	23.	24.	24.	23.
3	JULY 19	37.	39.	40.	34.	32.
4	JULY 26	48.	45.	47.	48.	46.
5	AUG. 2	52.	50.	52.	53.	52.
6	AUG. 9	30.	30.	29.	30.	35.
7	AUG. 16	29.	27.	27.	26.	25.
8	AUG. 23	34.	37.	35.	37.	39.
9	AUG. 29	90000.	90000.	90000.	90000.	90000.
10	SEPT 4	35.	30.	34.	39.	41.
11	SEPT 12	35.	34.	32.	32.	33.
12	SEPT 18	17.	16.	16.	17.	18.
13	SEPT 25	28.	27.	27.	27.	32.
14	OCT. 2	55.	57.	55.	56.	59.
15	OCT. 10	62.	60.	60.	57.	52.
16	OCT. 16	90000.	90000.	90000.	90000.	90000.
17	OCT. 23	61.	62.	62.	62.	63.
18	OCT. 30	60.	61.	60.	61.	59.
19	NOV. 7	64.	65.	66.	64.	63.
20	NOV. 13	67.	68.	66.	66.	67.
21	NOV. 21	67.	66.	67.	67.	67.
22	NOV. 28	67.	67.	66.	66.	67.
23	DEC. 5	68.	68.	68.	68.	68.
24	DEC. 11	72.	73.	73.	74.	75.
25	DEC. 19	76.	67.	74.	78.	76.
26	DEC. 26	83.	85.	85.	86.	84.
27	JAN. 2	83.	83.	84.	83.	83.
28	JAN. 9	81.	83.	83.	83.	82.
29	JAN. 15	87.	84.	83.	82.	79.
30	JAN. 22	76.	75.	75.	75.	74.
31	JAN. 31	80.	79.	79.	79.	79.
32	FEB. 5	88.	88.	89.	89.	89.
33	FEB. 14	84.	84.	84.	83.	84.
34	FEB. 20	39.	39.	39.	39.	38.
35	FEB. 27	29.	28.	28.	29.	32.
36	MAR. 6	36.	36.	36.	36.	37.
37	MAR. 12	38.	38.	38.	38.	38.
38	MAR. 20	18.	19.	18.	20.	20.
39	MAR. 26	13.	13.	13.	90000.	13.
40	APR. 2	22.	21.	21.	20.	20.
41	APR. 9	37.	38.	37.	37.	37.
42	APR. 16	33.	33.	33.	33.	33.
43	APR. 23	43.	43.	43.	43.	43.
44	MAY 1	44.	45.	46.	46.	46.
45	MAY 8	49.	48.	47.	46.	45.
46	MAY 15	54.	53.	55.	55.	55.
47	MAY 22	49.	49.	49.	49.	48.
48	MAY 29	90000.	90000.	90000.	90000.	90000.
49	JUNE 4	60.	60.	60.	60.	60.
50	JUNE 11	74.	72.	69.	71.	70.
51	JUNE 19	54.	54.	54.	54.	55.
52	JUNE 27	39.	45.	50.	57.	52.
53	JULY 3	44.	45.	45.	90000.	44.
54	JULY 9	43.	44.	43.	44.	46.

** NOTE ** -0. OR -0.01 INDICATES TRACE AMOUNT
90000. INDICATES NO MEASUREMENT

TABLE II- 8. SUPPLEMENTARY ANALYSES
** ORGANIC CARBON - MG/L C **

WEEK	DATE 1968-69	* STA.1	** STA.2	** STA.3	*** STA.4	** STA.5
1	JULY 5	11.	12.	10.	13.	14.
2	JULY 12	24.	25.	24.	26.	23.
3	JULY 19	29.	46.	25.	34.	34.
4	JULY 26	17.	17.	23.	16.	21.
5	AUG. 2	17.	21.	26.	26.	26.
6	AUG. 9	35.	31.	33.	32.	27.
7	AUG. 16	16.	19.	16.	15.	16.
8	AUG. 23	13.	17.	19.	14.	13.
9	AUG. 29	90000.	90000.	90000.	90000.	90000.
10	SEPT 4	19.	39.	38.	21.	19.
11	SEPT 12	20.	22.	18.	13.	53.
12	SEPT 18	44.	50.	48.	59.	49.
13	SEPT 25	30.	31.	31.	31.	23.
14	OCT. 2	25.	22.	21.	18.	17.
15	OCT. 10	18.	22.	24.	28.	35.
16	OCT. 16	90000.	90000.	90000.	90000.	90000.
17	OCT. 23	21.	26.	25.	27.	21.
18	OCT. 30	90000.	90000.	90000.	90000.	90000.
19	NOV. 7	90000.	90000.	90000.	90000.	90000.
20	NOV. 13	90000.	90000.	90000.	90000.	90000.
21	NOV. 21	7.	8.	7.	6.	7.
22	NOV. 28	6.	6.	5.	6.	8.
23	DEC. 5	7.	7.	6.	7.	7.
24	DEC. 11	7.	9.	4.	4.	2.
25	DEC. 19	6.	8.	7.	2.	9.
26	DEC. 26	5.	5.	7.	4.	6.
27	JAN. 2	6.	1.	2.	4.	9.
28	JAN. 9	0.	0.	0.	4.	2.
29	JAN. 15	3.	4.	5.	6.	8.
30	JAN. 22	0.	0.	2.	0.	4.
31	JAN. 31	8.	7.	8.	8.	8.
32	FEB. 5	90000.	90000.	90000.	90000.	90000.
33	FEB. 14	90000.	90000.	90000.	90000.	90000.
34	FEB. 20	39.	39.	33.	38.	42.
35	FEB. 27	38.	47.	39.	43.	27.
36	MAR. 6	43.	44.	45.	44.	44.
37	MAR. 12	44.	44.	41.	43.	44.
38	MAR. 20	49.	47.	54.	55.	66.
39	MAR. 26	32.	21.	20.	90000.	23.
40	APR. 2	23.	35.	26.	24.	26.
41	APR. 9	10.	11.	19.	11.	8.
42	APR. 16	15.	14.	17.	15.	14.
43	APR. 23	10.	9.	13.	11.	10.
44	MAY 1	12.	9.	9.	12.	11.
45	MAY 8	15.	17.	18.	18.	22.
46	MAY 15	13.	17.	12.	12.	14.
47	MAY 22	20.	20.	19.	19.	22.
48	MAY 29	90000.	90000.	90000.	90000.	90000.
49	JUNE 4	11.	12.	13.	12.	12.
50	JUNE 11	8.	5.	6.	5.	7.
51	JUNE 19	26.	26.	22.	24.	20.
52	JUNE 27	49.	65.	17.	55.	72.
53	JULY 3	23.	25.	335.	90000.	20.
54	JULY 9	26.	24.	27.	27.	23.

** NOTE ** -0. OR -0.01 INDICATES TRACE AMOUNT
90000. INDICATES NO MEASUREMENT

TABLE II- 9. SUPPLEMENTARY ANALYSES
** CHLORIDES - MG/L **

WEEK	DATE 1968-69	* STA.1	** STA.2	** STA.3	*** STA.4	** STA.5
1	JULY 5	90000.0	90000.0	90000.0	90000.0	90000.0
2	JULY 12	90000.0	90000.0	90000.0	90000.0	90000.0
3	JULY 19	90000.0	90000.0	90000.0	90000.0	90000.0
4	JULY 26	90000.0	90000.0	90000.0	90000.0	90000.0
5	AUG. 2	25.0	23.3	23.6	23.0	21.0
6	AUG. 9	90000.0	90000.0	90000.0	90000.0	90000.0
7	AUG. 16	3.2	1.5	1.1	1.8	2.7
8	AUG. 23	37.5	29.9	20.6	29.2	30.0
9	AUG. 29	27.7	30.0	31.7	30.3	29.5
10	SEPT 4	45.0	34.0	40.5	46.5	33.0
11	SEPT 12	90000.0	90000.0	90000.0	90000.0	90000.0
12	SEPT 18	90000.0	90000.0	90000.0	90000.0	90000.0
13	SEPT 25	90000.0	90000.0	90000.0	90000.0	90000.0
14	OCT. 2	24.8	21.9	20.3	20.3	21.7
15	OCT. 10	17.4	20.0	20.3	19.4	20.2
16	OCT. 16	23.1	21.3	20.8	20.0	21.4
17	OCT. 23	13.8	13.3	10.8	10.4	10.0
18	OCT. 30	13.0	12.8	13.0	11.8	13.3
19	NOV. 7	9.3	9.5	7.5	13.2	14.5
20	NOV. 13	19.8	21.9	19.6	17.3	18.3
21	NOV. 21	14.6	14.8	11.9	23.9	24.2
22	NOV. 28	21.1	20.0	21.3	20.2	20.2
23	DEC. 5	16.9	21.1	20.4	20.2	20.2
24	DEC. 11	12.5	14.4	13.3	13.9	14.8
25	DEC. 19	24.0	33.0	39.0	24.5	18.5
26	DEC. 26	26.6	25.4	26.7	25.3	24.7
27	JAN. 2	26.6	25.4	26.7	25.3	24.7
28	JAN. 9	32.6	32.9	34.7	31.0	32.6
29	JAN. 15	24.0	24.0	24.0	21.0	21.0
30	JAN. 22	33.7	33.9	43.2	43.5	40.5
31	JAN. 31	31.0	28.4	28.7	27.4	27.1
32	FEB. 5	25.6	26.2	27.1	27.5	28.7
33	FEB. 14	37.8	39.6	38.3	36.4	36.1
34	FEB. 20	38.3	36.5	35.8	36.7	36.8
35	FEB. 27	33.5	33.1	34.4	33.5	33.5
36	MAR. 6	30.1	29.7	31.6	29.9	30.4
37	MAR. 12	34.4	35.1	35.8	36.6	36.3
38	MAR. 20	14.6	14.9	17.1	16.7	18.0
39	MAR. 26	9.6	13.7	9.7	90000.0	10.6
40	APR. 2	14.9	14.1	15.0	13.4	13.7
41	APR. 9	12.1	9.6	10.5	7.6	8.4
42	APR. 16	9.0	7.8	6.5	7.3	7.1
43	APR. 23	10.1	9.8	9.3	9.0	10.6
44	MAY 1	13.6	13.2	12.7	12.0	10.6
45	MAY 8	10.9	12.6	13.2	9.6	11.6
46	MAY 15	18.7	18.0	17.5	17.4	17.8
47	MAY 22	10.1	10.5	11.2	11.5	14.6
48	MAY 29	16.5	26.5	27.4	34.6	24.6
49	JUNE 4	24.8	25.7	21.2	24.8	24.8
50	JUNE 11	20.4	17.7	13.7	14.9	12.8
51	JUNE 19	22.6	19.5	16.4	15.9	17.7
52	JUNE 27	16.4	16.1	17.1	15.6	18.9
53	JULY 3	11.0	11.6	11.1	90000.0	13.0
54	JULY 9	6.9	9.8	7.7	9.2	8.9

** NOTE ** -0. OR -0.01 INDICATES TRACE AMOUNT
90000. INDICATES NO MEASUREMENT

TABLE II-10. SUPPLEMENTARY ANALYSES
** HARDNESS - MG/L CACO3 **

WEEK	DATE 1968-69	* STA.1	** STA.2	** STA.3	*** STA.4	** STA.5
1	JULY 5	352.	344.	342.	340.	327.
2	JULY 12	230.	204.	207.	209.	201.
3	JULY 19	207.	230.	240.	221.	203.
4	JULY 26	312.	294.	301.	310.	305.
5	AUG. 2	90000.	90000.	90000.	90000.	215.
6	AUG. 9	291.	251.	244.	249.	247.
7	AUG. 16	247.	244.	241.	236.	234.
8	AUG. 23	281.	290.	292.	309.	294.
9	AUG. 29	326.	337.	304.	300.	295.
10	SEPT 4	270.	204.	250.	276.	288.
11	SEPT 12	246.	231.	227.	232.	243.
12	SEPT 18	256.	234.	245.	240.	249.
13	SEPT 25	276.	249.	247.	245.	240.
14	OCT. 2	384.	364.	364.	359.	355.
15	OCT. 10	421.	410.	415.	364.	370.
16	OCT. 16	454.	447.	444.	444.	434.
17	OCT. 23	390.	381.	385.	410.	398.
18	OCT. 30	413.	409.	406.	405.	415.
19	NOV. 7	441.	432.	445.	439.	438.
20	NOV. 13	457.	455.	456.	455.	446.
21	NOV. 21	472.	471.	471.	472.	467.
22	NOV. 28	474.	474.	476.	476.	474.
23	DEC. 5	475.	469.	468.	467.	470.
24	DEC. 11	523.	524.	523.	518.	516.
25	DEC. 19	517.	485.	511.	527.	520.
26	DEC. 26	524.	527.	529.	534.	533.
27	JAN. 2	679.	677.	674.	674.	676.
28	JAN. 9	544.	551.	553.	551.	554.
29	JAN. 15	524.	526.	526.	527.	529.
30	JAN. 22	460.	476.	479.	481.	485.
31	JAN. 31	464.	463.	464.	463.	465.
32	FEB. 5	476.	480.	479.	482.	481.
33	FEB. 14	364.	363.	360.	363.	361.
34	FEB. 20	460.	461.	460.	461.	459.
35	FEB. 27	330.	329.	330.	330.	336.
36	MAR. 6	497.	494.	487.	484.	482.
37	MAR. 12	546.	548.	547.	548.	548.
38	MAR. 20	241.	245.	246.	248.	255.
39	MAR. 26	156.	158.	175.	90000.	190.
40	APR. 2	238.	233.	230.	226.	225.
41	APR. 9	217.	219.	215.	213.	212.
42	APR. 16	208.	211.	210.	210.	209.
43	APR. 23	279.	278.	276.	274.	273.
44	MAY 1	291.	294.	294.	300.	296.
45	MAY 8	328.	324.	315.	309.	304.
46	MAY 15	354.	321.	307.	330.	354.
47	MAY 22	383.	376.	322.	367.	364.
48	MAY 29	384.	380.	373.	374.	368.
49	JUNE 4	399.	393.	390.	387.	348.
50	JUNE 11	380.	377.	373.	372.	363.
51	JUNE 19	382.	402.	401.	371.	402.
52	JUNE 27	279.	310.	392.	365.	346.
53	JULY 3	282.	290.	288.	90000.	281.
54	JULY 9	284.	284.	257.	271.	278.

** NOTE ** -0. OR -0.01 INDICATES TRACE AMOUNT
90000. INDICATES NO MEASUREMENT

TABLE II-11. SUPPLEMENTARY ANALYSES

** CALCIUM - MG/L CACO3 **

WEEK	DATE 1968-69	* STA.1	** STA.2	** STA.3	*** STA.4	** STA.5
1	JULY 5	233.	254.	250.	250.	254.
2	JULY 12	111.	96.	90000.	97.	94.
3	JULY 19	133.	146.	139.	107.	97.
4	JULY 26	218.	198.	207.	215.	213.
5	AUG. 2	90000.	90000.	90000.	90000.	320.
6	AUG. 9	181.	144.	152.	144.	146.
7	AUG. 16	119.	112.	117.	110.	108.
8	AUG. 23	159.	178.	186.	204.	187.
9	AUG. 29	230.	192.	180.	222.	162.
10	SEPT 4	155.	146.	142.	172.	222.
11	SEPT 12	129.	114.	125.	133.	133.
12	SEPT 18	160.	129.	139.	151.	154.
13	SEPT 25	174.	141.	139.	161.	129.
14	OCT. 2	90000.	259.	266.	302.	248.
15	OCT. 10	283.	379.	359.	322.	349.
16	OCT. 16	323.	324.	310.	312.	290.
17	OCT. 23	335.	325.	328.	326.	340.
18	OCT. 30	388.	398.	386.	334.	288.
19	NOV. 7	389.	406.	445.	379.	361.
20	NOV. 13	331.	332.	356.	390.	361.
21	NOV. 21	333.	342.	345.	341.	335.
22	NOV. 28	315.	315.	317.	317.	309.
23	DEC. 5	334.	332.	341.	322.	329.
24	DEC. 11	347.	362.	370.	359.	357.
25	DEC. 19	354.	331.	338.	366.	357.
26	DEC. 26	350.	347.	347.	354.	343.
27	JAN. 2	442.	440.	439.	441.	440.
28	JAN. 9	390.	383.	393.	390.	370.
29	JAN. 15	328.	330.	331.	334.	339.
30	JAN. 22	367.	356.	347.	336.	334.
31	JAN. 31	344.	347.	347.	343.	339.
32	FEB. 5	374.	372.	370.	365.	367.
33	FEB. 14	444.	443.	445.	445.	443.
34	FEB. 20	407.	411.	415.	426.	427.
35	FEB. 27	292.	291.	295.	299.	298.
36	MAR. 6	454.	428.	425.	423.	421.
37	MAR. 12	363.	358.	354.	350.	344.
38	MAR. 20	217.	216.	210.	202.	204.
39	MAR. 26	124.	123.	170.	90000.	184.
40	APR. 2	174.	182.	188.	262.	175.
41	APR. 9	188.	186.	179.	174.	170.
42	APR. 16	182.	170.	187.	192.	200.
43	APR. 23	202.	194.	208.	210.	212.
44	MAY 1	231.	233.	238.	241.	245.
45	MAY 8	230.	228.	224.	220.	220.
46	MAY 15	283.	266.	234.	228.	219.
47	MAY 22	315.	314.	370.	323.	304.
48	MAY 29	281.	292.	294.	283.	262.
49	JUNE 4	279.	287.	289.	294.	303.
50	JUNE 11	280.	268.	274.	273.	270.
51	JUNE 19	291.	285.	286.	288.	284.
52	JUNE 27	214.	241.	299.	286.	261.
53	JULY 3	220.	227.	224.	90000.	210.
54	JULY 9	219.	219.	216.	217.	220.

** NOTE ** -0. OR -0.01 INDICATES TRACE AMOUNT
90000. INDICATES NO MEASUREMENT

TABLE II-12. SUPPLEMENTARY ANALYSES

** IRON - MG/L **

WEEK	DATE 1968-69	* STA.1	** STA.2	** STA.3	*** STA.4	** STA.5
1	JULY 5	1.88	2.25	2.30	2.95	3.08
2	JULY 12	0.85	1.55	1.43	1.28	1.28
3	JULY 19	0.12	0.09	0.09	0.10	0.10
4	JULY 26	0.12	0.03	0.05	0.06	0.04
5	AUG. 2	90000.00	90000.00	90000.00	90000.00	90000.00
6	AUG. 9	0.25	0.22	0.21	0.22	0.27
7	AUG. 16	-0.01	0.05	0.02	0.05	0.06
8	AUG. 23	0.07	0.02	-0.01	-0.01	0.05
9	AUG. 29	0.12	0.25	0.30	90000.00	90000.00
10	SEPT 4	0.62	0.65	0.56	0.44	0.50
11	SEPT 12	0.23	0.24	0.19	0.31	0.19
12	SEPT 18	0.15	0.19	0.15	0.17	0.10
13	SEPT 25	0.11	0.10	0.10	0.11	0.11
14	OCT. 2	90000.00	90000.00	90000.00	90000.00	90000.00
15	OCT. 10	0.05	0.11	0.33	0.29	0.14
16	OCT. 16	0.04	0.06	0.09	0.08	0.09
17	OCT. 23	0.46	0.36	0.68	1.28	0.58
18	OCT. 30	0.03	0.03	0.02	0.02	0.01
19	NOV. 7	0.08	0.08	0.08	0.08	0.14
20	NOV. 13	0.10	0.08	0.08	0.07	0.08
21	NOV. 21	0.10	0.10	0.06	0.10	0.09
22	NOV. 28	0.10	0.10	0.12	0.12	0.10
23	DEC. 5	0.10	0.06	0.04	0.04	0.06
24	DEC. 11	0.07	0.04	0.05	0.04	0.05
25	DEC. 19	0.07	0.16	0.12	0.12	0.08
26	DEC. 26	0.02	0.01	0.04	0.0	0.0
27	JAN. 2	0.02	0.01	0.04	0.0	0.0
28	JAN. 9	0.02	0.01	0.03	0.0	0.0
29	JAN. 15	0.04	0.06	0.06	0.06	0.06
30	JAN. 22	0.02	0.02	0.01	0.01	0.01
31	JAN. 31	0.01	0.01	0.01	0.0	0.0
32	FEB. 5	0.03	0.04	0.03	0.03	0.03
33	FEB. 14	0.04	0.04	0.06	0.02	0.02
34	FEB. 20	0.02	0.02	0.02	0.00	0.01
35	FEB. 27	0.11	0.10	0.15	0.08	0.09
36	MAR. 6	0.05	0.05	0.05	0.29	0.03
37	MAR. 12	0.06	0.06	0.07	0.07	0.07
38	MAR. 20	0.10	0.05	0.07	0.07	0.08
39	MAR. 26	0.06	0.07	0.12	90000.00	0.07
40	APR. 2	0.04	0.03	0.03	0.04	0.04
41	APR. 9	0.05	0.04	0.04	0.03	0.05
42	APR. 16	0.05	0.04	0.05	0.03	0.02
43	APR. 23	0.02	0.03	0.01	0.03	0.03
44	MAY 1	0.02	0.01	0.02	0.01	0.01
45	MAY 8	0.02	0.02	0.02	0.01	0.02
46	MAY 15	0.02	0.01	0.01	0.01	0.01
47	MAY 22	0.01	0.01	0.01	0.0	0.0
48	MAY 29	0.04	0.02	0.15	0.01	0.01
49	JUNE 4	0.05	0.05	0.07	0.06	0.02
50	JUNE 11	0.07	0.06	0.13	0.14	0.01
51	JUNE 19	0.14	0.05	0.05	0.05	0.03
52	JUNE 27	0.07	0.18	0.13	0.01	0.10
53	JULY 3	0.44	0.17	0.07	90000.00	0.09
54	JULY 9	0.04	0.03	0.01	0.27	0.0

** NOTE ** -0. OR -0.01 INDICATES TRACE AMOUNT

90000. INDICATES NO MEASUREMENT

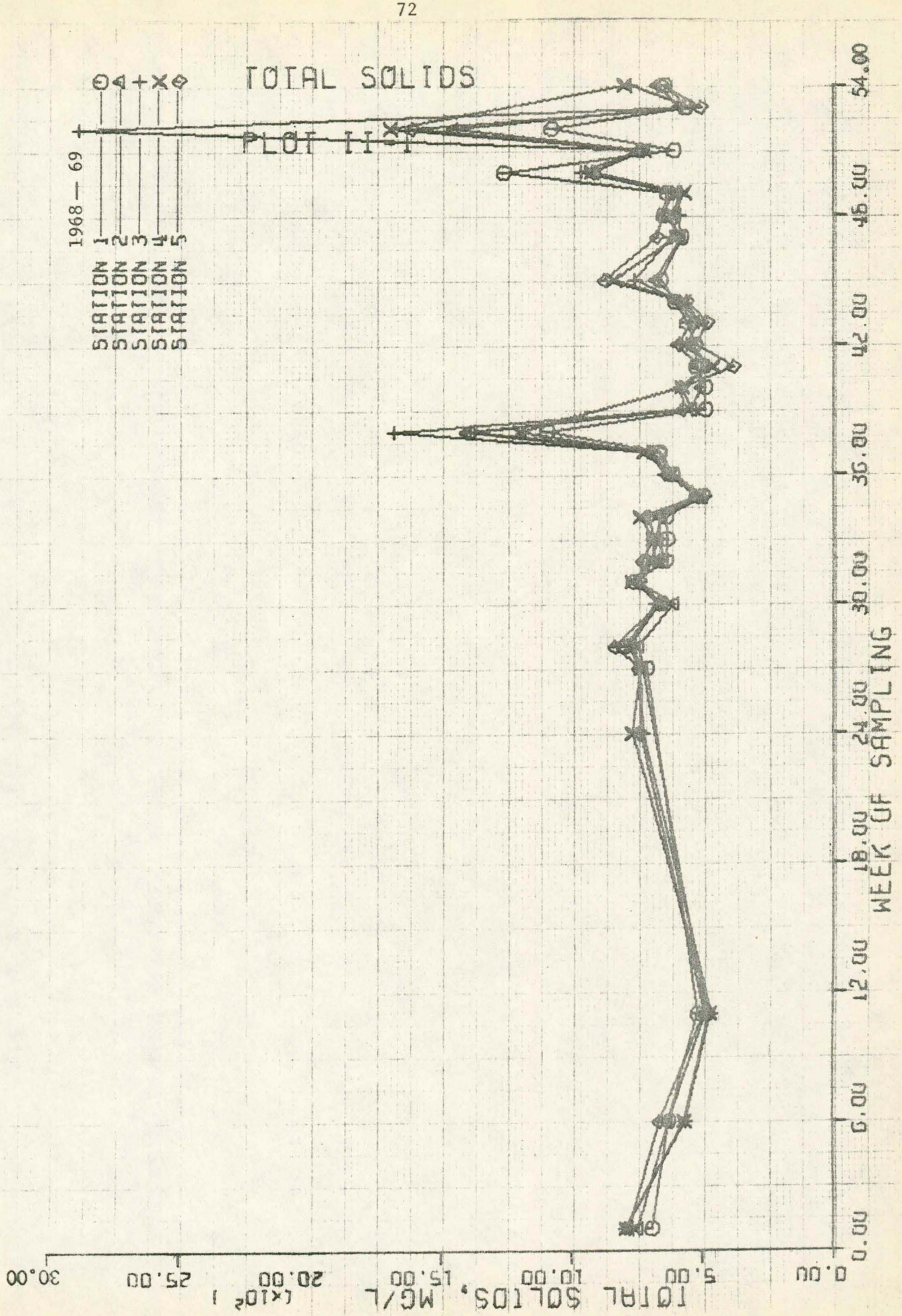
TABLE II-13. SUPPLEMENTARY ANALYSES

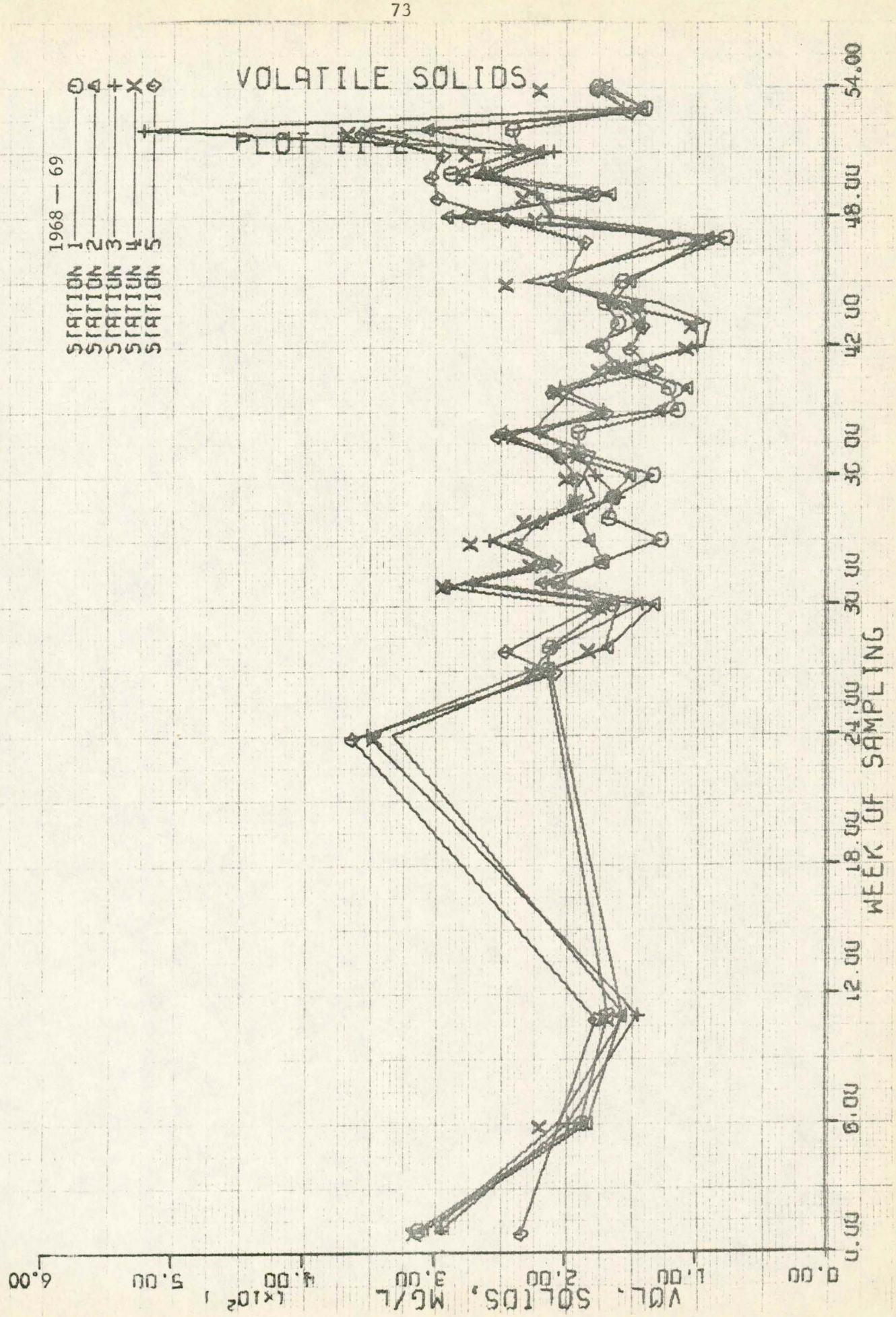
** SILICA - MG/L **

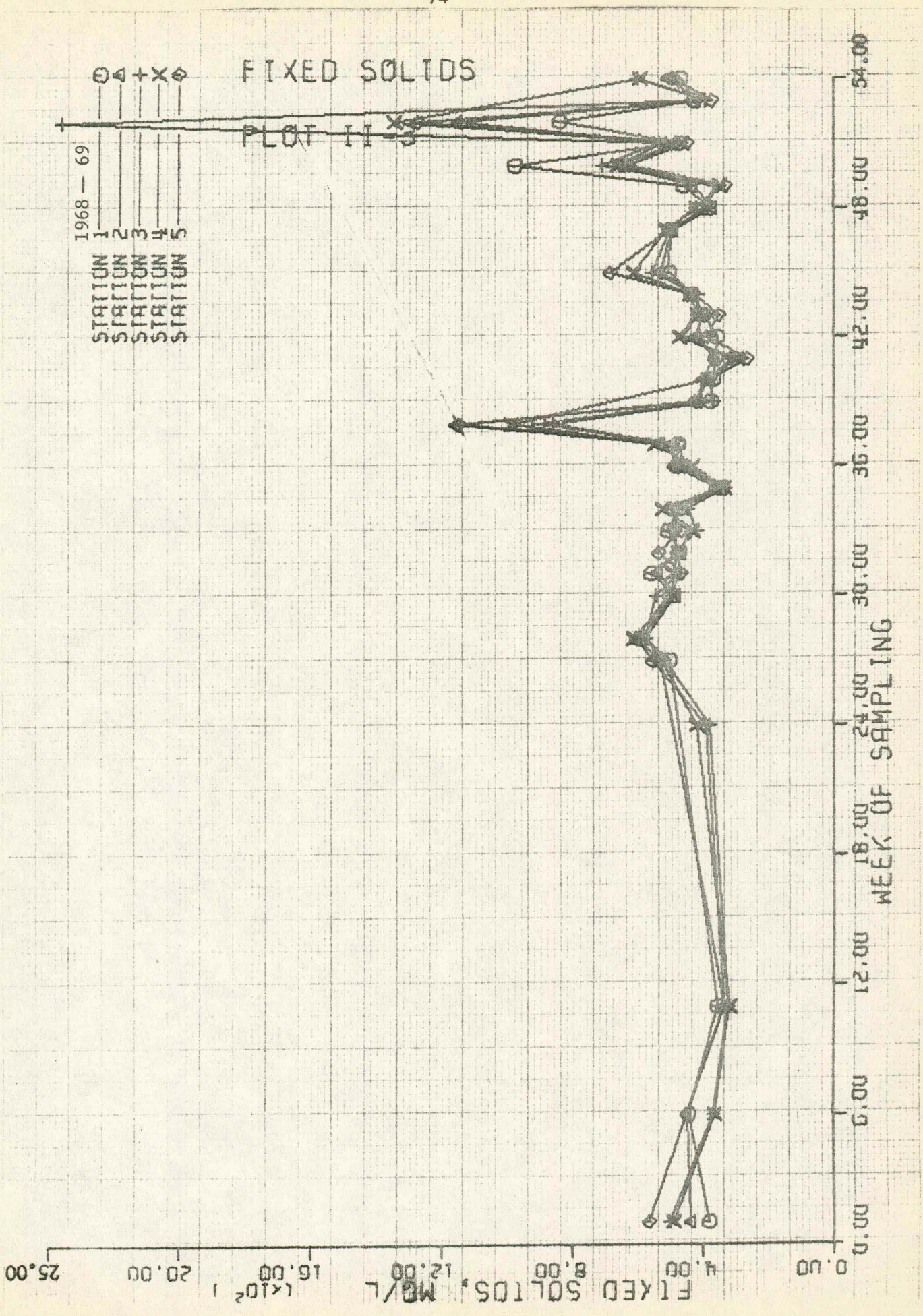
WEEK	DATE 1968-69	* STA.1	** STA.2	** STA.3	*** STA.4	** STA.5
1	JULY 5	47.8	44.5	28.5	38.8	50.7
2	JULY 12	5.5	7.9	7.1	6.3	6.1
3	JULY 19	9.3	9.0	7.9	4.3	2.5
4	JULY 26	17.4	16.2	90000.0	90000.0	90000.0
5	AUG. 2	23.7	21.3	21.0	21.5	20.0
6	AUG. 9	7.5	6.5	7.4	7.1	7.3
7	AUG. 16	9.1	6.6	7.2	7.9	8.6
8	AUG. 23	6.1	8.3	9.6	10.8	11.3
9	AUG. 29	8.9	8.5	7.8	6.3	6.3
10	SEPT 4	6.3	7.0	5.9	5.2	6.3
11	SEPT 12	4.3	3.6	2.8	2.6	3.6
12	SEPT 18	1.8	2.8	3.3	3.5	4.0
13	SEPT 25	3.1	1.3	1.3	1.3	1.8
14	OCT. 2	3.7	3.7	3.8	3.8	3.7
15	OCT. 10	4.0	5.3	6.0	5.0	5.8
16	OCT. 16	5.7	5.0	2.8	5.7	4.7
17	OCT. 23	17.0	11.3	21.3	11.8	11.8
18	OCT. 30	9.4	10.6	5.6	6.5	7.1
19	NOV. 7	13.2	13.2	8.8	6.0	5.6
20	NOV. 13	8.3	7.3	5.7	7.3	8.5
21	NOV. 21	9.2	7.2	7.3	5.8	6.9
22	NOV. 28	7.8	7.8	8.5	8.3	8.0
23	DEC. 5	7.1	6.4	6.2	6.9	5.2
24	DEC. 11	5.2	5.7	7.3	5.9	6.2
25	DEC. 19	5.3	6.3	6.5	6.8	7.0
26	DEC. 26	5.0	5.0	5.6	6.0	6.8
27	JAN. 2	7.5	9.3	9.4	10.4	10.4
28	JAN. 9	8.3	8.9	9.5	9.5	10.3
29	JAN. 15	10.2	10.2	10.6	10.3	10.3
30	JAN. 22	22.9	23.7	22.7	22.4	22.4
31	JAN. 31	28.3	28.5	29.0	28.9	29.3
32	FEB. 5	27.5	28.5	28.3	28.1	28.3
33	FEB. 14	26.6	26.8	26.6	26.6	26.7
34	FEB. 20	24.1	24.6	24.4	23.9	24.1
35	FEB. 27	19.9	19.2	20.0	19.5	19.9
36	MAR. 6	22.6	22.6	22.7	22.5	22.2
37	MAR. 12	23.1	23.5	23.2	23.1	23.5
38	MAR. 20	12.6	12.1	18.8	13.3	13.6
39	MAR. 26	15.3	14.8	15.0	90000.0	14.1
40	APR. 2	21.3	20.9	20.9	20.6	20.7
41	APR. 9	19.4	19.6	19.6	19.5	19.6
42	APR. 16	16.0	16.7	16.3	16.4	17.0
43	APR. 23	17.5	17.9	17.6	17.6	17.8
44	MAY 1	4.6	5.3	5.4	5.6	6.2
45	MAY 8	8.8	9.3	9.0	8.8	9.5
46	MAY 15	8.4	8.4	8.4	8.5	9.4
47	MAY 22	12.2	10.9	11.7	11.9	11.5
48	MAY 29	3.0	3.9	4.1	3.3	3.1
49	JUNE 4	15.1	15.4	15.4	15.4	14.9
50	JUNE 11	20.6	19.2	18.5	19.2	19.2
51	JUNE 19	24.3	23.9	23.9	23.6	24.0
52	JUNE 27	20.6	21.7	20.0	21.5	21.2
53	JULY 3	22.0	21.3	21.1	90000.0	21.9
54	JULY 9	19.9	18.5	18.3	24.4	19.5

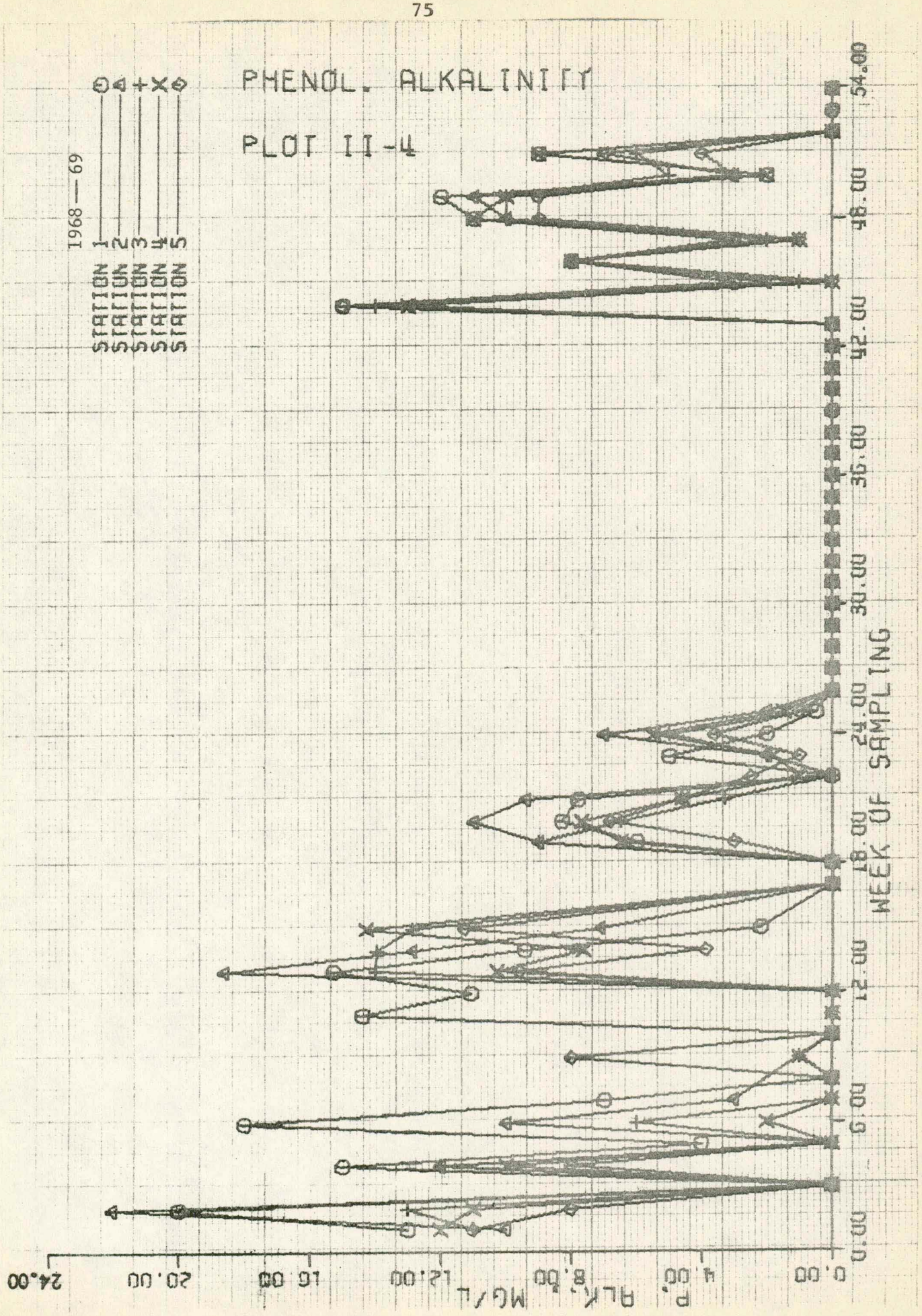
** NOTE ** -0. OR -0.01 INDICATES TRACE AMOUNT

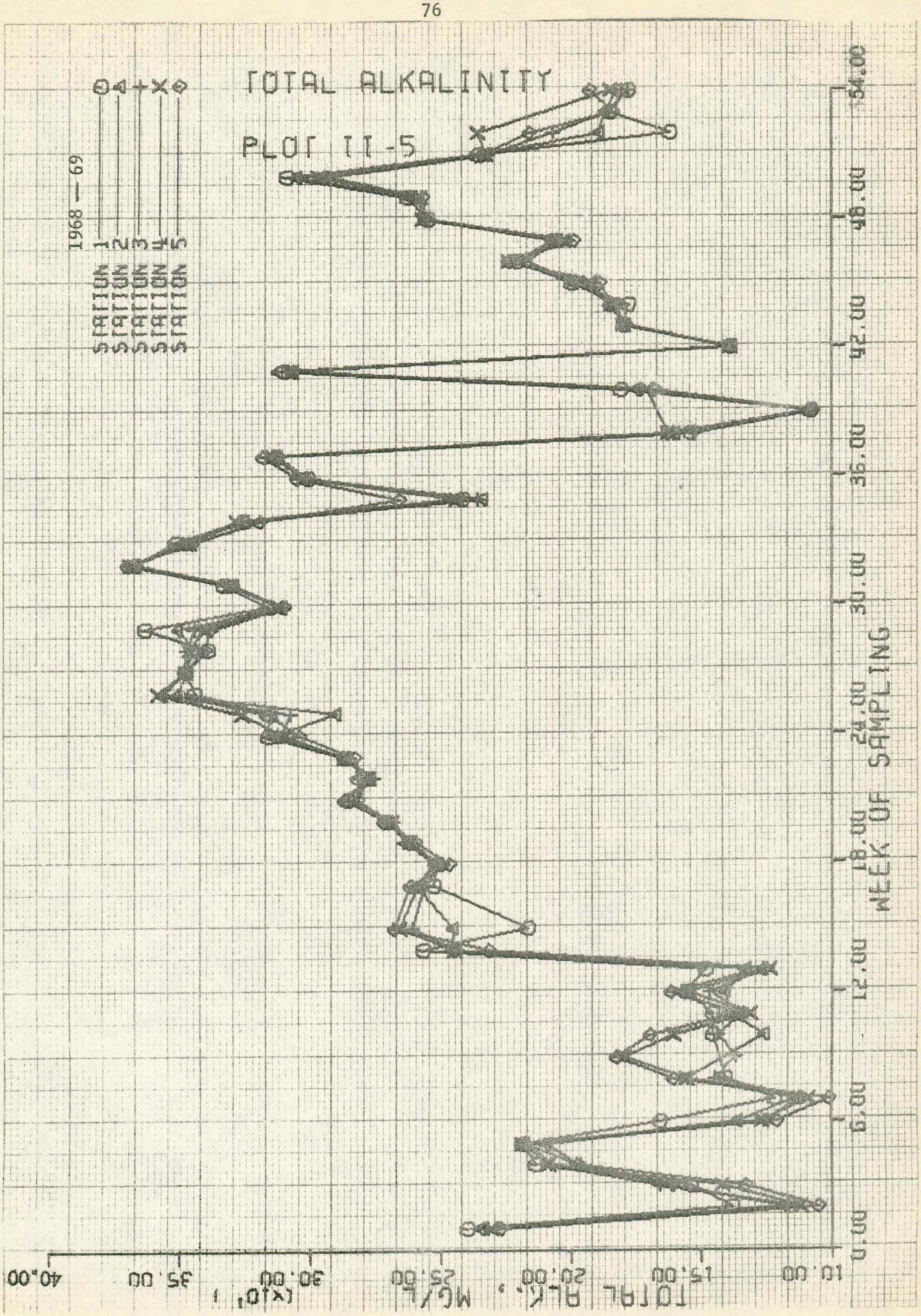
90000. INDICATES NO MEASUREMENT

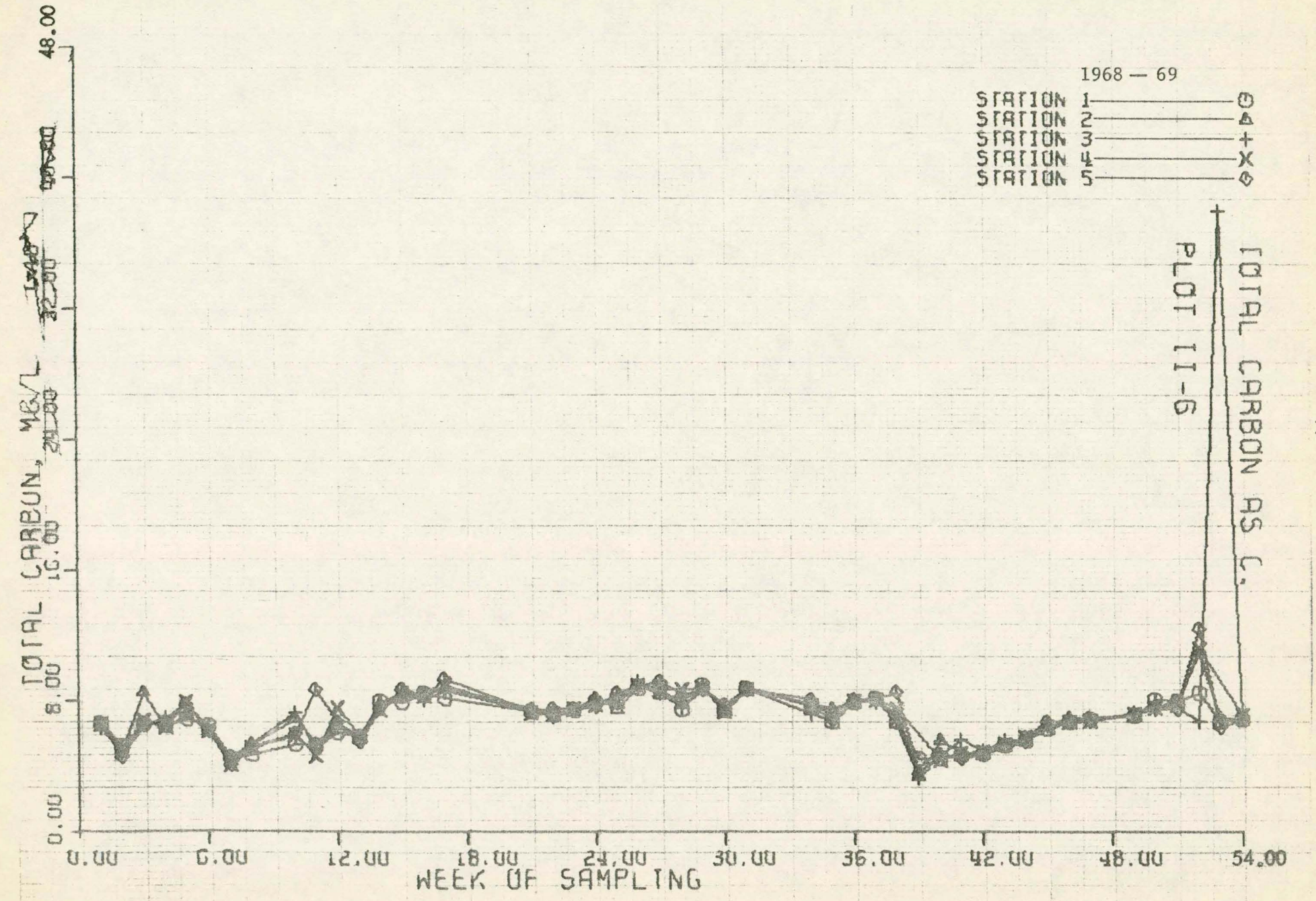

TOTAL SOLIDS
PLOT II
1968 — 69
STATION 1
STATION 2
STATION 3
STATION 4
STATION 5
TOTAL SOLIDS, MG/L (x10²)
0.00
5.00
10.00
15.00
20.00
25.00
30.00
0.00
6.00
12.00
18.00
24.00
30.00
36.00
42.00
48.00
54.00
WEEK OF SAMPLING

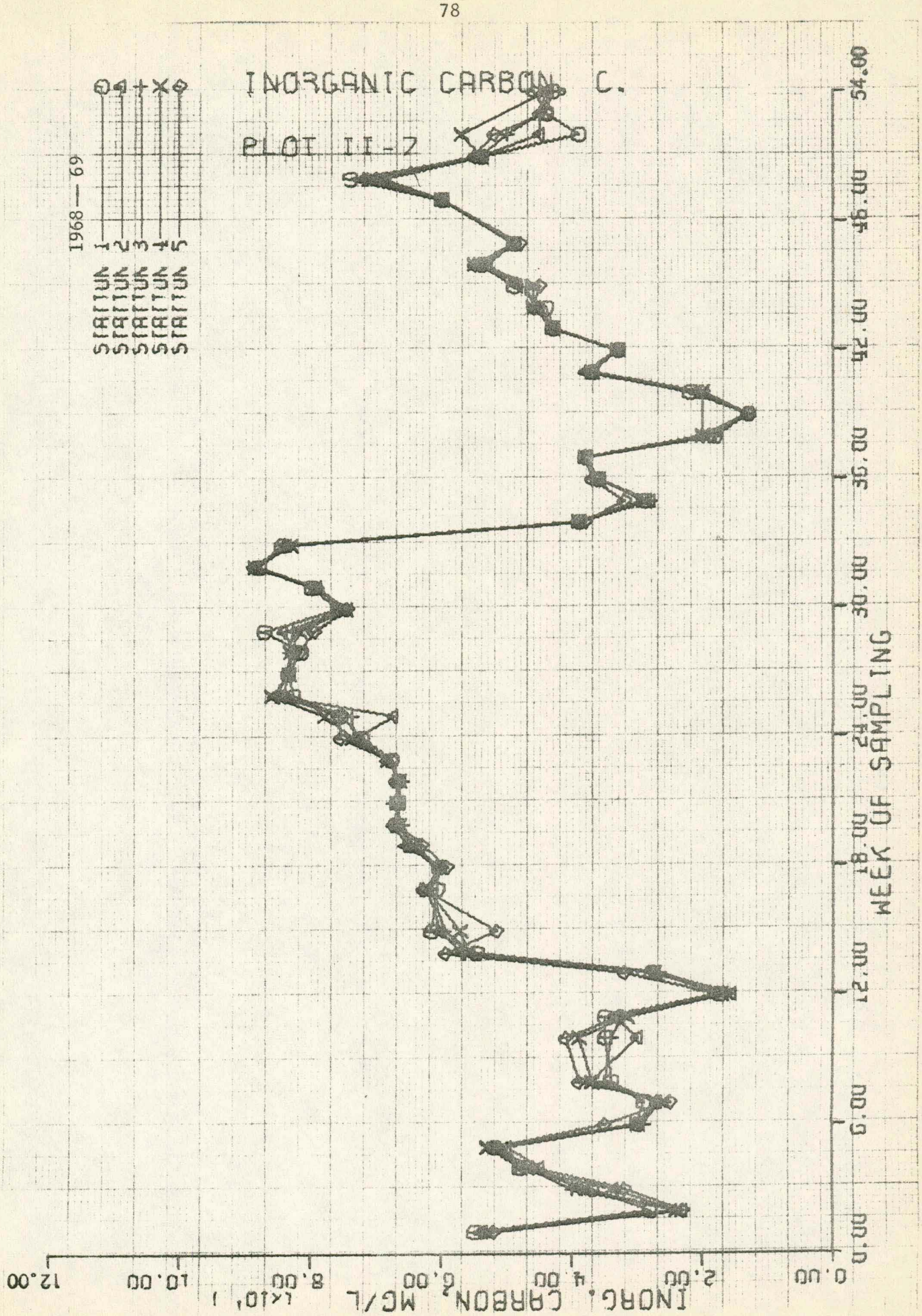

VOLATILE SOLIDS
PLOT M-2
1968 — 69
STATION 1
STATION 2
STATION 3
STATION 4
STATION 5
VOL. SOLIDS, MG/L
1x10²
0.00
1.00
2.00
3.00
4.00
5.00
6.00
0.00
6.00
12.00
18.00
24.00
30.00
36.00
42.00
48.00
54.00
WEEK OF SAMPLING

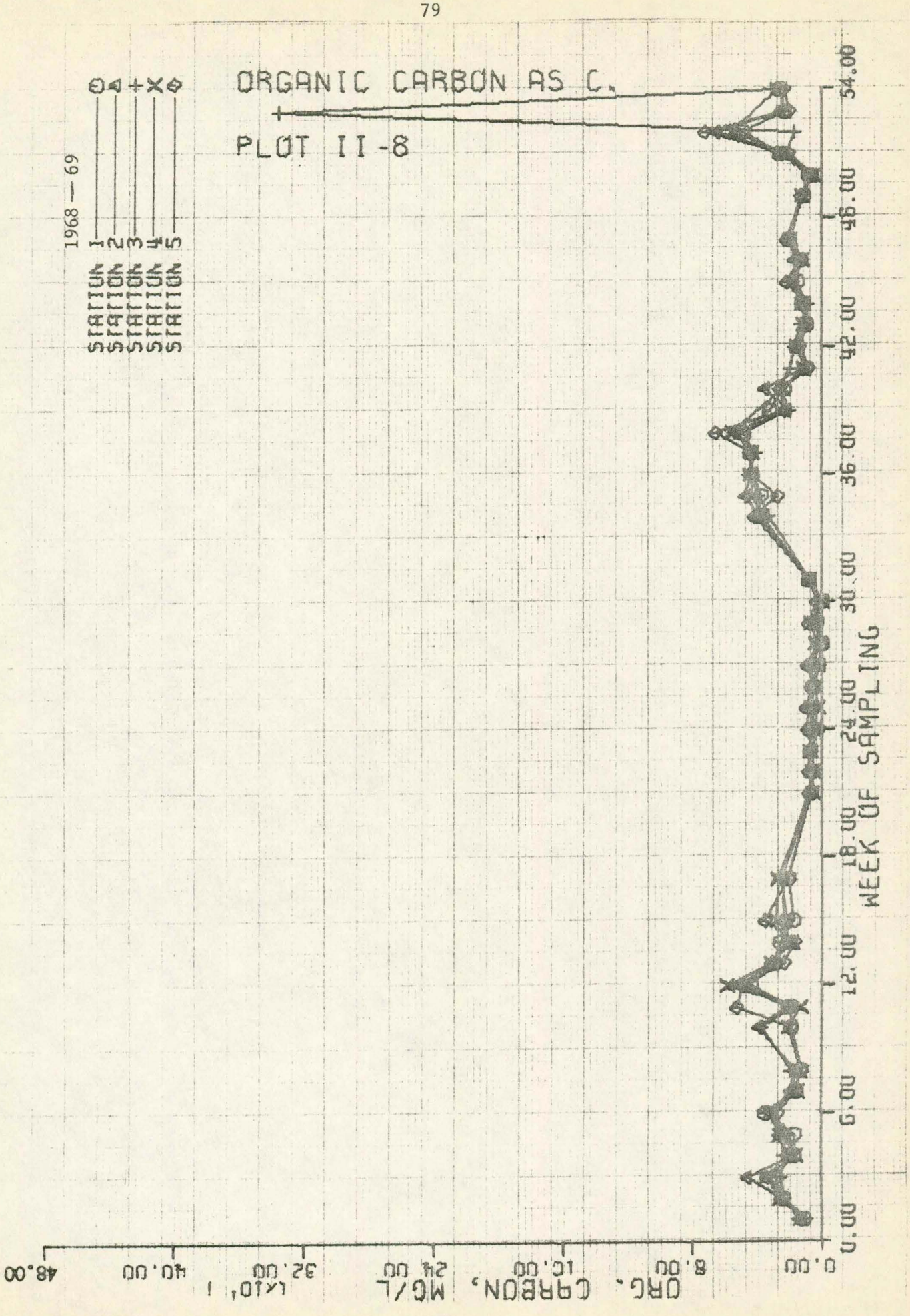

FIXED SOLIDS
PLOT II-3
1968 — 69
STATION 1
STATION 2
STATION 3
STATION 4
STATION 5
FIXED SOLIDS, MG/L (x10²)
0.00
4.00
8.00
12.00
16.00
20.00
25.00
0.00
6.00
12.00
18.00
24.00
30.00
36.00
42.00
48.00
54.00
WEEK OF SAMPLING

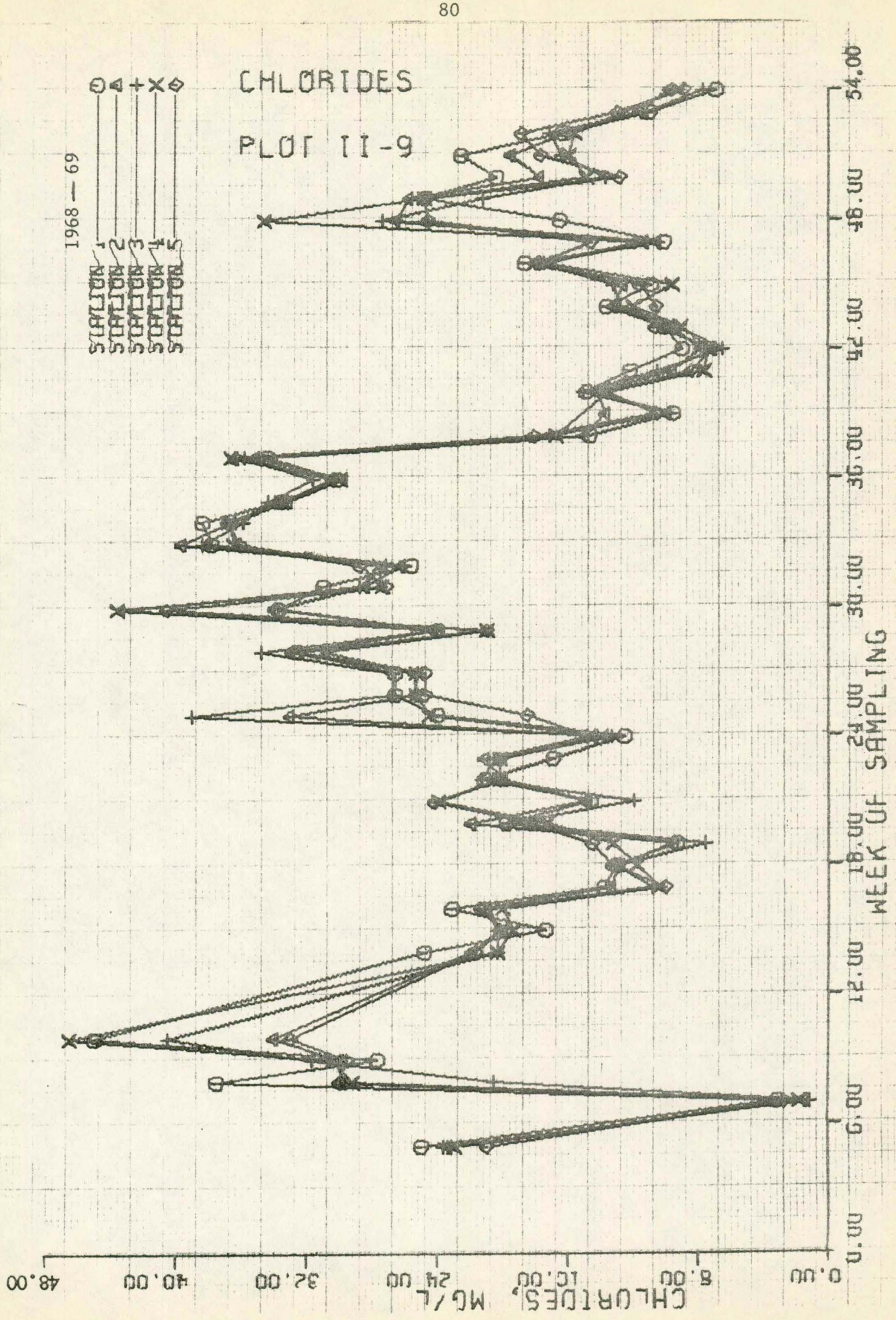

PHENOL. ALKALINITY
PLOT II-4
1968—69
STATION 1
STATION 2
STATION 3
STATION 4
STATION 5
P. ALK. MG/L
0.00
4.00
8.00
12.00
16.00
20.00
24.00
0.00
6.00
12.00
18.00
24.00
30.00
36.00
42.00
48.00
54.00
WEEK OF SAMPLING

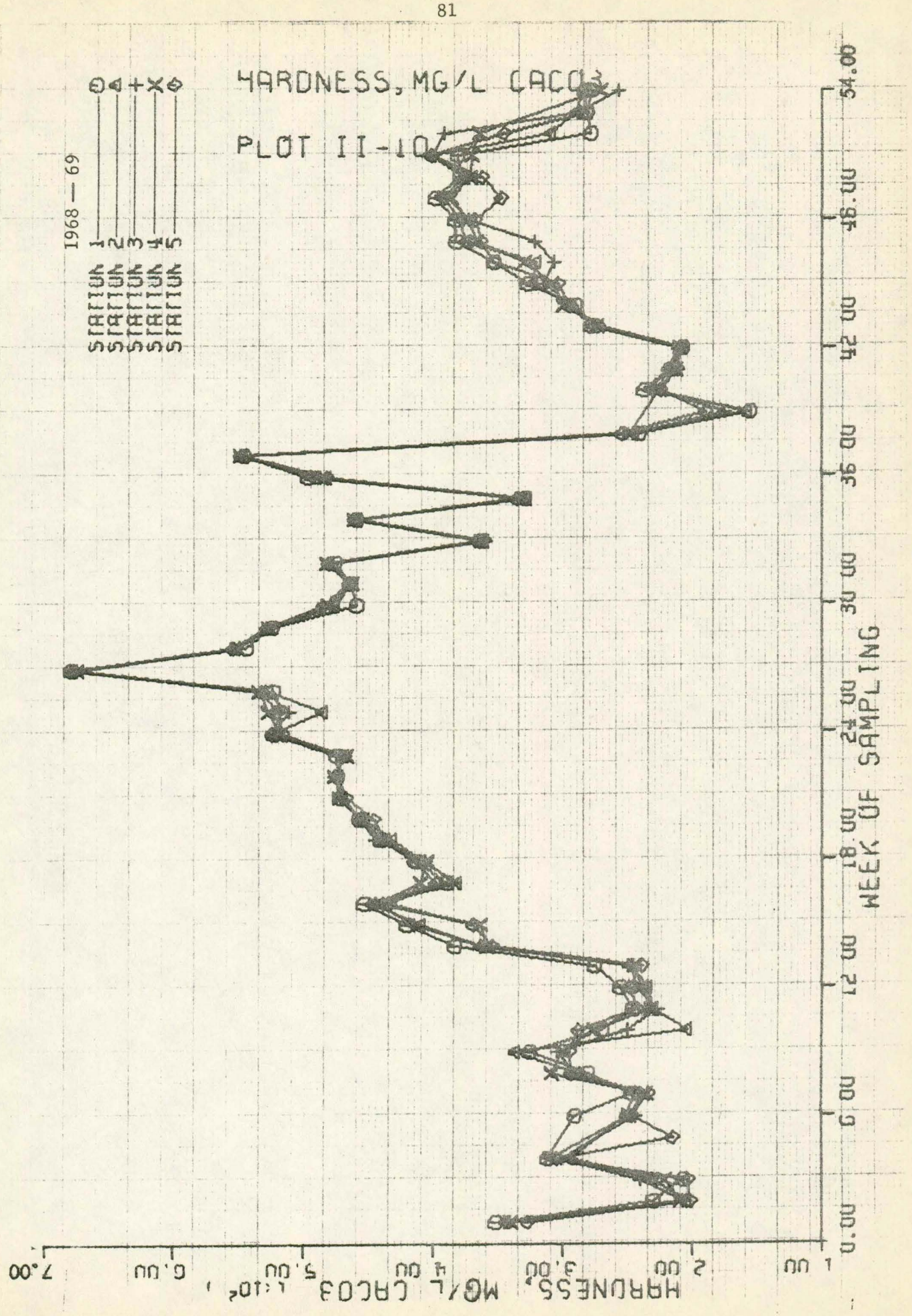

TOTAL ALKALINITY
PLOT II-5
1968 — 69
STATION 1
STATION 2
STATION 3
STATION 4
STATION 5
TOTAL ALK., MG/L (x10¹)
10.00
15.00
20.00
25.00
30.00
35.00
40.00
0.00
6.00
12.00
18.00
24.00
30.00
36.00
42.00
48.00
54.00
WEEK OF SAMPLING

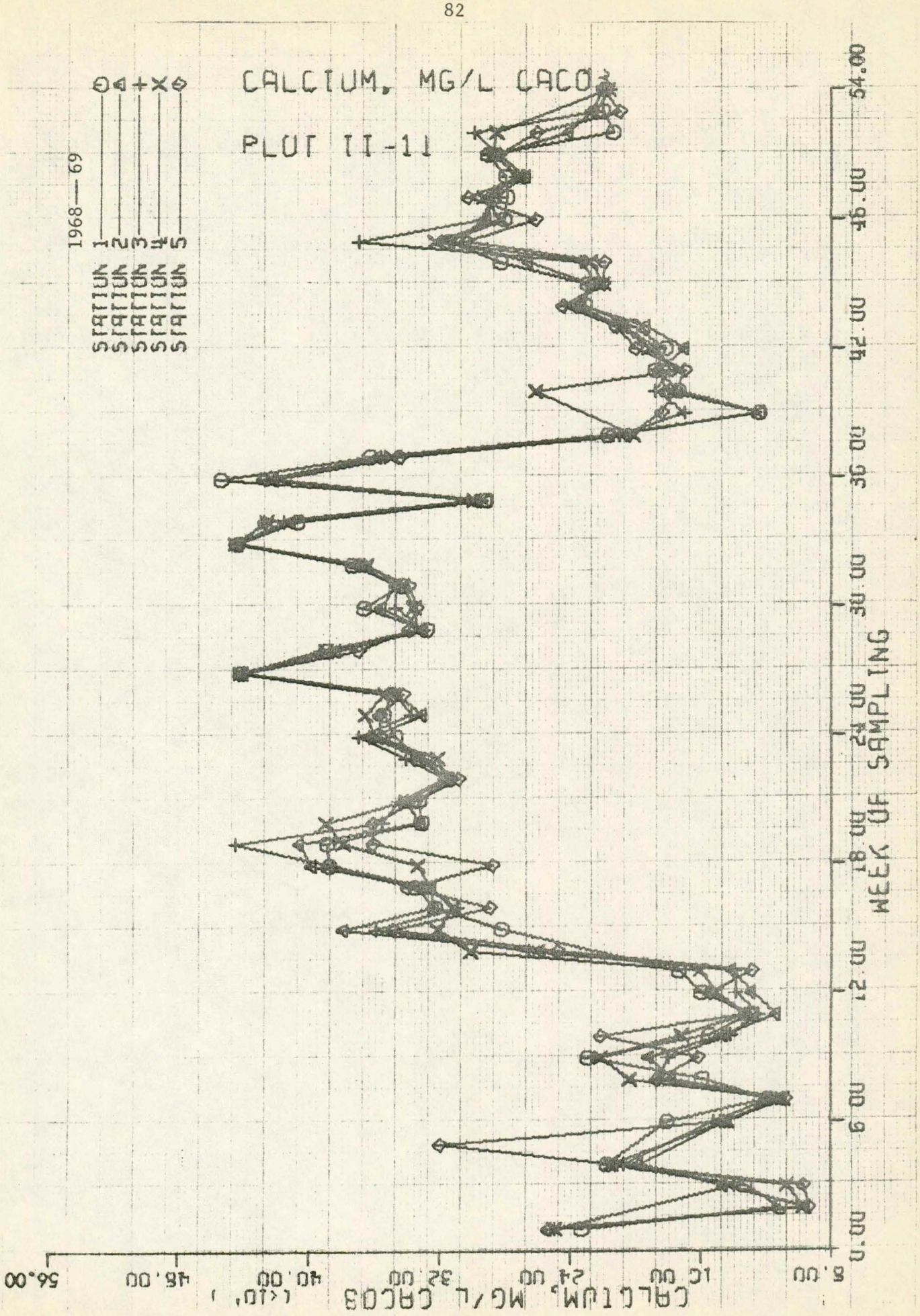

1968 — 69
STATION 1
STATION 2
STATION 3
STATION 4
STATION 5
TOTAL CARBON AS C.
PLOT II-G
TOTAL CARBON, MG/L
48.00
16.00
8.00
0.00
0.00
6.00
12.00
18.00
24.00
30.00
36.00
42.00
48.00
54.00
WEEK OF SAMPLING

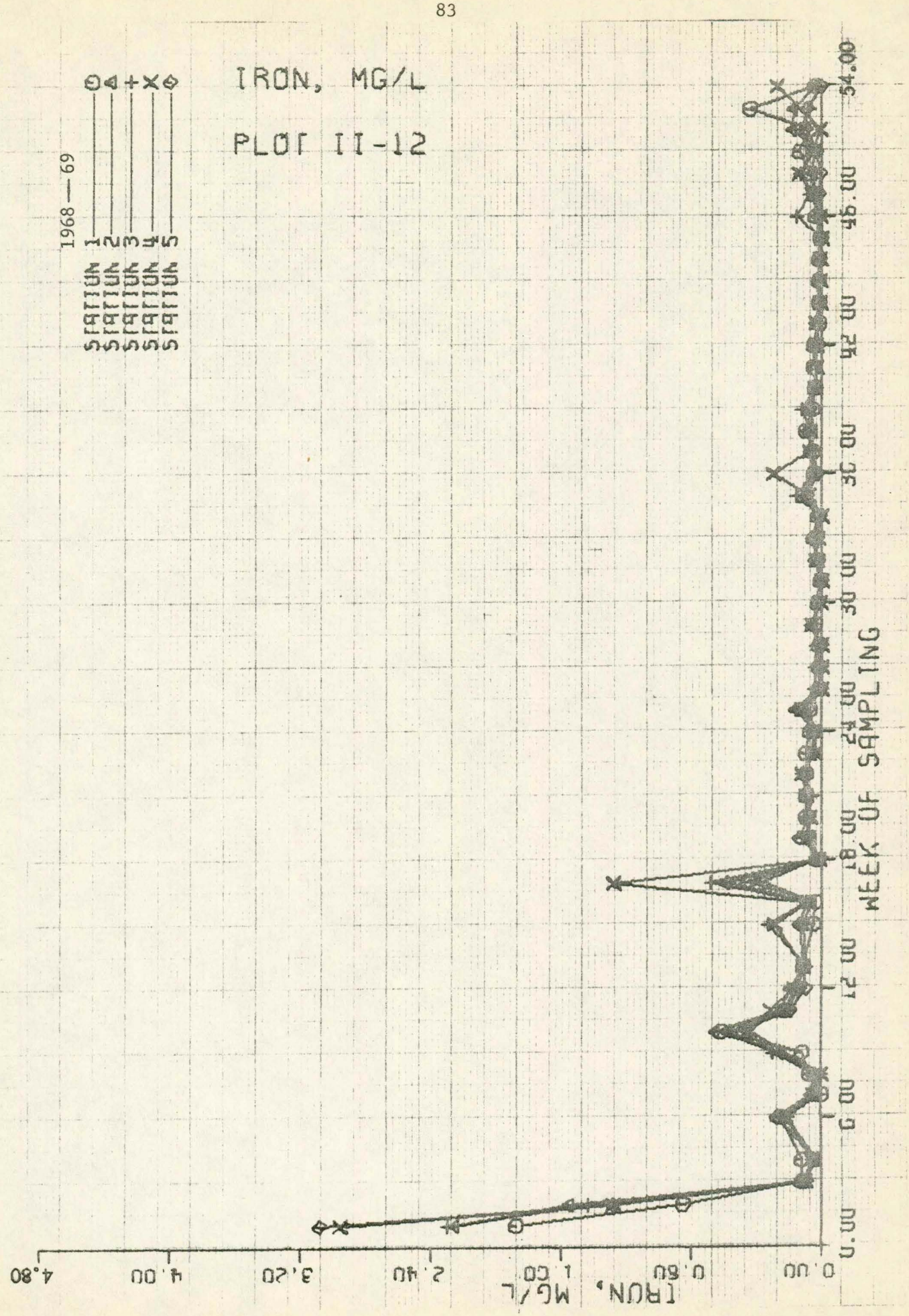

INORGANIC CARBON C.
PLOT II-7
1968—69
STATION 1
STATION 2
STATION 3
STATION 4
STATION 5
INORG. CARBON, MG/L
0.00
2.00
4.00
6.00
8.00
10.00
12.00
WEEK OF SAMPLING
0.00
6.00
12.00
18.00
24.00
30.00
36.00
42.00
48.00
54.00


ORGANIC CARBON AS C.
PLOT II-8
1968 — 69
STATION 1
STATION 2
STATION 3
STATION 4
STATION 5
ORG. CARBON, MG/L
0.00
8.00
16.00
24.00
32.00
40.00
48.00
WEEK OF SAMPLING
0.00
6.00
12.00
18.00
24.00
30.00
36.00
42.00
46.00
54.00


CHLORIDES
PLOT II-9
1968 — 69
STATION 1
STATION 2
STATION 3
STATION 4
STATION 5
CHLORIDES, MG/L
0.00
8.00
16.00
24.00
32.00
40.00
48.00
WEEK OF SAMPLING
0.00
6.00
12.00
18.00
24.00
30.00
36.00
42.00
46.00
54.00


HARDNESS, MG/L CACO3
PLOT II-10
1968 — 69
STATION 1
STATION 2
STATION 3
STATION 4
STATION 5
HARDNESS, MG/L CACO3 (10⁴)
1.00
2.00
3.00
4.00
5.00
6.00
7.00
0.00
6.00
12.00
18.00
24.00
30.00
36.00
42.00
48.00
54.00
WEEK OF SAMPLING


CALCIUM, MG/L CACO3
PLOT II-11
1968—69
STATION 1
STATION 2
STATION 3
STATION 4
STATION 5
CALCIUM, MG/L CACO3 (<10')
8.00
16.00
24.00
32.00
40.00
48.00
56.00
0.00
6.00
12.00
18.00
24.00
30.00
36.00
42.00
46.00
54.00
WEEK OF SAMPLING


IRON, MG/L
PLOT II-12
1968—69
STATION 1
STATION 2
STATION 3
STATION 4
STATION 5
IRON, MG/L
0.00
0.80
1.60
2.40
3.20
4.00
4.80
0.00
6.00
12.00
18.00
24.00
30.00
36.00
42.00
46.00
54.00
WEEK OF SAMPLING

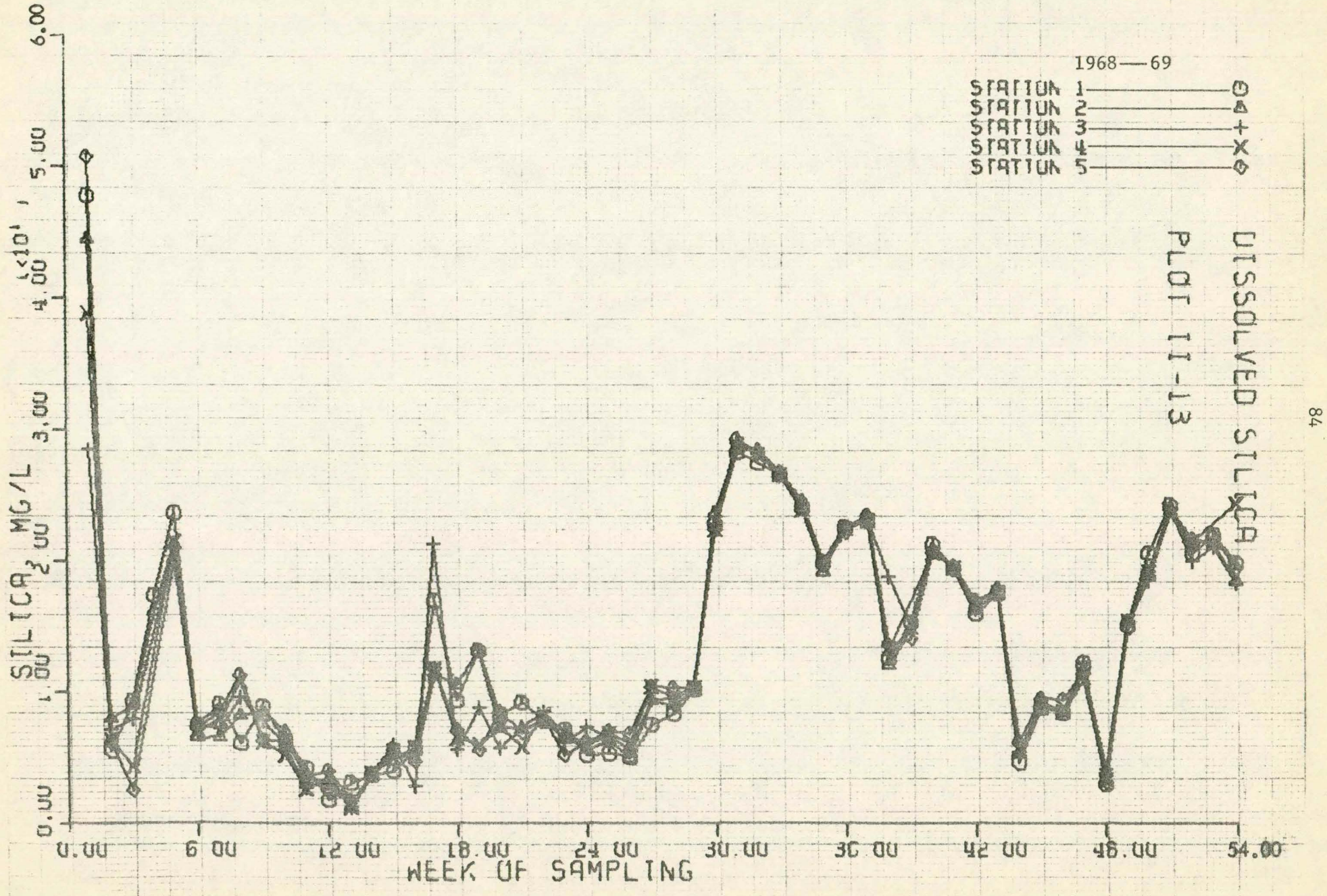

DISSOLVED SILICA
PLOT II-13
1968—69
STATION 1
STATION 2
STATION 3
STATION 4
STATION 5
SILICA, MG/L
(×10¹)
0.00
1.00
2.00
3.00
4.00
5.00
6.00
0.00
6.00
12.00
18.00
24.00
30.00
36.00
42.00
48.00
54.00
WEEK OF SAMPLING

TABLE III-1. ENVIRONMENTAL DATA

** CLOUD COVER **

WEEK	DATE 1968-69	* STA.1	** STA.2	** STA.3	** STA.4	** STA.5
1	JULY 5	PARTLY	PARTLY	PARTLY	PARTLY	CLEAR
2	JULY 12	PARTLY	PARTLY	PARTLY	PARTLY	PARTLY
3	JULY 19	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR
4	JULY 26	PARTLY	PARTLY	PARTLY	PARTLY	PARTLY
5	AUG. 2	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR
6	AUG. 9	CLOUDY	CLOUDY	CLOUDY	CLOUDY	CLOUDY
7	AUG. 16	CLOUDY	CLOUDY	CLOUDY	CLOUDY	CLOUDY
8	AUG. 23	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR
9	AUG. 29	CLOUDY	CLOUDY	CLOUDY	CLOUDY	CLOUDY
10	SEPT 4	CLOUDY	CLOUDY	CLOUDY	CLOUDY	RAIN
11	SEPT 12	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR
12	SEPT 18	CLOUDY	CLOUDY	CLOUDY	CLOUDY	CLOUDY
13	SEPT 25	CLOUDY	CLEAR	CLEAR	CLEAR	CLEAR
14	OCT. 2	CLOUDY	CLOUDY	CLOUDY	CLEAR	CLEAR
15	OCT. 10	CLOUDY	CLOUDY	CLOUDY	CLOUDY	CLOUDY
16	OCT. 16	CLOUDY	CLOUDY	CLOUDY	CLOUDY	CLOUDY
17	OCT. 23	PARTLY	PARTLY	PARTLY	PARTLY	PARTLY
18	OCT. 30	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR
19	NOV. 7	CLOUDY	CLOUDY	CLOUDY	CLOUDY	CLOUDY
20	NOV. 13	PARTLY	PARTLY	PARTLY	PARTLY	PARTLY
21	NOV. 21	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR
22	NOV. 28	CLOUDY	CLOUDY	CLOUDY	CLOUDY	CLOUDY
23	DEC. 5	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR
24	DEC. 11	NIGHT	OVERCAST	HAZE	HAZE	PARTLY
25	DEC. 19	OVERCAST	OVERCAST	OVERCAST	OVERCAST	OVERCAST
26	DEC. 26	OVERCAST	OVERCAST	OVERCAST	OVERCAST	OVERCAST
27	JAN. 2	OVERCAST	OVERCAST	OVERCAST	OVERCAST	OVERCAST
28	JAN. 9	OVERCAST	OVERCAST	OVERCAST	OVERCAST	OVERCAST
29	JAN. 15	OVERCAST	OVERCAST	OVERCAST	OVERCAST	OVERCAST
30	JAN. 22	RAIN	MIST	CLOUDY	OVERCAST	OVERCAST
31	JAN. 31	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR
32	FEB. 5	PARTLY	CLEAR	CLEAR	CLEAR	CLEAR
33	FEB. 14	OVERCAST	OVERCAST	OVERCAST	OVERCAST	OVERCAST
34	FEB. 20	OVERCAST	OVERCAST	OVERCAST	OVERCAST	OVERCAST
35	FEB. 27	SNOW	SNOW	SNOW	SNOW	SNOW
36	MAR. 6	OVERCAST	OVERCAST	OVERCAST	OVERCAST	OVERCAST
37	MAR. 12	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR
38	MAR. 20	OVERCAST	OVERCAST	OVERCAST	OVERCAST	OVERCAST
39	MAR. 26	CLEAR	CLEAR	CLEAR	CLEAR	PARTLY
40	APR. 2	OVERCAST	OVERCAST	OVERCAST	OVERCAST	OVERCAST
41	APR. 9	OVERCAST	OVERCAST	OVERCAST	OVERCAST	OVERCAST
42	APR. 16	OVERCAST	OVERCAST	OVERCAST	OVERCAST	OVERCAST
43	APR. 23	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR
44	MAY 1	OVERCAST	CLEAR	PARTLY	OVERCAST	OVERCAST
45	MAY 8	OVERCAST	OVERCAST	OVERCAST	OVERCAST	RAIN
46	MAY 15	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR
47	MAY 22	PARTLY	PARTLY	PARTLY	PARTLY	OVERCAST
48	MAY 29	PARTLY	PARTLY	PARTLY	PARTLY	CLEAR
49	JUNE 4	5 %	20 %	99 %	100 %	100 % R
50	JUNE 11	75 %	60 %	20 %	20 %	30 %
51	JUNE 19	HAZE	HAZE	HAZE	5 %	HAZE
52	JUNE 27	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR
53	JULY 3	15 %	CLEAR	CLEAR	*****	CLEAR
54	JULY 9	NIGHT	NIGHT	NIGHT	100 %	100 %

TABLE III-2. ENVIRONMENTAL DATA

** AIR TEMPERATURE **

WEEK	DATE 1968-69	* STA.1	** STA.2	** STA.3	** STA.4	** STA.5
1	JULY 5	WARM	WARM	WARM	WARM	WARM
2	JULY 12	HOT	HOT	HOT	HOT	HOT
3	JULY 19	WARM	WARM	WARM	WARM	WARM
4	JULY 26	HOT	WARM	WARM	WARM	WARM
5	AUG. 2	WARM	WARM	WARM	WARM	WARM
6	AUG. 9	COOL	COOL	COOL	COOL	COOL
7	AUG. 16	WARM	WARM	WARM	WARM	WARM
8	AUG. 23	HOT	HOT	WARM	WARM	WARM
9	AUG. 29	COOL	COOL	COOL	COOL	COOL
10	SEPT 4	MILD	MILD	MILD	COOL	COOL
11	SEPT 12	COOL	WARM	WARM	COOL	COOL
12	SEPT 18	COLD	COLD	COLD	COOL	COOL
13	SEPT 25	WARM	WARM	WARM	WARM	COOL
14	OCT. 2	COLD	COOL	COOL	COOL	COOL
15	OCT. 10	COOL	COOL	COOL	COOL	COOL
16	OCT. 16	COOL	COOL	COOL	COOL	COOL
17	OCT. 23	COOL	COOL	COOL	COOL	COOL
18	OCT. 30	COOL	COOL	COOL	COOL	COOL
19	NOV. 7	COLD	COLD	COLD	COLD	COLD
20	NOV. 13	COLD	COLD	COLD	COLD	COLD
21	NOV. 21	COOL	COOL	COOL	COOL	COOL
22	NOV. 28	COLD	COLD	COLD	COLD	COLD
23	DEC. 5	COLD	COLD	COLD	COLD	COLD
24	DEC. 11	COLD	COLD	COLD	COLD	COLD
25	DEC. 19	COLD	COLD	COLD	COLD	COLD
26	DEC. 26	COLD	COLD	COLD	COLD	COLD
27	JAN. 2	COLD	COLD	COLD	COLD	COLD
28	JAN. 9	COLD	COLD	COLD	COLD	COLD
29	JAN. 15	COLD	COLD	COLD	COLD	COLD
30	JAN. 22	COOL	COOL	COOL	MILD	MILD
31	JAN. 31	COLD	COLD	COLD	COLD	COLD
32	FEB. 5	COOL	COOL	COOL	COOL	COOL
33	FEB. 14	COLD	COLD	COLD	COLD	COLD
34	FEB. 20	COLD	COLD	COLD	COLD	COLD
35	FEB. 27	COLD	COLD	COLD	COLD	COLD
36	MAR. 6	COLD	COLD	COLD	COLD	COLD
37	MAR. 12	COLD	COLD	COLD	COLD	COLD
38	MAR. 20	COLD	COLD	COLD	COLD	COLD
39	MAR. 26	COLD	COLD	COLD	COLD	COLD
40	APR. 2	COLD	COLD	COLD	COLD	COLD
41	APR. 9	COLD	COLD	COLD	COOL	COOL
42	APR. 16	COOL	COOL	COOL	COOL	COOL
43	APR. 23	COOL	COOL	COOL	COOL	COOL
44	MAY 1	COOL	COOL	COOL	COOL	COOL
45	MAY 8	COOL	COOL	COOL	COOL	COOL
46	MAY 15	COOL	COOL	WARM	WARM	WARM
47	MAY 22	COOL	COOL	COOL	COOL	COOL
48	MAY 29	WARM	WARM	WARM	WARM	WARM
49	JUNE 4	27 C	23 C	20.5 C	20 C	19 C
50	JUNE 11	26 C	30 C	26 C	28 C	27.5 C
51	JUNE 19	31 C	29 C	27 C	27 C	25.5 C
52	JUNE 27	18.5 C	24 C	24 C	24 C	23 C
53	JULY 3	21 C	21 C	21 C	*****	22 C
54	JULY 9	20.5 C	26 C	23.5 C	24.5 C	24 C

TABLE III-3. ENVIRONMENTAL DATA

** AIR MOVEMENT **

WEEK	DATE 1968-69	* STA.1	** STA.2	** STA.3	** STA.4	** STA.5
1	JULY 5	CALM	CALM	CALM	CALM	CALM
2	JULY 12	CALM	CALM	CALM	BREEZE	BREEZE
3	JULY 19	BREEZE	BREEZE	BREEZE	BREEZE	BREEZE
4	JULY 26	BREEZE	CALM	BREEZE	CLOUDY	CLOUDY
5	AUG. 2	BREEZE	BREEZE	BREEZE	BREEZE	BREEZE
6	AUG. 9	BREEZE	BREEZE	BREEZE	BREEZE	BREEZE
7	AUG. 16	BREEZE	BREEZE	BREEZE	CALM	CALM
8	AUG. 23	BREEZE	BREEZE	BREEZE	BREEZE	BREEZE
9	AUG. 29	BREEZE	BREEZE	BREEZE	BREEZE	BREEZE
10	SEPT 4	CALM	CALM	CALM	CALM	CALM
11	SEPT 12	BREEZE	BREEZE	BREEZE	BREEZE	BREEZE
12	SEPT 18	BREEZE	BREEZE	WIND	BREEZE	BREEZE
13	SEPT 25	BREEZE	BREEZE	BREEZE	BREEZE	WIND
14	OCT. 2	WIND	BREEZE	BREEZE	BREEZE	WIND
15	OCT. 10	CALM	CALM	CALM	CALM	CALM
16	OCT. 16	WINDY	WINDY	WINDY	WINDY	WINDY
17	OCT. 23	BREEZE	BREEZE	BREEZE	BREEZE	BREEZE
18	OCT. 30	BREEZE	BREEZE	BREEZE	BREEZE	BREEZE
19	NOV. 7	WINDY	WINDY	WINDY	WINDY	WINDY
20	NOV. 13	BREEZE	BREEZE	BREEZE	BREEZE	BREEZE
21	NOV. 21	WINDY	WINDY	WINDY	WINDY	WINDY
22	NOV. 28	WINDY	WINDY	WINDY	WINDY	WINDY
23	DEC. 5	WINDY	WINDY	WINDY	WINDY	WINDY
24	DEC. 11	WINDY	WINDY	WINDY	WINDY	WINDY
25	DEC. 19	WINDY	WINDY	WINDY	WINDY	WINDY
26	DEC. 26	BREEZE	BREEZE	CALM	CALM	CALM
27	JAN. 2	CALM	CALM	CALM	CALM	CALM
28	JAN. 9	WINDY	WINDY	WINDY	WINDY	WINDY
29	JAN. 15	WINDY	WINDY	WINDY	WINDY	WINDY
30	JAN. 22	CALM	CALM	CALM	CALM	CALM
31	JAN. 31	WINDY	WINDY	WINDY	WINDY	WINDY
32	FEB. 5	CALM	CALM	CALM	CALM	CALM
33	FEB. 14	WINDY	WINDY	WINDY	WINDY	WINDY
34	FEB. 20	BREEZE	BREEZE	BREEZE	BREEZE	BREEZE
35	FEB. 27	WINDY	WINDY	WINDY	WINDY	WINDY
36	MAR. 6	BREEZE	BREEZE	BREEZE	BREEZE	BREEZE
37	MAR. 12	BREEZE	BREEZE	BREEZE	BREEZE	BREEZE
38	MAR. 20	WINDY	WINDY	WINDY	WINDY	WINDY
39	MAR. 26	BREEZE	BREEZE	BREEZE	BREEZE	BREEZE
40	APR. 2	BREEZE	BREEZE	BREEZE	BREEZE	BREEZE
41	APR. 9	BREEZE	BREEZE	BREEZE	BREEZE	BREEZE
42	APR. 16	BREEZE	BREEZE	BREEZE	BREEZE	BREEZE
43	APR. 23	BREEZE	BREEZE	BREEZE	BREEZE	BREEZE
44	MAY 1	WINDY	WINDY	WINDY	WINDY	WINDY
45	MAY 8	WINDY	WINDY	BREEZE	BREEZE	CALM
46	MAY 15	BREEZE	CALM	CALM	CALM	BREEZE
47	MAY 22	BREEZE	BREEZE	BREEZE	BREEZE	BREEZE
48	MAY 29	CALM	BREEZE	BREEZE	BREEZE	BREEZE
49	JUNE 4	BREEZE	BREEZE	BREEZE	BREEZE	BREEZE
50	JUNE 11	BREEZE	BREEZE	BREEZE	BREEZE	BREEZE
51	JUNE 19	BREEZE	BREEZE	BREEZE	BREEZE	BREEZE
52	JUNE 27	CALM	CALM	WINDY	WINDY	WINDY
53	JULY 3	BREEZE	CALM	CALM	*****	CALM
54	JULY 9	WINDY	WINDY	WINDY	WINDY	WINDY

TABLE IV. PRECIPITATION DATA
IN RESERVOIR AREA

MONTH	AMES	ANKENY	BOONE	WOODWARD
JULY 1968	2.25	4.65	1.68	3.62
AUGUST 1968	3.33	3.15	3.80	3.97
SEPTEMBER 1968	4.28	3.74	5.19	4.49
OCTOBER 1968	2.93	2.25	4.54	3.57
NOVEMBER 1968	1.22	0.96	1.29	2.08
DECEMBER 1968	1.86	2.39	2.06	1.97
JANUARY 1969	0.92	0.73	1.17	1.04
FEBRUARY 1969	0.81	0.52	1.69	1.40
MARCH 1969	0.56	0.89	1.36	1.22
APRIL 1969	4.11	3.67	4.33	3.65
MAY 1969	3.21	5.38	2.93	3.67

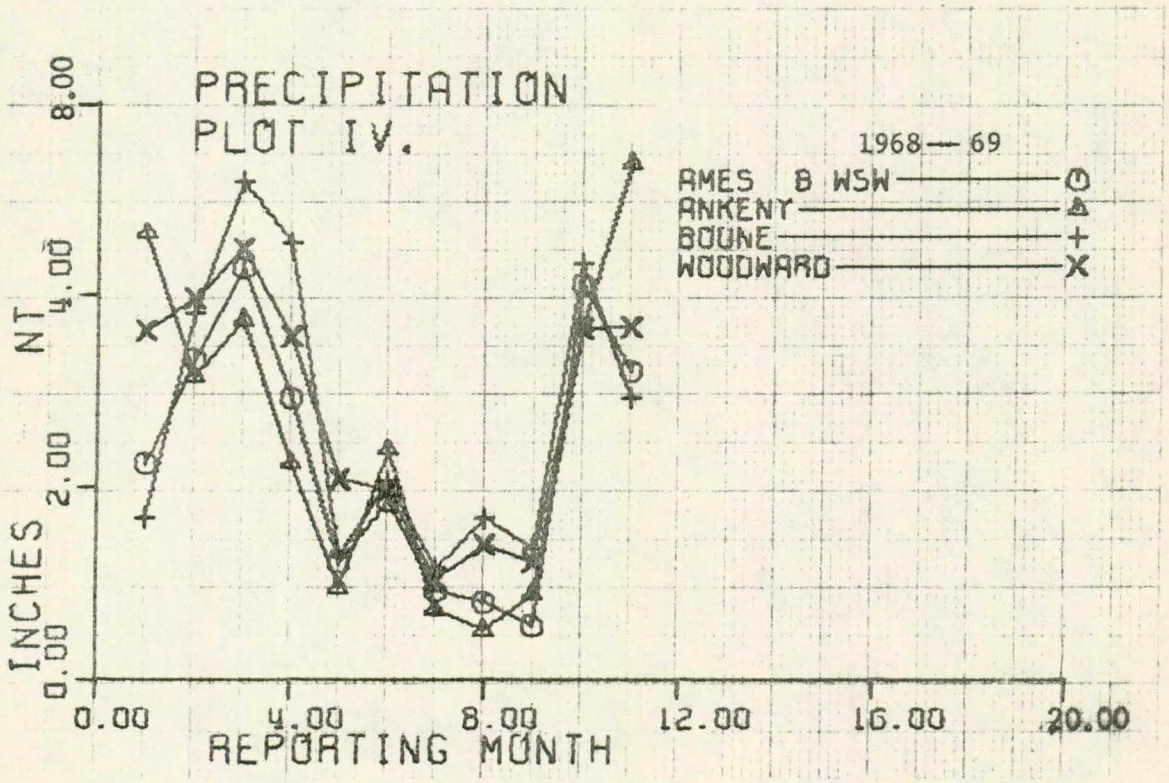


TABLE V. DISCHARGE DATA
AT STATIONS 1 AND 5

WEEK	DATE	STATION 1, BOONE		STATION 5, SAYLORVILLE	
		STAGE	DISCHARGE	STAGE	DISCHARGE
	1968-69				
1	JULY 5	1.04	1720.	7.95	2450.
2	JULY 12	0.68	748.	6.05	960.
3	JULY 19	1.96	3610.	7.15	1750.
4	JULY 26	0.72	832.	6.26	1100.
5	AUG. 2	0.86	1310.	7.12	1730.
6	AUG. 9	0.65	916.	6.06	960.
7	AUG. 16	0.54	530.	-1.00	-1.
8	AUG. 23	0.42	292.	5.01	360.
9	AUG. 29	0.35	253.	4.80	265.
10	SEPT 4	0.38	279.	4.81	270.
11	SEPT 12	0.38	265.	4.85	288.
12	SEPT 18	0.48	361.	4.60	180.
13	SEPT 25	0.49	418.	5.03	375.
14	OCT. 2	0.79	1070.	6.05	970.
15	OCT. 10	0.95	1470.	6.95	1610.
16	OCT. 16	1.07	1810.	5.18	450.
17	OCT. 23	5.18	7890.	13.50	9150.
18	OCT. 30	3.68	6060.	11.80	6740.
19	NOV. 7	2.12	4050.	10.00	4500.
20	NOV. 13	1.43	3050.	9.01	3460.
21	NOV. 21	1.31	2620.	8.66	3110.
22	NOV. 28	1.18	2210.	8.04	2532.
23	DEC. 5	1.05	1750.	7.55	2095.
24	DEC. 11	0.79	1070.	8.79	3240.
25	DEC. 19	0.89	1200.	8.35	2815.
26	DEC. 26	0.67	760.	-1.00	-1.
27	JAN. 2	0.67	650.	-1.00	-1.
28	JAN. 9	0.71	670.	-1.00	-1.
29	JAN. 15	0.74	650.	-1.00	-1.
30	JAN. 22	0.56	540.	-1.00	-1.
31	JAN. 31	0.71	500.	-1.00	-1.
32	FEB. 5	0.62	480.	-1.00	-1.
33	FEB. 14	0.58	430.	-1.00	-1.
34	FEB. 20	0.47	480.	-1.00	-1.
35	FEB. 27	0.43	465.	-1.00	-1.
36	MAR. 6	0.42	466.	-1.00	-1.
37	MAR. 12	0.63	740.	-1.00	-1.
38	MAR. 20	5.75	5300.	11.54	6400.
39	MAR. 26	12.19	19100.	19.00	22800.
40	APR. 2	6.93	10200.	15.70	12980.
41	APR. 9	10.38	15800.	17.87	18824.
42	APR. 16	14.37	23800.	19.65	24000.
43	APR. 23	9.38	14000.	17.87	18824.
44	MAY 1	5.03	7600.	13.58	9270.
45	MAY 8	4.56	6870.	13.10	8550.
46	MAY 15	2.80	4690.	10.90	5580.
47	MAY 22	2.94	4870.	11.17	5921.
48	MAY 29	2.78	4660.	10.92	5604.
49	JUNE 4	1.50	2820.	9.08	3530.
50	JUNE 11	1.96	3540.	9.19	3640.
51	JUNE 19	1.62	3040.	9.42	4050.
52	JUNE 27	7.80	11300.	12.32	7700.
53	JULY 3	-1.00	-1.	19.02	23560.
54	JULY 9	12.40	19300.	-1.00	-1.

-1. INDICATES NO DATA AVAILABLE

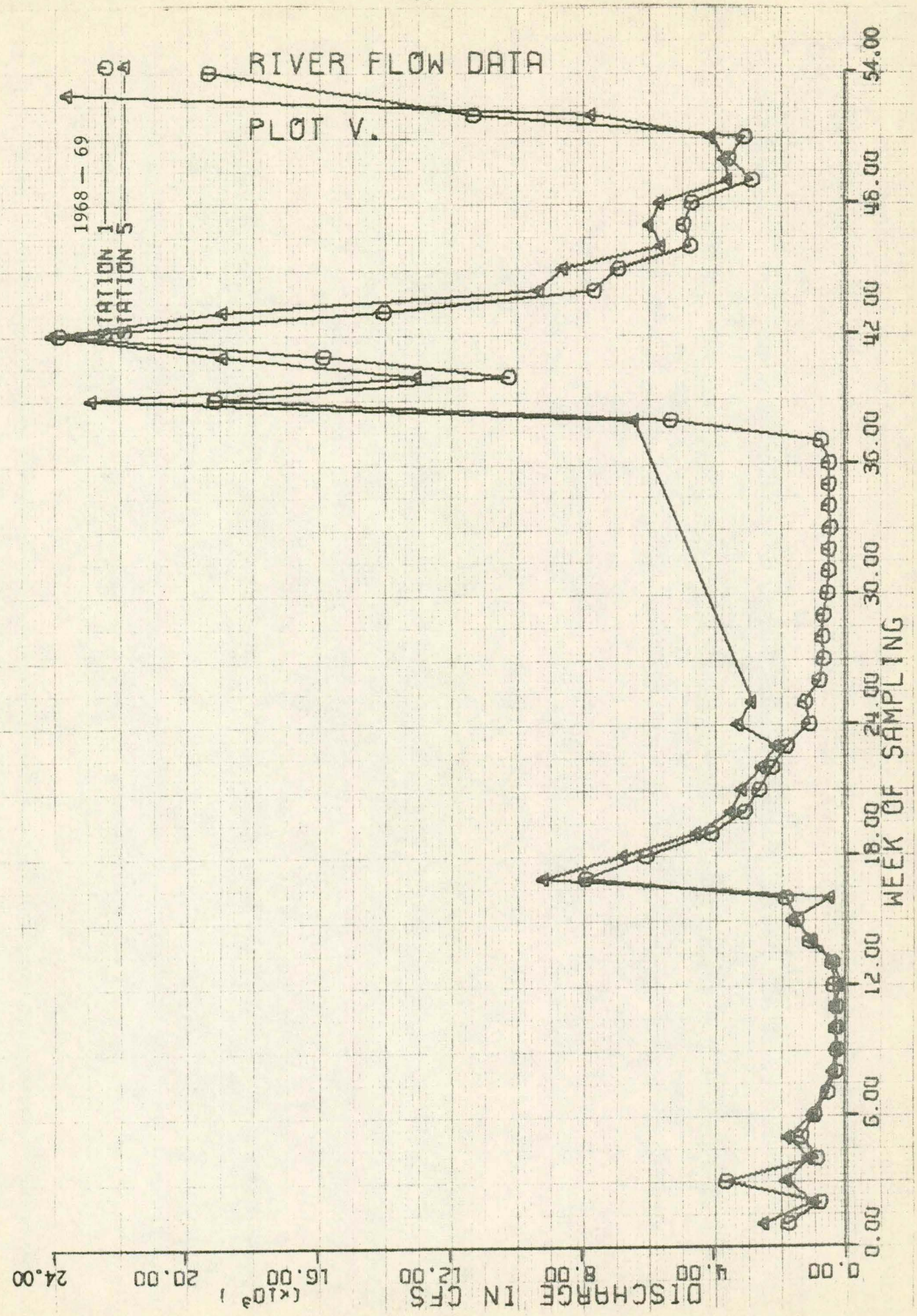

RIVER FLOW DATA
PLOT V.
1968 — 69
STATION 1
STATION 5
DISCHARGE IN CFS
(x10³)
0.00
4.00
8.00
12.00
16.00
20.00
24.00
WEEK OF SAMPLING
0.00
6.00
12.00
18.00
24.00
30.00
36.00
42.00
48.00
54.00

TABLE VI- 1, PLANKTON COUNT SUMMARY
TOTAL ALGAL UNITS PER MILLILITER

WEEK	DATE 1968-69	* STA.1	** STA.2	** STA.3	** STA.4	** STA.5
1	JAN. 5	-1.	-1.	-1.	-1.	-1.
2	JAN. 12	74794.	-1.	-1.	-1.	-1.
3	JAN. 19	-1.	-1.	-1.	-1.	-1.
4	JAN. 26	51999.	77714.	117108.	117220.	136440.
5	FEB. 2	-1.	-1.	-1.	-1.	-1.
6	FEB. 9	33673.	68135.	84836.	67005.	91223.
7	FEB. 16	79242.	84667.	79015.	103348.	75329.
8	FEB. 23	22352.	-1.	-1.	-1.	-1.
9	MAR. 1	81078.	-1.	-1.	-1.	-1.
10	MAR. 8	17211.	53722.	120726.	141271.	213616.
11	MAR. 15	37812.	85204.	89641.	104929.	124287.
12	MAR. 22	103037.	-1.	-1.	-1.	-1.
13	MAR. 29	107106.	122223.	135082.	124769.	153227.
14	APR. 5	140084.	-1.	-1.	-1.	-1.
15	APR. 12	130928.	175777.	158736.	145737.	115725.
16	APR. 20	152435.	-1.	-1.	-1.	-1.
17	APR. 27	117900.	108039.	78336.	75794.	87633.
18	MAY 3	203057.	-1.	-1.	-1.	-1.
19	MAY 10	281074.	176079.	177049.	120670.	108038.
20	MAY 17	122536.	-1.	-1.	-1.	-1.
21	MAY 24	130984.	159556.	161025.	142147.	123299.
22	JUNE 1	164389.	-1.	-1.	-1.	-1.
23	JUNE 7	105779.	221644.	94049.	111288.	86278.
24	JUNE 14	28628.	-1.	-1.	-1.	-1.
25	JUNE 21	79664.	36964.	29476.	31001.	24049.
26	JUNE 28	23399.	-1.	-1.	-1.	-1.
27	JULY 5	23683.	30040.	24868.	31651.	19161.
28	JULY 12	152039.	-1.	-1.	-1.	-1.
29	JULY 19	22045.	33515.	58300.	234953.	169417.
30	JULY 26	168882.	-1.	-1.	-1.	-1.
31	AUG. 2	25548.	36004.	25999.	27666.	24248.
32	AUG. 9	153677.	-1.	-1.	-1.	-1.
33	AUG. 16	83453.	71385.	85289.	108296.	42446.
34	AUG. 23	109565.	-1.	-1.	-1.	-1.
35	AUG. 29	94444.	65874.	34674.	34958.	33092.
36	SEP. 4	48692.	-1.	-1.	-1.	-1.
37	SEP. 12	41316.	61156.	61295.	50727.	47703.
38	SEP. 18	37643.	-1.	-1.	-1.	-1.
39	SEP. 25	53215.	43351.	27638.	27836.	53581.
40	OCT. 2	41456.	-1.	-1.	-1.	-1.
41	OCT. 10	36174.	35975.	23993.	21252.	26085.
42	OCT. 16	23541.	-1.	-1.	-1.	-1.
43	OCT. 23	6078.	12576.	13254.	11842.	11276.
44	OCT. 30	10147.	-1.	-1.	-1.	-1.
45	NOV. 7	12235.	-1.	-1.	-1.	-1.
46	NOV. 13	12407.	10852.	10880.	11387.	12829.
47	NOV. 21	6642.	-1.	-1.	-1.	-1.
48	NOV. 28	10739.	-1.	-1.	-1.	-1.
49	DEC. 5	10936.	-1.	-1.	-1.	-1.
50	DEC. 11	11304.	-1.	-1.	-1.	-1.
51	DEC. 19	17775.	16617.	18680.	15712.	18737.
52	DEC. 26	7630.	-1.	-1.	-1.	-1.
53	JAN. 2	6132.	6132.	6594.	6048.	6499.
54	JAN. 9	3363.	-1.	-1.	-1.	-1.
55	JAN. 15	3787.	4153.	5596.	3647.	4804.

** NOTE: -1. INDICATES NO COUNT MADE **

TABLE VI- 2, PLANKTON COUNT SUMMARY
BLUE-GREENS, COCC., NUMBER PER ML.

WEEK	DATE 1968-69	* STA.1	** STA.2	** STA.3	** STA.4	** STA.5
1	JAN. 5	-1.	-1.	-1.	-1.	-1.
2	JAN. 12	424.	-1.	-1.	-1.	-1.
3	JAN. 19	-1.	-1.	-1.	-1.	-1.
4	JAN. 26	254.	85.	763.	339.	593.
5	FEB. 2	-1.	-1.	-1.	-1.	-1.
6	FEB. 9	113.	113.	141.	282.	57.
7	FEB. 16	339.	57.	424.	565.	537.
8	FEB. 23	141.	-1.	-1.	-1.	-1.
9	MAR. 1	226.	-1.	-1.	-1.	-1.
10	MAR. 8	170.	283.	170.	198.	311.
11	MAR. 15	339.	1243.	707.	141.	1074.
12	MAR. 22	480.	-1.	-1.	-1.	-1.
13	MAR. 29	622.	678.	254.	367.	537.
14	APR. 5	735.	-1.	-1.	-1.	-1.
15	APR. 12	452.	565.	650.	678.	424.
16	APR. 20	707.	-1.	-1.	-1.	-1.
17	APR. 27	961.	1385.	763.	876.	565.
18	MAY 3	791.	-1.	-1.	-1.	-1.
19	MAY 10	820.	424.	763.	311.	904.
20	MAY 17	820.	-1.	-1.	-1.	-1.
21	MAY 24	989.	848.	565.	876.	848.
22	JUNE 1	226.	-1.	-1.	-1.	-1.
23	JUNE 7	820.	2402.	706.	254.	820.
24	JUNE 14	85.	-1.	-1.	-1.	-1.
25	JUNE 21	339.	170.	113.	198.	141.
26	JUNE 28	28.	-1.	-1.	-1.	-1.
27	JULY 5	198.	141.	537.	678.	311.
28	JULY 12	1696.	-1.	-1.	-1.	-1.
29	JULY 19	57.	565.	254.	1639.	141.
30	JULY 26	933.	-1.	-1.	-1.	-1.
31	AUG. 2	820.	678.	1074.	791.	622.
32	AUG. 9	1074.	-1.	-1.	-1.	-1.
33	AUG. 16	848.	904.	1498.	876.	1130.
34	AUG. 23	2430.	-1.	-1.	-1.	-1.
35	AUG. 29	3504.	1752.	480.	763.	678.
36	SEP. 4	848.	-1.	-1.	-1.	-1.
37	SEP. 12	1017.	1611.	1441.	1413.	1215.
38	SEP. 18	933.	-1.	-1.	-1.	-1.
39	SEP. 25	509.	396.	396.	141.	791.
40	OCT. 2	763.	-1.	-1.	-1.	-1.
41	OCT. 10	396.	311.	254.	254.	113.
42	OCT. 16	226.	-1.	-1.	-1.	-1.
43	OCT. 23	85.	57.	113.	283.	141.
44	OCT. 30	170.	-1.	-1.	-1.	-1.
45	NOV. 7	706.	-1.	-1.	-1.	-1.
46	NOV. 13	989.	735.	593.	650.	650.
47	NOV. 21	170.	-1.	-1.	-1.	-1.
48	NOV. 28	254.	-1.	-1.	-1.	-1.
49	DEC. 5	141.	-1.	-1.	-1.	-1.
50	DEC. 11	141.	-1.	-1.	-1.	-1.
51	DEC. 19	565.	254.	565.	424.	57.
52	DEC. 26	311.	-1.	-1.	-1.	-1.
53	JAN. 2	198.	367.	141.	565.	650.
54	JAN. 9	735.	-1.	-1.	-1.	-1.
55	JAN. 15	509.	480.	735.	283.	678.

** NOTE: -1. INDICATES NO COUNT MADE **

TABLE VI- 3, PLANKTON COUNT SUMMARY
BLUE-GREENS, FIL., NUMBER PER ML.

WEEK	DATE 1968-69	* STA.1	** STA.2	** STA.3	** STA.4	** STA.5
1	JAN. 5	-1.	-1.	-1.	-1.	-1.
2	JAN. 12	398.	-1.	-1.	-1.	-1.
3	JAN. 19	-1.	-1.	-1.	-1.	-1.
4	JAN. 26	57.	254.	28.	0.	85.
5	FEB. 2	-1.	-1.	-1.	-1.	-1.
6	FEB. 9	57.	0.	57.	57.	141.
7	FEB. 16	85.	113.	113.	57.	57.
8	FEB. 23	28.	-1.	-1.	-1.	-1.
9	MAR. 1	85.	-1.	-1.	-1.	-1.
10	MAR. 8	0.	339.	85.	141.	141.
11	MAR. 15	28.	0.	28.	791.	113.
12	MAR. 22	57.	-1.	-1.	-1.	-1.
13	MAR. 29	339.	28.	28.	57.	85.
14	APR. 5	28.	-1.	-1.	-1.	-1.
15	APR. 12	85.	283.	28.	0.	0.
16	APR. 20	0.	-1.	-1.	-1.	-1.
17	APR. 27	0.	28.	113.	113.	141.
18	MAY 3	0.	-1.	-1.	-1.	-1.
19	MAY 10	28.	0.	28.	0.	28.
20	MAY 17	0.	-1.	-1.	-1.	-1.
21	MAY 24	0.	198.	85.	367.	311.
22	JUNE 1	0.	-1.	-1.	-1.	-1.
23	JUNE 7	28.	57.	0.	0.	85.
24	JUNE 14	57.	-1.	-1.	-1.	-1.
25	JUNE 21	0.	28.	0.	0.	113.
26	JUNE 28	57.	-1.	-1.	-1.	-1.
27	JULY 5	170.	113.	85.	170.	198.
28	JULY 12	763.	-1.	-1.	-1.	-1.
29	JULY 19	170.	141.	226.	452.	1441.
30	JULY 26	57.	-1.	-1.	-1.	-1.
31	AUG. 2	254.	57.	198.	565.	425.
32	AUG. 9	3193.	-1.	-1.	-1.	-1.
33	AUG. 16	1837.	1159.	593.	283.	367.
34	AUG. 23	1809.	-1.	-1.	-1.	-1.
35	AUG. 29	622.	593.	480.	311.	735.
36	SEP. 4	537.	-1.	-1.	-1.	-1.
37	SEP. 12	85.	820.	226.	254.	339.
38	SEP. 18	735.	-1.	-1.	-1.	-1.
39	SEP. 25	1470.	763.	311.	85.	113.
40	OCT. 2	3532.	-1.	-1.	-1.	-1.
41	OCT. 10	2346.	3278.	3278.	2685.	2346.
42	OCT. 16	2402.	-1.	-1.	-1.	-1.
43	OCT. 23	565.	1780.	2430.	1639.	1159.
44	OCT. 30	3928.	-1.	-1.	-1.	-1.
45	NOV. 7	3843.	-1.	-1.	-1.	-1.
46	NOV. 13	1413.	2006.	1809.	1893.	2769.
47	NOV. 21	820.	-1.	-1.	-1.	-1.
48	NOV. 28	452.	-1.	-1.	-1.	-1.
49	DEC. 5	622.	-1.	-1.	-1.	-1.
50	DEC. 11	170.	-1.	-1.	-1.	-1.
51	DEC. 19	452.	311.	339.	480.	311.
52	DEC. 26	339.	-1.	-1.	-1.	-1.
53	JAN. 2	254.	283.	254.	283.	311.
54	JAN. 9	678.	-1.	-1.	-1.	-1.
55	JAN. 15	1102.	1724.	1215.	650.	339.

** NOTE: -1. INDICATES NO COUNT MADE **

TABLE VI- 4, PLANKTON COUNT SUMMARY
GREENS, COCC., NUMBER PER ML.

WEEK	DATE 1968-69	* STA.1	** STA.2	** STA.3	** STA.4	** STA.5
1	JAN. 5	-1.	-1.	-1.	-1.	-1.
2	JAN. 12	1639.	-1.	-1.	-1.	-1.
3	JAN. 19	-1.	-1.	-1.	-1.	-1.
4	JAN. 26	254.	480.	1356.	226.	763.
5	FEB. 2	-1.	-1.	-1.	-1.	-1.
6	FEB. 9	367.	735.	2910.	227.	396.
7	FEB. 16	1351.	1497.	1300.	1413.	1328.
8	FEB. 23	1441.	-1.	-1.	-1.	-1.
9	MAR. 1	1752.	-1.	-1.	-1.	-1.
10	MAR. 8	2148.	1356.	904.	2769.	2769.
11	MAR. 15	1611.	1809.	1837.	2487.	1300.
12	MAR. 22	1272.	-1.	-1.	-1.	-1.
13	MAR. 29	3589.	2854.	2939.	3363.	2826.
14	APR. 5	3024.	-1.	-1.	-1.	-1.
15	APR. 12	6302.	2261.	4239.	6839.	4522.
16	APR. 20	5765.	-1.	-1.	-1.	-1.
17	APR. 27	3532.	3561.	3787.	3956.	4691.
18	MAY 3	12717.	-1.	-1.	-1.	-1.
19	MAY 10	34477.	37859.	43520.	34477.	33064.
20	MAY 17	38716.	-1.	-1.	-1.	-1.
21	MAY 24	51433.	57085.	67824.	52564.	42955.
22	JUNE 1	53129.	-1.	-1.	-1.	-1.
23	JUNE 7	82802.	191603.	85063.	91845.	62737.
24	JUNE 14	5369.	-1.	-1.	-1.	-1.
25	JUNE 21	19499.	11191.	11587.	12717.	12802.
26	JUNE 28	1356.	-1.	-1.	-1.	-1.
27	JULY 5	5652.	7206.	6217.	6669.	3024.
28	JULY 12	33912.	-1.	-1.	-1.	-1.
29	JULY 19	1159.	2487.	7291.	14554.	7404.
30	JULY 26	15402.	-1.	-1.	-1.	-1.
31	AUG. 2	3109.	5793.	5369.	3504.	2600.
32	AUG. 9	9608.	-1.	-1.	-1.	-1.
33	AUG. 16	10824.	14695.	9721.	6443.	3080.
34	AUG. 23	8535.	-1.	-1.	-1.	-1.
35	AUG. 29	12321.	4946.	10456.	6556.	4013.
36	SEP. 4	11869.	-1.	-1.	-1.	-1.
37	SEP. 12	19641.	24304.	18369.	17945.	17380.
38	SEP. 18	2006.	-1.	-1.	-1.	-1.
39	SEP. 25	25010.	14554.	1526.	9891.	14130.
40	OCT. 2	14271.	-1.	-1.	-1.	-1.
41	OCT. 10	3448.	4098.	6161.	6048.	5115.
42	OCT. 16	4804.	-1.	-1.	-1.	-1.
43	OCT. 23	678.	1130.	1667.	1017.	1498.
44	OCT. 30	1357.	-1.	-1.	-1.	-1.
45	NOV. 7	1243.	-1.	-1.	-1.	-1.
46	NOV. 13	848.	1187.	1300.	1272.	1017.
47	NOV. 21	396.	-1.	-1.	-1.	-1.
48	NOV. 28	283.	-1.	-1.	-1.	-1.
49	DEC. 5	763.	-1.	-1.	-1.	-1.
50	DEC. 11	735.	-1.	-1.	-1.	-1.
51	DEC. 19	1526.	452.	876.	452.	650.
52	DEC. 26	678.	-1.	-1.	-1.	-1.
53	JAN. 2	452.	509.	706.	904.	1102.
54	JAN. 9	339.	-1.	-1.	-1.	-1.
55	JAN. 15	424.	593.	424.	537.	424.

** NOTE: -1. INDICATES NO COUNT MADE **

TABLE VI- 5, PLANKTON COUNT SUMMARY
GREENS, FIL., NUMBER PER ML.

WEEK	DATE 1968-69	* STA.1	** STA.2	** STA.3	** STA.4	** STA.5
1	JAN. 5	-1.	-1.	-1.	-1.	-1.
2	JAN. 12	2035.	-1.	-1.	-1.	-1.
3	JAN. 19	-1.	-1.	-1.	-1.	-1.
4	JAN. 26	1639.	113.	1300.	761.	707.
5	FEB. 2	-1.	-1.	-1.	-1.	-1.
6	FEB. 9	254.	367.	1780.	1159.	622.
7	FEB. 16	820.	537.	622.	904.	1272.
8	FEB. 23	565.	-1.	-1.	-1.	-1.
9	MAR. 1	820.	-1.	-1.	-1.	-1.
10	MAR. 8	1102.	933.	1130.	1130.	1554.
11	MAR. 15	678.	1385.	1243.	791.	1413.
12	MAR. 22	1159.	-1.	-1.	-1.	-1.
13	MAR. 29	848.	989.	2939.	735.	1159.
14	APR. 5	763.	-1.	-1.	-1.	-1.
15	APR. 12	1893.	565.	1159.	1272.	763.
16	APR. 20	735.	-1.	-1.	-1.	-1.
17	APR. 27	1215.	791.	1130.	1187.	706.
18	MAY 3	800.	-1.	-1.	-1.	-1.
19	MAY 10	622.	1385.	1611.	678.	1583.
20	MAY 17	735.	-1.	-1.	-1.	-1.
21	MAY 24	480.	622.	480.	650.	1046.
22	JUNE 1	509.	-1.	-1.	-1.	-1.
23	JUNE 7	57.	170.	509.	678.	2063.
24	JUNE 14	537.	-1.	-1.	-1.	-1.
25	JUNE 21	1271.	1780.	2148.	2430.	2346.
26	JUNE 28	2035.	-1.	-1.	-1.	-1.
27	JULY 5	2063.	2996.	2289.	2515.	622.
28	JULY 12	339.	-1.	-1.	-1.	-1.
29	JULY 19	1583.	2204.	876.	1441.	1893.
30	JULY 26	622.	-1.	-1.	-1.	-1.
31	AUG. 2	1272.	820.	424.	311.	85.
32	AUG. 9	113.	-1.	-1.	-1.	-1.
33	AUG. 16	339.	283.	85.	28.	28.
34	AUG. 23	0.	-1.	-1.	-1.	-1.
35	AUG. 29	170.	565.	28.	57.	0.
36	SEP. 4	141.	-1.	-1.	-1.	-1.
37	SEP. 12	28.	57.	113.	85.	141.
38	SEP. 18	0.	-1.	-1.	-1.	-1.
39	SEP. 25	57.	113.	198.	57.	0.
40	OCT. 2	424.	-1.	-1.	-1.	-1.
41	OCT. 10	509.	113.	339.	396.	170.
42	OCT. 16	1583.	-1.	-1.	-1.	-1.
43	OCT. 23	85.	170.	28.	170.	113.
44	OCT. 30	537.	-1.	-1.	-1.	-1.
45	NOV. 7	537.	-1.	-1.	-1.	-1.
46	NOV. 13	735.	85.	593.	140.	396.
47	NOV. 21	28.	-1.	-1.	-1.	-1.
48	NOV. 28	198.	-1.	-1.	-1.	-1.
49	DEC. 5	141.	-1.	-1.	-1.	-1.
50	DEC. 11	141.	-1.	-1.	-1.	-1.
51	DEC. 19	57.	141.	85.	28.	28.
52	DEC. 26	57.	-1.	-1.	-1.	-1.
53	JAN. 2	57.	28.	28.	85.	28.
54	JAN. 9	0.	-1.	-1.	-1.	-1.
55	JAN. 15	0.	28.	0.	85.	57.

** NOTE: -1. INDICATES NO COUNT MADE **

TABLE VI- 6, PLANKTON COUNT SUMMARY
PIGMENTED FLAGELLATES, GREEN, NO.PER ML.

WEEK	DATE 1968-69	* STA.1	** STA.2	** STA.3	** STA.4	** STA.5
1	JAN. 5	-1.	-1.	-1.	-1.	-1.
2	JAN. 12	3193.	-1.	-1.	-1.	-1.
3	JAN. 19	-1.	-1.	-1.	-1.	-1.
4	JAN. 26	848.	537.	593.	480.	1046.
5	FEB. 2	-1.	-1.	-1.	-1.	-1.
6	FEB. 9	976.	3476.	1727.	2430.	2204.
7	FEB. 16	2289.	3560.	3702.	2996.	2543.
8	FEB. 23	4832.	-1.	-1.	-1.	-1.
9	MAR. 1	1328.	-1.	-1.	-1.	-1.
10	MAR. 8	4126.	4267.	3476.	4522.	2430.
11	MAR. 15	1837.	5256.	4522.	4239.	3504.
12	MAR. 22	3787.	-1.	-1.	-1.	-1.
13	MAR. 29	1724.	2430.	1950.	707.	1272.
14	APR. 5	706.	-1.	-1.	-1.	-1.
15	APR. 12	1130.	2600.	1046.	986.	763.
16	APR. 20	904.	-1.	-1.	-1.	-1.
17	APR. 27	1554.	961.	1752.	933.	1187.
18	MAY 3	2346.	-1.	-1.	-1.	-1.
19	MAY 10	1893.	2317.	2459.	2006.	1780.
20	MAY 17	1017.	-1.	-1.	-1.	-1.
21	MAY 24	1470.	1102.	1413.	1300.	2685.
22	JUNE 1	1272.	-1.	-1.	-1.	-1.
23	JUNE 7	2487.	5652.	1611.	1272.	2430.
24	JUNE 14	2148.	-1.	-1.	-1.	-1.
25	JUNE 21	1554.	1017.	1978.	1413.	1017.
26	JUNE 28	367.	-1.	-1.	-1.	-1.
27	JULY 5	1046.	2515.	989.	1243.	820.
28	JULY 12	4691.	-1.	-1.	-1.	-1.
29	JULY 19	820.	1017.	678.	1780.	1893.
30	JULY 26	2204.	-1.	-1.	-1.	-1.
31	AUG. 2	1074.	1470.	848.	650.	1017.
32	AUG. 9	1978.	-1.	-1.	-1.	-1.
33	AUG. 16	1837.	1526.	509.	678.	283.
34	AUG. 23	1696.	-1.	-1.	-1.	-1.
35	AUG. 29	1356.	1639.	650.	689.	706.
36	SEP. 4	1667.	-1.	-1.	-1.	-1.
37	SEP. 12	1074.	593.	904.	1074.	1017.
38	SEP. 18	1300.	-1.	-1.	-1.	-1.
39	SEP. 25	876.	1074.	961.	1611.	537.
40	OCT. 2	2543.	-1.	-1.	-1.	-1.
41	OCT. 10	932.	1554.	1470.	2063.	1809.
42	OCT. 16	1300.	-1.	-1.	-1.	-1.
43	OCT. 23	1243.	2204.	2120.	2869.	1385.
44	OCT. 30	1526.	-1.	-1.	-1.	-1.
45	NOV. 7	2006.	-1.	-1.	-1.	-1.
46	NOV. 13	1809.	791.	1074.	1498.	565.
47	NOV. 21	706.	-1.	-1.	-1.	-1.
48	NOV. 28	622.	-1.	-1.	-1.	-1.
49	DEC. 5	396.	-1.	-1.	-1.	-1.
50	DEC. 11	509.	-1.	-1.	-1.	-1.
51	DEC. 19	1328.	1272.	1130.	1074.	1639.
52	DEC. 26	791.	-1.	-1.	-1.	-1.
53	JAN. 2	593.	650.	622.	820.	452.
54	JAN. 9	565.	-1.	-1.	-1.	-1.
55	JAN. 15	650.	367.	1215.	820.	1074.

** NOTE: -1. INDICATES NO COUNT MADE **

TABLE VI- 7, PLANKTON COUNT SUMMARY
PIGMENTED FLAGELLATES, OTHER, NO.PER ML.

WEEK	DATE 1968-69	* STA.1 **	STA.2 **	STA.3 **	STA.4 **	STA.5
1	JAN. 5	-1.	-1.	-1.	-1.	-1.
2	JAN. 12	0.	-1.	-1.	-1.	-1.
3	JAN. 19	-1.	-1.	-1.	-1.	-1.
4	JAN. 26	0.	0.	28.	28.	28.
5	FEB. 2	-1.	-1.	-1.	-1.	-1.
6	FEB. 9	85.	85.	57.	85.	0.
7	FEB. 16	0.	28.	28.	85.	283.
8	FEB. 23	0.	-1.	-1.	-1.	-1.
9	MAR. 1	0.	-1.	-1.	-1.	-1.
10	MAR. 8	28.	0.	0.	0.	0.
11	MAR. 15	0.	0.	0.	0.	0.
12	MAR. 22	0.	-1.	-1.	-1.	-1.
13	MAR. 29	0.	0.	0.	0.	0.
14	APR. 5	0.	-1.	-1.	-1.	-1.
15	APR. 12	0.	226.	0.	0.	0.
16	APR. 20	0.	-1.	-1.	-1.	-1.
17	APR. 27	0.	0.	0.	0.	0.
18	MAY 3	0.	-1.	-1.	-1.	-1.
19	MAY 10	0.	0.	0.	0.	0.
20	MAY 17	0.	-1.	-1.	-1.	-1.
21	MAY 24	0.	0.	0.	28.	0.
22	JUNE 1	0.	-1.	-1.	-1.	-1.
23	JUNE 7	311.	0.	254.	170.	0.
24	JUNE 14	0.	-1.	-1.	-1.	-1.
25	JUNE 21	28.	0.	0.	0.	0.
26	JUNE 28	0.	-1.	-1.	-1.	-1.
27	JULY 5	0.	0.	0.	0.	0.
28	JULY 12	0.	-1.	-1.	-1.	-1.
29	JULY 19	0.	0.	0.	0.	0.
30	JULY 26	28.	-1.	-1.	-1.	-1.
31	AUG. 2	0.	0.	0.	0.	0.
32	AUG. 9	0.	-1.	-1.	-1.	-1.
33	AUG. 16	0.	0.	0.	0.	0.
34	AUG. 23	0.	-1.	-1.	-1.	-1.
35	AUG. 29	0.	57.	0.	141.	0.
36	SEP. 4	0.	-1.	-1.	-1.	-1.
37	SEP. 12	0.	0.	0.	0.	57.
38	SEP. 18	0.	-1.	-1.	-1.	-1.
39	SEP. 25	0.	0.	0.	0.	0.
40	OCT. 2	0.	-1.	-1.	-1.	-1.
41	OCT. 10	0.	0.	0.	0.	0.
42	OCT. 16	0.	-1.	-1.	-1.	-1.
43	OCT. 23	0.	0.	0.	0.	0.
44	OCT. 30	0.	-1.	-1.	-1.	-1.
45	NOV. 7	0.	-1.	-1.	-1.	-1.
46	NOV. 13	0.	57.	0.	0.	0.
47	NOV. 21	57.	-1.	-1.	-1.	-1.
48	NOV. 28	28.	-1.	-1.	-1.	-1.
49	DEC. 5	28.	-1.	-1.	-1.	-1.
50	DEC. 11	0.	-1.	-1.	-1.	-1.
51	DEC. 19	0.	0.	57.	28.	0.
52	DEC. 26	28.	-1.	-1.	-1.	-1.
53	JAN. 2	0.	28.	0.	28.	0.
54	JAN. 9	0.	-1.	-1.	-1.	-1.
55	JAN. 15	28.	28.	57.	0.	28.

** NOTE: -1. INDICATES NO COUNT MADE **

TABLE VI- 8, PLANKTON COUNT SUMMARY
CENTRIC DIATOMS, MELOSIRA, NO. PER ML.

WEEK	DATE 1968-69	* STA.1	** STA.2	** STA.3	** STA.4	** STA.5
1	JAN. 5	-1.	-1.	-1.	-1.	-1.
2	JAN. 12	0.	-1.	-1.	-1.	-1.
3	JAN. 19	-1.	-1.	-1.	-1.	-1.
4	JAN. 26	0.	0.	0.	0.	0.
5	FEB. 2	-1.	-1.	-1.	-1.	-1.
6	FEB. 9	0.	0.	141.	170.	141.
7	FEB. 16	0.	57.	0.	0.	0.
8	FEB. 23	0.	-1.	-1.	-1.	-1.
9	MAR. 1	0.	-1.	-1.	-1.	-1.
10	MAR. 8	0.	0.	0.	57.	0.
11	MAR. 15	28.	28.	0.	28.	85.
12	MAR. 22	0.	-1.	-1.	-1.	-1.
13	MAR. 29	0.	198.	678.	113.	367.
14	APR. 5	170.	-1.	-1.	-1.	-1.
15	APR. 12	706.	0.	396.	170.	198.
16	APR. 20	85.	-1.	-1.	-1.	-1.
17	APR. 27	424.	254.	113.	254.	650.
18	MAY 3	170.	-1.	-1.	-1.	-1.
19	MAY 10	198.	141.	367.	57.	226.
20	MAY 17	283.	-1.	-1.	-1.	-1.
21	MAY 24	311.	85.	85.	452.	0.
22	JUNE 1	85.	-1.	-1.	-1.	-1.
23	JUNE 7	254.	0.	0.	113.	57.
24	JUNE 14	11869.	-1.	-1.	-1.	-1.
25	JUNE 21	2939.	2289.	1441.	1385.	480.
26	JUNE 28	254.	-1.	-1.	-1.	-1.
27	JULY 5	1470.	933.	678.	311.	1187.
28	JULY 12	3165.	-1.	-1.	-1.	-1.
29	JULY 19	480.	1328.	2854.	9778.	5935.
30	JULY 26	6217.	-1.	-1.	-1.	-1.
31	AUG. 2	1950.	2148.	1724.	1498.	1667.
32	AUG. 9	3476.	-1.	-1.	-1.	-1.
33	AUG. 16	8987.	14554.	12887.	5878.	7913.
34	AUG. 23	35042.	-1.	-1.	-1.	-1.
35	AUG. 29	19019.	10541.	14893.	16532.	17804.
36	SEP. 4	12152.	-1.	-1.	-1.	-1.
37	SEP. 12	4776.	8478.	7291.	5991.	8195.
38	SEP. 18	4804.	-1.	-1.	-1.	-1.
39	SEP. 25	5115.	5002.	7065.	4550.	6274.
40	OCT. 2	3589.	-1.	-1.	-1.	-1.
41	OCT. 10	1074.	1639.	1215.	1470.	1498.
42	OCT. 16	1130.	-1.	-1.	-1.	-1.
43	OCT. 23	283.	706.	1046.	593.	848.
44	OCT. 30	113.	-1.	-1.	-1.	-1.
45	NOV. 7	28.	-1.	-1.	-1.	-1.
46	NOV. 13	28.	226.	0.	57.	170.
47	NOV. 21	0.	-1.	-1.	-1.	-1.
48	NOV. 28	57.	-1.	-1.	-1.	-1.
49	DEC. 5	57.	-1.	-1.	-1.	-1.
50	DEC. 11	57.	-1.	-1.	-1.	-1.
51	DEC. 19	0.	0.	0.	28.	0.
52	DEC. 26	0.	-1.	-1.	-1.	-1.
53	JAN. 2	0.	0.	0.	0.	0.
54	JAN. 9	0.	-1.	-1.	-1.	-1.
55	JAN. 15	0.	0.	0.	0.	0.

** NOTE: -1. INDICATES NO COUNT MADE **

TABLE VI- 9, PLANKTON COUNT SUMMARY
CENTRIC DIATOMS, TOTAL, NO. PER ML.

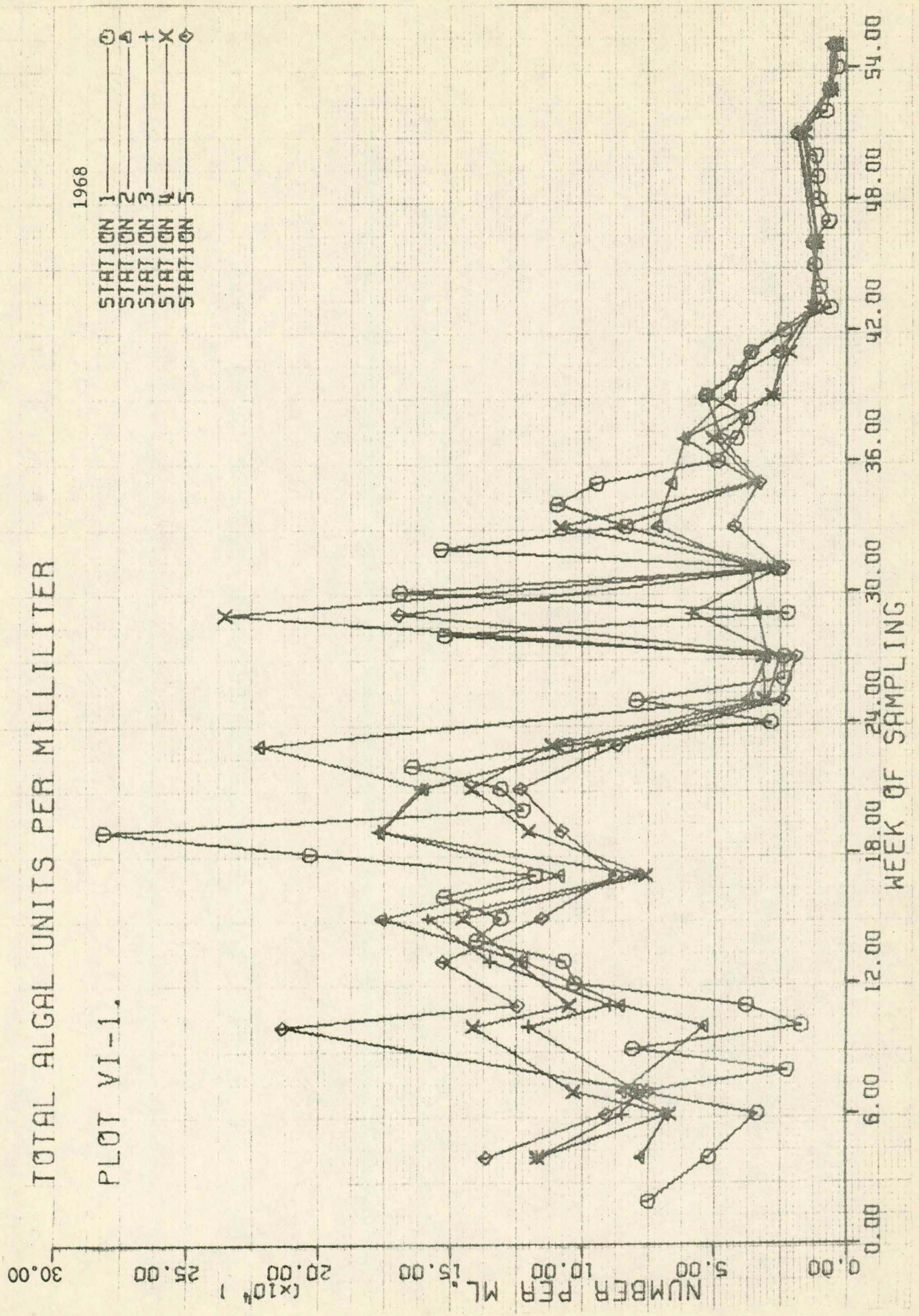
WEEK	DATE 1968-69	* STA.1	** STA.2	** STA.3	** STA.4	** STA.5
1	JAN. 5	-1.	-1.	-1.	-1.	-1.
2	JAN. 12	66794.	-1.	-1.	-1.	-1.
3	JAN. 19	-1.	-1.	-1.	-1.	-1.
4	JAN. 26	48890.	76019.	113040.	114736.	133105.
5	FEB. 2	-1.	-1.	-1.	-1.	-1.
6	FEB. 9	31651.	63020.	77150.	62624.	87464.
7	FEB. 16	73759.	78054.	72346.	96932.	69096.
8	FEB. 23	14130.	-1.	-1.	-1.	-1.
9	MAR. 1	76019.	-1.	-1.	-1.	-1.
10	MAR. 8	8761.	45216.	113605.	130900.	205168.
11	MAR. 15	32810.	74352.	80258.	95547.	115668.
12	MAR. 22	93541.	-1.	-1.	-1.	-1.
13	MAR. 29	94671.	112107.	123609.	117392.	145059.
14	APR. 5	133274.	-1.	-1.	-1.	-1.
15	APR. 12	117986.	169277.	148195.	131296.	106455.
16	APR. 20	135450.	-1.	-1.	-1.	-1.
17	APR. 27	104703.	91252.	65959.	63557.	76104.
18	MAY 3	155317.	-1.	-1.	-1.	-1.
19	MAY 10	181627.	121094.	115386.	76924.	58442.
20	MAY 17	70933.	-1.	-1.	-1.	-1.
21	MAY 24	59939.	84017.	76104.	68276.	58781.
22	JUNE 1	105777.	-1.	-1.	-1.	-1.
23	JUNE 7	14526.	15260.	1102.	10004.	10513.
24	JUNE 14	18086.	-1.	-1.	-1.	-1.
25	JUNE 21	51264.	18680.	10626.	10880.	5341.
26	JUNE 28	10908.	-1.	-1.	-1.	-1.
27	JULY 5	10513.	13367.	11134.	17267.	11530.
28	JULY 12	97271.	-1.	-1.	-1.	-1.
29	JULY 19	11304.	17323.	39875.	197707.	140169.
30	JULY 26	132822.	-1.	-1.	-1.	-1.
31	AUG. 2	12971.	23060.	13395.	16899.	16363.
32	AUG. 9	109451.	-1.	-1.	-1.	-1.
33	AUG. 16	59855.	46996.	70820.	38942.	36173.
34	AUG. 23	87889.	-1.	-1.	-1.	-1.
35	AUG. 29	63387.	49257.	19895.	24445.	25151.
36	SEP. 4	26282.	-1.	-1.	-1.	-1.
37	SEP. 12	15882.	29532.	35551.	24078.	22608.
38	SEP. 18	26847.	-1.	-1.	-1.	-1.
39	SEP. 25	23484.	24925.	22890.	14723.	35664.
40	OCT. 2	16956.	-1.	-1.	-1.	-1.
41	OCT. 10	21704.	23456.	9637.	7291.	13000.
42	OCT. 16	8478.	-1.	-1.	-1.	-1.
43	OCT. 23	2148.	4352.	3985.	2812.	4380.
44	OCT. 30	1583.	-1.	-1.	-1.	-1.
45	NOV. 7	2798.	-1.	-1.	-1.	-1.
46	NOV. 13	5850.	5256.	4946.	4917.	6556.
47	NOV. 21	4069.	-1.	-1.	-1.	-1.
48	NOV. 28	8252.	-1.	-1.	-1.	-1.
49	DEC. 5	7828.	-1.	-1.	-1.	-1.
50	DEC. 11	9467.	-1.	-1.	-1.	-1.
51	DEC. 19	13084.	13565.	15402.	12830.	15826.
52	DEC. 26	5426.	-1.	-1.	-1.	-1.
53	JAN. 2	4013.	4069.	3476.	3109.	3702.
54	JAN. 9	650.	-1.	-1.	-1.	-1.
55	JAN. 15	820.	735.	1583.	961.	1978.

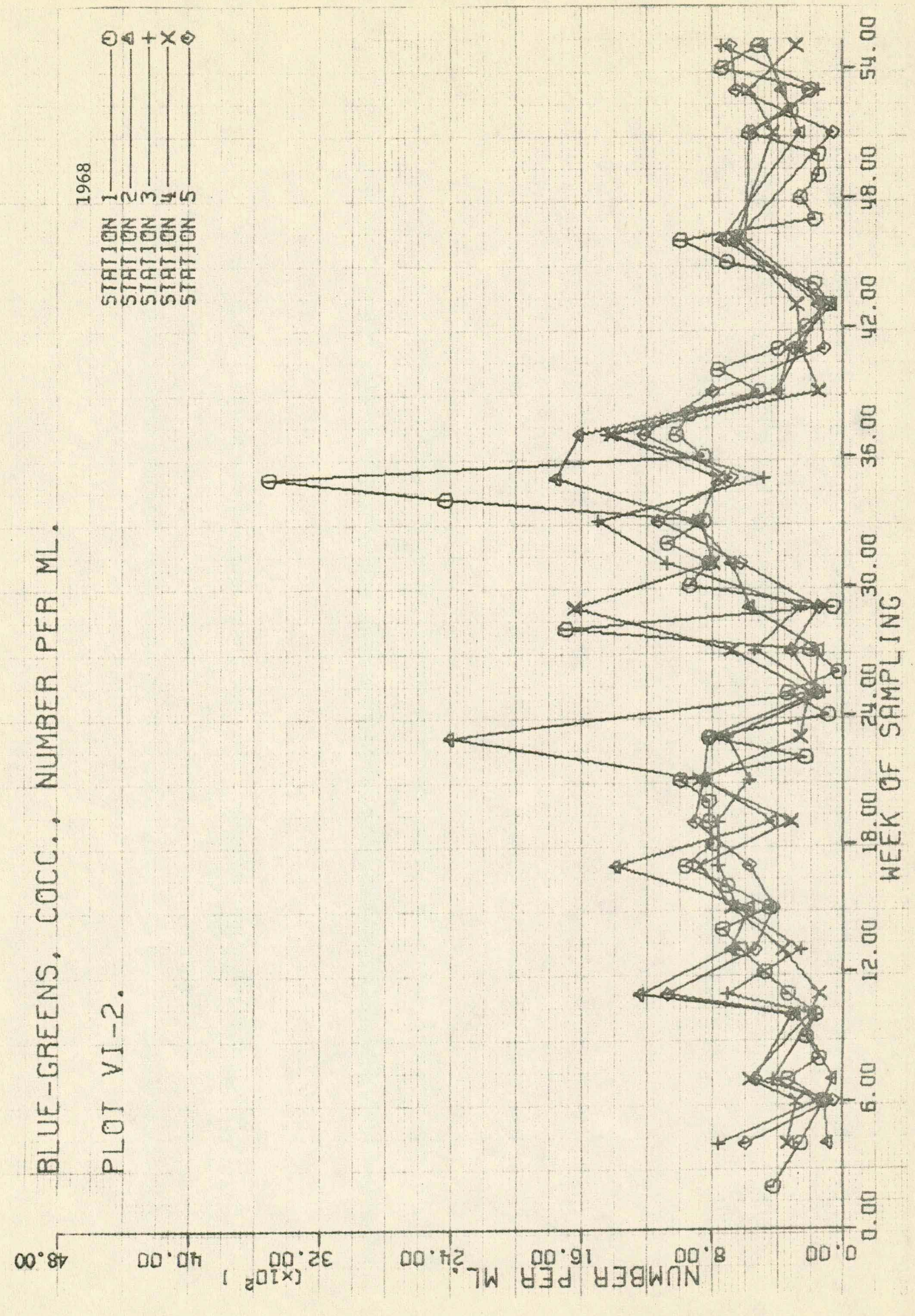
** NOTE: -1. INDICATES NO COUNT MADE **

TABLE VI-10, PLANKTON COUNT SUMMARY
PENNATE DIATOMS, NUMBER PER ML.

WEEK	DATE 1968-69	* STA.1	** STA.2	** STA.3	** STA.4	** STA.5
1	JAN. 5	-1.	-1.	-1.	-1.	-1.
2	JAN. 12	311.	-1.	-1.	-1.	-1.
3	JAN. 19	-1.	-1.	-1.	-1.	-1.
4	JAN. 26	57.	226.	0.	650.	113.
5	FEB. 2	-1.	-1.	-1.	-1.	-1.
6	FEB. 9	170.	339.	226.	141.	339.
7	FEB. 16	594.	876.	480.	396.	113.
8	FEB. 23	1215.	-1.	-1.	-1.	-1.
9	MAR. 1	848.	-1.	-1.	-1.	-1.
10	MAR. 8	876.	1328.	1356.	1611.	1243.
11	MAR. 15	509.	1159.	1046.	933.	1215.
12	MAR. 22	2741.	-1.	-1.	-1.	-1.
13	MAR. 29	5313.	3137.	3363.	2148.	2289.
14	APR. 5	1554.	-1.	-1.	-1.	-1.
15	APR. 12	3080.	-1.	3419.	4663.	3165.
16	APR. 20	8874.	-1.	-1.	-1.	-1.
17	APR. 27	5935.	10061.	4832.	5172.	4239.
18	MAY 3	31086.	-1.	-1.	-1.	-1.
19	MAY 10	61607.	13000.	13282.	6274.	12237.
20	MAY 17	10315.	-1.	-1.	-1.	-1.
21	MAY 24	16673.	15684.	14554.	18086.	16673.
22	JUNE 1	3476.	-1.	-1.	-1.	-1.
23	JUNE 7	4748.	6500.	4804.	7065.	7630.
24	JUNE 14	2346.	-1.	-1.	-1.	-1.
25	JUNE 21	5709.	4098.	3024.	3363.	2289.
26	JUNE 28	8648.	-1.	-1.	-1.	-1.
27	JULY 5	4041.	3702.	3617.	3109.	2656.
28	JULY 12	13367.	-1.	-1.	-1.	-1.
29	JULY 19	6952.	9778.	9100.	17380.	16476.
30	JULY 26	16814.	-1.	-1.	-1.	-1.
31	AUG. 2	6048.	4126.	4691.	4946.	3137.
32	AUG. 9	28260.	-1.	-1.	-1.	-1.
33	AUG. 16	7913.	5822.	2063.	1046.	1385.
34	AUG. 23	7206.	-1.	-1.	-1.	-1.
35	AUG. 29	13084.	7065.	2685.	1696.	1696.
36	SEP. 4	7348.	-1.	-1.	-1.	-1.
37	SEP. 12	3589.	4239.	4691.	5878.	4946.
38	SEP. 18	5822.	-1.	-1.	-1.	-1.
39	SEP. 25	1809.	1526.	1356.	1328.	2346.
40	OCT. 2	2967.	-1.	-1.	-1.	-1.
41	OCT. 10	6839.	3165.	2854.	2515.	3532.
42	OCT. 16	4748.	-1.	-1.	-1.	-1.
43	OCT. 23	1272.	2883.	2911.	3052.	2600.
44	OCT. 30	1046.	-1.	-1.	-1.	-1.
45	NOV. 7	1102.	-1.	-1.	-1.	-1.
46	NOV. 13	763.	735.	565.	1017.	876.
47	NOV. 21	396.	-1.	-1.	-1.	-1.
48	NOV. 28	650.	-1.	-1.	-1.	-1.
49	DEC. 5	1017.	-1.	-1.	-1.	-1.
50	DEC. 11	141.	-1.	-1.	-1.	-1.
51	DEC. 19	763.	622.	226.	396.	226.
52	DEC. 26	198.	-1.	-1.	-1.	-1.
53	JAN. 2	565.	198.	367.	254.	254.
54	JAN. 9	396.	-1.	-1.	-1.	-1.
55	JAN. 15	254.	198.	367.	311.	226.

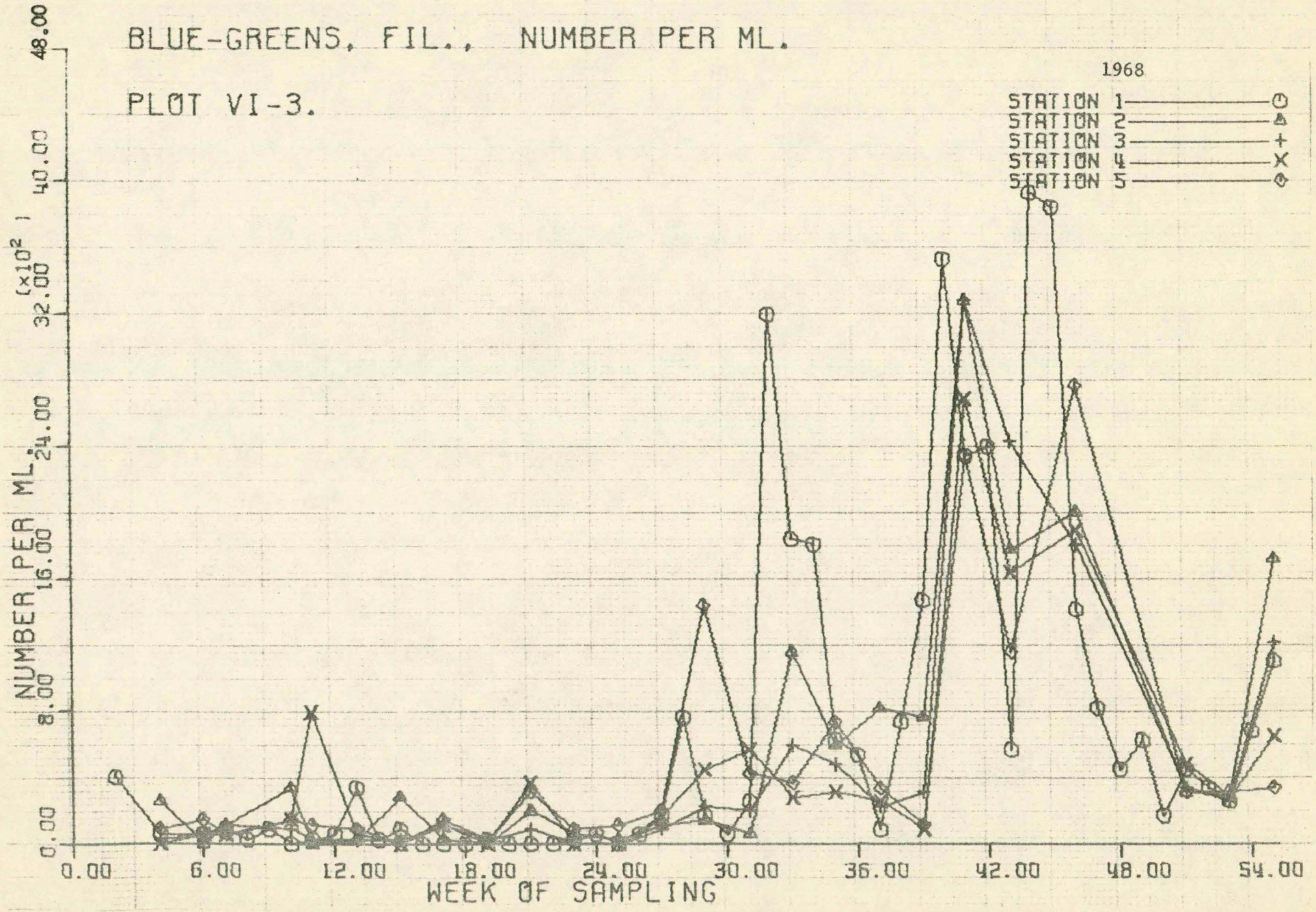
** NOTE: -1. INDICATES NO COUNT MADE **

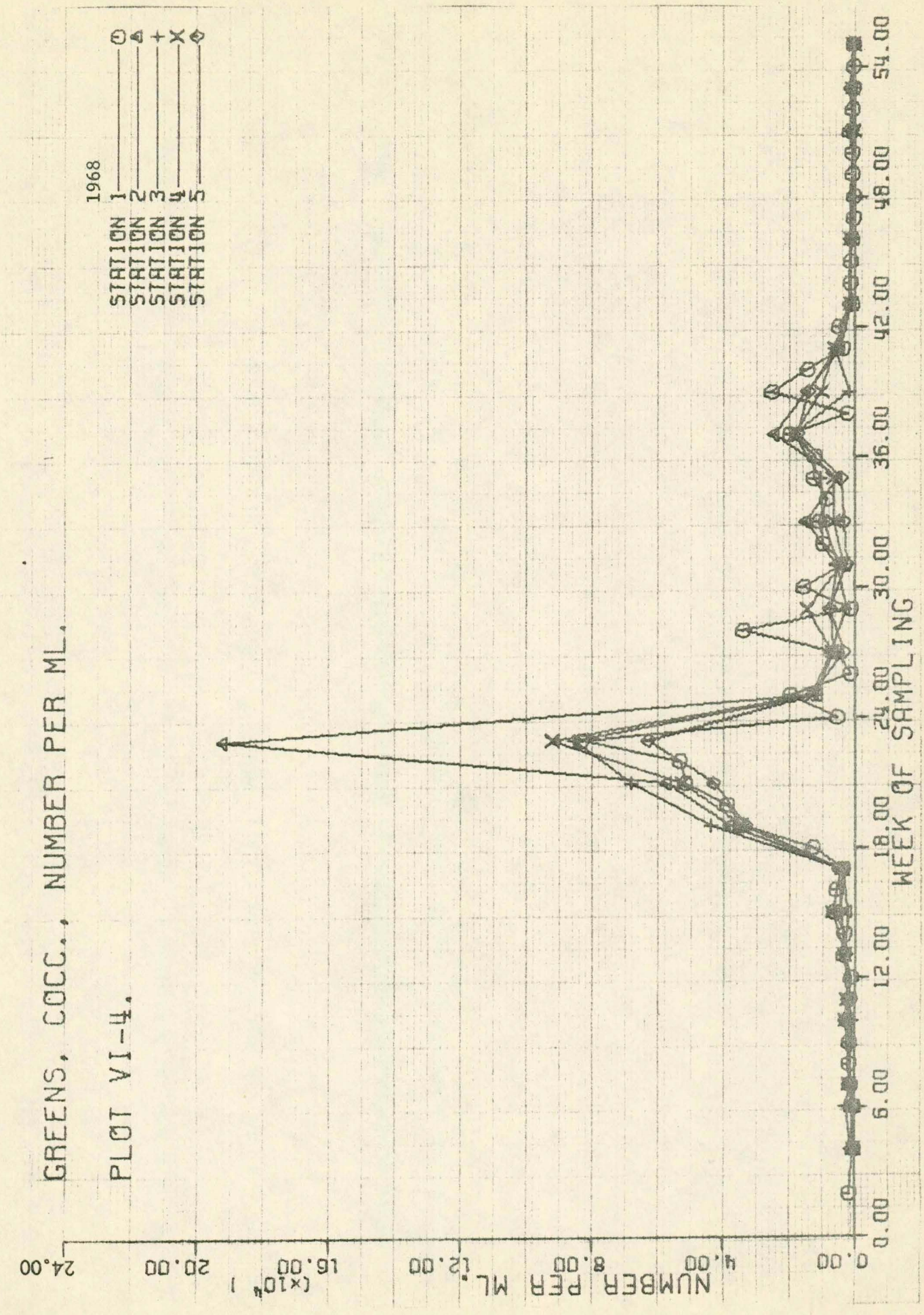

TOTAL ALGAL UNITS PER MILLILITER
PLOT VI-1.
1968
STATION 1
STATION 2
STATION 3
STATION 4
STATION 5
NUMBER PER ML. (x10⁴)
0.00
5.00
10.00
15.00
20.00
25.00
30.00
0.00
6.00
12.00
18.00
24.00
30.00
36.00
42.00
48.00
54.00
WEEK OF SAMPLING

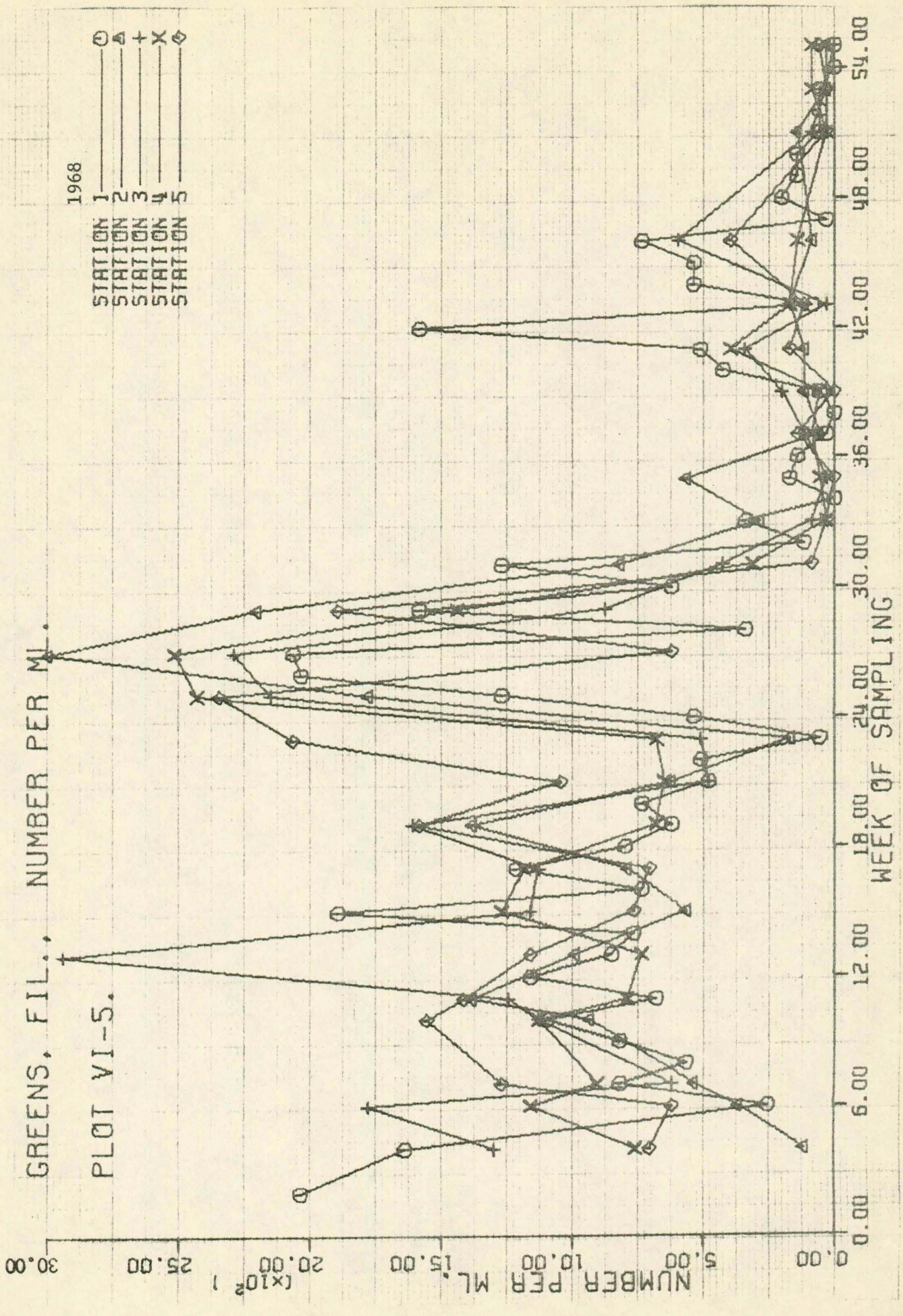

BLUE-GREENS, COCC., NUMBER PER ML.
PLOT VI-2.
1968
STATION 1
STATION 2
STATION 3
STATION 4
STATION 5
NUMBER PER ML. (x10²)
0.00
8.00
16.00
24.00
32.00
40.00
48.00
WEEK OF SAMPLING
0.00
6.00
12.00
18.00
24.00
30.00
36.00
42.00
48.00
54.00

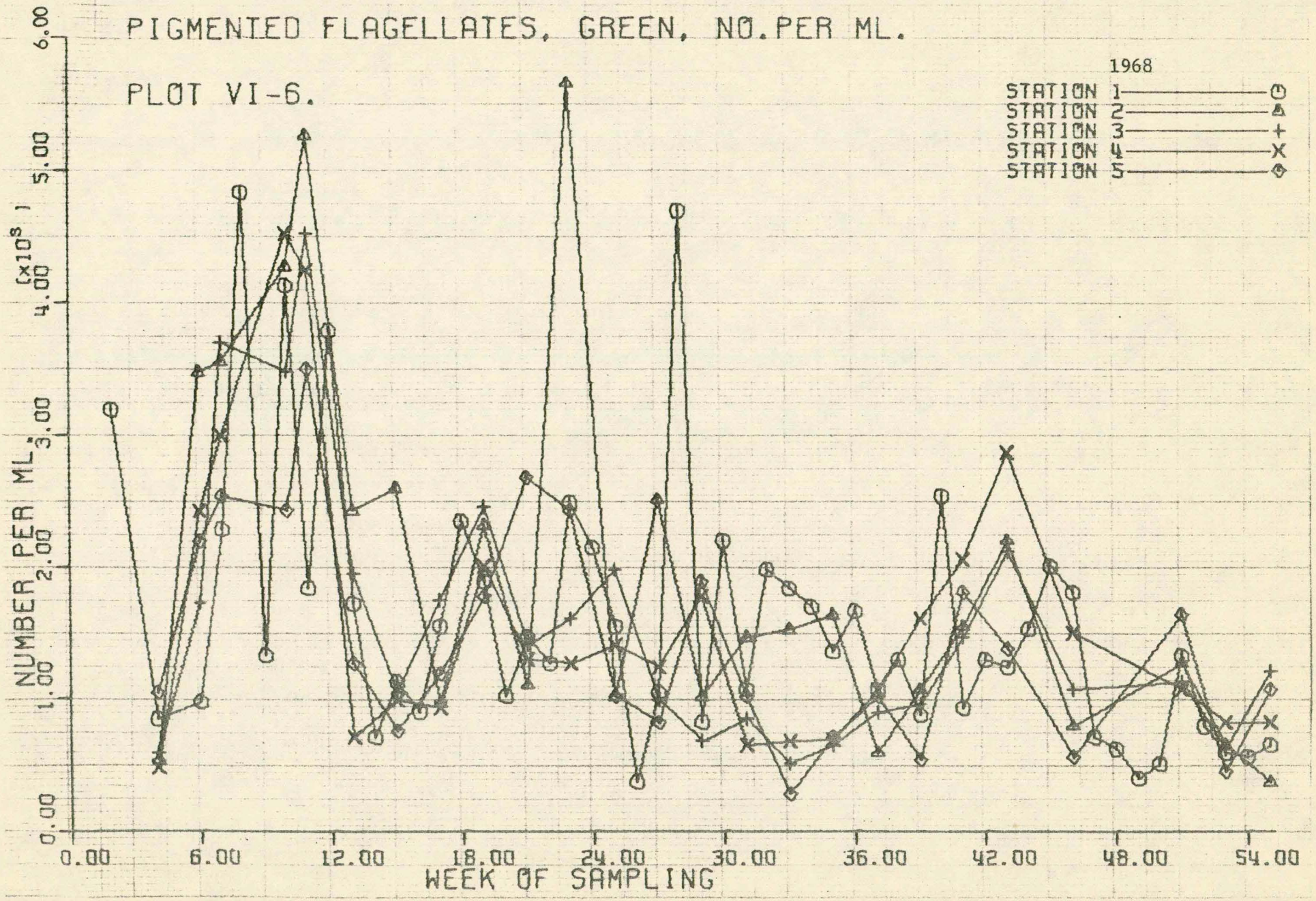
BLUE-GREENS, FIL., NUMBER PER ML.

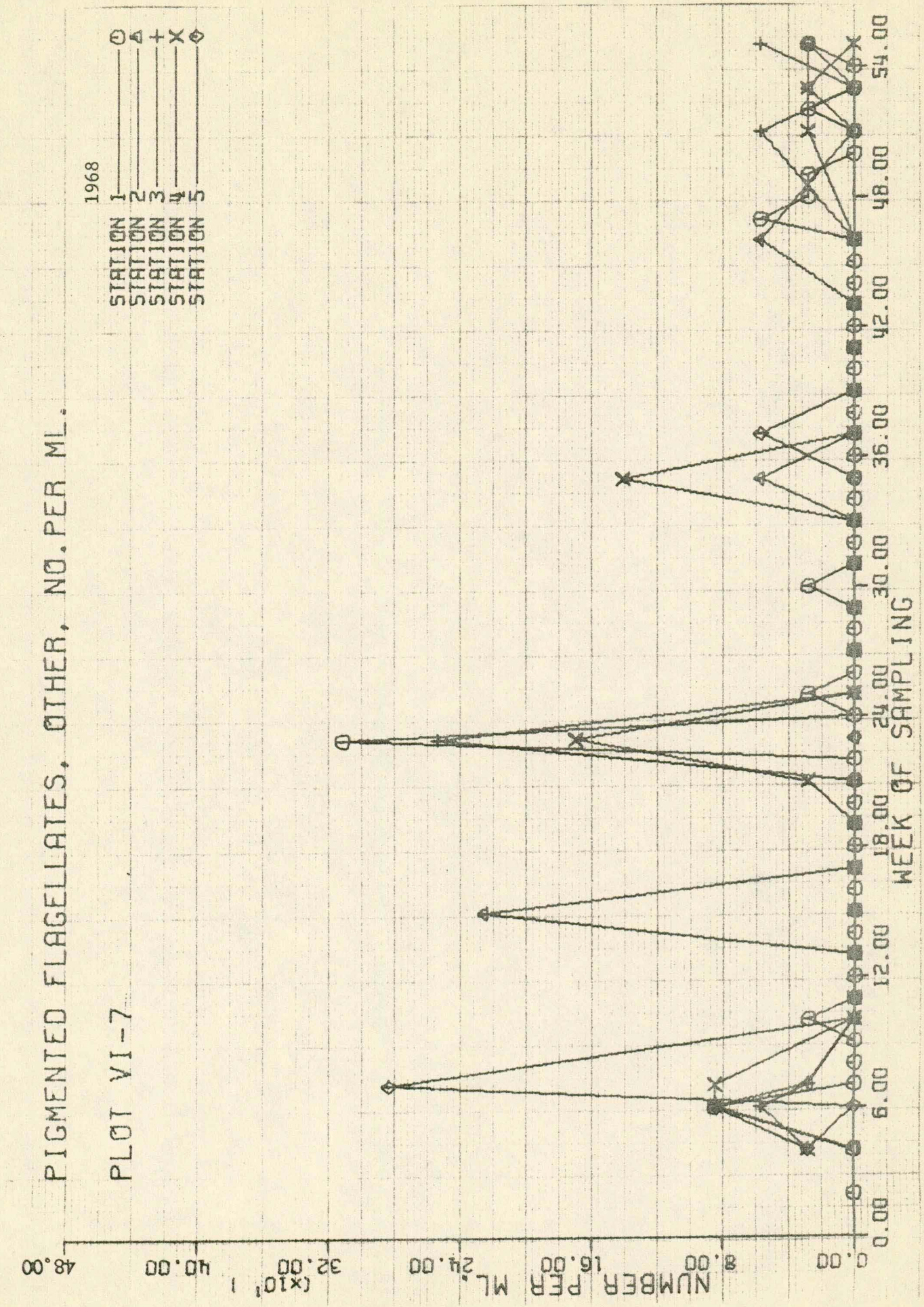
PLOT VI-3.

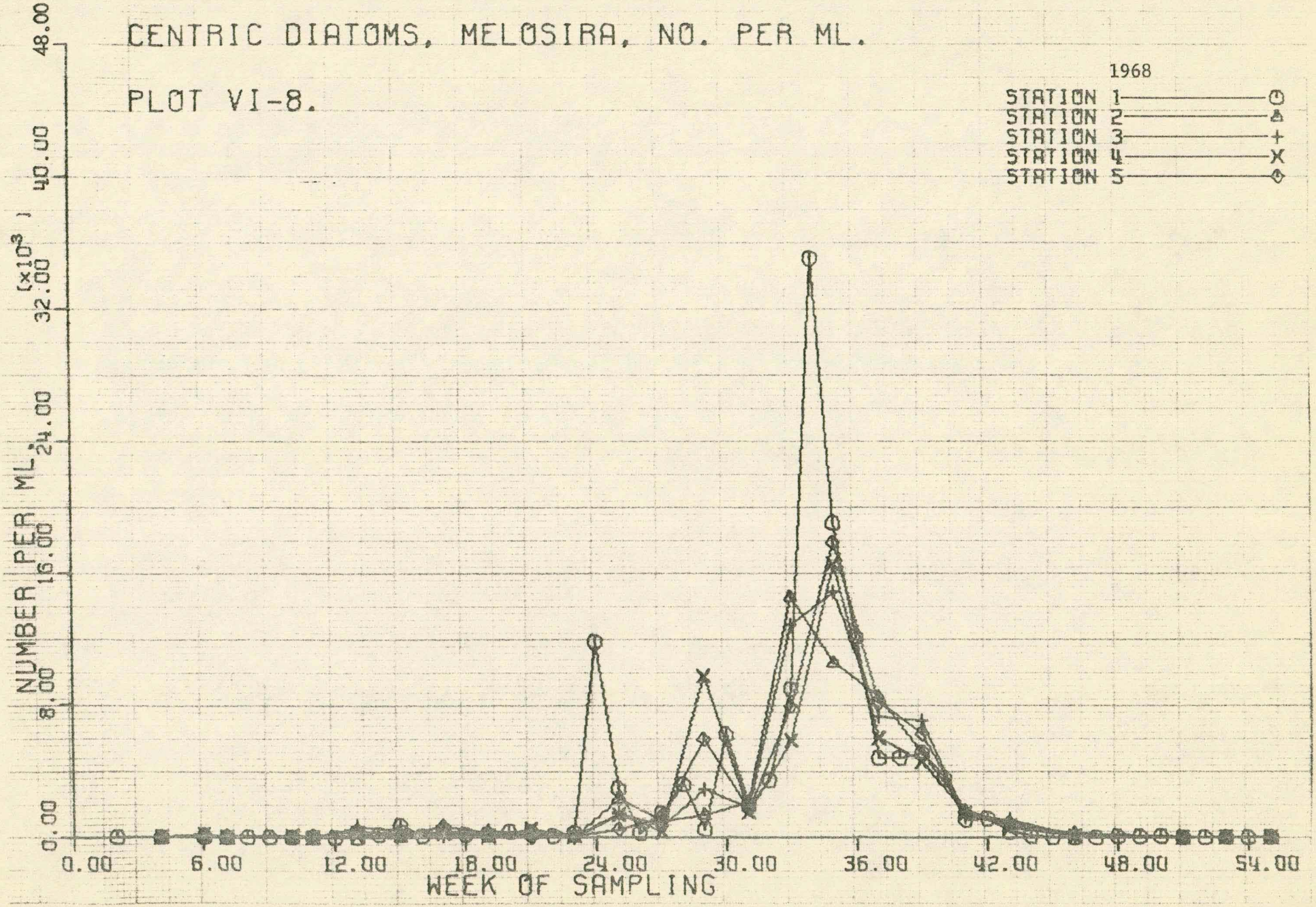


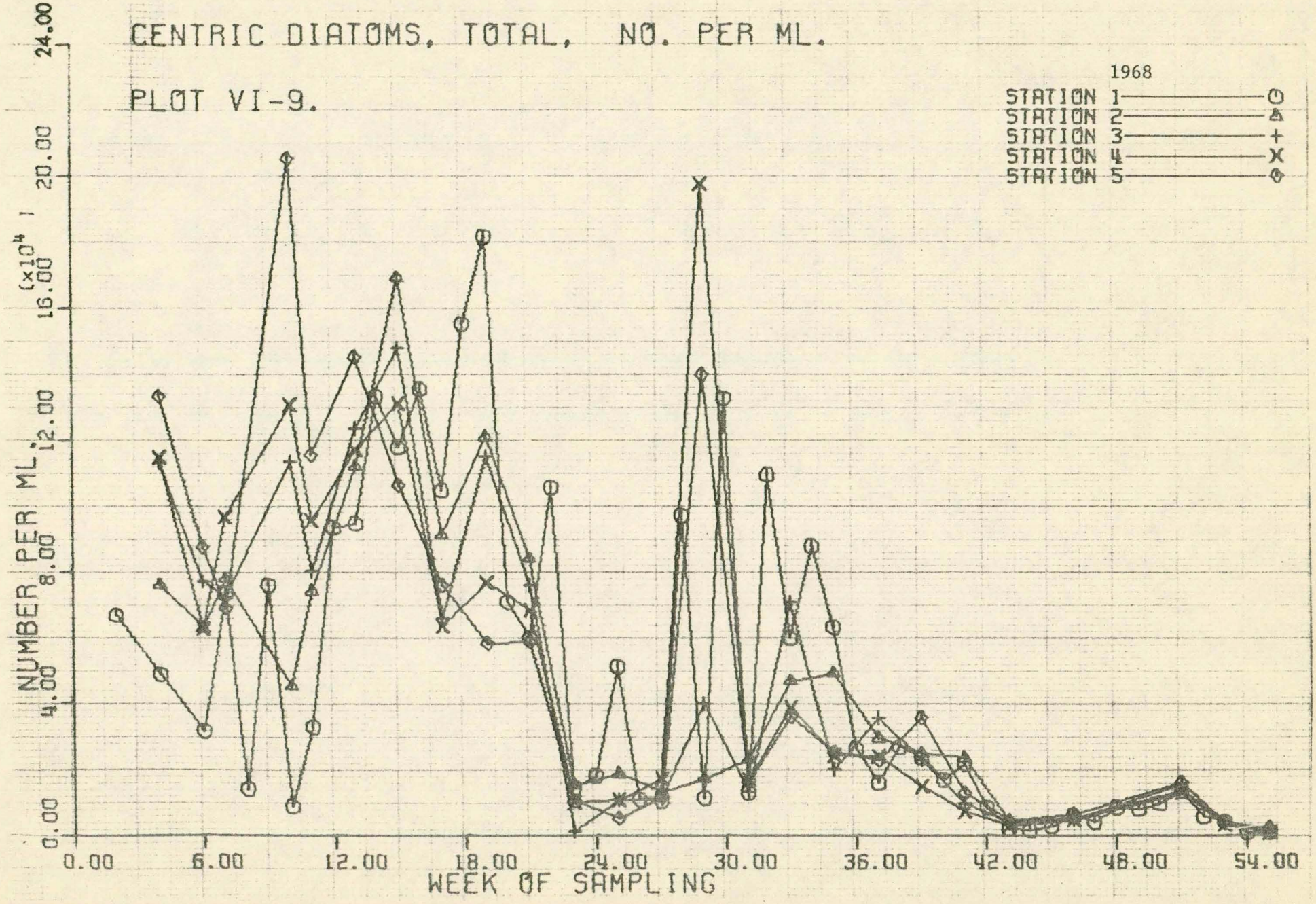

GREENS, COCC., NUMBER PER ML.
PLOT VI-4.
1968
STATION 1
STATION 2
STATION 3
STATION 4
STATION 5
NUMBER PER ML. (x10⁴)
0.00
4.00
8.00
12.00
16.00
20.00
24.00
0.00
6.00
12.00
18.00
24.00
30.00
36.00
42.00
48.00
54.00
WEEK OF SAMPLING


GREENS. FIL., NUMBER PER ML.
PLOT VI-S.
1968
STATION 1
STATION 2
STATION 3
STATION 4
STATION 5
NUMBER PER ML.
(x10²)
0.00
5.00
10.00
15.00
20.00
25.00
30.00
0.00
6.00
12.00
18.00
24.00
30.00
36.00
42.00
48.00
54.00
WEEK OF SAMPLING


PIGMENTED FLAGELLATES, GREEN, NO. PER ML.
PLOT VI-6.
1968
STATION 1
STATION 2
STATION 3
STATION 4
STATION 5
NUMBER PER ML. (x10³)
0.00
1.00
2.00
3.00
4.00
5.00
6.00
0.00
6.00
12.00
18.00
24.00
30.00
36.00
42.00
48.00
54.00
WEEK OF SAMPLING


PIGMENTED FLAGELLATES, OTHER, NO. PER ML.
PLOT VI-7
1968
STATION 1
STATION 2
STATION 3
STATION 4
STATION 5
NUMBER PER ML. (x10¹)
0.00
8.00
16.00
24.00
32.00
40.00
48.00
0.00
6.00
12.00
18.00
24.00
30.00
36.00
42.00
48.00
54.00
WEEK OF SAMPLING


CENTRIC DIATOMS, MELOSIRA, NO. PER ML.
PLOT VI-8.
1968
STATION 1
STATION 2
STATION 3
STATION 4
STATION 5
NUMBER PER ML (x10³)
0.00
8.00
16.00
24.00
32.00
40.00
48.00
0.00
6.00
12.00
18.00
24.00
30.00
36.00
42.00
48.00
54.00
WEEK OF SAMPLING


CENTRIC DIATOMS, TOTAL, NO. PER ML.
PLOT VI-9.
1968
STATION 1
STATION 2
STATION 3
STATION 4
STATION 5
NUMBER PER ML. (x10⁴)
0.00
4.00
8.00
12.00
16.00
20.00
24.00
0.00
6.00
12.00
18.00
24.00
30.00
36.00
42.00
48.00
54.00
WEEK OF SAMPLING

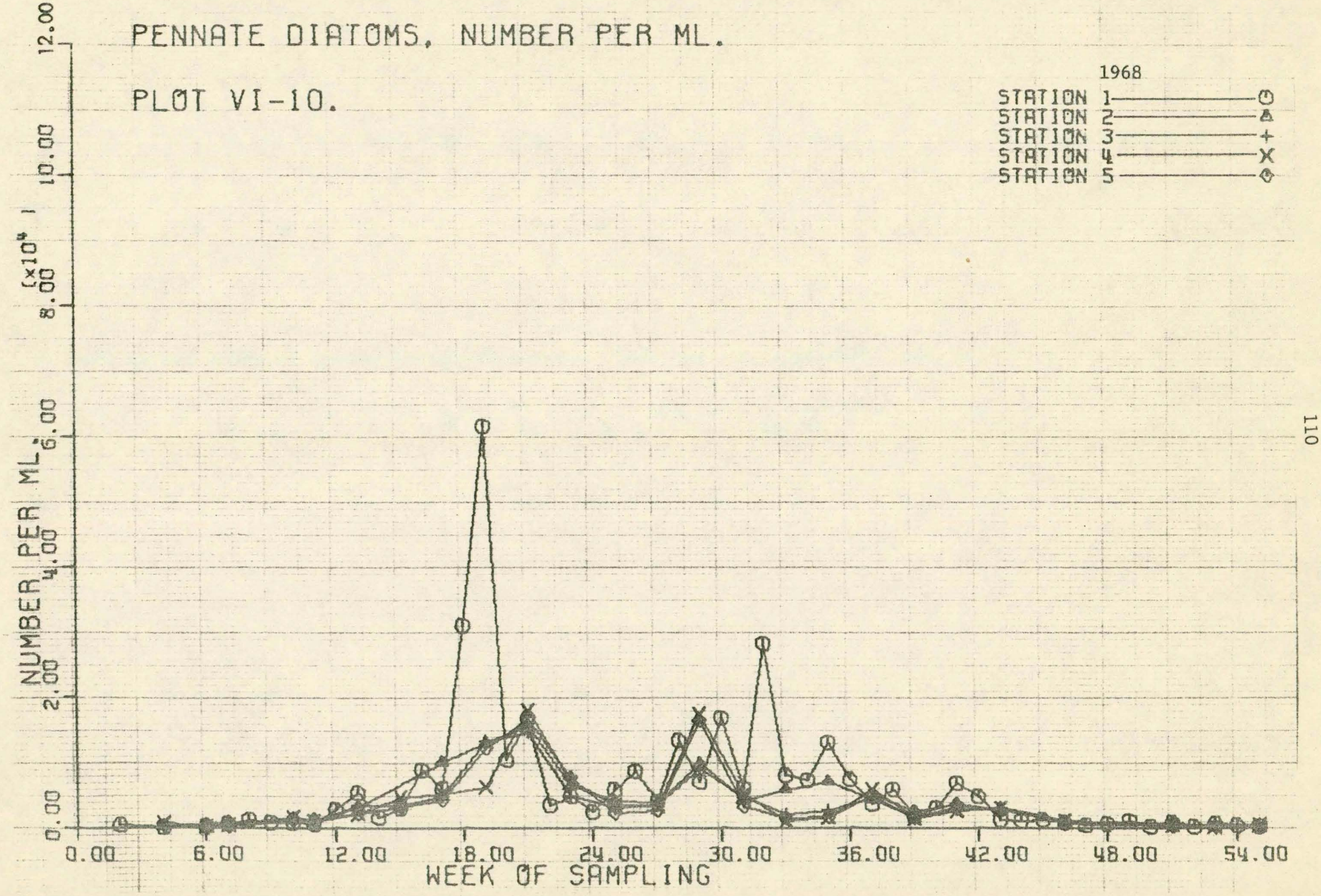

PENNATE DIATOMS, NUMBER PER ML.
PLOT VI-10.
1968
STATION 1
STATION 2
STATION 3
STATION 4
STATION 5
NUMBER PER ML. (x10⁴)
0.00
2.00
4.00
6.00
8.00
10.00
12.00
0.00
6.00
12.00
18.00
24.00
30.00
36.00
42.00
48.00
54.00
WEEK OF SAMPLING

TABLE VI-11, PLANKTON COUNT SUMMARY
AVERAGE SOLAR RADIATION, IN LANGLEYS

WEEK	DATE	* STA.1 **
	1968-69	
1	JAN. 5	-1.
2	JAN. 12	989.
3	JAN. 19	-1.
4	JAN. 26	1155.
5	FEB. 2	-1.
6	FEB. 9	1766.
7	FEB. 16	2007.
8	FEB. 23	2261.
9	MAR. 1	1713.
10	MAR. 8	2346.
11	MAR. 15	2134.
12	MAR. 22	1908.
13	MAR. 29	2839.
14	APR. 5	2671.
15	APR. 12	3075.
16	APR. 20	2271.
17	APR. 27	2775.
18	MAY 3	3830.
19	MAY 10	2889.
20	MAY 17	3513.
21	MAY 24	3034.
22	JUNE 1	2068.
23	JUNE 7	3769.
24	JUNE 14	3524.
25	JUNE 21	3771.
26	JUNE 28	3081.
27	JULY 5	3778.
28	JULY 12	4364.
29	JULY 19	3244.
30	JULY 26	3864.
31	AUG. 2	3637.
32	AUG. 9	3337.
33	AUG. 16	3416.
34	AUG. 23	3028.
35	AUG. 29	2979.
36	SEP. 4	-1.
37	SEP. 12	-1.
38	SEP. 18	-1.
39	SEP. 25	-1.
40	OCT. 2	-1.
41	OCT. 10	-1.
42	OCT. 16	-1.
43	OCT. 23	-1.
44	OCT. 30	-1.
45	NOV. 7	-1.
46	NOV. 13	-1.
47	NOV. 21	-1.
48	NOV. 28	-1.
49	DEC. 5	-1.
50	DEC. 11	-1.
51	DEC. 19	-1.
52	DEC. 26	-1.
53	JAN. 2	-1.
54	JAN. 9	-1.
55	JAN. 15	-1.

** NOTE: -1. INDICATES NO COUNT MADE **

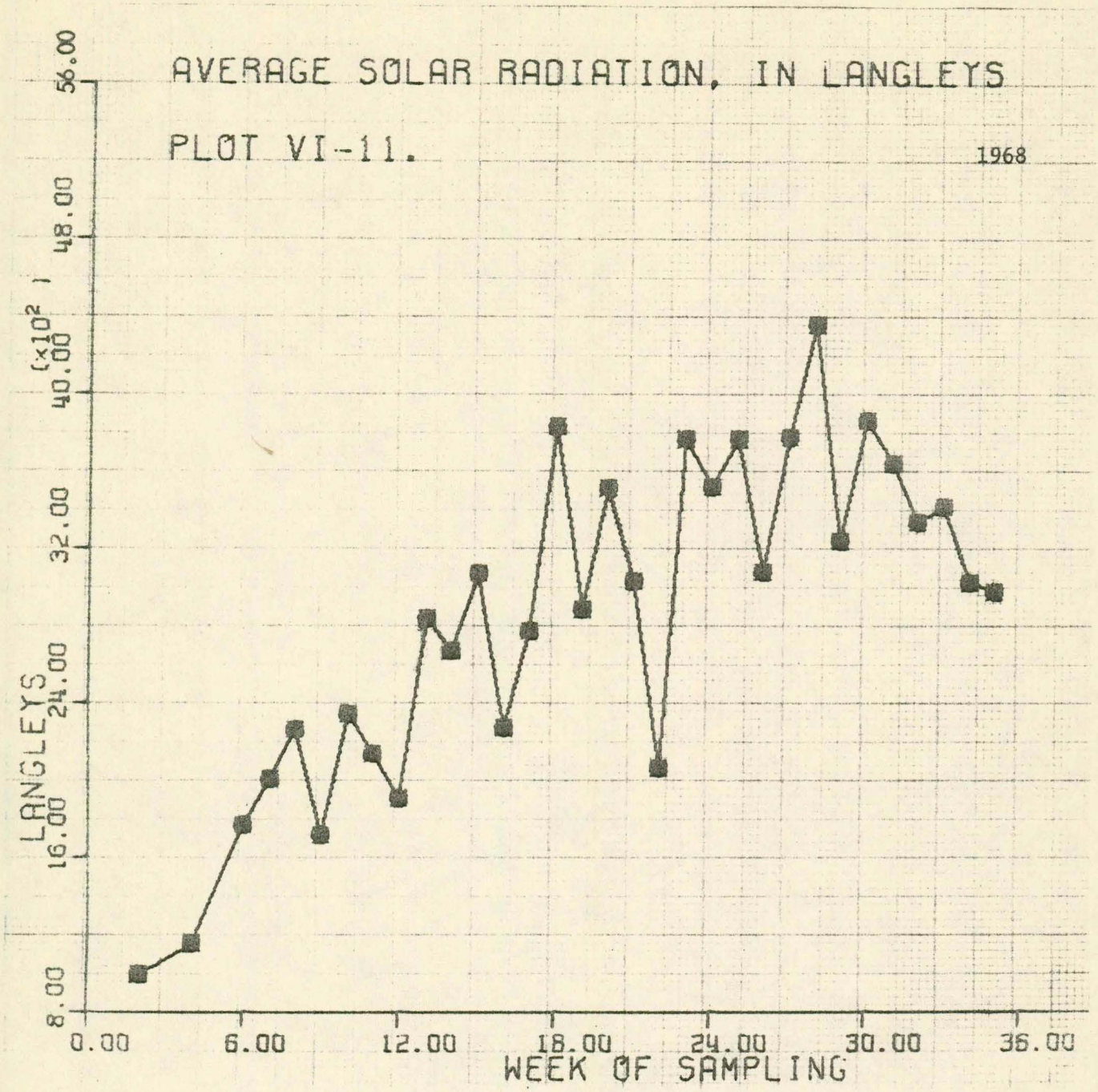

AVERAGE SOLAR RADIATION, IN LANGLEYS
PLOT VI-11.
1968
LANGLEYS (×10²)
56.00
48.00
40.00
32.00
24.00
16.00
8.00
0.00
6.00
12.00
18.00
24.00
30.00
36.00
WEEK OF SAMPLING

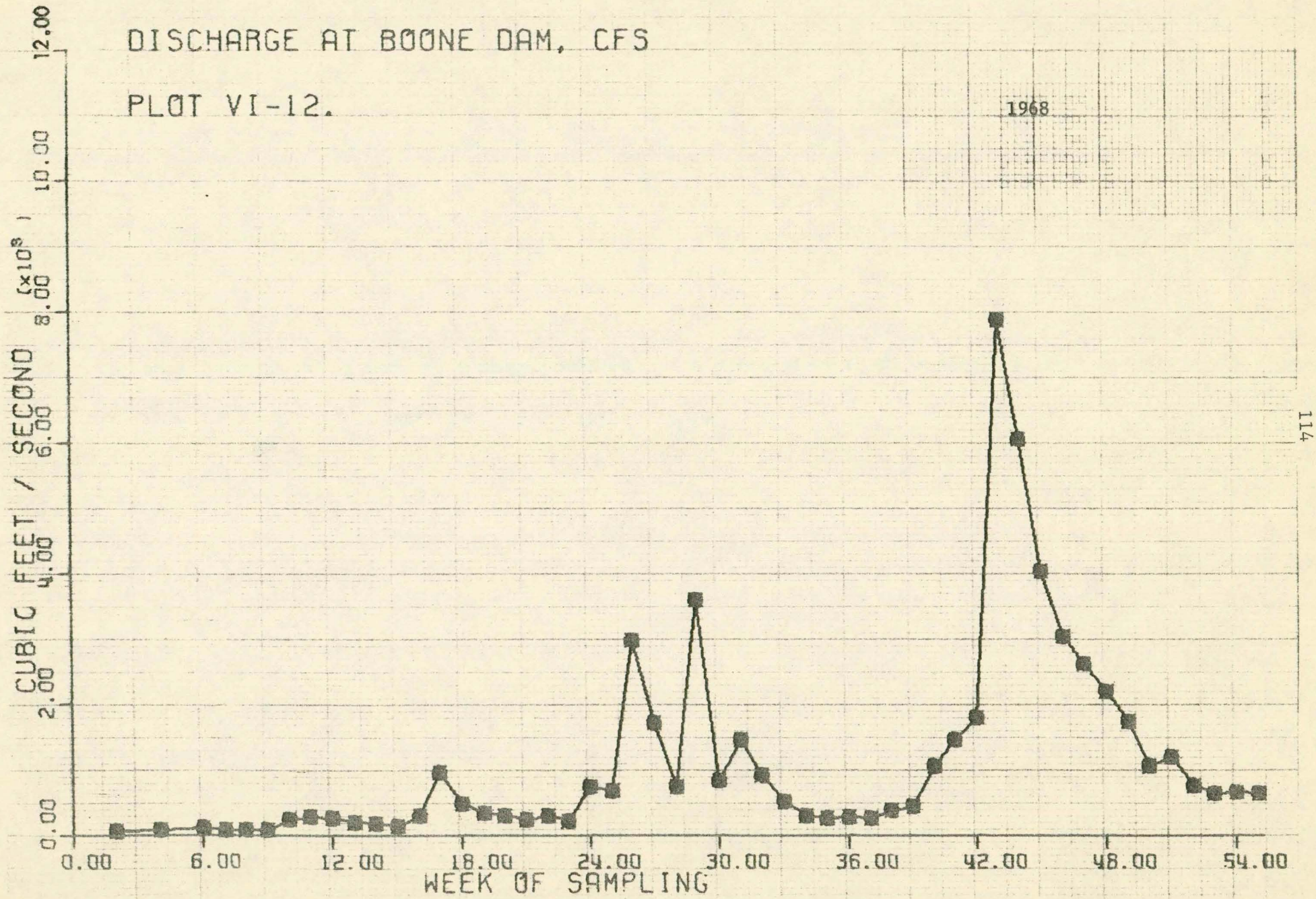
TABLE VI-12, PLANKTON COUNT SUMMARY
DISCHARGE AT BOONE DAM, CFS

WEEK	DATE	* STA.1 **
	1968-69	
1	JAN. 5	-1.
2	JAN. 12	62.
3	JAN. 19	-1.
4	JAN. 26	88.
5	FEB. 2	-1.
6	FEB. 9	112.
7	FEB. 16	80.
8	FEB. 23	85.
9	MAR. 1	79.
10	MAR. 8	242.
11	MAR. 15	279.
12	MAR. 22	265.
13	MAR. 29	198.
14	APR. 5	177.
15	APR. 12	147.
16	APR. 20	292.
17	APR. 27	958.
18	MAY 3	482.
19	MAY 10	334.
20	MAY 17	292.
21	MAY 24	231.
22	JUNE 1	292.
23	JUNE 7	220.
24	JUNE 14	748.
25	JUNE 21	674.
26	JUNE 28	2980.
27	JULY 5	1720.
28	JULY 12	748.
29	JULY 19	3610.
30	JULY 26	832.
31	AUG. 2	1470.
32	AUG. 9	916.
33	AUG. 16	530.
34	AUG. 23	292.
35	AUG. 29	253.
36	SEP. 4	279.
37	SEP. 12	265.
38	SEP. 18	388.
39	SEP. 25	450.
40	OCT. 2	1070.
41	OCT. 10	1470.
42	OCT. 16	1810.
43	OCT. 23	7890.
44	OCT. 30	6060.
45	NOV. 7	4050.
46	NOV. 13	3050.
47	NOV. 21	2620.
48	NOV. 28	2210.
49	DEC. 5	1750.
50	DEC. 11	1070.
51	DEC. 19	1200.
52	DEC. 26	760.
53	JAN. 2	650.
54	JAN. 9	670.
55	JAN. 15	650.

** NOTE: -1. INDICATES NO COUNT MADE **

DISCHARGE AT BOONE DAM, CFS

PLOT VI-12.



APPENDIX B. WATER QUALITY MONITOR

The water quality monitoring equipment at the Boone River Pumping Station (Sampling Point 1) has not been in operation since September 1968. A brief summary of experience with the system is as follows:

May 1968 — Installation.

June 1968 — Two breakdowns, both due to failure of the universal joints on the pump drive shaft. They were replaced each time.

July 1968 — Another failure of the drive shaft; it was replaced completely with one incorporating an improved joint.

August 1968 — Pump motor burned out. Entire pump was replaced and damaged pump sent to Des Moines for repairs.

September 1968 — New pump jammed with debris, causing a failure of the joint again (new pump still had old joints). Old pump was not repaired yet, and no replacement available. When the pump was finally available, high water prevented installation.

Spring 1969 — It was found that ice and high water had destroyed the casing and pump mount.

Some continuously recorded monitor data collected between May and September 1968 are available, but none are included in this report.

A new installation is being designed and should be in operation in early October 1969, incorporating a pump capable of operating under the conditions encountered.

The monitor unit itself functioned properly, if kept at an even temperature, and has been used for making extensive diurnal studies while the pumping system has been inoperative. The Peerless Dynaflo pump suggested by Honeywell for use with the monitor is not capable of giving proper service under the pumping conditions in river installations. The water encountered contains too much suspended solid material, and the

low-head discharge allows the pump to exceed its speed rating. It has been decided to use a dewatering, or "trash" pump, capable of handling sand with no damage, and self-limiting in speed.

Cost of the new installation, utilizing as much of the old piping and wiring as possible, is estimated at $900. It will be made as soon as river flow conditions permit.

KK/gk