WOODS HOLE OCEANOGRAPHIC INSTITUTION

Woods Hole, Massachusetts

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Appendix C to Reference No. 61-6

BIOLOGICAL, CHEMICAL AND RADIOCHEMICAL STUDIES OF MARINE PLANKTON

Reduced Data Report

Submitted to the U. S. Atomic Energy Commission
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UNCLASSIFIED

BIOLOGICAL, CHEMICAL, AND RADIOCHEMICAL STUDIES OF MARINE PLANKTON

APPENDIX C

to Reference No. 61-6

REDUCED DATA REPORT

This Appendix reports in detail the chemical and physical data on all oceanographic cruises and stations occupied under this program between September 1956 and September 1958 inclusive. A list of twelve cruises completed during this period is given in Table 1 and charts of the location of the stations are presented in Figures 1 and 2.

The list of the scientific personnel aboard is given at the beginning of each cruise report. We are all happy to acknowledge with thanks the assistance and cooperation of Captain W. Scott Bray and the crew of the Atlantis; of Captain Eugene Mysona and the crew of the Bear and of Captain David Casiles and the crew of the Crawford. The cooperation of all of these people in achieving the objectives of the program has been splendid and they have all contributed above and beyond their normal duties to the achievement of the purposes of our investigation.

The methods used have been standard oceanographic procedures, most of which are published in detail in the literature. A brief statement concerning the methods used is included here in order to inform the reader concerning the procedures which have been chosen.

The heading of each table gives the ship, the cruise number and the station number. Both the cruise number and station number are listed consecutively for each vessel and the original data are filed at the Woods Hole Oceanographic Institution under these numbers. Since the stations are repeated at approximately the same location, each station has been assigned a letter designation as indicated in Figures 1 and 2. The actual location of each station is given in latitude and longitude. Most of these were determined by Loran fixes at the time the Nansen bottle-cast was tripped. In the case of stations A and S, shore fixes were generally used for the position. The depth given for each station is the depth of the water as determined by sonic sounding. In cases where the sonic depth was not obtained, the depth for that location from the navigation chart has been included and is indicated as the chart depth. The time for the station is Greenwich Meridian Time (GMT) in accordance with standard oceanographic practice. To convert to Eastern Standard Time, which applies to all of the stations included in this report, subtract five hours from GMT.

Temperature was determined by calibrated deep-sea reversing thermometers. At stations where the depth of water exceeded 100 meters, unprotected thermometers were included at various depths within the cast and the corrected depths calculated from the paired protected and unprotected thermometers. These corrected depths are the ones given in the tables of data. For stations shallower than 100 meters no depth correction has been made.

Chlorinity was determined by the Knudsen method, involving the titration of chloride in sea water by a silver nitrate solution using potassium chromate as an indicator. From these results the salinity and density (σ_t) have been obtained from the hydrographical tables of Martin Knudsen.

Chlorophyll a has been determined by the method described by Richards with Thompson (1952) as modified for use with a millipore filter by Creitz and Richards (1955). Depending upon the amount of phytoplankton in the water, between 1 and 4 liters of sea water was filtered for these determinations.

Dissolved oxygen has been determined by the Winkler method as described by Thompson and Robinson (1939). The iodine liberated in this method was titrated with approximately 0.01 N sodium thiosulfate which was standardized using 0.01 N solution of either potassium dichromate or potassium biniodate. The oxygen values are recorded in the tables in ml/l: these may be multiplied by 1.4286 in order to obtain the oxygen values in mg/l.

Inorganic nutrients (inorganic phosphate, nitrate, nitrite, and ammonia) were determined on frozen samples of the sea water. Approximately 400 ml of water were placed in a 500-ml Plax (polyethylene) screw-cap bottle, which was placed in a specially constructed freezer so that each bottle directly contacted the cooling plate along one side. The temperature in the freezer was maintained at -10° to -17°C and the samples were generally frozen solid within about four hours. Comparison between the results obtained using fresh and frozen samples has been made on 173 samples analyzed for inorganic phosphate in which the concentrations ranged from 0.09 to 1.82 μg atoms/liter. The relationship between the frozen samples and the fresh samples for phosphate is given by:

$$\text{Frozen} = 0.081 + .9375\ \text{Fresh}.$$

This relationship indicates that, on frozen samples, low concentrations are somewhat overestimated while concentrations greater than 1.3 μg at/l are somewhat underestimated. The standard error of estimate of a single determination is 0.05 μg at/l so that only rarely does the error introduced by the freezing exceed the uncertainty in the determination from other causes.

A comparison was made on 67 nitrate samples, which ranged in concentration from 0.3 to 28.5 μg at/l with the following result:

$$\text{Frozen} = 0.127 + 1.01 \text{ Fresh.}$$

Since the standard error of estimate is 1.59 μg at/l for a single nitrate determination, it can be concluded that no significant and consistent error in nitrate is introduced by the freezing technique.

Inorganic phosphate has been determined by the ammonium molybdate method as described by Wooster and Rakestraw (1951). Stannous chloride was used as the reducing agent and measurements were made in the photo-electric colorimeter described by Ford (1950). Calibrations were made using standard inorganic phosphate solutions added to nearly phosphate-free Sargasso Sea surface water. This automatically corrects for the maximum salt effect error in the phosphate determination.

Particulate phosphorus was determined on material filtered from 200-300 ml samples of sea water. A barium sulfate precipitate was first laid on a Corning buchner-type fine-fritted disc funnel as described by Redfield, Smith and Ketchum (1937). Prior to filtration, 1 ml of concentrated hydrochloric acid was added to the sea water sample in order to liberate phosphate adsorbed on silt and other suspended material in the water. After filtration the barium sulfate precipitate and plankton were transferred quantitatively, with distilled water washings, to a 125-ml Erlenmeyer Vycor (96% silica) flask which was covered with a 50-ml pyrex beaker and digested as described below for total phosphate. After the digestion, the barium sulfate precipitate was filtered off on a fitted disc funnel, the sample was diluted to 100 ml and analyzed for inorganic phosphate as described above. Calibrations were made by adding known amounts of phosphate standard to 50 ml of distilled water prior to digestion.

In some cases, combined samples have been used for the determination of particulate phosphorus in the deeper waters. In such cases equal volumes of water from the depths indicated by brackets have been filtered in order to obtain the average value.

Total phosphorus was determined by the method described by Harvey (1948) as modified by Ketchum, Corwin and Keen (1955). Water samples for total phosphorus determinations have been stored in 8 oz. flint glass screw-cap bottles. Prior to withdrawing the sample for analysis, one ml of concentrated hydrochloric acid was added to the samples and the side-walls and bottom were vigorously scrubbed with a rubber policeman to remove any adhering bacterial film or any phosphorus adsorbed to the walls of the bottle. A 50-ml sample was then withdrawn and transferred to a 125-ml Erlenmeyer Vycor (96% silica) flask. Two ml of 38% (by volume) sulfuric acid and 4 drops of saturated aqueous solution of sodium sulfite were added, the flask covered with a 50-ml pyrex beaker, and the digestion carried on in a steam autoclave for 5 hours at pressure of 38 lbs/sq inch (140°C). Following digestion the samples were diluted with distilled

water to 100 ml and the phosphorus determined as the molybdate complex reduced with stannous chloride as above. In calibrating the photometer inorganic phosphate standard solutions were added to nearly phosphate-free Sargasso Sea surface water and the samples were carried through the entire digestion procedure listed above.

When particulate phosphorus analyses were made on a sample, the "total" analysis was done on the filtrate, and the result obtained was the total dissolved phosphorus. The data listed in the tables under "Total Phosphorus" in such a case is the sum of the total dissolved phosphorus and the particulate phosphorus.

Nitrate nitrogen has been determined as nitrite following reduction with hydrazine in the presence of copper according to the method of Mullin and Riley (1955a). Both nitrate and nitrite are determined by this method and the numbers listed in the tables of data as "Nitrate Nitrogen" include the nitrite nitrogen.

Nitrite nitrogen was determined colorimetrically following diazotization with sulfanilic acid and coupling with alphanaphthylamine according to the method of Rider and Mellon (1946). The color developed was determined in a Beckman DU spectrophotometer at a wave length of 520 mμ.

Ammonia was estimated by the indophenol method according to Riley (1953) following a vacuum distillation of the sample and collection of the ammonia in dilute hydrochloric acid.

Silicates have been determined by the method as described by Mullin and Riley (1955b) and depends upon the development of molybdenum blue complex in acid solution, after oxidation with metol-sulfite-oxalate solution. The primary standard for the silicate analysis was made by fusing quartz with anhydrous sodium carbonate. The color developed is read in a Beckman DU spectrophotometer at a wave length of 812 mμ.

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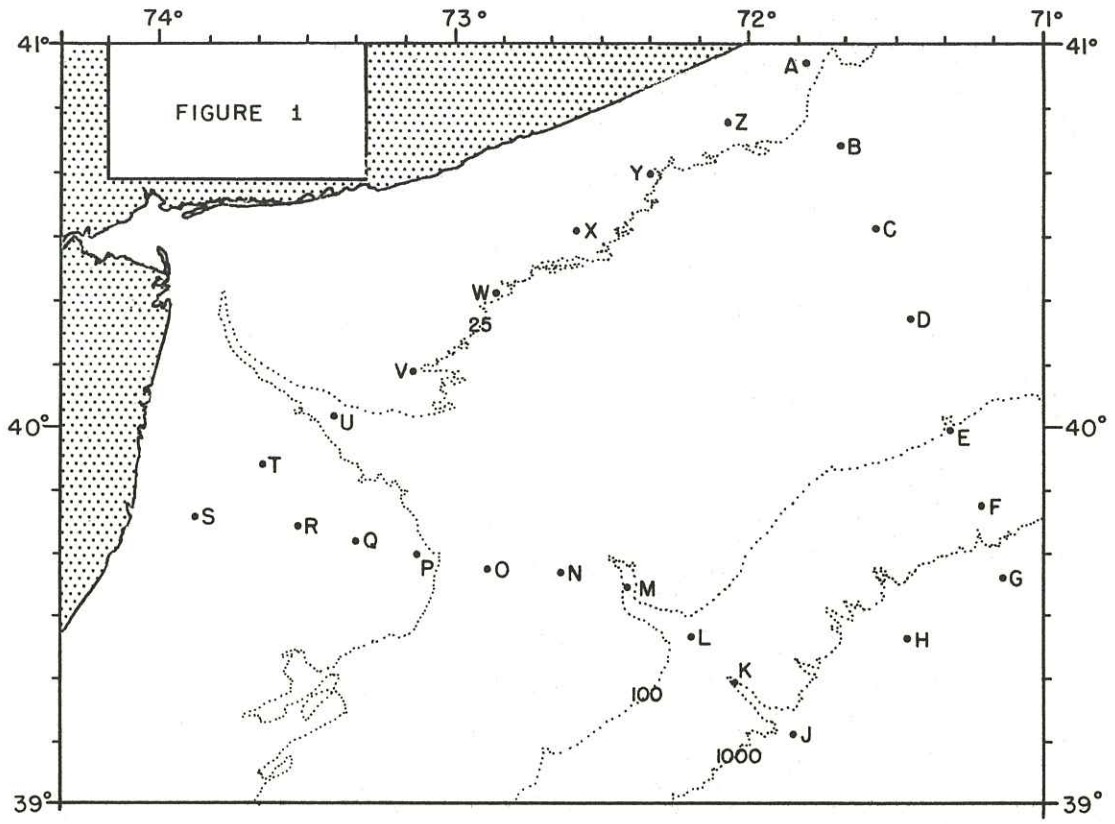
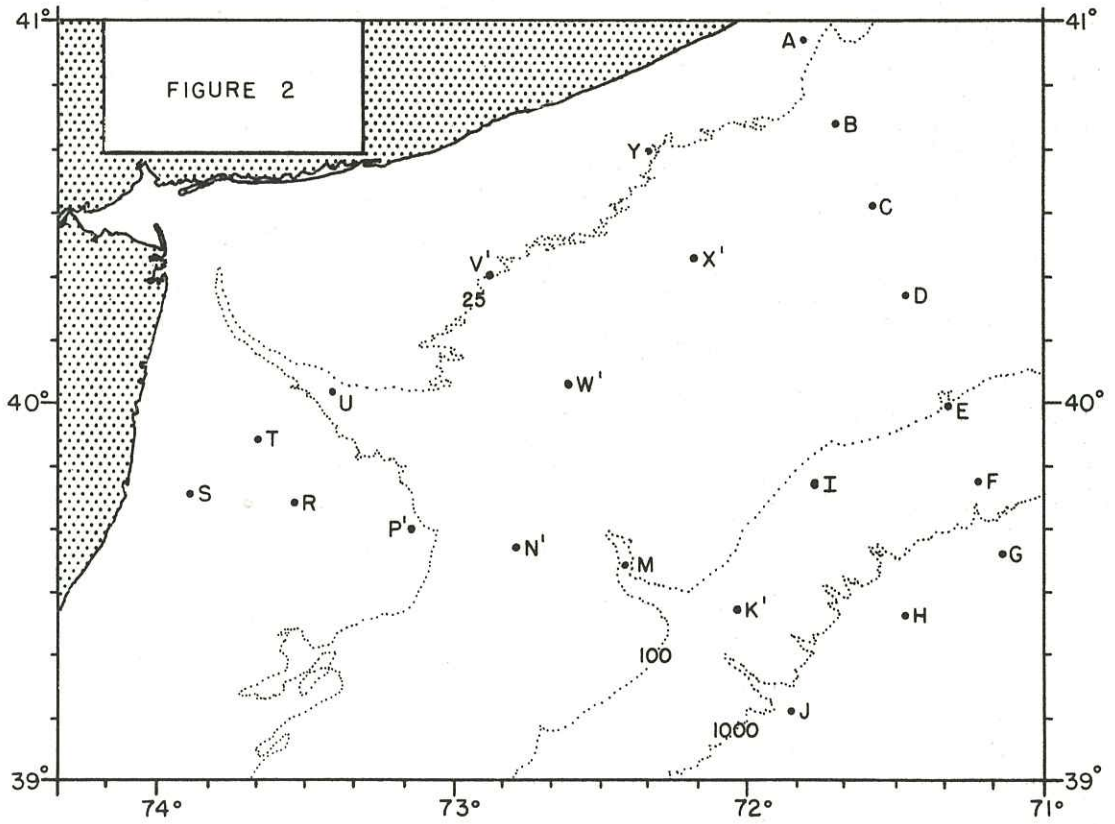
Table 1

List of cruises for the study of biology, chemistry and radiochemistry of coastal plankton populations between September 1956 and September 1958

Vessel	Cruise No.	Date	
Atlantis	227	Sept. 10 - 15	1956
Crawford	8	Nov. 28 - Dec. 3	
Bear	159	Feb. 12 - 17	1957
Bear	162	Mar. 21 - 25	
Bear	165	April 29 - May 3	
Crawford	13	July 10 - 20	
Bear	174	Sept. 16 - 20	
Bear	179	Nov. 18 - 23	
Bear	181	Jan. 21 - 27	1958
Bear	183	Mar. 6 - 10	
Bear	185	May 12 - 16	
Bear	195	Sept. 5 - 8	


74°
73°
72°
71°
41°
40°
39°
FIGURE 1
A
Z
B
Y
X
C
W
25
D
V
U
E
T
F
S
R
Q
P
O
N
M
G
L
H
K
100
J
1000


41°
40°
39°
74°
73°
72°
71°
FIGURE 2
A
B
Y
C
V'
X'
25
D
W'
U
E
T
I
F
S
R
P'
N'
M
G
K'
H
100
J
1000

ATLANTIS CRUISE 227

September 10-15, 1956

Scientific Personnel

Bostwick H. Ketchum,
Chief Scientist
Vaughan T. Bowen
Nathaniel Corwin
Herbert C. Curl, Jr.
Edward M. Hulburt
Guy McLeod
John H. Ryther
Ralph F. Vaccaro
Charles S. Yentsch

Atlantis CRUISE NO. 227 STATION NO. 5391 LOCATION A

DATE Sept. 11, 1956 LAT. 40° 57.9' N LONG. 71° 48.7' W

DEPTH 37 m GMT 00:00

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	19.19	31.72	22.48	0.15	5.17	0.39	0.24	0.86	0.10	0.38	0.29
10	19.19	31.72	22.48	--	5.17	0.42	0.13	0.71	0.10	0.12	0.29
20	19.14	31.72	22.50	0.19	5.20	0.43	0.14	0.62	0.15	0.00	<0.29
35	13.72	32.14	24.32	0.20	5.19	0.12	0.13	0.80	1.00	0.09	7.15

ATLANTIS CRUISE NO. 227 STATION NO. 5392 LOCATION B

DATE Sept. 11, 1956 LAT. 40° 44.2' N LONG. 71° 41.3' W

DEPTH 64 (chart) m GMT 0304

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	19.37	31.76	22.47	0.09	5.17	0.34	0.13	0.61	0.30	0.00	<0.29
10	19.26	32.18	22.89	0.44	5.19	0.30	0.15	0.52	0.10	0.15	<0.29
20	19.96	32.34	23.50	0.27	5.62	0.31	0.13	0.53	0.15	0.14	<0.29
30	12.23	32.41	24.54	--	6.00	0.44	0.11	0.59	0.50	0.00	<0.29
40	9.32	32.54	25.17	0.27	4.87	0.76	0.07	1.10	3.10	0.15	2.28
50	8.01	32.75	25.54	--	4.24	1.13	0.11	1.26	4.80	0.20	<0.29
60	8.00	32.75	25.54	--	4.19	1.22	0.11	1.33	--	0.34	0.86

ATLANTIS CRUISE NO. 227 STATION NO. 5393 LOCATION C

DATE Sept. 11, 1956 LAT. 40° 31.5' N LONG. 71° 34.5' W

DEPTH 67 (chart) m GMT 0635

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	19.03	31.19	22.12	0.18	5.20	0.26	0.12	0.50	1.20	0.00	0.58
10	19.02	32.18	22.89	0.21	5.19	0.36	0.13	0.49	0.60	0.00	--
20	18.99	32.49	23.14	0.15	5.26	0.26	0.10	0.46	0.10	0.00	0.00
30	14.70	32.66	24.25	--	5.85	0.42	0.17	0.59	0.20	0.00	--
40	9.47	32.55	25.15	0.32	5.59	0.53	--	0.79	3.10	0.20	0.57
50	8.29	32.65	25.41	--	5.48	0.71	0.10	0.94	2.80	0.58	--
60	8.00	32.72	25.51	0.27	5.00	0.85	--	1.01	3.80	0.00	--
70	7.85	32.78	25.58	--	4.80	0.85	0.10	1.11	3.90	0.00	--

ATLANTIS CRUISE NO. 227 STATION NO. 5394 LOCATION D

DATE Sept. 11, 1956 LAT. 40° 18' N LONG. 71° 28' W

DEPTH 77 m GMT 1256

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	18.25	32.22	23.12	0.17	5.34	0.33	0.08	0.52	0.15	0.20	1.14
10	18.27	32.22	23.11	0.04	5.30	0.33	0.10	0.50	0.30	0.12	1.14
20	16.16	32.45	23.78	0.15	6.10	0.32	0.16	0.73	0.00	0.11	5.45
30	13.78	32.36	24.21	--	6.20	0.38	0.33	1.09	0.15	0.00	3.15
40	10.25	32.61	25.07	0.32	5.52	0.95	0.10	1.05	2.60	0.03	0.00
50	7.96	32.70	25.50	--	5.38	0.80	0.09	--	3.60	0.23	1.43
60	8.05	32.90	25.64	0.27	5.06	0.87	0.08	--	3.90	0.20	0.00
75	9.42	33.51	25.91	--	4.95	0.75	0.08	--	5.50	0.14	0.00

ATLANTIS CRUISE NO. 227 STATION NO. 5395 LOCATION E

DATE Sept. 11, 1956 LAT. 39° 59.7' N LONG. 71° 19.0' W

DEPTH 172 (chart) m GMT 2029

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	23.42	35.43	24.16	0.17	4.62	0.05	0.06		1.10	0.00	0.02
10	23.46	35.43	24.14	0.064	4.60	0.09	0.13		0.15	--	0.00
25	23.42	35.44	24.16	--	4.61	0.06	0.05		0.70	0.29	0.00
49	19.08	35.69	25.54	0.54	4.90	0.12	0.08		0.70	0.57	0.00
74	12.25	34.85	26.44	0.17	4.60	0.73	0.09		5.60	0.00	0.06
98	12.20	35.14	26.68	0.15	4.33	0.73	0.02		5.10	0.00	0.06
146	11.94	35.35	26.81	--	3.75	1.00	--		10.90	0.86	0.05
192	11.53	35.34	26.98	--	3.48	1.12	0.05		12.00	0.00	0.06

ATLANTIS CRUISE NO. 227 STATION NO. 5396 LOCATION F

DATE Sept. 11, 1956 LAT. 39° 48' N LONG. 71° 10' W

DEPTH 1270 m GMT 2352

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	23.16	35.39	24.20	0.18	4.62	0.15	0.10	--	0.45	0.00	0.29
10	23.12	35.39	24.21	0.082	4.62	--	0.07	--	1.10	0.00	0.00
25	23.14	35.41	24.22	0.00	4.37	0.09	0.06	--	0.10	0.00	0.57
49	16.22	35.43	26.04	0.10	5.00	0.27	0.06	0.58	3.00	0.14	0.57
74	14.50	35.44	26.42	0.18	4.10	0.66	0.04	--	6.10	0.20	0.00
98	13.88	35.57	26.67	0.25	3.83	0.84	0.02	1.04	9.70	0.06	0.00
147	12.91	35.53	26.83	--	--	0.91	--	--	9.90	0.02	0.00
196	11.48	35.44	27.04	0.15	3.28	1.14	0.03	1.43	13.90	0.02	0.00
294	8.67	35.16	27.31	--	3.12	1.27	--	1.57	19.50	0.06	0.00
292	8.79	35.16	27.30	--	3.05	1.52	--	--	15.80	0.00	0.29
399	--	--	--	0.15	--	--	--	--	13.00	0.00	0.00
585	4.44	34.96	27.72	--	5.30	1.19	0.09	1.70	--	--	--
789	--	--	--	--	4.23	--	--	--	--	--	--
975	3.99	--	--	0.08	3.70	--	--	--	--	--	--

ATLANTIS CRUISE NO. 227 STATION NO. 5397 LOCATION G

DATE Sept. 12, 1956 LAT. 39° 36.3' N LONG. 71° 08.1' W

DEPTH 2231 m GMT 0520

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	22.60	34.98	24.04	0.15	4.72	0.14	0.08	0.40	1.10	0.00	0.28
10	22.61	34.97	24.04	0.16	4.80	0.14	0.08	0.33	0.50	0.06	0.00
25	23.05	35.20	24.08	0.05	4.74	0.11	--	--	0.50	0.00	0.00
49	15.83	35.42	26.14	0.27	5.08	0.32	--	--	1.40	0.15	0.00
74	14.64	35.61	26.53	0.17	3.89	0.76	0.02	0.81	8.90	0.14	0.00
98	12.37	35.26	26.73	0.14	4.33	0.85	0.03	0.96	8.50	0.02	0.00
147	12.19	35.43	26.90	0.11	3.77	1.17	--	1.10	12.50	0.02	0.00
196	11.12	35.39	27.09	--	3.28	1.39	0.07	1.46	19.60	0.06	0.28
294	8.83	35.16	27.29	--	3.05	1.69	--	1.63	20.50	0.02	0.28
287	8.82	35.16	27.29	--	3.18	1.63	--	1.60	20.50	0.06	0.00
383	6.76	35.04	27.40	--	--	1.46	--	1.34	13.00	0.06	0.00
575	4.76	35.03	27.75	--	5.14	1.33	0.03	1.37	14.70	0.14	0.29
767	4.38	34.96	27.74	--	5.60	1.30	0.06	1.36	10.40	0.02	0.00
959	4.16	34.97	27.77	--	5.71	1.29	0.06	1.35	15.90	0.02	0.28
1150	4.23	34.97	27.76	--	5.75	1.23	0.00	1.23	11.60	0.02	0.57
1340	3.71	34.95	27.80	--	5.84	1.18	--	1.15	11.40	0.14	0.00
1530	3.70	34.95	27.80	--	5.89	1.22	0.01	1.23	17.00	0.02	0.00
1725	3.60	34.95	27.81	--	5.90	1.28	--	1.26	14.80	0.02	0.57
1918	3.52	34.96	27.83	--	5.73	1.25	0.02	1.27	10.00	0.02	0.00

ATLANTIS CRUISE NO. 227 STATION NO. 5398 LOCATION H

DATE Sept. 12, 1956 LAT. 39° 28.1' N LONG. 71° 27.2' W

DEPTH 2212 m GMT 1522

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	22.22	34.85	24.06	0.22	4.71	0.05	0.19	0.36	0.90	0.08	0.00
10	22.27	34.88	24.06	0.11	4.73	0.05	0.06	0.17	0.60	0.00	0.00
25	22.60	35.16	24.19	0.11	4.69	0.06	0.03	0.19	0.50	0.02	0.00
49	13.04	34.47	25.99	0.12	5.68	0.37	0.12	0.57	0.80	0.08	0.00
74	12.26	34.93	26.50	0.28	4.55	0.74	0.01	0.83	5.90	0.02	0.00
98	12.10	35.13	26.68	0.00	4.27	0.85	0.00	0.85	8.50	0.08	0.00
147	10.85	35.28	27.04	--	3.69	1.21	--	1.21	12.50	0.00	0.00
196	10.53	35.30	27.12	0.04	3.20	1.42	0.02	1.44	14.80	0.06	0.00
294	8.30	35.12	27.34	--	3.24	1.66	--	1.68	18.0	0.00	0.00
291	8.47	35.12	27.32		3.20	1.36	--	1.44	11.8	0.06	0.57
388	6.92	35.03	27.48		3.89	1.45	0.00	1.45	15.4	0.06	0.00
582	5.09	34.96	27.66		4.88	1.29	--	1.29	11.4	0.00	1.43
776	4.43	34.96	27.73		5.39	1.23	0.08	1.35	11.8	0.08	1.14
970	4.08	34.96	27.77		5.68	1.24	--	1.24	10.6	0.14	0.00
1164	--	34.94	--		5.75	1.12	0.00	1.15	9.9	0.06	0.00
1358	3.75	34.92	27.77		5.73	1.19	--	1.14	10.6	0.00	0.00
1552	3.68	34.97	27.82		5.78	1.12	0.04	1.39	10.5	0.38	0.00
1746	3.56	34.96	27.83		5.71	1.18	0.03	1.23	10.8	0.12	0.29
1940	3.44	34.96	27.83		5.62	1.12	--	1.38	13.6	0.02	0.29

ATLANTIS CRUISE NO. 227 STATION NO. 5399 LOCATION J

DATE Sept. 12, 1956 LAT. 39° 11.5' N LONG. 71° 51.0' W

DEPTH 2231 m GMT 2157

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	22.11	34.45	23.79	0.05	4.83	0.09	0.02	0.27	0.60	0.12	0.00
10	21.96	34.47	23.84	0.11	4.75	0.11	0.06	0.35	0.00	0.00	0.00
25	21.20	34.82	24.32	0.18	5.13	0.16	0.04	0.27	1.00	0.02	0.00
49	18.34	35.28	25.42	0.46	4.55	0.05	0.06	0.65	5.00	0.29	0.00
74	13.34	35.38	26.63	0.07	4.22	0.79	0.07	0.89	7.40	0.00	0.29
97	12.37	35.30	26.76	0.75	4.15	0.78	0.02	0.93	10.50	0.06	0.00
146	11.99	35.44	26.95		3.42	1.14	--	1.18	12.00	0.00	0.00
194	10.90	35.37	27.10	0.07	3.04	1.40	0.03	1.43	15.10	0.06	0.00
291	8.72	35.15	27.30	--	3.16	1.59	--	1.62	18.00	0.14	0.00
388	6.51	35.02	27.52	--	4.05	1.51	0.04	--	16.00	0.00	0.29
582	5.03	34.99	27.68		4.97	1.39	--	1.40	15.10	0.00	0.00
776	4.38	34.97	27.75		5.39	1.29	--	1.32	12.40	0.00	0.00
970	4.06	34.97	27.78		5.65	1.24	0.00	1.32	12.80	0.00	0.00
1164	3.89	34.97	27.80		4.87	1.16	--	1.28	12.00	0.02	1.14
1358	3.73	34.95	27.80		5.72	1.17	0.01	1.10	12.70	0.00	0.00
1552	3.64	34.96	27.82		5.76	1.13	--	1.12	13.80	0.00	0.00
1746	3.55	34.95	27.80		5.77	1.21	--	1.30	12.00	0.08	0.29
1940	3.46	34.96	27.83		5.66	1.14	--	1.27	14.50	0.00	0.00

ATLANTIS CRUISE NO. 227 STATION NO. 5400 LOCATION K

DATE Sept. 13, 1956 LAT. 39° 20' N LONG. 72° 03' W

DEPTH 1929 m GMT 0154

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	19.76	33.64	23.81	0.15	5.12	0.20	0.10	0.40	0.30	0.00	0.00
10	19.24	33.68	23.97	0.18	5.16	0.18	0.09	0.44	0.05	0.02	0.00
25	20.34	34.85	24.58	0.27	5.23	0.16	0.11	0.36	0.50	0.00	0.00
49	12.26	34.65	26.28	0.46	4.90	0.60	0.07	0.72	4.10	0.02	0.00
74	11.85	34.99	26.63	0.18	4.55	0.84	0.07	0.91	8.30	0.15	0.00
98	12.13	35.22	26.75	--	4.38	0.79	0.04	0.97	10.30	0.00	0.57
147	11.78	35.37	26.96	--	3.55	1.08	--	1.23	10.70	0.47	0.00
196	11.28	35.39	27.05	0.36	3.16	1.40	0.04	1.44	9.70	0.06	0.00
294	9.14	35.19	27.26		3.07	1.56	--	1.59	14.90	0.08	0.29
343	7.90	35.10	27.46		3.38	1.65	0.10	1.75	12.80	0.00	0.29
539	5.07	35.00	27.68		4.91	1.32	--	1.39	11.80	0.55	0.29
735	4.51	34.98	27.74		5.33	1.33	0.03	1.36	13.40	0.02	0.00
931	4.08	34.97	27.78		5.69	1.28	--	1.16	10.60	0.29	0.86
1127	3.95	34.96	27.79		5.77	1.28	0.07	1.35	12.00	0.02	2.00
1323	3.81	34.95	27.79		5.80	1.23	--	1.21	10.60	0.02	0.29
1519	3.54	34.95	27.81		5.81	1.05	0.06	1.11	9.90	0.02	0.00
1715	3.61	34.95	27.80		5.88	1.13	--	1.16	10.90	0.02	0.29
1813	3.58	34.96	27.82		5.69	1.21	0.08	1.29	11.20	0.02	0.29

ATLANTIS CRUISE NO. 227 STATION NO. 5401 LOCATION L

DATE Sept. 13, 1956 LAT. 39° 26.8' N LONG. 72° 11.8' W

DEPTH 1024 m GMT 0712

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	22.33	35.05	24.17	1.00	4.70	0.06	0.07	0.36	0.50	0.02	0.00
10	22.38	35.06	24.18	0.07	4.47	0.07	0.12	--	0.05	0.02	0.57
25	22.39	35.08	24.18	0.09	4.68	0.16	0.03	0.39	0.20	0.46	0.29
49	12.14	34.37	26.09	0.23	5.16	0.49	0.04	0.55	3.10	0.35	0.00
74	13.06	35.11	26.46	0.57	4.40	0.79	0.02	0.90	6.20	0.73	0.29
98	12.09	35.18	26.73	0.25	4.35	0.89	0.02	0.98	5.80	0.00	0.29
147	12.41	35.48	26.90	--	3.54	0.96	--	1.02	10.00	0.02	0.86
197	11.31	35.38	27.02	2.00	3.33	1.33	0.01	1.34	10.20	0.00	0.00
295	9.38	35.21	27.24		3.02	1.54	--	1.60	15.10	0.15	0.29
196	11.34	35.37	27.02		3.38	1.30	0.01	1.58	10.60	0.23	0.29
294	--	35.19	--		3.10	1.41	0.00	1.58	14.80	0.00	0.00
490	5.38	35.00	27.55		4.65	1.36	0.00	1.55	20.00	0.06	0.00
686	4.46	34.98	27.74		5.34	1.29	0.01	1.37	11.40	0.14	0.00
882	4.06	34.96	27.77		5.60	1.18	0.00	1.32	10.20	0.06	0.57

ATLANTIS CRUISE NO. 227 STATION NO. 5402 LOCATION M

DATE Sept. 13, 1956 LAT. 39° 35' N LONG. 72° 25' W

DEPTH 461 m GMT 1757

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	19.82	33.03	23.32	0.20	5.13	0.21	0.19	0.95	0.90	0.00	0.00
10	20.95	34.35	24.03	0.15	4.85	0.10	0.09	0.68	0.50	0.12	0.86
25	21.87	34.86	24.16	0.41	4.83	0.17	0.09	0.62	0.40	0.23	0.00
49	8.36	32.90	25.59	0.38	5.35	0.86	0.33	1.33	5.60	0.06	0.29
74	10.42	33.94	26.08	0.32	5.08	0.76	0.15	1.06	3.40	0.14	0.29
98	11.11	34.68	26.53	0.03	4.52	0.88	0.18	1.24	8.70	0.08	0.57
147	11.54	35.13	26.80	--	4.01	0.97	--	0.98	8.00	0.14	0.29
196	11.46	35.24	26.90	0.67	3.72	1.17	0.06	1.60	10.20	0.08	0.00
294	9.37	35.19	27.22	--	3.42	1.34	--	1.51	10.30	0.00	0.86
390	7.60	35.11	27.44	--	3.83	1.47	0.01	1.68	10.70	0.02	0.00

ATLANTIS CRUISE NO. 227 STATION NO. 5403 LOCATION N

DATE Sept. 13, 1956 LAT. 39° 37.0' N LONG. 72° 39.5' W

DEPTH 73 m GMT 2035

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	20.31	32.35	22.68	0.22	5.00	0.21	0.10	0.42	0.00	0.00	0.00
10	19.64	32.69	23.09	0.09	5.24	0.25	0.37	0.70	0.15	0.02	0.00
20	18.78	32.80	23.42	0.57	4.90	0.23	0.10	0.38	0.00	0.02	0.00
30	15.12	33.13	24.52	--	5.86	0.37	0.12	0.49	1.10	0.00	0.00
40	8.80	32.90	25.53	0.30	5.96	0.64	0.13	0.85	2.00	0.12	0.00
49	7.70	32.89	25.69	--	5.56	0.89	0.10	0.99	5.80	0.02	0.29
59	7.94	33.07	25.79	0.55	4.65	0.99	--	--	7.00	0.00	0.00

ATLANTIS CRUISE NO. 227 STATION NO. 5404 LOCATION O

DATE Sept. 13, 1956 LAT. 39° 37.8' N LONG. 72° 54.0' W

DEPTH 64 m GMT 2315

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	20.26	32.39	22.74	0.18	5.22	0.23	0.10	0.44	0.90	0.06	0.00
10	20.22	32.42	22.77	0.08	5.07	0.37	0.28	--	1.10	0.14	0.29
20	14.04	32.77	24.47	0.35	6.30	0.36	0.14	0.64	0.40	0.06	1.43
30	7.67	32.85	25.65	0.45	5.89	0.64	--	--	3.50	0.29	1.71
40	7.16	32.76	25.66	--	4.58	1.37	0.12	--	7.40	0.23	1.71
49	7.13	32.73	25.64	--	4.64	0.97	0.08	1.20	5.00	0.34	2.00
59	7.11	32.73	25.64	0.03	4.59	1.07	0.56	1.73	4.90	0.26	1.43

ATLANTIS CRUISE NO. 227 STATION NO. 5405 LOCATION P

DATE Sept. 14, 1956 LAT. 39° 39.9' N LONG. 73° 08.0' W

DEPTH 40 m GMT 0149

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	21.02	31.83	22.09	0.33	4.94	0.09	0.11	0.53	0.50	0.00	0.00
5	21.06	31.84	22.10	0.41	4.97	0.23	0.14	0.72	0.10	0.00	0.00
15	20.30	32.39	22.71	--	5.06	0.27	0.06	0.78	0.80	0.00	0.00
25	19.99	32.73	23.05	0.16	5.26	0.34	0.09	0.77	0.50	0.06	0.00
35	8.17	32.52	25.36	--	4.59	0.96	0.16	1.19	2.10	0.12	1.14

ATLANTIS CRUISE NO. 227 STATION NO. 5406 LOCATION Q

DATE Sept. 14, 1956 LAT. 39° 42.3' N LONG. 73° 20.2' W

DEPTH 35 m GMT 0424

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	20.88	31.41	21.82	0.09	4.92	0.32	0.12	0.64	0.60	0.08	0.29
10	20.88	31.43	21.83	0.64	4.93	0.33	0.11	0.62	0.50	0.00	0.86
20	20.23	31.69	22.20	0.23	4.41	0.34	0.14	0.66	0.00	0.06	0.00
30	10.19	32.34	24.87	0.17	3.44	1.17	0.37	1.57	1.40	0.20	0.28

ATLANTIS CRUISE NO. 227 STATION NO. 5407 LOCATION R

DATE Sept. 14, 1956 LAT. 39° 44.5' N LONG. 73° 32.0' W

DEPTH 36 m GMT 0701

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	20.71	31.54	21.97	0.17	4.92	0.25	0.14	0.58	0.10	0.06	0.00
10	20.70	31.51	21.95	0.28	4.97	0.34	0.10	0.55	0.00	0.06	0.57
20	20.66	31.50	21.95	--	4.92	0.37	0.13	0.58	0.70	0.15	0.86
30	11.11	32.28	24.66	--	3.80	1.00	0.13	1.17	1.20	0.02	2.58

ATLANTIS CRUISE NO. 227 STATION NO. 5408 LOCATION S

DATE Sept. 15, 1956 LAT. 39° 45.9' N LONG. 73° 53.5' W

DEPTH 24 m GMT 0156

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	21.07	31.02	21.47	0.03	5.02	0.45	--	--	0.80	0.20	2.28
10	21.08	31.07	21.50	0.23	5.00	0.44	0.18	0.86	0.00	0.00	0.57
20	14.65	31.81	23.61	0.36	3.30	1.14	0.31	1.44	0.80	0.00	0.57

ATLANTIS CRUISE NO. 227 STATION NO. 5409 LOCATION T

DATE Sept. 15, 1956 LAT. 39° 54.1' N LONG. 73° 39.7' W

DEPTH 25 m GMT 0420

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	21.08	31.32	21.70	0.37	4.99	0.31	0.11	0.53	0.00	0.00	0.86
10	21.07	31.31	21.70	0.17	5.03	0.36	0.16	0.68	0.25	0.58	--
20	20.56	31.37	21.87	0.25	4.97	0.50	0.16	0.84	0.10	0.00	--

ATLANTIS CRUISE NO. 227 STATION NO. 5410 LOCATION U

DATE Sept. 15, 1956 LAT. 40° 02' N LONG. 73° 24.6' W

DEPTH 74 m GMT 0758

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	20.94	31.26	21.69	0.17	4.96	0.44	0.11	0.73	0.10	0.00	0.00
10	20.96	31.29	21.71	0.18	5.03	0.45	0.15	0.72	0.15	0.12	0.00
20	20.56	31.74	22.15	0.20	4.99	0.55	0.11	0.82	0.15	0.00	0.00
30	10.29	32.60	25.05	--	5.67	0.76	0.15	1.01	0.40	0.14	--
40	7.70	32.58	25.44	0.72	3.85	1.35	0.07	1.54	1.50	0.29	2.30
59	7.42	32.72	25.59	0.35	4.58	1.44	0.14	1.79	2.35	0.47	2.86
69	7.43	32.72	25.59	--	4.57	1.35	0.11	1.49	1.30	0.12	--

ATLANTIS CRUISE NO. 227 STATION NO. 5411 LOCATION V

DATE Sept. 15, 1956 LAT. 40° 09.5' N LONG. 73° 08.0' W

DEPTH 45 m GMT 1020

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	20.50	31.15	21.72	0.23	4.99	0.38	0.13	0.67	0.00	0.06	0.00
10	20.51	31.15	21.72	0.36	4.97	0.48	0.16	0.75	0.25	0.00	0.58
20	19.47	31.57	22.30	0.47	4.90	0.43	0.12	0.59	0.10	0.35	--
30	9.89	32.40	24.97	0.45	4.06	1.03	0.15	1.28	2.40	0.55	4.56

ATLANTIS CRUISE NO. 227 STATION NO. 5412 LOCATION W

DATE Sept. 15, 1956 LAT. 40° 20.8' N LONG. 72° 52.0' W

DEPTH 44 m GMT 1349

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	20.03	--	--	0.23	5.05	0.47	0.20	0.87	0.10	0.00	--
10	20.02	31.50	22.11	0.34	5.09	0.44	0.20	0.64	0.15	0.00	0.58
20	19.31	31.58	22.35	0.47	5.08	0.43	0.20	0.67	0.15	0.00	0.00
30	11.21	32.66	24.94	--	6.11	0.52	0.12	0.68	0.45	0.14	2.00
40	8.22	32.54	25.34	--	4.51	1.29	0.14	1.43	2.50	0.29	2.30

ATLANTIS CRUISE NO. 227 STATION NO. 5413 LOCATION X

DATE Sept. 15, 1956 LAT. 40° 30.8' N LONG. 72° 36.0' W

DEPTH 43 m GMT 1705

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	19.64	31.76	22.40	0.25	5.22	0.23	0.19	0.78	0.00	0.00	0.00
10	19.64	31.75	22.40	0.27	5.22	0.25	0.17	0.62	0.00	0.30	1.14
20	19.04	31.88	22.64	0.00	5.24	0.25	0.15	0.53	0.10	0.20	0.57
30	10.66	32.39	24.82	--	5.38	0.55	0.15	0.77	0.50	0.26	0.00
40	8.94	32.46	25.17	0.35	4.09	1.06	0.14	1.28	2.40	0.41	3.72

ATLANTIS CRUISE NO. 227 STATION NO. 5414 LOCATION Y

DATE Sept. 15, 1956 LAT. 40° 39.7' N LONG. 72° 20.4' W

DEPTH 43 m GMT 1951

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	20.06	32.03	22.50	0.32	5.11	0.26	0.11	0.73	0.30	0.06	0.00
10	20.10	32.04	22.50	0.17	5.10	0.25	--	--	0.25	0.06	0.00
20	20.00	32.03	22.52	0.41	5.39	0.27	0.11	0.51	0.15	0.00	0.00
30	12.70	32.34	23.04	--	5.94	0.54	0.13	0.74	0.20	0.12	0.57
40	8.99	32.53	25.22	0.86	4.48	1.13	0.06	1.27	3.10	0.14	2.86

ATLANTIS CRUISE NO. 227 STATION NO. 5415 LOCATION Z

DATE Sept. 15, 1956 LAT. 40° 47' N LONG. 72° 03' W

DEPTH 42 m GMT 2240

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	19.81	31.79	22.38	0.48	5.14	--	0.12	0.68	0.20	0.06	0.57
10	19.83	31.79	22.38	0.29	5.12	0.31	0.14	0.64	0.00	0.02	0.00
20	19.81	31.79	22.38	0.25	5.13	0.31	0.12	1.06	1.40	0.02	0.00
30	10.57	32.36	24.82	--	4.96	0.81	0.15	1.14	1.85	0.35	0.29
40	9.71	32.47	25.04	0.36	4.32	1.03	0.11	--	4.55	0.15	0.86

CRAWFORD CRUISE 8

November 28-December 3, 1956

Scientific Personnel

Bostwick H. Ketchum,
Chief Scientist
Vaughan T. Bowen
Nathaniel Corwin
Herbert C. Curl, Jr.
Guy McLeod
John L. Schilling
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Charles S. Yentsch

CRAWFORD CRUISE NO. 8 STATION NO. 47 LOCATION A

DATE Nov. 29, 1956 LAT. 40° 57.9' N LONG. 71° 48.7' W

DEPTH 36 m GMT 0340

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	11.22	32.68	24.96	4.05	5.89	0.81	0.27	4.21	0.55	0.00	1.37
10	11.24	32.72	24.98	4.00	5.94	0.77	0.23	5.00	0.40	0.86	1.34
20	--	32.73	--	4.20	5.69	0.89	0.19	4.30	0.46	0.00	1.24
30	12.04	33.03	25.07	3.90	5.96	0.77	0.18	3.56	0.48	0.50	1.23

CRAWFORD CRUISE NO. 8 STATION NO. 48 LOCATION B

DATE Nov. 29, 1956 LAT. 40° 43.5' N LONG. 71° 40.0' W

DEPTH 64 m GMT 0709

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	13.32	33.94	25.53	1.85	5.59	0.57	0.17	0.98	4.01	0.42	0.28
10	13.29	33.91	25.52	1.86	5.55	0.60	0.12	0.91	4.13	0.33	0.57
20	13.33	33.92	25.51	1.71	5.56	0.64	0.12	0.97	3.88	0.58	1.71
40	13.39	33.91	25.49	1.55	5.56	0.62	0.11	0.93	3.86	0.67	3.42
60	13.98	34.14	25.55	1.56	4.41	0.63	0.09	0.81	3.55	0.47	0.29

CRAWFORD CRUISE NO. 8 STATION NO. 49 LOCATION C

DATE Nov. 29, 1956 LAT. 40° 43.3' N LONG. 71° 34.5' W

DEPTH 75 m GMT 1431

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	13.80	34.29	25.69	1.50	5.28	0.53	0.14	0.80	2.48	0.50	0.00
10	13.81	34.31	25.72	0.97	5.54	0.50	0.12	0.80	2.78	0.32	1.43
20	14.03	34.33	25.69	2.09	5.61	0.53	0.15	0.85	2.47	0.34	4.00
30	14.12	34.40	25.72	--	5.61	0.43	0.08	0.70	2.11	0.59	0.00
50	15.39	34.88	25.81	0.94	5.56	0.47	0.06	0.71	3.50	1.18	0.28
60	15.50	34.93	25.83	--	5.28	0.42	0.05	0.65	3.54	0.59	0.86

CRAWFORD CRUISE NO. 8 STATION NO. 50 LOCATION D

DATE Nov. 29, 1956 LAT. 40° 20.0' N LONG. 71° 27.5' W

DEPTH 73 m GMT 2042

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	13.82	34.36	25.75	1.78	5.38	0.49	0.11	0.82	1.97	0.49	0.00
10	13.83	34.34	25.73	1.98	5.46	0.57	0.08	0.65	1.32	0.42	0.29
20	13.90	34.34	25.73	1.22	5.57	0.54	0.08	0.67	2.15	0.27	0.00
30	14.46	34.59	25.80	0.78	5.64	0.48	--	--	3.10	0.57	2.00
40	14.60	34.68	25.83	1.52	5.66	0.49	0.23	0.86	3.16	0.43	3.14
60	14.72	34.70	25.82	--	5.36	0.52	0.28	0.89	2.98	0.48	0.77

CRAWFORD CRUISE NO. 8 STATION NO. 51 LOCATION E

DATE Nov. 30, 1956 LAT. 39° 59.6' N LONG. 71° 18.7' W

DEPTH 238 m GMT 0041

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	15.61	35.08	25.92	0.61	5.31	0.41	0.06	0.60	3.15	0.53	1.71
10	--	35.04	--	--	5.37	0.39	0.09	0.80	3.13	0.58	0.00
25	15.62	35.05	25.90	0.56	5.55	0.50	0.11	0.81	3.37	0.56	0.00
50	15.60	35.06	25.91	0.58	5.44	0.44	0.04	0.48	2.16	0.52	0.00
75	15.62	35.09	25.92	0.64	5.26	0.47	0.08	0.56	3.25	0.34	0.00
100	15.88	35.18	25.93	0.50	5.21	0.42	0.09	0.65	3.29	0.48	0.00
150	13.56	35.60	26.76	--	3.60	1.08	0.08	1.19	15.4	0.06	0.00
200	12.91	35.53	26.85	--	3.49	1.02	0.01	1.05	14.0	--	2.86

CRAWFORD CRUISE NO. 8 STATION NO. 52 LOCATION F

DATE Nov. 30, 1956 LAT. 39° 48.0' N LONG. 71° 09.5' W

DEPTH 1133 m GMT 0358

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	17.88	35.53	25.72	0.33	4.99	--	0.03	--	1.95	0.40	0.17
10	17.92	35.53	25.72	0.51	5.00	--	0.11	--	2.17	0.40	0.28
25	17.95	35.54	25.72	0.31	5.00	0.22	0.18	0.62	2.49	0.36	0.28
50	17.73	35.53	25.76	0.96	4.94	0.45	0.07	0.55	2.42	0.36	0.40
75	16.77	35.49	25.96	0.55	4.69	0.71	--	--	4.40	0.30	0.00
100	16.19	35.92	26.42	0.89	3.11	0.78	0.07	0.87	10.40	0.06	0.57
149	14.22	35.78	26.75		3.46	0.95	0.13	1.13	15.90	0.02	0.00
197	13.13	35.68	26.92		3.68	1.14	0.10	1.28	17.00	--	0.29
198	13.21	35.67	26.89		3.89	1.02	0.02	1.17	15.70	0.45	0.00
296	10.51	35.32	27.13		5.80	1.45	0.03	1.53	18.00	0.13	0.57
396	8.02	35.08	27.35		5.51	1.48	0.05	1.72	21.80	0.49	2.57
495	6.22	35.03	27.57		5.10	1.51	0.04	1.56	14.90	0.04	3.70
594	5.24	35.03	27.69		4.44	1.35	0.07	1.63	15.10	0.00	1.43
792	4.45	35.00	27.77		3.56	1.30	0.03	1.57	18.50	0.05	0.85
992	4.15	34.97	27.77		3.46	1.25	0.10	1.51	13.30	0.05	0.00

CRAWFORD CRUISE NO. 8 STATION NO. 53 LOCATION G

DATE Nov. 30, 1956 LAT. 39° 36.2' N LONG. 71° 07.5' W

DEPTH 2258 m GMT 0836

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	19.57	36.05	25.69	0.39	4.83	0.23	0.03	0.44	1.59	--	0.57
10	19.57	35.86	25.55	0.39	4.79	0.18	0.04	0.45	1.68	--	0.00
25	19.58	35.88	25.56	(a)0.32	4.79	0.22	0.05	0.44	1.58	--	0.29
50	19.63	35.83	25.50	(b)0.41	4.86	0.22	0.05	0.37	1.41	--	3.42
74	19.65	35.88	25.53	(c)0.41	5.03	--	0.09	--	1.75	--	0.00
99	18.16	36.15	26.13	(d)0.33	3.49	0.56	0.04	0.81	8.90	--	1.42
148	--	36.06	--	(e)0.05	3.18	0.66	0.05	0.78	10.30	--	0.28
198	12.97	35.52	26.82		3.84	1.04	0.06	0.78	15.90	--	0.57
297	10.79	35.34	27.09		3.25	1.48	0.02	1.19	24.90	--	0.29
396	8.42	35.13	27.33		3.84	1.60	0.23	1.62	28.50	--	0.29
440	7.79	35.10	27.41		3.56	1.62	0.05	1.80	26.80	--	0.29
540	6.07	35.02	27.58		4.75	1.20	0.05	1.39	20.80	--	0.00
615	--	35.00	--		5.20	1.25	--	--	19.80	--	0.00
815	4.59	35.00	27.75		5.71	1.37	0.08	--	19.00	0.020	0.00
1014	4.18	34.97	27.77		6.00	1.27	--	--	17.30	0.240	2.00
1210	3.92	34.97	27.79		6.02	1.19	0.21	1.48	17.60	0.035	1.14
1408	3.77	34.95	27.79		6.51	--	--	--	23.20	0.130	0.00
1606	3.68	34.96	27.81		6.33	1.42	0.03	--	16.60	0.015	0.00
1804	3.55	34.99	27.85		5.98	1.33	--	--	17.50	0.250	0.57
2002	3.41	34.92	27.79		6.15	1.19	0.03	1.28	20.50	0.160	5.15

(a) 20 m; (b) 40 m; (c) 60 m; (d) 80 m; (e) 100 m.

CRAWFORD CRUISE NO. 8 STATION NO. 54 LOCATION H

DATE Dec. 1, 1956 LAT. 39° 26.9' N LONG. 71° 26.5' W

DEPTH 2240 m GMT 0115

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	19.30	35.89	25.65	(a)0.40	4.96	0.18	0.07	0.50	1.83	0.530	0.57
10	19.39	35.92	25.64	(b)0.34	4.87	0.20	0.05	0.32	1.69	0.330	0.00
25	19.49	35.93	25.63	(c)0.32	5.04	0.22	0.05	0.43	1.82	0.270	0.00
50	19.23	35.89	25.66	(d)0.32	4.96	0.18	0.09	0.56	1.74	0.295	3.44
75	19.40	35.92	25.63	(e)0.35	4.97	0.25	0.05	0.43	1.67	0.385	1.71
99	19.17	35.94	25.70	(f)0.39	4.77	0.20	0.08	0.54	2.30	0.303	5.45
148	15.51	36.00	26.64	(g)0.27	4.00	0.87	--	--	13.50	0.045	1.14
198	13.62	35.69	26.81		3.85	0.96	0.08	1.13	15.00	0.040	0.00
297	10.67	35.34	27.11		3.26	1.47	0.12	1.86	20.60	0.015	0.29
396	8.27	35.08	27.21		3.41	1.71	0.10	1.81	26.00	0.010	0.57
398	8.24				3.56	1.70	0.03	1.73	28.50	0.035	6.30
495	6.62	35.08	27.57		4.28	1.46	0.03	1.54	26.30	0.025	0.86
597	5.38	35.00	27.65		4.72	1.37	--	1.45	20.00	0.025	2.86
796	4.57	34.98	27.73		5.65	1.35	0.09	1.55	18.90	0.015	2.58
995	4.21	34.99	27.77		5.87	1.33	--	1.53	20.00	0.005	0.57
1392	3.78				6.09	1.29	--	1.47	17.50	0.005	1.14
1591	3.66				6.14	1.34	0.09	1.47	20.60	0.025	0.00
1790	3.54				6.02	1.23	--	1.52	16.00	0.020	3.70
1990	3.40				6.09	1.30	0.06	1.45	12.40	0.015	0.00

(a) 0 m; (b) 10 m; (c) 20 m; (d) 40 m; (e) 60 m; (f) 80 m; (g) 100 m.

CRAWFORD CRUISE NO. 8 STATION NO. 55 LOCATION J

DATE Dec. 1, 1956 LAT. 39° 11.4' N LONG. 71° 50.8' W

DEPTH 2250 m GMT 0748

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	17.81	35.36	25.61	(a)0.45	5.02	0.28	0.09	0.64	1.55	0.315	0.20
10	17.78	35.35	25.62	(b)0.59	5.03	0.27	0.09	0.52	1.61	0.325	0.86
25	17.80	35.36	25.62	(c)0.38	5.00	0.20	0.11	0.42	1.50	0.310	0.00
50	17.86	35.38	25.63	(d)0.50	5.00	0.27	0.06	0.42	1.74	0.090	1.42
74	17.65	35.35	25.65	(e)0.46	4.99	0.30	0.05	0.53	2.12	0.045	1.72
99	14.11	35.47	26.55	(f)0.32	3.97	0.90	0.19	--	14.00	0.105	0.00
149	13.90	35.77	26.83	(g)0.18	3.58	1.00	0.09	--	16.3	--	1.72
199	12.27	35.63	27.06		3.31	1.14	0.01	--	20.6	0.015	2.00
298	9.83	35.23	27.19		3.00	--	0.02	--	26.6	--	0.00
398	7.84	35.10	27.41		3.69	1.52	0.01	--	22.3	0.015	0.00
392	8.06	35.08	27.35		3.67	1.66	0.02	1.73	28.3	--	0.00
490	6.28	34.99	27.52		4.33	1.46	0.00	1.64	24.2	--	0.00
588	5.30	34.99	27.65		4.88	1.34	--	1.51	20.2	--	1.14
784	4.58	34.99	27.75		4.92	1.30	0.00	1.30	18.5	--	3.43
985	4.19	34.94	27.75		5.78	1.35	--	1.38	16.8	--	0.00
1175	3.91	34.94	27.78		5.94	1.23	0.01	1.32	20.0	0.015	0.00
1372	3.75	34.94	27.79		6.01	1.29	--	1.41	18.0	0.035	1.14
1568	3.64	34.95	27.81		6.05	1.15	0.00	1.42	17.4	0.025	0.00
1763	3.53	34.94	27.81		6.06	1.27	--	1.55	16.0	0.035	0.29
1960	3.41	34.96	27.85		6.07	1.32	0.00	1.37	16.0	0.020	0.00

(a) 1 m; (b) 10 m; (c) 20 m; (d) 40 m; (e) 60 m; (f) 80 m; (g) 100 m.

CRAWFORD CRUISE NO. 8 STATION NO. 56 LOCATION K

DATE Dec. 1, 1956 LAT. 39° 20.3' N LONG. 71° 03.0' W

DEPTH 1755 m GMT 1305

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	16.14	35.16	25.87	(a)0.80	3.90	0.36	0.05	0.63	2.72	0.420	0.00
9	16.12	35.20	25.89	(b)0.60	4.58	0.33	0.03	0.51	2.73	0.380	0.00
24	16.15	35.20	25.90	(c)1.66	4.56	0.39	0.03	0.55	2.52	0.405	0.00
49	16.22	35.20	25.90	(d)0.66	4.57	0.30	0.05	0.58	2.30	0.375	0.28
74	16.39	35.80	26.29	(e)0.45	4.57	0.70	0.01	0.72	10.4	0.085	0.00
98	15.57	35.90	26.56	(f)0.89	3.82	0.84	0.01	0.85	11.8	0.060	2.86
147	14.01	35.73	26.73		3.07	0.93	0.02	1.06	22.6	0.030	0.57
196	12.53	35.56	26.95		3.32	1.28	0.02	1.30	17.9	0.025	0.29
294	9.83	35.20	27.15		3.62	1.62	0.02	1.71	26.4	0.025	0.57
392	7.33	35.04	27.43		3.67	1.67	0.04	1.79	26.0	0.025	2.28
399	7.44	35.04	27.41		3.81	1.71	0.02	1.73	21.6	0.025	0.00
490	5.70	35.00	27.61		4.71	1.39	--	1.47	24.8	0.025	1.71
594	4.93	34.98	27.69		5.19	1.34	0.01	1.43	20.6	0.020	4.27
792	4.36	34.96	27.74		5.64	1.32	--	1.40	21.3	0.070	0.00
990	4.12	34.94	27.75		5.82	1.33	0.04	1.53	20.0	0.025	0.00
1188	3.96	34.95	27.77		6.03	1.29	--	1.27	16.7	0.035	0.00
1385	3.78	34.94	27.79		5.98	1.45	0.01	1.64	17.0	0.025	0.57
1585	3.65	34.94	27.79		6.16	1.27	--	1.29	18.3	0.035	3.42
1632	3.58	34.93	27.79		5.92	1.35	0.03	1.45	21.0	0.035	0.57

(a) 0 m; (b) 10 m; (c) 20 m; (d) 40 m; (e) 60 m; (f) 80 m.

CRAWFORD CRUISE NO. 8 STATION NO. 57 LOCATION L

DATE Dec. 1, 1956 LAT. 39° 26.2' N LONG. 72° 12.1' W

DEPTH 1133 m GMT 1746

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	15.64	34.93	25.80	(a)0.54	3.25	0.45	0.15	0.72	2.34	0.355	0.74
10	--	34.91	--	(b)0.48	3.76	0.41	0.18	0.84	2.43	--	0.54
25	15.66	34.91	25.78	(c)0.53	4.77	0.38	0.07	0.48	2.05	0.390	0.00
50	16.43	35.30	25.90	(d)0.59	5.24	0.32	0.09	0.53	1.78	0.355	2.00
75	16.57	35.36	25.92	(e)0.62	5.45	0.32	0.08	0.40	2.38	0.390	0.00
99	16.18	37.76	26.30	(f)0.44	5.88	0.71	0.05	0.76	8.90	0.100	0.29
147	13.91	35.62	26.71	(g)0.34	5.74	1.08	0.04	1.12	16.80	0.055	0.29
195	12.75	35.53	26.89		5.25	1.00	0.04	1.14	14.40	0.040	0.00
246	10.26	35.30	27.16		5.31	1.40	0.04	1.52	21.1	0.045	0.86
346	7.70	35.09	27.42		5.24	1.44	0.05	1.63	21.2	0.035	0.86
445	5.64	34.99	27.51		5.13	1.45	0.03	1.49	25.0	0.015	0.00
544	4.92	34.97	27.68		5.08	1.40	0.03	1.43	18.6	0.025	0.57
643	4.58	34.98	27.73		4.03	1.37	0.05	1.42	23.2	0.020	0.00
842	4.20	34.93	27.74		3.53	1.35	0.04	1.39	19.5	0.025	1.15
1042	3.97	34.94	27.77		3.62	1.28	0.05	1.51	18.6	0.035	1.14

(a) 0 m; (b) 10 m; (c) 20 m; (d) 40 m; (e) 60 m; (f) 80 m; (g) 100 m.

CRAWFORD CRUISE NO. 8 STATION NO. 58 LOCATION M

DATE Dec. 1, 1956 LAT. 39° 35.0' N LONG. 72° 25.0' W

DEPTH 436 m GMT 2330

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	13.99	34.54	25.85	(a)1.60	5.44	0.57	0.09	0.66	3.86	0.435	0.00
9	13.98	34.57	25.88	(b)1.31	5.41	--	0.13		3.26	--	0.86
23	14.01	34.58	25.88	(c)1.40	5.39	0.58	0.10	0.68	3.44	0.530	0.29
46	14.12	34.63	25.90	(d)1.18	5.38	0.54	0.09	0.65	3.37	0.560	0.00
67	14.35	34.81	25.98	(e)1.17	5.44	0.64	0.14	0.92	4.6	0.530	0.57
89	13.71	35.42	26.59	(f)0.50	3.92	0.98	0.08	1.06	14.3	0.105	0.00
130	13.45	35.49	26.69	(g)0.86	3.76	0.85	0.03	1.01	16.0	0.060	0.29
170	12.85	35.48	26.81		3.84	1.22	0.03	--	18.8	0.040	0.00
255	10.86	35.35	27.09		3.35	1.46	0.04	--	21.2	0.045	0.86
340	7.74	35.15	27.48		4.07	1.00	0.08	1.58	22.7	0.050	0.86

(a) 0 m; (b) 10 m; (c) 20 m; (d) 40 m; (e) 60 m; (f) 80 m; (g) 100 m.

CRAWFORD CRUISE NO. 8 STATION NO. 59 LOCATION N

DATE Dec. 2, 1956 LAT. 39° 36.5' N LONG. 72° 39.9' W

DEPTH 70 m GMT 0237

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	13.45	34.23	25.73	1.86	5.48	0.52	0.17	0.92	3.48		0.57
10	13.43	34.21	25.72	1.76	5.45	0.62	0.11	0.72	2.89		0.00
24	13.44	34.21	25.72	1.78	5.43	0.58	0.19	0.77	3.16		0.00
40	13.84	34.34	25.72	1.20	5.21	0.59	0.10	0.69	4.00		0.86
60	14.33	34.95	26.09	0.47	4.35	0.81	0.09	0.90	9.10		0.29

CRAWFORD CRUISE NO. 8 STATION NO. 60 LOCATION O

DATE Dec. 2, 1956 LAT. 39° 37.8' N LONG. 72° 54.0' W

DEPTH 60 m GMT 0533

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	13.52	34.45	25.89	1.30	5.47	0.47	0.09	0.75	3.30	0.620	1.43
10		34.46		1.50	5.39	0.49	0.11	0.80	2.46	--	0.00
20	13.68	34.55	25.92	1.40	5.35	0.48	0.15	--	3.32	0.430	2.28
30	13.80	34.61	25.95	--	5.37	0.50	0.10	0.89	3.50	0.400	0.86
40	13.95	34.71	26.00	1.25	5.26	0.79	0.12	--	3.58	0.650	0.00
50	14.27	34.88	26.06	--	4.82	0.65	0.06	0.83	5.70	0.405	4.00

CRAWFORD CRUISE NO. 8 STATION NO. 61 LOCATION P

DATE Dec. 2, 1956 LAT. 39° 40' N LONG. 73° 08' W

DEPTH 36 m GMT 0855

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	11.88	33.14	25.20	3.00	5.76	0.68	0.15	0.91	1.86	0.385	0.29
10	11.86	33.13	25.19	2.75	5.75	0.66	0.15	0.96	1.88	--	0.00
20	11.91	33.12	25.18	3.22	5.75	0.66	0.15	1.00	1.84	0.370	0.00
30	11.92	33.12	25.17	2.55	5.75	0.57	0.14	0.99	2.09	0.210	1.71

CRAWFORD CRUISE NO. 8 STATION NO. 62 LOCATION Q

DATE Dec. 2, 1956 LAT. 39° 42.3' N LONG. 73° 20.2' W

DEPTH 35 m GMT 1317

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	11.75	33.20	25.26	(a)3.65	5.79	0.54	0.16	0.85	1.16	0.370	0.00
10	11.76	33.17	25.24	(b)3.25	5.81	0.50	0.17	0.99	1.71	--	0.00
20	11.80	33.17	25.24	(c)3.66	5.84	0.53	0.19	0.99	1.51	0.345	0.57
30	11.82	33.20	25.25	(d)3.60	5.80	0.63	0.17	0.90	1.45	0.370	2.00

(a) 0 m; (b) 5 m; (c) 20 m; (d) 25 m.

CRAWFORD CRUISE NO. 8 STATION NO. 63 LOCATION R

DATE Dec. 2, 1956 LAT. 39° 44.2' N LONG. 73° 32.2' W

DEPTH 36 (chart) m GMT 2123

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1		32.98		3.40	5.84	0.74	0.22	1.01	1.07	0.190	0.00
10		32.64		3.25	6.02	0.49	0.22	0.94	0.50	--	0.00
20		32.62		4.20	6.02	0.59	0.20	1.04	0.50	0.090	0.31
30		32.61		3.55	6.02	0.82	0.18	1.00	0.39	0.105	4.00

CRAWFORD CRUISE NO. 8 STATION NO. 64 LOCATION S

DATE Dec. 3, 1956 LAT. 39° 45.9' N LONG. 73° 53.5' W

DEPTH 26 m GMT 0026

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	9.96	31.73	24.44	(a)5.10	6.07	0.62	0.18	1.06	0.36	0.050	3.36
10	9.99	31.71	24.42	(b)2.70	6.08	0.65	0.17	1.10	0.98	--	0.00
20	9.97	31.74	24.45	(c)2.70	6.10	0.61	0.16	0.88	0.36	0.055	0.00
23	9.98	31.74	24.45	(d)2.80	6.11	0.71	0.22	1.04	0.39	0.045	0.57

(a) 0 m; (b) 5 m; (c) 10 m; (d) 20 m.

CRAWFORD CRUISE NO. 8 STATION NO. 65 LOCATION T

DATE Dec. 3, 1956 LAT. 39° 54.1' N LONG. 73° 39.7' W

DEPTH 25 (chart) m GMT 0243

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	11.04	32.75	25.05	5.45	6.02	0.65	0.20	0.85	0.51	0.090	1.14
10	11.01	32.75	25.06	5.05	6.02	0.62	0.21	0.74	0.71	--	2.18
20	11.08	32.74	25.04	7.00	6.07	0.52	0.22	0.74	0.51	0.100	0.57
30	11.09	32.76	25.05	5.40	6.01	0.63	0.20	0.83	0.50	0.110	1.14

CRAWFORD CRUISE NO. 8 STATION NO. 66 LOCATION U

DATE Dec. 3, 1956 LAT. 40° 02.0' N LONG. 73° 24.6' W

DEPTH 74 (chart) m GMT 0521

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	11.15	33.07	25.28	3.75	6.01	0.66	0.20	0.96	1.31	--	2.00
10	11.13	33.07	25.29	4.50	5.96	--	0.23	--	1.70	--	0.28
20	11.61	33.38	25.45	3.10	5.85	0.64	0.21	1.01	1.47	--	0.00
30	12.00	33.58	25.52	--	5.76	0.63	0.16	0.83	1.84	0.475	1.43
40	12.69	33.94	25.65	2.85	5.63	0.58	0.13	0.76	2.70	--	0.57
50	13.56	34.26	25.73	--	5.42	0.66	0.08	0.68	4.03	0.655	0.00
60	14.17	34.54	25.82	1.10	5.12	0.57	0.10	0.76	4.80	--	0.00
70	14.20	34.56	25.82	1.05	5.12	--	0.14	0.81	4.40	--	1.71

CRAWFORD CRUISE NO. 8 STATION NO. 67 LOCATION V

DATE Dec. 3, 1956 LAT. 40° 09.6' N LONG. 73° 07.8' W

DEPTH 40 m GMT 0819

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	11.18	32.87	25.12	(a)4.00	5.79	0.59	0.21	0.98	1.71	0.270	2.00
10	11.13	32.88	25.13	(b) --	5.90	0.75	0.24	0.99	1.56	--	1.43
20	11.27	32.87	25.10	(c)4.40	5.95	0.79	0.31	1.23	1.27	0.290	3.42
30	11.18	32.89	25.13	(d)4.37	5.95	0.63	0.28	1.14	1.58	0.275	3.17
35	11.60	33.01	25.15	(e)1.70	5.95	0.68	0.20	0.97	3.20	0.325	2.56

(a) 0 m; (b) 10 m; (c) 20 m; (d) 30 m; (e) 40 m.

CRAWFORD CRUISE NO. 8 STATION NO. 68 LOCATION W

DATE Dec. 3, 1956 LAT. 40° 21.0' N LONG. 72° 51.7' W

DEPTH 40 m GMT 1127

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	11.37	32.90	25.10	3.65	5.78	0.80	0.16	1.03	2.91	0.225	0.00
10	11.34	32.92	25.12	4.15	5.76	0.74	0.16	1.04	2.60	--	2.56
20	11.46	33.02	25.19	4.75	5.79	0.74	0.17	1.07	2.47	0.205	0.00
30	11.50	33.06	25.21	4.45	5.80	0.76	--	1.06	2.42	0.225	0.29
35	11.74	33.22	25.29	--	5.79	0.71	0.18	1.11	3.44	0.260	0.00

CRAWFORD CRUISE NO. 8 STATION NO. 69 LOCATION X

DATE Dec. 3, 1956 LAT. 40° 30.7' N LONG. 72° 35.5' W

DEPTH 40 m GMT 1400

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	11.34	33.00	25.19	4.85	5.81	0.49	0.19	1.07	2.94	0.195	1.15
10	--	32.96	--	4.40	5.79	0.50	0.18	1.04	2.80	--	1.14
20	11.37	33.02	25.20	4.85	5.76	0.53	--	1.08	2.97	0.205	0.00
30	11.43	33.04	25.21	5.18	5.79	0.50	0.20	1.28	2.88	0.195	0.00
35	11.67	33.20	25.29	--	5.78	0.55	0.24	1.30	5.20	0.125	2.00

CRAWFORD CRUISE NO. 8 STATION NO. 70 LOCATION Y

DATE Dec. 3, 1956 LAT. 40° 39.8' N LONG. 72° 20.5' W

DEPTH 43 (chart) m GMT 1642

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	11.14	32.93		4.15	5.86	0.58	0.17	0.90	2.21	0.200	0.87
10	11.13	32.91		4.30	5.86	0.60	0.21	0.93	2.16	--	4.86
20	11.16	32.91		4.15	5.83	0.62	0.18	0.95	2.65	0.190	0.57
30	11.27	32.92		4.45	5.83	0.57	--	1.18	2.64	0.215	0.80
35	11.16	32.92		--	5.81	0.80	0.18	0.98	2.98	0.205	0.00

CRAWFORD CRUISE NO. 8 STATION NO. 71 LOCATION Z

DATE Dec. 3, 1956 LAT. 40° 47.0' N LONG. 72° 02.5' W

DEPTH 42 (chart) m GMT 1959

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	11.37	33.07	25.23	4.65	5.88	0.75	0.19	0.94	3.80	0.205	0.28
10	11.32	33.07	25.24	4.85	5.73	0.79	--	0.84	3.00	--	0.57
20	11.35	33.07	25.24	5.00	5.88	0.81	--	1.20	3.50	0.160	2.00
30	11.47	33.14	25.27	4.75	5.83	0.80	--	0.94	3.13	0.185	3.66
35	11.71	33.32	25.37	--	5.83	0.76	0.21	0.97	3.10	0.215	0.86

BEAR CRUISE 159

February 12-17, 1957

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BEAR CRUISE NO. 159 STATION NO. 105 LOCATION A

DATE Feb. 13, 1957 LAT. 40° 57.7' N LONG. 71° 49.8' W

DEPTH 34 m GMT 2343

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	3.02	31.65	25.22	1.77	7.26	1.14	0.11	1.49	4.7	0.293	0.46
10	3.21	32.37	25.79	2.78	7.26	1.01	0.13	1.39	3.8	0.105	--
20	3.32	32.51	25.89	2.75	7.24	0.95	--	--	3.8	0.085	0.34
30	--	32.58	--	2.27	7.25	1.05	0.15	1.52	3.0	0.188	0.46

BEAR CRUISE NO. 159 STATION NO. 106 LOCATION B

DATE Feb. 14, 1957 LAT. 40° 43.5' N LONG. 71° 42.5' W

DEPTH 59 m GMT 0302

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	5.51	32.88	25.96	0.32	6.76	0.81	0.16	1.18	5.4	0.155	0.00
10	5.50	32.89	25.96	0.47	6.77	0.83	0.22	1.13	4.2	0.200	0.00
20	5.64	32.95	26.00	1.10	6.75	0.83	0.08	1.14	4.9	0.161	0.00
30	--	33.14	--	1.02	6.67	0.94	0.11	1.19	5.8	0.119	0.00
40	6.24	33.18	26.11	--	6.69	0.81	--	1.15	3.9	0.101	2.40
50	6.03	33.16	26.08	1.00	--	0.81	0.07	1.08	5.7	0.431	10.20

BEAR CRUISE NO. 159 STATION NO. 107 LOCATION C

DATE Feb. 14, 1957 LAT. 40° 30.5' N LONG. 71° 37.4' W

DEPTH 72 m GMT 0706

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	5.78	32.95	25.98	0.78	6.34	0.93	0.10	1.18	4.9	0.150	1.09
10	5.77	32.97	26.00	0.82		0.85	0.08	1.22	4.0	0.129	--
20	5.80	32.91	25.95	0.34	6.75	0.91	0.09	1.20	5.1	0.140	0.74
30	5.85	32.92	25.95	--	6.70	0.91	--	1.12	5.5	0.121	1.09
40	5.85	32.95	25.98	0.62	6.73	0.86	0.08	1.10	5.1	0.130	0.00
49	5.84	32.95	25.98	--	6.72	0.94	--	1.10	4.8	0.121	0.00
59	6.05	32.96	25.96	0.18	6.63	0.92	0.09	1.17	5.7	0.119	0.11

BEAR CRUISE NO. 159 STATION NO. 108 LOCATION D

DATE Feb. 14, 1957 LAT. 40° 18.7' N LONG. 71° 28.5' W

DEPTH 78 m GMT 1015

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	7.16	33.22	26.01	0.80	6.47	0.95		1.03	6.4	0.165	0.00
10	7.12	33.22	26.01	0.50	6.64	0.74		1.09	6.1	0.114	--
20	7.18	33.22	26.01	0.39	6.63	0.91		1.00	5.1	0.161	0.23
30	7.20	33.22	26.02	--	6.63	0.85		--	5.9	0.152	0.09
39	7.23	33.22	26.02	0.33	6.62	0.85		0.98	5.8	0.152	0.20
49	7.26	33.22	26.02	--	6.62	0.81		1.02	5.5	0.155	0.00
59	7.20	33.21	26.02	0.43	6.63	0.83		0.97	7.4	0.121	0.00

BEAR CRUISE NO. 159 STATION NO. 109 LOCATION E

DATE Feb. 14, 1957 LAT. 39° 59.3' N LONG. 71° 21.0' W

DEPTH 314 (chart) m GMT 2049

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	12.99	35.37	26.70	0.55	5.39	0.62	0.06	0.72	6.3	0.090	0.57
8	12.94	35.40	26.73	--	5.39	0.65	0.09	0.81	5.0	0.080	--
20	13.04	35.39	26.71	0.02	5.34	0.58	0.05	0.69	7.1	0.121	0.40
40	12.96	35.37	26.68	0.53	5.32	0.65	0.03	0.76	6.4	0.079	0.46
60	12.79	35.34	26.71	0.19	5.34	0.56	0.08	0.77	7.1	0.111	0.00
80	12.83	35.36	26.71	0.19	5.23	0.69	0.06	0.90	7.6	0.095	0.00
120	13.10	35.44	26.72	0.00	5.07	0.67	--	0.79	8.1	0.090	0.00
160	13.03	35.44	26.75		5.07	1.06	--	1.07	8.5	0.140	0.49

BEAR CRUISE NO. 159 STATION NO. 110 LOCATION F

DATE Feb. 15, 1957 LAT. 39° 48.5' N LONG. 71° 10.8' W

DEPTH ____ m GMT 0205

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	14.22	35.80	26.77	(a) 0.46	5.01	0.51	0.07	0.73	8.1	0.130	0.69
10	14.26	35.78	26.75	(b) 0.00	5.06	0.55	0.04	0.90	3.8	0.060	--
24	14.29	35.76	26.73	(c) 0.16	4.98	0.61	0.03	0.92	6.0	0.168	0.12
47	14.30	35.76	26.73	(d) 0.13	5.00	0.56	0.09	0.85	6.2	0.079	0.00
71	14.30	35.83	26.78	(e) 0.14	5.12	0.54	0.04	0.90	9.6	0.100	0.00
96	14.28	35.82	26.80	(f) 0.14	4.99	--	--	--	6.7	0.110	--
146	14.32	35.80	26.75		5.02	0.57	--	--	4.2	0.101	0.00
196	12.78	35.62	26.94		3.23	1.18	0.05	1.48	18.6	0.218	0.00
250	11.20	35.38	27.05		2.81	1.38	--	0.85	23.0	0.011	0.00
435	6.91	35.06	27.49		4.02	1.33	--	1.44	23.0	0.011	0.00
535	5.74	35.01	27.52		4.74	1.46	0.04	1.64	18.8	0.231	0.00
--	5.80	34.97	--		5.33	--	--	--	11.6	0.161	--
910	4.28	34.96	27.74		5.60	1.30	0.02	1.45	21.5	0.362	0.00

(a) 1 m; (b) 10 m; (c) 25 m; (d) 55 m; (e) 85 m; (f) 110 m.

BEAR CRUISE NO. 159 STATION NO. 111 LOCATION G

DATE Feb. 15, 1957 LAT. 39° 36.3' LONG. 71° 09.0' W

DEPTH 2280 (chart) m GMT 0518

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	13.88	35.67	26.74	0.00	5.12	0.68	0.12	0.81	9.7	0.017	0.00
10	13.89	35.66	26.75	0.00	5.12	0.53	0.03	0.72	7.2	0.076	--
24	13.92	35.64	26.72	0.00	5.06	0.63	0.04	0.78	4.5	0.110	0.00
47	13.96	35.65	26.71	0.00	5.24	0.79	0.03		8.4	0.090	0.00
71	13.98	35.68	26.73	0.27	5.12	0.62	0.06	0.98	7.3	0.080	--
95	13.96	35.64	26.71	0.00	5.15	0.64	0.01	0.78	5.5	0.114	--
142	--	35.65	--		5.09	0.75	--	0.84	6.7	0.114	--
190	13.44	35.62	26.80		3.50	1.18	--	1.27	15.0	0.023	--
284	10.28	35.26	27.12		3.10	1.78	0.04	1.92	19.9	0.000	--
656	5.00	35.06	27.74		4.88	1.48	0.00	1.57	20.4	0.010	--
820	4.55	34.95	27.71		5.44	1.46	--	1.49	15.7	0.010	--
1161	3.88				5.84	1.23	0.00	1.56	12.8	0.003	--
1344	3.75	34.91	27.76		5.98	1.31	--	1.53	16.3	0.015	--
1720	3.57	34.86	27.72		6.07	1.33	0.00	1.39	16.0	0.043	--

BEAR CRUISE NO. 159 STATION NO. 112 LOCATION H

DATE Feb. 15, 1957 LAT. 39° 25.8' N LONG. 71° 28.7' W

DEPTH 2900 (chart) m GMT 1343

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	11.52	35.17	26.83	--	--	--	0.06		9.3	0.158	--
9	11.52	35.08	26.76	0.09	--	0.69	0.03	0.86	9.7	0.209	--
22	11.56	35.08	26.76	0.09	--	0.65	0.03	0.86	3.2	0.130	0.00
44	11.61	35.08	26.74	--	--	0.64	0.04	0.94	8.1	0.114	0.00
65	11.62	35.06	26.70	0.00	--	0.54	0.03	0.81	7.8	0.101	0.00
88	11.64	35.07	26.72	0.045	--	--	0.02	--	--	--	--
176	11.89	35.50	27.03		3.23	1.34	0.01	1.62	15.1	0.018	0.00
267	9.30	35.24	27.27		3.10		--	1.63	20.4	0.022	0.00
202	10.13	35.29	27.18		2.99	--	--	1.68	5.7	0.015	--
420	6.94	35.05	27.49		4.14	1.27	--	1.38	29.3	0.023	0.00
560	5.03	35.02	27.70		5.13	1.25	--	1.45	18.7	0.020	0.00
742	--	35.03	--		5.44	1.35	--	1.31	20.1	0.034	0.00
1086	3.94	34.98	27.69		5.87	1.16	0.01	1.46	16.5	0.000	0.23
1261	3.84	34.97	27.80		5.94	1.32	--	1.54	16.6	0.034	0.00
1440	3.71	34.98	27.82		6.03	1.27	--	1.51	17.8	0.030	0.00
1620	3.63	34.98	27.83		5.97	1.23	0.03	1.49	18.5	0.008	0.00

BEAR CRUISE NO. 159 STATION NO. 113 LOCATION J

DATE Feb. 15, 1957 LAT. 39° 10.6' N LONG. 71° 49.0' W

DEPTH 2230 (chart) m GMT 2132

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	11.87	35.20	26.80	0.29	5.55	0.67	0.08	1.01	7.8	0.085	0.00
8	11.89	35.16	26.76	0.24	5.53	0.61	0.06	0.98	7.6	0.111	0.00
21	11.90	35.17	26.76	0.28	5.49	0.67	0.09	0.89	3.5	0.111	0.80
40	11.90	35.18	26.76	0.29	5.49	0.70	0.08	0.98	7.1	0.100	0.00
61	11.95	35.18	26.75	0.23	5.53	0.65	0.05	0.93	3.5	0.117	12.4
97	11.95	35.18	26.75	0.14	5.49	0.75	0.06	0.82	3.2	0.108	0.00
164	11.97	35.21	26.78		5.44	0.67	0.06	0.84	7.4	0.099	--
330	7.63	35.09	27.42		3.62	1.84	0.01	1.90	9.8	0.019	--
440	5.99	35.04	27.58		4.52	1.54	--	1.66	20.3	0.010	--
550	5.00	35.02	27.71		5.13	1.47	--	1.59	18.5	0.003	--
617	4.47	35.01	27.77		4.15	1.64	--	1.82	21.1	0.000	0.00
790	4.26	34.99	27.78		5.64	1.29	0.01	1.51	16.3	0.000	0.12
1085	4.05	34.99	27.79		5.82	1.37	--	1.47	17.9	0.038	0.00
1512	4.79	34.98	27.71		6.03	1.35	0.00	1.57	16.6	0.038	0.00

BEAR CRUISE NO. 159 STATION NO. 114 LOCATION K

DATE Feb. 16, 1957 LAT. 39° 19.3' N LONG. 72° 01.4' W

DEPTH 1929 (chart) m GMT 0300

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	13.02	35.53	26.82	0.46	5.19	0.53	0.05	0.84	3.6	0.108	0.00
10	13.10	35.52	26.80	--	5.16	0.62	0.03	0.84	0.8	0.075	--
25	13.12	35.51	26.78	0.22	5.20	--	0.03	--	2.8	0.076	0.00
50	13.14	35.52	26.79	0.32	5.19	0.62	0.06	0.81	3.5	0.095	0.20
74	13.13	35.53	26.80	0.14	5.17	0.64	0.07	0.83	7.4	0.132	0.00
99	12.98	35.50	26.81	0.09	5.30	0.62	0.03	0.79	3.8	0.091	0.00
199	12.34	35.75	27.12		3.22	1.27	0.05	1.45	13.7	0.073	0.00
299	9.42	35.24	27.25		5.20	1.64	--	1.71	11.2	0.019	0.00
352	8.42	35.15	27.34		3.44	1.86	0.04	--	8.0	0.023	0.49
540	5.23	35.04	27.70		4.94	1.36	--	1.42	19.4	0.008	0.29
736	4.41	34.97	27.72		5.53	1.27	0.06	1.55	14.1	0.060	0.23
950	4.16	35.01	27.80		5.79	1.38	--	1.36	6.3	0.008	0.29
1140	4.09	34.99	27.79		5.87	1.21	0.02	1.37	--	0.006	0.00
1330	--	34.99	--		5.90	1.27	--	1.32	17.3	0.003	0.34
1542	3.85	34.99	27.81		5.91	1.29	0.02	1.40	16.3	0.034	0.00

BEAR CRUISE NO. 159 STATION NO. 115 LOCATION L

DATE Feb. 16, 1957 LAT. 39° 27.4' N LONG. 72° 10.4' W

DEPTH 1000 (chart) m GMT 0812

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	12.41	35.35	26.80	0.30	5.73	0.61	0.05	0.93	3.8	0.130	0.23
10	12.46	35.37	26.81	0.00	5.36	0.69	0.006	1.02	6.8	0.106	--
25	12.50	35.35	26.77	0.50	5.39	0.63	0.07	0.85	3.6	0.108	0.00
50	12.48	35.35	26.78	0.23	5.36	--	--	--	--	--	--
75	12.48	35.38	26.81	0.23	5.38	0.54	0.06	1.00	6.9	0.090	0.09
100	12.47	35.35	26.78	--	5.40	0.64	0.04	1.00	7.5	0.079	0.80
200	12.69	35.60	26.94	--	3.49	1.17	0.02	1.36	18.8	0.058	0.00
294	11.19	35.45	27.11	--	3.17	1.48	--	1.52	10.0	0.053	0.20
392	8.70	35.24	27.37	--	3.28	1.62	0.05	1.80	12.5	0.034	0.17
490	7.02	35.11	27.52	--	3.95	1.61	--	1.60	25.6	0.034	1.09
587	5.68	35.35	27.89	--	4.81	1.41	0.06	1.69	16.0	0.097	0.00
784	4.66	35.02	27.75	--	5.36	1.36	0.02	1.51	19.7	0.043	0.00

BEAR CRUISE NO. 159 STATION NO. 116 LOCATION N

DATE Feb. 16, 1957 LAT. 39° 37.0' N LONG. 72° 39.5' W

DEPTH 69 m GMT 1221

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	8.66	33.92	26.35	0.30	6.08	0.69	0.05	1.07	3.5	0.172	0.34
10	8.68	33.90	26.34	0.39	6.08	0.79	0.05	0.98	6.1	0.154	--
20	8.68	33.90	26.34	0.75	6.07	0.74	0.08	1.12	4.9	0.195	0.09
30	8.71	33.90	26.32	--	6.07	0.79	--	0.98	6.0	0.161	0.29
40	8.84	33.93	26.34	0.35	6.07	0.94	0.07	--	7.9	0.152	0.17
50	8.76	34.07	26.45	--	6.01	0.75	--	0.92	6.1	0.155	0.23
60	9.39	34.15	26.42	0.29	5.95	0.72	0.05	0.95	8.0	0.155	0.00

BEAR CRUISE NO. 159 STATION NO. 117 LOCATION O

DATE Feb. 16, 1957 LAT. 39° 38.0' N LONG. 72° 53.0' W

DEPTH 66 m GMT 1419

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	6.96	33.40	26.19	1.38	6.55	0.75	0.11	1.00	2.1	0.155	
10	6.93	33.41	26.20	1.50	6.55	0.75	0.09	1.08	--	--	
20	6.97	33.38	26.17	1.23	6.55	0.81	0.11	1.22	6.3	0.129	
30	6.99	33.34	26.14	--	6.57	0.72	--	1.07	5.3	0.155	
40	7.02	33.32	26.12	1.25	6.56	0.69	0.10	1.02	4.9	0.158	
50	8.12	33.87	26.40	--	6.18	0.78	--	0.95	2.1	0.210	
60	8.25	33.97	26.45	1.45	6.18	0.84	0.09	0.95	4.3	0.170	

BEAR CRUISE NO. 159 STATION NO. 118 LOCATION P

DATE Feb. 16, 1957 LAT. 39° 38.8' N LONG. 73° 07.4' W

DEPTH 39 m GMT 1630

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	6.29	33.67	26.48	2.13	6.71	0.75	0.13	1.15	1.2	0.121	0.80
10	6.25	33.69	26.50	2.33	6.76	0.75	0.13	1.15	1.2	0.130	--
20	6.37	33.65	26.46	2.05	6.70	0.99	0.16	1.19	1.2	0.114	0.09
30	6.47	33.72	26.49	2.50	6.60	0.80	0.09	1.15	1.2	0.121	0.52

BEAR CRUISE NO. 159 STATION NO. 119 LOCATION Q

DATE Feb. 16, 1957 LAT. 39° 42.3' N LONG. 73° 20.1' W

DEPTH 55 m GMT 1846

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	6.32	33.82	26.60	1.60	6.70	0.80	0.12	1.33	1.5	0.101	0.57
10	6.28	33.82	26.62	1.55	6.29	0.79	0.10	1.16	1.3	0.130	--
20	6.32	33.82	26.60	1.00	6.68	0.89	0.15	1.18	3.0	0.152	0.17
30	6.32	33.81	26.60	--	6.68	0.81	0.15	1.19	1.4	0.090	0.40

BEAR CRUISE NO. 159 STATION NO. 120 LOCATION R

DATE Feb. 16, 1957 LAT. 39° 44.5' N LONG. 73° 32.0'W

DEPTH 35 m GMT 2052

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	5.87	33.71	26.57	1.75	6.68	0.85	0.15	1.33	2.8	0.099	5.7
10	5.85	33.74	26.59	2.50	6.85	0.80	0.12	1.08	1.3	0.090	--
20	5.90	33.72	26.57	2.17	6.73	0.85	0.14	1.21	1.6	0.101	0.29
30	5.94	33.73	26.58	2.03	6.80	0.95	0.27	1.32	2.8	0.090	0.86

BEAR CRUISE NO. 159 STATION NO. 121 LOCATION S

DATE Feb. 16, 1957 LAT. 39° 45.7' N LONG. 73° 53.0' W

DEPTH 24 m GMT 2323

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	3.97	32.87	26.11	3.40	7.11	0.95	0.35	1.40	1.4	0.091	0.52
10	3.92	32.91	26.15	3.14	7.13	0.93	0.29	1.23	2.3	0.095	--
20	4.39	33.11	26.26	3.44	7.01	0.96	0.32	--	1.6	0.097	0.62

BEAR CRUISE NO. 159 STATION NO. 122 LOCATION T

DATE Feb. 17, 1957 LAT. 39° 54.5' N LONG. 73° 40.5' W

DEPTH 32 m GMT 0127

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	3.99	32.96	26.18	1.63	7.03	1.00	0.06	1.09	3.4	0.073	0.57
10	4.00	32.95	26.18	1.77	7.03	0.89	0.13	1.19	1.9	0.101	--
20	4.43	33.16	26.29	2.17	6.87	1.00	0.14	1.37	1.6	0.108	0.80
30	4.51	33.19	26.31	2.40	6.87	1.12	0.18	1.33	1.8	0.097	1.37

BEAR CRUISE NO. 159 STATION NO. 123 LOCATION U

DATE Feb. 17, 1957 LAT. 40° 01.5' N LONG. 73° 25.0' W

DEPTH 70 m GMT 0350

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	5.96	33.55	26.44	2.00	6.80	0.78	0.12	1.11	1.3	0.127	0.00
10	5.92	33.56	26.44	2.78	6.76	0.79	--	--	2.4	0.119	--
20	6.18	33.58	26.43	2.58	6.69	0.80	0.18	1.02	1.7	0.142	0.49
30	6.38	33.63	26.44	--	6.54	0.84	0.13	0.98	1.8	0.121	0.29
40	6.08	33.56	26.42	2.50	6.34	0.69	0.11	1.02	1.6	0.130	0.40
50	6.19	33.59	26.44	--	6.70	0.75	0.11	0.93	3.0	0.114	0.68
60	6.49	33.67	26.46	5.00	6.70	0.65	0.10	0.91	1.6	0.155	0.00

BEAR CRUISE NO. 159 STATION NO. 124 LOCATION V

DATE Feb. 17, 1957 LAT. 40° 09.6' N LONG. 73° 07.7' W

DEPTH 40 m GMT 0645

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	6.12	33.53	26.40	2.45	6.76	0.98	0.14	0.98	2.4	0.095	
10	6.13	33.45	26.34	2.15	6.77	0.98	0.11	0.98	3.2	0.110	
20	6.21	33.46	26.33	--	6.81	1.07	0.13	1.07	2.3	0.155	
30	6.18	33.49	26.36	--	6.54	1.00	0.13	1.00	2.4	0.110	

BEAR CRUISE NO. 159 STATION NO. 125 LOCATION W

DATE Feb. 17, 1957 LAT. 40° 21.0' N LONG. 72° 52.0' W

DEPTH 43 m GMT 0917

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	4.95	32.95	26.08	3.20	6.96	0.80	0.15	1.10	1.7	0.101	0.00
10	4.96	32.96	26.08	3.60	6.96	0.93	0.17	1.07	1.4	0.108	--
20	5.10	32.98	26.08	--	6.94	0.81	0.19	1.20	1.3	0.108	0.00
30	5.58	33.14	26.15	--	6.87	0.81	0.18	1.07	1.7	0.111	0.37

BEAR CRUISE NO. 159 STATION NO. 126 LOCATION X

DATE Feb. 17, 1957 LAT. 40° 24.3' N LONG. 72° 45.6' W

DEPTH 44 m GMT 1030

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	6.01	33.37	26.28		6.72	0.73	0.07	1.09	2.2	0.165	0.00
10	6.11	33.36	26.26		6.72	0.79	0.15	1.20	3.6	0.150	--
20	6.18	33.38	26.27		6.73	0.75	0.09	0.96	1.1	0.185	0.00
30	6.38	33.42	26.28		6.71	0.73	0.10	1.11	4.9	0.140	0.68

BEAR CRUISE NO. 159 STATION NO. 127 LOCATION Y

DATE Feb. 17, 1957 LAT. 40° 37.1' N LONG. 72° 18.4' W

DEPTH 48 m GMT 1925

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	4.89	32.89	26.04	2.75	7.02	0.86	0.14	1.13	1.6	0.142	0.00
10	4.87	32.95	26.09	2.26	7.06	1.00	0.13	1.32	2.2	0.130	--
20	5.12	32.99	26.10	1.72	6.97	0.83	0.17	1.15	1.8	0.129	0.00
30	5.09	33.18	26.24	2.67	6.97	0.79	0.16	1.15	1.8	0.133	0.00

BEAR CRUISE NO. 159 STATION NO. 128 LOCATION Z

DATE Feb. 17, 1957 LAT. 40° 47.2' N LONG. 72° 04.2' W

DEPTH 40 m GMT 2130

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	4.57	32.79	25.99	4.11	7.04	0.85	0.15	1.08	0.9	0.119	0.00
10	4.57	32.78	25.99	3.54	7.12	0.91	0.18	1.16	1.9	0.119	--
20	4.71	32.80	25.98	3.20	7.14	0.81	0.14	1.19	1.7	0.129	0.37
30	5.31	33.13	26.18	2.98	6.91	0.80	0.18	1.07	2.4	0.140	0.00

BEAR CRUISE 162

March 21-25, 1957

Scientific Personnel

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BEAR CRUISE NO. 162 STATION NO. 129 LOCATION A

DATE March 22, 1957 LAT. 40° 57.3' N LONG. 71° 49.5' W

DEPTH 37 m GMT 0119

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	4.10	31.73	25.20	0.88	7.10	0.73	0.19	1.19	1.85	0.580	0.37
10	4.18	32.01	25.42	1.39	7.08	0.77	0.19	1.15	1.30	0.150	0.00
20	4.31	32.51	25.71	1.20	6.99	0.76	0.10	1.04	1.48	0.105	0.09
30	4.38	32.55	25.81	1.58	6.95	0.70	0.12	1.09	2.75	0.275	0.00

BEAR CRUISE NO. 162 STATION NO. 130 LOCATION B

DATE March 22, 1957 LAT. 40° 43.2' N LONG. 71° 41.9' W

DEPTH 37 m GMT 0510

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	5.04	32.84	25.98	1.52	6.90	0.75	0.11	1.12	3.20	0.208	0.00
10	5.01	32.83	25.98	1.57	6.97	0.76	0.12	1.07	4.00	0.153	--
20	5.07	32.83	25.98	1.50	6.95	0.81	0.11	1.07	3.40	0.138	0.00
30	5.07	32.84	25.98	3.14	6.97	0.78	0.10	1.10	3.80	0.158	0.28
40	5.04	32.83	25.98	--	6.95	0.77	0.09	0.96	3.90	0.400	0.37
50	5.00	32.83	25.98	1.30	6.90	0.77	0.08	0.99	4.25	0.480	0.37

BEAR CRUISE NO. 162 STATION NO. 131 LOCATION C

DATE March 22, 1957 LAT. 40° 31.2' N LONG. 71° 34.2' W

DEPTH 67 m GMT 0833

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	4.34	32.62	25.89	0.75	6.92	0.78	0.13	1.04	3.12	0.110	0.67
10	4.32	32.63	25.89	1.82	6.88	0.68	0.14	0.97	3.30	0.091	0.98
20	4.38	32.62	25.88	0.75	6.99	0.74	0.16	0.96	2.95	0.140	0.00
30	4.35	32.62	25.89	--	6.89	0.76	0.12	0.95	2.75	0.110	0.94
40	4.35	32.62	25.89	0.77	6.99	0.72	0.12	1.02	3.16	0.150	0.47
50	4.21	32.60	25.88	--	6.90	0.68	0.15	1.08	2.58	0.140	0.98
60	4.30	32.64	25.90	3.75	6.87	0.63	0.18	1.14	3.00	0.300	1.42

BEAR CRUISE NO. 162 STATION NO. 132 LOCATION D

DATE March 22, 1957 LAT. 40° 31.2' N LONG. 71° 34.2' W

DEPTH 74 m GMT 1050

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	5.63	33.11	26.12	4.25	7.04	0.67	0.15	1.08	3.46	0.160	--
10	5.62	33.07	26.10	3.40	7.03	0.72	0.16	1.01	3.90	0.170	0.37
20	5.66	33.11	26.12	5.20	6.99	0.74	0.20	1.01	3.74	0.130	0.00
30	5.73	33.10	26.11	--	7.01	0.63	0.20	0.94	4.40	0.125	0.00
40	5.83	33.13	26.12	5.61	7.05	0.66	0.15	1.12	3.13	0.137	0.00
50	5.77	33.16	26.15	--	7.01	0.68	0.16	0.97	4.12	0.153	0.37
60	5.83	33.15	26.14	5.20	6.99	0.73	0.11	0.89	3.92	0.205	0.00
	GMT 1411										
1	5.77	33.14	26.11		7.10						
10	5.73	33.14	26.12		7.10						
20	5.76	33.15	26.14		7.04						
40	5.77	33.16	26.14		7.01						
50	5.86	33.19	26.16		6.91						
	GMT 1642										
1	6.02	33.14	26.10		7.15						
10	5.76	33.15	26.14		7.21						
20	5.77	33.14	26.13		7.08						
40	5.77	33.14	26.13		7.02						
60	5.86	33.19	26.14		6.88						

BEAR CRUISE NO. 162 STATION NO. 133 LOCATION E

DATE March 22, 1957 LAT. 39° 59.4' N LONG. 71° 19.5' W

DEPTH 320 (chart) m GMT 2009

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	7.94	33.76	26.34	4.02	6.83	0.63	0.20	0.93	2.85	0.163	1.35
9	8.02	33.79	26.35	6.95	6.86	0.58	0.15	0.88	3.40	0.188	0.75
23	8.36	34.01	26.48	7.00	6.72	0.54	0.18	0.90	2.84	0.192	0.00
47	9.58	34.35	26.55	5.25	6.12		0.11	0.81			0.28
70	11.28	34.92	26.69	2.73	5.47	0.68	0.06	0.86	6.00	0.250	0.00
93	12.24	35.20	26.72		5.65	0.61	0.08	0.78	4.90	0.260	0.15
137	13.16	35.54	26.80		5.18	0.61	0.02	0.76	2.50	0.410	0.00
184	12.52	35.54	26.93		4.27	0.95	0.02	1.02	12.70	0.620	0.00

BEAR CRUISE NO. 162 STATION NO. 134 LOCATION F

DATE March 22, 1957 LAT. 39° 48.5' N LONG. 71° 10.3' W

DEPTH 1250 (chart) m GMT 2315

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	15.49	36.07	26.71	0.44	5.04	0.36	0.06	0.82	4.20	0.245	0.28
10	15.47	36.09	26.72	0.44	5.04	0.51	0.06	0.65	5.30	0.300	0.00
25	15.54	36.07	26.71	0.40	5.04	0.40	0.06	0.57	5.60	0.265	0.00
50	15.52	36.08	26.71	0.50	5.04	0.47	0.02	0.56	6.40	0.290	0.09
75	15.59	36.10	26.71	0.30	5.04	--	0.03	0.55	5.60	0.265	0.00
100	15.49	36.09	26.71	0.45	5.05	0.44	0.02	0.62	5.20	0.265	0.00
146	15.53	36.09	26.71		5.04	0.48	--	0.54	5.30	0.318	0.28
192	15.40	36.10	26.74		5.02	0.51	0.02	0.60	5.50	0.318	0.09
192	15.10	36.05	26.78		4.95	0.55	--	0.53	5.50	0.285	0.00
276	12.08	35.53	27.01		3.19	1.16	--	1.19	14.70	0.268	0.23
370	9.17	35.20	27.29		3.27		0.01	1.59	18.00	0.048	0.00
464	7.26	35.11	27.49		3.85	1.55	--	1.53	14.40	0.080	0.00
563	6.09	35.06	27.62		4.04	1.47	0.00	1.46	16.40	0.638	0.09
762	4.66	35.00	27.74		5.42	1.32	--	1.33	14.20	0.260	0.00
962	4.21	34.97	27.77		5.71	1.25	0.00	1.26	16.20	0.390	0.00

BEAR CRUISE NO. 162 STATION NO. 135 LOCATION G

DATE March 23, 1957 LAT. 39° 35.7' N LONG. 71° 07.0' W

DEPTH 2270 (chart) m GMT 0346

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	15.83	36.22	26.74	0.24	4.86	0.39	0.04	0.55	7.10	0.262	0.00
10	15.85	36.21	26.73	0.27	4.95	0.46	0.01	0.51	4.90	0.265	0.00
25	15.88	36.24	26.75	0.39	4.94	0.41	0.01	--	4.90	0.265	0.09
50	15.89	36.24	26.74	0.39	4.95	0.41	0.02	0.46	4.80	0.250	0.00
75	15.92	36.23	26.73	0.33	4.96	0.48	0.03	0.52	5.40	0.294	0.28
100	15.87	36.23	26.74	0.25	4.94	0.46	0.02	0.55	6.60	0.225	0.00
147	15.92	36.22	26.72		5.03	0.55	--	0.60	5.50	0.290	0.00
192	15.89	36.22	26.72		4.98	0.47	0.03	0.58	6.20	0.278	0.60
282	13.07	35.66	26.91		3.43	1.30	0.01	0.59	14.30	0.142	0.32
285	13.15	35.67	26.91		3.58	1.08	--	1.18	12.90	0.050	0.09
364	12.66	35.68	27.01		3.98	0.91	0.00	1.06	12.30	0.052	0.40
425	10.15	35.31	27.18		3.04	1.51	--		18.00	0.048	0.19
478	7.80	35.08	27.40		3.61	1.48	0.03	1.54	19.40	0.058	0.21
555	--	35.30	--		4.02	1.22	--	1.57	17.40	0.052	0.28
680	7.18	35.10	27.48		4.05		0.01		18.00	0.044	0.00
850	5.09	35.03	27.71		5.05	--	--	1.54	14.10	0.018	0.00
1026	--	35.03	--		5.63	1.17	0.01	1.39	15.20	0.050	0.00
1210	3.98	34.98	27.79		5.85	1.26	--	1.37	16.20	0.122	0.00
1410	3.78	35.00	27.83		5.98	1.16	--	1.30	13.80	0.120	0.23
1610	3.62	34.99	27.84		5.95	1.13	0.01	1.25	14.20	0.080	0.00

BEAR CRUISE NO. 162 STATION NO. 136 LOCATION H

DATE March 23, 1957 LAT. 39° 27.0' N LONG. 71° 28.2' W

DEPTH 2220 (chart) m GMT 0941

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	15.26	36.10	26.80	0.57	5.27	0.36	0.04	0.50	4.90	0.240	0.00
10	15.24	36.10	26.79	0.68	5.18	0.48	0.04	0.50	6.00	0.285	0.00
25	15.28	36.07	26.74	--	5.14	0.48	0.00	0.51	4.30	0.232	0.00
49	15.23	36.07	26.76	0.52	5.09	0.42	0.01	0.59	4.20	0.264	0.19
72	15.27	36.07	26.76	0.55	5.09	0.48	0.03	0.53	7.40	0.260	0.00
95	15.23	36.05	26.76	0.53	5.14	0.46	0.02	0.56	6.00	0.262	0.00
143	15.28	36.05	26.74		5.04	0.68	--	0.69	4.90	0.262	0.00
190	13.33	35.71	26.90		3.97	1.02	0.09	1.10	9.60	0.040	0.47
285	10.84	35.36	27.10		3.15	--	0.05	1.41	19.60	0.030	0.00
	GMT 1115										
280	10.92	--	--		3.11	1.45	--	1.52	--	--	--
365	8.31	35.11	27.34		3.18	1.34	0.00	1.47	20.00	0.011	0.00
450	6.89	35.08	27.52		3.86	1.60	--	1.59	20.40	0.030	0.28
536	5.81	35.01	27.60		4.62	1.34	0.00	1.49	17.20	0.020	0.00
715	5.06	35.02	27.70		5.31	1.20	--	1.36	13.80	0.010	0.00
900	4.20	34.96	27.75		5.73	1.18	0.11	1.52	14.80	0.020	0.00
1085	3.91	34.93	27.77		5.94	1.23	--	1.36	12.30	0.010	0.09
1282	3.78	34.95	27.79		5.99	1.23	0.04	1.31	15.10	0.040	0.00
1486	3.70	34.96	27.80		6.01	1.22	--	1.33	13.70	0.048	0.47
1675	3.66	34.95	27.81		6.01	1.25	--	1.30	15.90	0.052	0.00
1873	3.51	34.95	27.82		5.96	1.27	0.02	1.36	18.50	0.032	0.04
	GMT 1435										
1	15.17	36.07	26.78		5.15						
10	15.14	36.05	26.77		5.13						
25	15.17	--	--		5.11						
50	15.16	36.05	26.77		5.15						
75	15.15	36.03	26.75		5.13						
100	15.08	36.01	26.75		5.13						
	GMT 1655										
1	15.19	36.05	26.76		5.15						
10	15.17	36.03	26.75		5.04						
25	15.17	36.05	26.77		5.04						
50	15.17	36.04	26.76		5.06						
75	15.21	36.07	27.77		5.03						
100	15.06	36.03	26.78		5.11						

BEAR CRUISE NO. 162 STATION NO. 137 LOCATION J

DATE March 23, 1957 LAT. 39° 10.9' N LONG. 71° 50.9' W

DEPTH 2210 (chart) m GMT 2007

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	14.79	35.94	26.76	1.06	5.29	0.41	0.06	0.68	5.40	0.225	0.09
10	14.77	35.95	26.77	0.82	5.30	0.49	0.06	0.66	4.90	0.265	0.00
24	14.79	35.96	26.77	1.04	5.26	0.44	0.05	0.53	5.40	0.248	0.13
48	14.74	35.94	26.77	1.19	5.25	0.44	0.07	0.61	5.60	0.260	0.28
72	14.76	35.92	26.75	1.43	5.20	0.48	0.05	0.64	5.80	0.252	0.09
96	14.66	35.94	26.99	1.00	5.17	0.48	0.09	0.71	4.00	0.264	0.00
142	13.11	35.65	26.90		5.03	0.74	--	0.98	9.10	0.060	0.00
187	12.11	35.53	27.01		3.62	1.17	0.04	1.34	12.60	0.068	0.00
279	9.34	35.20	27.24		3.00	--	0.08	1.80	20.60	0.060	0.42
262	9.06	35.15	27.22		3.09	1.61	--	1.67	18.60	0.040	0.00
349	7.97	35.08	27.37		3.18	1.80	0.04	1.87	14.00	0.028	0.09
436	6.35	35.04	27.56		4.23	1.40	--	1.66	16.70	0.010	0.00
524	5.25	35.00	27.67		5.07	1.29	0.01	1.59	13.10	0.025	0.32
698	4.76	35.00	27.72		5.42	1.33	--	1.41	12.50	0.117	0.00
872	4.15	34.98	27.78		5.75	1.22	0.07	1.29	13,70	0.050	0.00
1056	3.90	34.95	27.79		5.91	1.19	--	1.30	14.20	0.034	0.00
1240	3.76	34.94	27.78		6.02	1.18	--	1.25	13.60	0.032	0.00
1426	3.65	34.95	27.81		6.02	1.24	0.15		15.00	0.040	0.00
1613	3.66	34.96	27.82		6.02	1.17	--	1.26	14.20	0.028	0.00
1800	3.58	34.95	27.82		6.08	1.27	--	1.34	12.40	0.028	0.00

BEAR CRUISE NO. 162 STATION NO. 138 LOCATION K

DATE March 24, 1957 LAT. 39° 20.5' N LONG. 72° 03.0' W

DEPTH 1930 (chart) m GMT 0100

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	15.13	36.00	26.73	0.64	5.06	0.48			4.90	0.294	0.00
10	15.15	36.04	26.76	0.35	5.05	0.42	0.06	0.60	5.40	0.282	0.13
24	15.18	36.03	26.75	0.42	5.09	0.48	0.07	0.65	5.50	0.318	0.00
48	15.15	36.04	26.76	0.45	5.09	0.48	0.04	0.58	5.70	0.287	0.00
71	15.00	36.02	26.78	0.47	5.09	0.47	0.06	0.64	6.50	0.282	0.00
95	15.13	36.00	26.73	0.44	5.15	0.51	0.06	0.60	4.60	0.294	0.00
142	15.10	35.98	26.73		5.02	0.50	--	0.57	6.00	0.280	0.00
190	12.94	35.62	26.91		3.41	1.19	0.05	1.24	8.30	0.028	0.00
285	9.86	35.23	27.18		3.06	1.58	0.07	1.65	15.60	0.032	0.47
392	7.98	35.07	27.35		3.47	1.62	0.04	1.66	18.60	0.011	0.00
485	6.16	35.00	27.55		4.39	1.53	--	1.53	18.30	0.032	0.13
579	5.36	34.98	27.64		4.91	1.24	0.02	1.45	15.20	0.020	0.09
760	4.55	34.97	27.63		5.42	1.22	--	1.34	15.20	0.015	0.00
941	4.19	34.95	27.78		5.75	1.16	0.02	1.27	13.80	0.028	0.00
1130	4.17	34.96	27.67		5.72	1.25	--	1.26	12.50	0.034	0.00
1320	3.89	34.97	27.80		5.90	1.16	--	1.33	14.80	0.010	0.32
1505	3.74	34.94	27.79		6.04	1.15	0.03	1.33	13.00	0.034	0.09

BEAR CRUISE NO. 162 STATION NO. 139 LOCATION L

DATE March 24, 1957 LAT. 39° 26.7' N LONG. 72° 10.5' W

DEPTH 1000 (chart) m GMT 0010

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	14.98	35.96	26.73	1.12	5.07	0.53	0.07	0.71	4.40	0.290	0.00
10	15.00	35.98	26.74	0.93	5.08	0.54	0.05	0.67	5.20	0.285	0.00
24	15.03	35.96	26.72	--	--	0.50	0.08	0.65	5.20	0.274	0.00
48	15.05	35.98	26.73	0.84	5.09	0.45	0.05	0.71	5.00	0.250	0.09
72	15.07	36.01	26.75	1.16	5.16	0.49	0.08	0.73	5.70	0.260	0.38
95	15.07	36.03	26.75		4.93	0.50	0.04	0.66	4.90	0.220	0.28
142	14.86	35.98	26.78		4.88	0.62	--	0.65	6.90	0.255	0.00
189	12.83	35.62	26.92		4.47	0.72	0.01	0.86	9.30	0.028	0.13
185	13.09	35.62	26.88		4.26	0.95	--	0.96	9.30	0.034	0.00
276	10.12	35.29	27.10		3.09	1.52	0.07	1.59	18.80	0.032	0.00
367	8.40	35.11	27.32		3.45	1.59	--	1.58	19.30	0.028	0.00
461	6.37	35.00	27.54		5.03	1.46	0.03	1.50	17.40	0.040	0.28
554	5.46	34.97	27.59		4.91	1.38	--	1.39	16.20	0.029	0.00
745	4.65	34.95	27.70		5.41	1.30	0.02	1.44	13.20	0.070	0.28

BEAR CRUISE NO. 162 STATION NO. 140 LOCATION M

DATE March 24, 1957 LAT. 39° 35.0' N LONG. 72° 25.0' W

DEPTH 460 (chart) m GMT 0851

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	6.23	32.22	26.14	4.75	7.20	0.57	0.18	0.88	2.15	0.095	0.00
9	6.20	33.22	26.14	4.05	7.23	0.70	0.25	0.96	2.55	0.125	0.00
23	6.25	33.28	26.19	4.97	6.88	0.64	0.16	0.92	3.10	0.123	0.23
47	8.16	33.94	26.45	1.86	6.40	0.63	0.10	0.83	3.20	0.175	0.00
70	8.92	34.14	26.49	2.65	5.75	0.62	--	0.84	5.40	0.191	0.00
90	10.63	34.75	26.67	2.00	5.88	0.82	0.09	0.91	6.60	0.234	0.28
135	12.19	35.29	26.79		5.05	0.75	--	0.89	7.80	0.195	0.00
180	11.90	35.36	26.90		4.34	0.80	0.05	1.06	10.00	0.091	0.00
270	10.48	35.36	27.18		3.58	1.49	--	1.53	12.70	0.060	0.00
360	8.09	35.17	27.43		3.85	1.29	0.05	1.43	14.00	0.110	0.00

BEAR CRUISE NO. 162 STATION NO. 141 LOCATION N

DATE March 24, 1957 LAT. 39° 36.8' N LONG. 72° 39.6' W

DEPTH 75 (chart) m GMT 1134

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	6.26	33.11	26.06	1.38	6.99	0.57	0.13	0.88	2.16	0.100	0.00
10	6.23	33.11	26.06	0.95	6.97	0.65	0.12	0.86	2.32	0.120	1.35
20	6.07	33.11	26.08	0.83	6.94	0.68	0.11	0.95	2.48	0.110	0.00
30	6.06	33.13	26.08	--	6.88	0.62	0.16	0.94	2.25	0.124	0.70
40	6.17	33.15	26.10	1.00	6.84	0.63	0.11	0.97	2.52	0.095	0.75
50	6.31	33.29	26.19	--	6.67	0.80	0.08	0.94	3.30	0.130	0.32
60	6.37	33.29	26.18	0.98	6.66	0.67	0.08	0.87	4.60	0.124	0.42

BEAR CRUISE NO. 162 STATION NO. 142 LOCATION O

DATE March 24, 1957 LAT. 39° 38.0' N LONG. 72° 54.5' W

DEPTH 61 m GMT 1349

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	7.01	33.32	26.11	2.95	7.05	0.53	0.19	0.92	2.01	0.120	0.00
10	6.81	33.32	26.14	2.85	7.05	0.63	0.22	1.08	1.90	0.145	0.09
20	6.83	33.32	26.14	3.52	6.99	0.60	0.16	0.95	2.30	0.085	0.00
30	6.75	33.37	26.20	--	6.84	0.56	0.11	0.86	2.31	0.090	0.42
40	6.79	33.36	26.18	2.65	6.80	0.61	0.11	0.93	2.53	0.123	0.00
50	6.86	33.37	26.18	--	6.75	0.56	0.12	0.89	2.30	0.140	0.60
60	6.69	33.47	26.28	1.75	6.50	0.68	0.06	0.86	2.48	0.105	0.70

BEAR CRUISE NO. 162 STATION NO. 143 LOCATION P

DATE March 24, 1957 LAT. 39° 39.7' N LONG. 73° 07.5' W

DEPTH 40 m GMT 1532

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	7.05	33.49	26.25	3.53	7.53	0.36	0.18	0.85	0.58	0.040	0.00
10	6.82	33.51	26.29	4.70	7.48	0.44	0.24	0.99	0.57	0.083	0.00
20	6.54	33.54	26.35	1.12	6.76	0.69	0.15	0.92	1.38	0.098	0.00
30	6.52	33.56	26.35	--	6.69	0.60	0.27	1.03	1.26	0.092	0.38

BEAR CRUISE NO. 162 STATION NO. 144 LOCATION Q

DATE March 24, 1957 LAT. 39° 41.4' N LONG. 73° 20.0' W

DEPTH 35 m GMT 1650

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	6.48	33.40	26.25	0.56	6.87	0.60	0.08	0.78	1.12	0.119	0.00
10	6.27	33.41	26.28	1.56	6.89	0.57	0.13	1.04	1.11	0.070	0.00
20	6.23	33.45	26.32	1.71	6.79	0.65	0.11	0.89	1.17	0.080	0.13
30	6.22	33.43	26.31	2.00	6.75	0.62	0.14	0.91	1.37	0.095	0.09

BEAR CRUISE NO. 162 STATION NO. 145 LOCATION R

DATE March 25, 1957 LAT. 39° 44.2' N LONG. 73° 31.6' W

DEPTH 34 m GMT 0100

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	7.33	33.46	26.18	1.45	6.98	0.53	0.10	0.79	0.99	0.095	0.00
10	6.33	33.43	26.29	1.84	7.11	0.56	0.18	0.91	1.14	0.090	0.38
20	6.41	33.48	26.32	3.60	7.02	--	0.14	0.87	--	--	0.38
30	6.35	33.50	26.34	2.75	6.67	0.57	0.12	0.87	1.71	0.090	0.42

BEAR CRUISE NO. 162 STATION NO. 146 LOCATION S

DATE March 25, 1957 LAT. 39° 45.0' N LONG. 73° 53.0' W

DEPTH 24 m GMT 0329

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	5.57	33.00	26.05	0.78	6.94	0.47	0.13	0.89	0.61	0.034	0.47
10	5.51	33.07	26.10	0.66	6.84	0.55	0.15	0.85	0.60	0.032	0.00
20	5.35	33.20	26.23	0.63	6.81	0.62	0.21	0.94	0.50	0.046	0.28

BEAR CRUISE NO. 162 STATION NO. 147 LOCATION T

DATE March 25, 1957 LAT. 39° 54.0' N LONG. 73° 39.0' W

DEPTH 31 m GMT 0547

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	5.76	33.18	26.18	0.75	6.86	0.65	0.08	0.87	1.07	0.85	0.00
10	5.76	33.22	26.20	0.60	6.84	0.66	0.08	0.86	0.88	0.90	0.47
20	5.81	33.22	26.19	0.62	6.85	--	0.06	0.83	--	--	0.19
30	5.69	33.17	26.17	0.67	6.83	--	0.19	1.01	0.98	0.95	0.00

BEAR CRUISE NO. 162 STATION NO. 148 LOCATION U

DATE March 25, 1957 LAT. 40° 01.4' N LONG. 73° 24.4' W

DEPTH 69 m GMT 0804

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	6.30	33.31	26.20	4.24	7.20	0.47	0.14	0.91	0.57	0.050	0.00
10	6.32	33.32	26.21	4.03	7.26	0.54	0.16	0.84	0.83	0.040	0.13
20	6.47	33.38	26.24	4.08	7.19	--	0.15	0.83	--	--	0.00
30	6.62	33.43	26.26	4.00	7.06	0.55	0.14	0.80	0.76	0.018	0.00
40	6.58	33.45	26.28	--	6.84	--	0.10	0.84	--	--	0.38
50	6.54	33.43	26.27	3.25	6.72	--	0.11	0.84	5.40	0.150	0.49
60	6.55	33.45	26.28	--	6.72	0.60	0.11	0.80	1.48	0.088	0.19

BEAR CRUISE NO. 162 STATION NO. 149 LOCATION V

DATE March 25, 1957 LAT. 40° 09.5' N LONG. 73° 08.5' W

DEPTH 47 m GMT 1039

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	6.02	33.21	26.16	3.45	7.10	0.69	0.16	0.91	1.12	0.078	0.47
10	6.00	33.19	26.15	2.70	7.10	0.63	0.17	0.85	1.31	0.083	0.00
20	6.05	33.22	26.16	3.25	7.02	--	0.19	0.98	--	--	0.42
30	6.05	33.22	26.16	2.75	7.02	0.60	0.20	0.96	1.42	0.062	0.00

BEAR CRUISE NO. 162 STATION NO. 150 LOCATION W

DATE March 25, 1957 LAT. 40° 20.8' N LONG. 72° 52.0' W

DEPTH 44 m GMT 1302

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	5.11	32.64	25.82		6.97	0.57	0.16	1.05	1.50	0.090	0.00
10	5.09	32.64	25.82		7.05	0.69	0.15	1.02	1.17	0.090	0.00
20	5.14	32.65	25.82		6.99	--	0.11	0.93	--	--	0.38
30	5.15	32.78	25.92		6.89	0.63	0.12	0.90	1.68	0.095	0.77

BEAR CRUISE NO. 162 STATION NO. 151 LOCATION X

DATE March 25, 1957 LAT. 40° 31.0' N LONG. 72° 36.5' W

DEPTH 38 m GMT 1515

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	5.28	32.57	25.74	1.76	7.17	0.66	0.13	0.89	1.36	0.122	0.77
10	5.16	32.56	25.75	1.26	7.11	0.63	0.14	0.99	1.56	0.090	0.28
20	5.19	32.58	25.76	1.38	7.09	--	--	0.99	--	--	0.19
30	5.05	32.69	25.86	0.83	6.82	0.74	0.09	0.95	1.56	0.098	0.60

BEAR CRUISE NO. 162 STATION NO. 152 LOCATION Y

DATE March 25, 1957 LAT. 40° 40.5' N LONG. 72° 20.6' W

DEPTH 40 m GMT 1719

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	5.18	32.30	25.54	1.22	7.21	0.71	0.15	1.16	1.34	0.088	0.00
10	5.26	32.53	25.71	1.45	7.24	0.67	0.12	0.89	1.36	0.092	0.19
20	5.05	32.71	25.88	1.50	6.99	--	0.07	0.88	--	--	0.56
30	5.35	32.82	25.93	1.22	6.88	0.66	0.10	0.87	2.22	0.095	0.13

BEAR CRUISE NO. 162 STATION NO. 153 LOCATION Z

DATE March 25, 1957 LAT. 40° 47.3' N LONG. 72° 03.3' W

DEPTH 40 m GMT 1939

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	5.40	32.13	25.38	0.75	7.19	0.71	0.08	0.88	1.24	0.078	0.28
10	5.03	32.55	25.76	0.93	7.06	--	--	0.87	2.75	0.095	0.51
20	5.20	32.80	25.93	0.78	7.00	0.72	--	0.92	3.44	0.110	0.47
30	5.28	32.91	26.01	2.25	6.80	0.74	0.07	0.91	2.75	0.095	0.60

BEAR CRUISE 165

April 29-May 3, 1957

Scientific Personnel

Bostwick H. Ketchum,
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Vaughan T. Bowen
Nathaniel Corwin
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S. T. S. Rao
John H. Ryther
Allyn Seymour
David H. Shonting
William H. Sutcliffe, Jr.
Charles S. Yentsch

BEAR CRUISE NO. 165 STATION NO. 154 LOCATION A

DATE April 29, 1957 LAT. 40° 57.3' N LONG. 71° 48.7' W

DEPTH 38 m GMT 2159

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	8.27	30.87	24.03	1.50	6.83	0.81	0.14	1.09	1.30	0.160	0.75
10	7.74	31.50	24.59	1.60	7.03	0.54	0.12	0.75	0.96	0.100	0.47
20	6.77	31.99	25.10	1.55	6.92	0.56	0.10	0.76	0.84	0.130	0.51
30	5.78	32.54	25.66	1.95	6.49	0.78	0.06	0.85	1.90	0.120	0.89

BEAR CRUISE NO. 165 STATION NO. 155 LOCATION B

DATE April 30, 1957 LAT. 40° 43.5' N LONG. 71° 40.0' W

DEPTH 64 m GMT 0058

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	9.25	31.78	24.59	0.15	6.97	0.59	0.08	0.69	0.88	0.040	0.51
10	7.87	32.31	25.22	0.69	6.91	0.48	0.07	0.69	0.58	0.065	0.00
20	6.45	32.46	25.52	1.00	7.03	0.56	0.11	0.74	0.76	0.095	0.00
30	5.47	32.62	25.76	0.73	6.83	0.68	0.05	0.75	1.25	0.070	0.47
40	5.20	32.64	25.81	--	6.56	0.64	0.06	0.87	1.04	0.070	0.61
50	4.77	32.70	25.92	1.11	5.96	0.89	0.05	1.01	1.30	0.300	0.00

BEAR CRUISE NO. 165 STATION NO. 156 LOCATION C

DATE April 30, 1957 LAT. 40° 31.5' N LONG. 71° 33.9' W

DEPTH 70 m GMT 0411

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	8.26	32.58	25.36	0.50	6.92	0.48	0.12	0.72	0.62	0.025	0.00
10	8.27	32.59	25.37	0.55	6.92	0.52	0.17	0.78	0.44	0.040	1.61
20	6.27	32.78	25.73	1.50	6.92	0.51	0.19	0.85	0.47	0.038	0.00
30	5.23	32.71	25.86	--	6.56	0.69	0.12	0.92	0.62	0.040	2.62
40	5.34	32.81	25.92	0.27	6.35	0.76	0.11	0.97	0.80	0.070	1.92
50	5.22	32.87	25.99	--	6.24	0.70	0.08	1.02	1.30	0.075	2.02
60	5.41	32.92	26.00	0.24	6.24		0.07	1.09	1.90	0.262	2.87

BEAR CRUISE NO. 165 STATION NO. 157 LOCATION D

DATE April 30, 1957 LAT. 40° 17.4' N LONG. 71° 27.1' W

DEPTH 74 m GMT 0635

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	9.96	33.50	25.81	0.50	6.63	0.32	0.10	0.73	0.62	0.065	0.09
10	9.91	33.47	25.79	0.73	6.67	0.35	0.11	0.65	0.72	0.055	0.00
20	9.23	33.63	26.04	0.77	6.77	0.42	0.13	0.65	0.52	0.045	0.00
30	9.28	33.92	26.26	--	6.36	0.53	0.11	0.70	0.72	0.075	0.38
40	9.85	34.26	26.43	0.90	5.71	0.56	0.07	0.76	1.40	0.360	1.17
50	9.58	34.32	26.68	--	5.01	1.31	0.06	1.23	5.20	0.430	1.22
60	10.58	34.61	26.57	0.40	4.89	0.85	0.09	1.03	7.00	0.690	0.28

BEAR CRUISE NO. 165 STATION NO. 158 LOCATION E

DATE April 30, 1957 LAT. 39° 59.6' N LONG. 71° 18.5' W

DEPTH 320 (chart) m GMT 0933

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	11.24	34.19	26.14	1.30	6.44	0.37	--	--	0.50	0.030	0.00
10	11.21	34.23	26.17	1.26	6.49	0.29	0.13	0.56	--	0.038	0.00
24	10.61	34.52	26.49	1.78	5.97	0.49	0.10	0.70	1.94	0.300	0.00
48	12.37	35.21	26.70	0.45	5.22	0.64	0.05	0.70	5.40	0.085	--
72	13.07	35.49	26.77	0.28	5.97	0.83	0.04	0.88	4.60	0.050	0.00
96	13.77	35.72	26.81	0.44	5.06	0.63	0.06	0.68	4.40	0.125	0.00
142	12.62	35.31	26.72	--	6.08	0.65	0.03	0.86	--	--	0.19
188	13.91	35.78	26.83	--	5.05	0.57	0.04	0.66	4.60	0.100	0.00
279	12.28	35.58	27.01	--	3.72	1.12	0.04	1.14	--		

BEAR CRUISE NO. 165 STATION NO. 159 LOCATION F

DATE April 30, 1957 LAT. 39° 47.5' N LONG. 71° 10.2' W

DEPTH 1246 (chart) m GMT 1904

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	12.08	34.59	26.27	2.00	6.35		0.22	0.57	1.30	0.160	
10	12.01	34.57	26.26	1.94	6.34	0.21	0.15	0.43	0.58	0.130	
25	12.53	35.09	26.57	1.78	5.84	0.32	0.12	0.44	1.80	0.275	
50	14.01	35.76	26.79	0.30	5.13	0.56	0.04	0.66	4.38	0.100	
75	14.29	35.91	26.92	1.00	5.01	0.53	0.02	0.57	4.20	0.058	
98	14.17	35.86	26.84	0.28	5.04	0.64	0.03	0.65	6.00	0.050	
143	13.69	35.75	26.85		4.59	0.75	--	0.77	7.90	0.355	
190	11.55	35.45	27.03		3.52	1.26	0.04	1.21	9.40		
176	11.93	35.47	27.00		3.67	1.25	--	1.14	16.20	0.065	
230	9.36	35.18	27.22		3.17	1.40	0.03	1.36	7.90	0.072	
286	8.95	35.20	27.31		3.12	1.66	0.03	0.56	10.60	0.225	
400	6.43	35.06	27.56		4.02	1.51	--	1.60	15.20	0.085	
556	5.21	35.04	27.71		4.31	1.36	0.00	1.36	15.40	0.092	

BEAR CRUISE NO. 165 STATION NO. 160 LOCATION G

DATE April 30, 1957 LAT. 39° 36.3' N LONG. 71° 08.0' W

DEPTH 2250 (chart) m GMT 2221

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	12.18	34.59	26.25	1.48	6.26	0.40	0.20	0.70	0.60	0.135	0.38
10	12.37	34.65	26.26	1.60	6.26	--	0.19	0.60	0.60	0.105	0.00
25	12.86	35.35	26.71	0.73	5.34	0.44	0.04	0.63	4.80	0.360	0.21
49	13.49	35.57	26.75	0.84	5.26	0.52	0.02	0.65	4.20	0.155	0.00
73	13.72	35.70	26.81	0.33	5.05	0.64	0.03	0.77	4.60	0.070	0.00
96	14.15	35.85	26.83	0.35	4.97	0.61	0.03	0.69	6.60	0.060	0.09
142	12.86	35.61	26.92		4.37	0.90	--	0.89	8.70	0.043	0.19
187	11.72	35.45	27.01		3.17		0.04	1.18	--	0.060	0.51
282	8.77	35.15	27.30		3.12	1.11	0.05	1.54	14.80	0.160	0.00
281	8.72	35.15	27.30		3.17	1.59	--	--	13.00	0.105	--
376	7.21	35.10	27.50		3.70	1.43	0.00	1.59	13.30	0.105	0.00
470	6.02	35.07	27.63		4.46	1.30	--	1.38	11.20	0.030	0.19
564	4.87	34.98	27.70		5.12	1.27	0.00	1.31	10.80	0.092	0.28
751	4.35	34.93	27.71		5.52	1.23	--	1.22	12.60	0.040	0.19
940	4.13	35.00	27.79		5.72	1.19	0.02	1.28	11.30	0.040	0.00
1127	4.00	34.91	27.74		5.79	1.07	--	1.15	13.80	0.045	0.51
1317	3.80	34.93	27.77		5.92		0.01	1.15	9.40	0.090	0.51
1502	3.72	34.95	27.80		5.92	1.08	--	1.18	16.70	0.075	0.19
1690	3.64	34.92	27.82		5.95	1.22	--	1.25	12.50	0.050	0.42
1880	3.49	34.93	27.81		5.95	1.23	0.01	1.27	9.60	0.070	0.19

BEAR CRUISE NO. 165 STATION NO. 161 LOCATION H

DATE May 1, 1957 LAT. 39° 25.7' N LONG. 71° 27.0' W

DEPTH 2212 (chart) m GMT 0348

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	9.99	33.25	25.62	1.22	6.98	0.35	0.29		0.60	0.105	0.28
9	9.97	33.29	25.65	1.08	6.98	0.33	0.17	0.87	0.60	0.060	0.19
22	9.08	33.41	25.89	2.63	7.07	0.41	0.18		0.52	0.070	0.28
45	9.97	34.36	26.49	0.77	5.95	0.63	0.08	0.80	3.90	0.430	0.00
67	11.65	34.97	26.66	0.85	5.55	0.56	0.08	0.82	4.04	0.215	0.24
88	13.02	35.46	26.77	0.34	5.29	0.68	0.04	0.73	4.00	0.130	0.42
132	13.18	35.63	26.86		4.63	0.77	--	0.79	7.50	0.032	0.00
178	12.06	35.50	27.00		3.79	1.25	0.04		6.50	0.065	0.00
275	7.57	35.06	27.41		3.58	1.32	0.02	--	12.00	0.100	0.23
258	7.90	35.10	27.39		3.44	1.55	--	1.50	14.60	0.092	0.19
350	6.62	35.01	27.50		4.01	1.55	0.01	1.52	13.80	0.035	0.00
436	5.48	34.96	27.61		4.70	1.37	--	1.32	10.80	0.045	0.28
522	4.98	34.98	27.69		5.03	1.27	0.03	1.29	10.40	0.120	0.00
699	4.66	34.98	27.72		5.31	1.15	--	1.12	9.80	0.080	0.80
874	4.39	34.94	27.72		5.54	1.26	0.05	--	12.20	0.028	0.00
1049	4.00	34.97	27.53		5.77	1.15	--	1.22	9.60	0.050	0.00
1224	3.89	34.95	27.79		5.84	1.16	0.13	--	12.80	0.120	0.00
1398	3.72	34.95	27.79		5.88	1.09	--	1.18	11.70	0.100	0.14
1574	3.66	34.93	27.79		5.92	1.22	--	1.31	15.40	0.030	0.00
1758	3.50	34.95	27.82		5.90	1.25	0.07	1.34	11.00	0.070	0.00

BEAR CRUISE NO. 165 STATION NO. 162 LOCATION J

DATE May 1, 1957 LAT. 39° 11.2' N LONG. 71° 51.0' W

DEPTH 2230 (chart) m GMT 1118

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	13.91	35.34	26.48	2.18	6.04	0.19	0.15	0.50	0.60	0.150	0.09
10	13.94	35.42	26.54	2.25	6.03	0.27	0.14	0.44	0.97	0.045	0.00
24	13.78	35.34	26.52	2.23	6.01	0.39	0.16	0.49	1.10	0.155	0.00
48	13.77	35.67	26.77	1.25	5.46	0.43	--	--	3.00		0.00
71	13.85	35.76	26.83	0.52	5.18	0.41	0.13	0.67	4.20	0.190	0.32
94	14.27	35.89	26.84	0.55	5.03	0.64	0.01	0.63	4.20	0.145	0.00
141	14.45	35.96	26.85		5.03	0.58	--	0.67	6.00	0.115	0.47
187	13.77	35.81	26.89		4.97	0.53	0.04	0.71	5.80	0.120	0.19
278	11.09	35.40	27.09		3.08	1.40	0.03	1.40	9.60	0.120	1.45
270	11.10	35.40	27.08		3.07	1.40	--	1.42	10.80	0.060	2.35
360	8.80	35.16	27.28		3.07	1.53	0.04	1.57	13.30	0.100	0.00
450	7.02	35.07	27.50		3.85	1.86	--	1.52	9.30	0.090	--
540	5.82	35.06	27.64		4.52	1.38	0.02	1.43	11.00	0.045	0.47
720	4.63	35.06	27.82		5.29	1.10	--	1.22	9.40	0.035	0.00
923	4.25	34.96	27.75		5.63	1.21	0.00	1.21	11.70	0.060	0.00
1080	3.97	34.93	27.76		5.71	1.11	--	1.22	8.20	--	0.47
1263	3.81	34.93	27.77		5.86	1.16	0.00	1.16	12.60	0.035	0.70
1445	3.70	34.91	27.77		5.92	1.09	--	1.15	8.20	0.080	0.75
1628	3.62	34.90	27.77		5.97	1.20	--	1.28	11.70	0.050	0.47
1815	3.50	34.95	27.82		5.90	1.16	0.00	1.16	15.80	0.050	2.91

BEAR CRUISE NO. 165 STATION NO. 163 LOCATION K

DATE May 1, 1957 LAT. 39° 21.3' N LONG. 72° 04.0' W

DEPTH 1927 (chart) m GMT 1622

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	11.82	34.22	25.27	1.13	6.40	0.33	0.19	0.67	0.93	0.050	0.00
10	11.80	34.23	26.07	1.44	6.43	0.30	0.18	0.60	1.30	0.060	1.47
24	11.06	34.63	26.50	1.98	5.85	0.52	0.13	0.79	3.70	0.350	0.47
48	13.44	35.53	26.73	0.55	5.29	0.55	0.07	0.74	4.00	0.250	0.75
72	13.92	35.76	26.81	0.30	5.13	0.52	0.07	0.69	3.40	0.110	0.89
95	14.03	35.78	26.81	0.25	5.10	0.50	0.03	0.61	3.40	0.105	0.19
140	13.87	35.82	26.87		5.17	0.51	--	0.55	3.40	0.090	0.37
184	13.85	35.76	26.82		5.08	0.61	0.16	0.81	3.40	0.080	0.56
280	10.77	35.35	27.13		2.99	1.39	0.06	1.45	12.00	0.050	0.51
254	11.67	35.35	27.11		3.33	1.31	--	1.40	14.30	0.100	0.00
344	8.65	35.15	27.31		3.28	1.40	0.02	1.57	12.20	0.050	0.32
429	7.04	35.06	27.48		3.93	1.45	--	1.43	13.30	0.070	0.56
516	5.79	35.01	27.61		4.54	1.39	0.04	1.38	11.80	0.105	0.42
690	4.78	34.95	27.68		5.23	1.24	--	1.24	8.20	0.100	2.07
863	4.26	34.96	27.75		5.58	1.19	0.08	1.34	11.00	0.050	0.47
1038	4.03	34.93	27.75		5.73	1.22	--	1.25	9.80	0.060	0.19
1222	3.94	34.95	27.78		5.91	1.17	--	1.24	15.20	0.080	0.11
1417	3.76	34.95	27.79		5.92	1.25	0.02	1.23	9.30	0.030	0.47

BEAR CRUISE NO. 165 STATION NO. 164 LOCATION L

DATE May 2, 1957 LAT. 39° 26.3' N LONG. 72° 11.6' W

DEPTH 980 (chart) m GMT 0310

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	10.65	33.76	25.91	1.38	6.56	0.32	0.14	0.68	1.30	0.060	0.11
9	10.68	33.77	25.91	1.38	6.62	0.32	0.21	0.73	0.60	0.080	0.94
23	10.52	34.08	26.19	2.03	6.61	0.41	0.20	0.69	0.60	0.045	0.58
46	13.05	35.44	26.74	0.75	5.26	0.55	0.10	0.80	4.20	0.120	0.32
69	14.10	35.82	26.81	0.20	5.13	0.54	0.24	0.86	4.30	0.100	0.65
92	14.08	35.90	26.88	0.28	4.49	0.59	0.05	0.67	4.95	0.065	0.75
138	13.47	35.11	26.86		4.60	0.71	--	0.75	--	0.030	0.28
193	12.68	35.62	26.96		4.02	0.95	0.02	1.06	7.60	0.045	0.09
164	13.40	35.11	26.88		4.60	0.74	--	0.75	5.80	0.060	0.32
246	11.19	35.43	27.10		3.39	1.26	0.00	1.26	10.60	0.125	0.42
328	8.60	35.11	27.29		2.21	1.52	0.00	1.51	12.40	0.105	0.00
411	7.80	35.11	27.41		5.70	1.52	--	1.51	11.00	0.120	0.11
494	6.61	35.04	27.52		4.11	1.47	0.00	1.47	14.20	0.040	1.45
658	5.04	34.97	27.67		5.08	1.32	0.01	1.42	10.80	0.050	--

BEAR CRUISE NO. 165 STATION NO. 165 LOCATION M

DATE May 2, 1957 LAT. 39° 36.0' N LONG. 72° 24.5' W

DEPTH 465 (chart) m GMT 0647

DEPTH m	T °C	S /‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	9.58	33.28	25.71	0.88	6.82	0.43	0.22	0.88	1.00	0.050	0.75
9	9.60	33.28	25.71	1.06	6.80	0.42	0.25	0.82	--	0.030	0.56
23	9.78	33.33	25.72	1.63	6.72	0.42	0.16	0.67	0.60	0.040	0.51
43	11.16	34.62	26.49	0.53	5.87	0.45	0.09	0.79	3.70	0.320	0.28
64	12.10	35.08	26.65	0.27	5.33	0.61	0.06	0.89	3.80	0.150	0.00
86	12.64	35.30	26.72	0.45	5.13	0.63	0.05	0.79	4.20	0.130	0.61
127	12.96	35.51	26.82	--	4.81	0.73	--	0.84	5.20	0.085	0.19
166	13.16	35.54	26.82	--	4.73	0.71	0.07	0.98	5.50	0.050	0.38
246	11.14	35.40	27.09	--	3.73	1.23	0.03	1.33	15.60	0.055	0.19
334	9.06	35.24	27.32	--	3.52	1.42	0.03	1.56	12.50	0.075	0.28

BEAR CRUISE NO. 165 STATION NO. 166 LOCATION N

DATE May 2, 1957 LAT. 39° 36.5' N LONG. 72° 39.7' W

DEPTH 73 (chart) m GMT 0908

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	8.98	32.78	25.41	0.98	7.09	0.39	0.18	0.86	0.73	0.045	0.00
10	8.96	32.76	25.40	1.10	7.14	0.32	0.14	0.67	0.44	0.110	0.42
20	7.14	32.82	25.72	3.50	7.26	0.50	0.21	0.95	0.68	0.065	0.00
30	6.09	32.97	25.96	--	6.72	0.64	0.18	0.97	2.15	0.115	1.78
40	6.43	33.25	26.04	0.87	6.23	0.68	0.11	1.09	1.96	0.125	1.12
50	6.61	33.16	26.05	--	6.13	0.82	0.05	0.99	3.60	0.190	1.69
60	6.58	33.22	26.10	0.25	6.15	0.75	0.09	1.04	3.60	0.175	1.98

BEAR CRUISE NO. 165 STATION NO. 167 LOCATION O

DATE May 2, 1957 LAT. 39° 38.0' N LONG. 72° 54.2' W

DEPTH 62 m GMT 1116

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	9.57	33.05	25.53	0.59	6.70	0.40	0.11	0.69	0.86	0.060	0.28
10	9.61	33.00	25.49	0.50	6.67	0.62	0.11	0.68	0.60	0.030	0.51
20	9.18	33.09	25.62	0.48	7.27	0.39	0.14	0.69	--	0.020	0.51
30	6.90	33.14	25.99	--	6.77	0.59	0.17	0.83	2.10	0.045	0.28
40	7.12	33.24	26.05	1.48	6.67	0.51	0.15	0.83	--	0.045	
50	7.08	33.36	26.14	--	6.21	0.70	0.09	0.83	1.80	0.105	1.45
60	7.10	33.34	26.13	3.64	6.20	0.61	0.11	0.82	1.24	0.130	1.17

BEAR CRUISE NO. 165 STATION NO. 168 LOCATION P

DATE May 2, 1957 LAT. 39° 40.0' N LONG. 73° 08.0' W

DEPTH 40 m GMT 1306

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	9.55	33.14	25.60	0.50	6.60	0.55	0.13	0.63	0.60	0.045	0.61
10	9.45	33.16	25.64	0.50	6.64	0.43	0.13	0.63	0.60	0.060	0.47
20	8.89	33.22	25.78	1.12	6.76	0.42	0.16	0.66	0.40	0.055	0.26
30	7.24	33.31	26.09	4.00	6.53	0.54	0.13	0.70	1.02	0.080	0.80

BEAR CRUISE NO. 165 STATION NO. 169 LOCATION Q

DATE May 3, 1957 LAT. 39° 42.3' N LONG. 73° 20.5' W

DEPTH 36 m GMT 1430

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	10.03	33.09	25.48	0.52	6.49	0.42	0.09	0.59	0.70	0.025	0.00
10	9.95	33.12	25.52	0.55	6.49	0.44	0.10	0.57	--	0.060	0.00
20	7.32	33.32	26.08	7.00	6.83	0.67	0.14	0.69	0.86	0.050	0.00
30	7.31	33.31	26.07	8.07	6.81	0.48	0.14	0.67	1.00	--	--

BEAR CRUISE NO. 165 STATION NO. 170 LOCATION R

DATE May 3, 1957 LAT. 39° 44.0' N LONG. 73° 32.4' W

DEPTH 39 m GMT 1645

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	10.50	32.39	24.86	0.60	6.56	0.34	0.44	0.92	0.60	0.090	0.00
10	10.16	32.44	24.96	0.85	6.56	0.46	0.22	0.76	0.60	0.080	0.00
20	6.84	32.91	25.82	1.50	7.04	0.55	0.33	0.90	--	0.050	1.03
30	6.91	33.14	25.98	8.50	6.67	0.48	0.03	0.61	0.90	0.050	0.00

BEAR CRUISE NO. 165 STATION NO. 171 LOCATION S

DATE May 3, 1957 LAT. 39° 45.7' N LONG. 73° 53.5' W

DEPTH 25 m GMT 0242

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	10.69	30.64	23.47	2.50	6.79	0.30	0.26	0.75	0.60	0.045	0.19
10	10.43	30.83	23.66	--	6.82	0.34	0.27	0.82	0.62	0.050	0.00
20	6.66	32.66	25.65	3.25	6.21	0.58	0.15	0.81	0.52	0.044	0.32

BEAR CRUISE NO. 165 STATION NO. 172 LOCATION T

DATE May 3, 1957 LAT. 39° 53.5' N LONG. 73° 39.8' W

DEPTH 30 m GMT 0515

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	9.22	32.75	25.35	(a) 0.75	6.56	0.40	0.27	0.77	1.04	0.060	0.56
10	9.24	32.75	25.35	0.91	6.56	0.39	--	--	1.00	0.025	0.61
25	6.96	33.14	25.98	(b) 1.50	6.27	0.69	0.27	1.10	--	0.090	0.51
				(c) 5.73							

(a) 0 m; (b) 20 m; (c) 30 m.

BEAR CRUISE NO. 165 STATION NO. 173 LOCATION U

DATE May 3, 1957 LAT. 40° 01.7' N LONG. 73° 25.6' W

DEPTH 61 m GMT 0731

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	9.16	32.69	25.31	0.48	6.54	0.47	0.14	0.64	0.86	0.060	0.51
10	9.23	32.70	25.31	0.72	6.56	0.47	0.14	0.68	0.86	0.060	0.75
20	9.05	32.73	25.36	0.42	6.56	0.70	0.15	0.77	1.04	0.090	0.65
30	6.84	33.16	26.02	3.00	6.24	--	0.09	0.83	--	0.060	0.85
40	6.94	33.20	26.04	2.55	6.19	0.63	0.12	0.86	1.45	0.060	1.17
50	6.96	33.22	26.06	--	6.03	0.75	0.08	0.81	--	0.160	1.41

BEAR CRUISE NO. 165 STATION NO. 174 LOCATION V

DATE May 3, 1957 LAT. 40° 09.5' N LONG. 73° 08.0' W

DEPTH 43 m GMT 1039

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	8.63	32.40	25.17	0.55	6.65	0.48	0.08	0.80	0.93	0.045	0.75
10	8.59	32.48	25.24	1.08	6.64	0.56	0.08	0.65	0.50	0.050	1.17
20	8.51	32.42	25.20	0.27	6.72	0.50	0.10	0.62	0.88	0.030	0.00
30	7.18	33.11	25.93	1.50	7.09	0.49	0.14	0.65	1.10	0.030	1.64

BEAR CRUISE NO. 165 STATION NO. 175 LOCATION W

DATE May 3, 1957 LAT. 40° 21.5' N LONG. 72° 52.3' W

DEPTH 45 m GMT 1338

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	8.92	32.39	25.11	0.51	6.63	0.42	0.08	0.56	1.02	0.050	0.19
10	8.83	32.37	25.10	0.47	6.58	0.49	0.08	0.58	0.67	0.030	0.51
20	8.81	32.42	25.16	0.50	6.61	0.44	0.09	0.54	0.76	0.045	0.51
40	6.32	33.07	26.01	1.45	5.68	0.89	0.08	0.87	3.00	0.115	1.65

BEAR CRUISE NO. 165 STATION NO. 176 LOCATION X

DATE May 3, 1957 LAT. 40° 30.7' N LONG. 72° 36.7' W

DEPTH 37 m GMT 1605

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	9.07	32.15	24.90	0.46	6.63	0.33	0.18	0.72	1.40	0.045	0.61
10	8.90	32.19	24.86	0.58	6.63	0.50	0.17	0.68	--	0.030	0.42
20	6.51	32.76	25.74	0.78	6.56	0.76	0.15	1.04	0.59	0.090	0.32
30	6.24	32.92	25.90	0.83	6.14	0.88	0.15	1.11	2.10	0.120	0.00

BEAR CRUISE NO. 165 STATION NO. 177 LOCATION Y

DATE May 3, 1957 LAT. 40° 40.2' N LONG. 72° 21.0' W

DEPTH 43 m GMT 1810

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	9.31	31.95	24.71	0.50	6.61	0.44	0.12	0.68	--	0.020	1.31
10	9.00	32.00	24.79	0.38	6.60	0.57	0.13	0.78	0.80	0.030	3.38
20	8.30	32.09	24.92	0.50	6.72	0.49	0.16	0.70	0.58	0.025	0.75
30	5.89	32.83	25.88	0.88	5.64	1.09	0.13	1.22	3.00	0.100	1.97

BEAR CRUISE NO. 165 STATION NO. 178 LOCATION Z

DATE May 3, 1957 LAT. 40° 47.3' N LONG. 72° 02.6' W

DEPTH 39 m GMT 2012

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	8.47	31.57	24.54	1.58	6.90	0.49	0.19	0.77	0.60	0.020	0.11
10	8.25	31.60	24.60	1.40	6.93	0.51	0.20	0.83	--	0.040	1.50
20	6.25	32.57	25.62	1.45	6.98	0.51	0.15	0.90	0.50	0.040	0.28
30	5.96	32.85	25.84	0.35	6.12	0.49	0.08	1.00	--	--	2.07

CRAWFORD CRUISE 13

July 10-20, 1957

Scientific Personnel

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Chief Scientist
Vaughan T. Bowen
Nathaniel Corwin
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CRAWFORD CRUISE NO. 13 STATION NO. 186 LOCATION A

DATE July 10, 1957 LAT. 40° 57.6' N LONG. 71° 48.8' W

DEPTH 38 m GMT 2330

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	17.28	31.77	23.00	2.75	5.46	0.53	0.17	0.99	0.92	0.055	0.00
10	18.04	31.99	22.98	2.29	5.52	0.46	0.17	0.87	0.66	0.090	0.00
20	10.27	32.82	25.20	2.00	6.42	0.43	0.17	0.83	0.96	0.025	0.00
30	8.69	32.93	25.56	1.28	5.25	0.79	0.08	0.91	2.12	0.238	0.57

CRAWFORD CRUISE NO. 13 STATION NO. 187 LOCATION B

DATE July 11, 1957 LAT. 40° 44.1' N LONG. 71° 40.0' W

DEPTH 67 m GMT 0220

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	20.54	32.48	22.52	0.45	5.14	0.25	0.07	0.75	0.48	0.010	0.00
10	20.55	32.53	22.76	1.26	5.20	0.30	0.07	0.53	0.52	0.060	0.00
20	10.99	32.95	25.20	0.50	6.89	0.34	0.14	0.57	0.53	0.025	0.00
30	9.38	32.98	25.49	0.97	6.79	0.33	0.10	0.57	0.66	0.025	0.00
40	7.24	33.09	25.90	0.40	6.25	0.65	0.12	0.79	1.32	0.160	0.00
50	7.29	33.29	26.04	--	6.61	1.05	0.05	1.00	8.60	0.175	0.00
60	7.29	33.32	26.08	--	6.61	0.92	0.07	1.06	6.80	0.160	0.00

CRAWFORD CRUISE NO. 13 STATION NO. 188 LOCATION C

DATE July 11, 1957 LAT. 40° 31.2' N LONG. 71° 34.0' W

DEPTH 70 m GMT 0442

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	20.01	32.19	22.64	0.57	5.10	0.34	0.12	0.64	0.79	0.010	0.00
10	20.11	32.20	22.64	0.27	5.27	0.34	0.12	0.66	0.78	0.040	0.00
20	11.73	33.05	25.15	0.27	6.90	0.37	0.11	0.66	0.72	0.020	0.00
30	9.89	33.14	25.44	0.95	7.02	--	0.08	0.48	0.40	0.060	0.00
40	7.72	33.19	25.92	0.17	6.76	0.64	0.10	0.72	1.17	0.060	0.00
50	7.16	33.41	26.18	--	5.54	0.90	--	--	6.00	0.190	2.00
59	7.62	33.55	26.22	--	4.94	0.73	0.07	1.11	6.80	0.065	0.00

CRAWFORD CRUISE NO. 13 | STATION NO. 189 | LOCATION D

DATE July 11, 1957 | LAT. 40° 18.5' N | LONG. 71° 28.0' W

DEPTH 70 m | GMT 0720

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	21.13	32.08	22.26	0.70	5.12	0.29	0.14	0.79	0.62	0.040	0.00
10	21.15	32.08	22.26	0.78	5.12	0.28	0.13	0.65	0.54	0.030	1.43
20	12.68	33.25	25.12	0.17	5.85	0.44	0.17	0.79	0.59	0.025	0.00
30	9.36	33.01	25.76	--	6.30	0.41	0.16	0.74	0.90	0.080	0.00
40	7.01	33.12	25.96	1.42	6.66	0.61	0.17	0.94	1.20	0.190	0.00
50	6.88	33.19	26.04	--	6.68	0.79	0.04	0.82	3.40	0.490	0.00
60	7.22	33.36	26.12	0.47	6.62	0.77	0.05	0.88	4.80	0.290	0.00

CRAWFORD CRUISE NO. 13 | STATION NO. 190 | LOCATION E

DATE July 11, 1957 | LAT. 40° 00.0' N | LONG. 71° 19.0' W

DEPTH 314 (chart) m | GMT 1238

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	21.30	32.31	22.38	(a)0.52	4.98	0.28	0.17	0.80	0.56	0.025	0.00
11	21.42	32.26	22.32	(b)0.40	4.98	0.31	0.11	0.58	0.54	0.050	0.86
26	17.98	33.88	24.45	(c)1.50	5.86	0.23	0.16	0.50	0.76	0.040	0.00
52	12.97	34.71	26.19	(d)0.50	5.20	0.46	0.03	0.52	2.22	0.220	0.00
77	12.78	35.15	26.67	(e)0.11	4.83	0.68	0.03	0.70	5.60	0.040	0.90
103	13.41	35.47	26.68	(f)0.00	4.54	0.68	0.07	0.85	8.30	0.050	0.57
153	12.12	35.54	27.00		3.75	1.19	0.03	1.24	14.20	0.045	0.30
204	9.78	35.27	27.22		2.94	1.55	0.03	1.56	23.20	0.060	0.85
305	7.72	35.09	27.40		3.44	--	0.02	1.63	24.40	0.090	0.00

(a) 0 m; (b) 10 m; (c) 25 m; (d) 50 m; (e) 75 m; (f) 100 m.

CRAWFORD CRUISE NO. 13 STATION NO. 191 LOCATION F

DATE July 11, 1957 LAT. 39° 48.2' N LONG. 71° 10.0' W

DEPTH 1250 (chart) m GMT 1945

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	22.20	32.55	22.35	0.45	4.90	0.23	0.15	0.69	0.46	0.055	0.00
10	22.01	32.52	22.36	0.49	5.02	0.19	0.12	0.63	0.58	0.040	0.00
25	21.87	35.08	24.32	0.25	5.30	0.09	0.09	0.33	0.50	0.045	0.00
50	10.96	34.19	26.18	0.10	5.24	0.54	0.04	0.79	4.30	0.155	0.00
75	11.52	34.67	26.45	0.16	4.94	0.67	0.04	0.72	6.40	0.050	0.00
100	13.64	34.47	26.74		4.53	0.68	0.05	0.88	6.60	0.055	0.00
150	13.36	35.72	26.91		4.45	0.78	0.01	1.35	10.00	0.060	0.00
200	12.65	35.44	26.82		3.52	1.22	0.01	1.32	13.80	0.060	0.00
176	12.60	35.58	26.93		3.84	0.95	0.03	1.03	14.20	0.055	0.00
264	9.02	35.15	27.25		3.05	1.34	0.04	1.62	18.70	0.030	0.00
354	7.18	35.04	27.45		3.71	1.58	0.02	1.45	20.30	0.040	0.00
450	5.65	35.02	27.63		4.48	1.29	0.00	1.36	17.00	0.190	0.00
560	5.04	34.98	27.68		4.88	1.33	0.05	1.46	17.00	0.050	0.00
727	3.95	34.93	27.77		5.41	1.33	--	1.65	14.20	0.025	0.00
915	4.04	34.96	27.77		5.67	1.13	--	1.43	15.20	0.075	0.29

CRAWFORD CRUISE NO. 13 STATION NO. 192 LOCATION G

DATE July 11, 1957 LAT. 39° 35.0' N LONG. 71° 06.7' W

DEPTH 2270 (chart) m GMT 2350

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	22.81	34.44	23.58	0.17	4.72	0.14	0.07	0.53	0.50	0.040	0.00
10	22.84	34.52	23.63	0.004	4.87	0.13	0.07	0.56	0.55	0.025	0.00
24	19.99	35.34	25.04	0.20	5.42	0.10	0.07	0.33	0.50	0.045	0.00
45	15.98	35.76	26.35	0.75	4.95	0.24	0.07	0.51	0.50	0.060	0.00
74	15.54	35.82	26.50	0.29	4.67	0.42	0.03	0.72	4.70	0.090	0.00
98	15.10	35.80	26.59	0.05	4.39	0.59	0.01	0.68	8.30	0.075	0.00
147	13.86	35.65	26.74		4.22	0.78	--	0.83	9.60	0.030	0.00
196	13.09	35.63	26.90		4.48	0.85	0.02	0.79	10.00	0.040	0.00
295	11.04	35.37	27.10		2.99	1.38	0.01	1.38	18.40	0.030	0.00
273	11.70	35.44	27.02		3.04	1.35	--	1.30	14.20	0.040	0.00
364	8.93	35.11	27.24		3.03	1.56	0.03	--	22.10	0.015	0.00
454	7.19	35.12	27.50		3.66	1.52	--	1.33	19.00	0.025	2.86
545	5.76	35.01	27.61		4.46	1.44	0.00	1.36	20.00	0.030	0.00
726	4.63	34.93	27.69		5.15	1.31	--	1.34	15.80	0.230	0.00
910	4.24	34.93	27.73		5.60	1.25	0.04	1.29	16.70	0.040	0.00
1105	4.12	34.93	27.74		5.73	1.24	--	1.22	15.00	0.070	0.00
1295	3.86	34.95	27.78		5.82	1.21	0.01	1.35	12.40	0.080	0.00
1490	3.75	34.96	27.80		5.96	1.22	--	1.22	14.90	0.040	4.29
1690	3.66	34.94	27.79		5.98	1.25	--	1.26	14.60	0.040	3.72
1890	3.55	34.95	27.82		5.89	1.24	0.05	1.44	14.20	0.060	0.00

CRAWFORD CRUISE NO. 13 STATION NO. 193 LOCATION H

DATE July 12, 1957 LAT. 39° 26.5' N LONG. 71° 28.6' W

DEPTH 2212 (chart) m GMT 0414

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	22.24	34.97	24.15	0.15	5.09	--	0.12	0.42	0.48	0.045	0.00
10	22.26	34.97	24.14	--	4.91	0.12	0.07	0.37	0.49	0.025	0.00
25	16.82	35.45	25.92	0.35	5.46	0.14	0.09	0.43	0.40	0.025	0.00
50	15.80	35.82	26.45	0.50	4.72	0.35	0.07	0.57	3.50	0.105	0.00
75	15.24	35.83	26.60	0.12	4.65	0.49	0.04	0.56	6.20	0.100	0.00
100	14.81	35.83	26.69	0.06	4.07	0.66	0.04	0.82	8.40	0.040	0.00
150	13.78	35.65	26.76		4.30	0.82	--	0.83	8.10	0.020	0.00
200	13.01	35.63	26.91		4.58	0.83	0.05	0.98	10.10	0.020	0.00
300	11.09	35.40	27.11		3.02	1.50	0.04	1.39	20.00	0.050	0.57
288	11.67	35.47	27.03		3.02	1.43	--	1.34	14.60	0.045	0.00
373	9.27	35.18	27.23		3.00	1.56	0.03	1.52	20.00	0.020	0.00
468	7.19	35.09	27.49		2.74	1.57	--	1.52	17.00	0.020	0.00
559	5.64	34.97	27.59		5.26	1.45	0.04	1.38	18.50	0.015	0.00
743	4.57	34.97	27.72		5.24	1.31	--	1.31	18.50	0.020	0.00
931	4.34	34.98	27.76		5.41	1.24	0.04	1.23	16.80	0.020	0.00
1120	4.12	34.95	27.76		5.69	1.19	--	1.27	16.70	0.025	0.00
1311	3.79	34.98	27.81			--	0.06	--		0.040	0.00
1506	3.67	34.97	27.82		5.84	1.26	--	1.24	13.40	0.015	0.30
1702	3.62	34.95	27.81		5.94	1.24	--	1.36	14.40	0.020	0.00
1900	3.54	34.88	27.76		5.91	1.05	0.03	1.37	13.20	0.040	0.00

CRAWFORD CRUISE NO. 13 STATION NO. 194 LOCATION J

DATE July 12, 1957 LAT. 39° 11.0' N LONG. 71° 51.0' W

DEPTH 2230 (chart) m GMT 0946

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	22.92	35.29	24.19	0.18	4.66	0.09	0.04	0.22		0.060	0.00
9	22.90	35.31	24.21	0.24	4.71	0.09	0.04	0.24	0.53	0.030	0.00
22	22.86	35.29	24.21	1.46	4.71	0.11	0.02	0.18	0.39	0.050	1.43
43	16.65	35.26	25.82	0.19	5.20	0.19	0.06	0.28	0.43	0.050	4.58
64	16.04	35.77	26.35	0.09	4.14	0.59	0.02	0.58	6.00	0.060	0.57
85	14.17	35.47	26.54		4.36	0.66	0.03	0.76	6.20	0.065	0.00
132	13.33	35.56	26.79		4.15	0.80	--	0.77	7.00	0.060	0.00
178	12.34	35.45	26.89		4.25	0.91	0.00	1.06	12.50	0.045	0.00
274	10.29	35.33	27.18		2.97	1.38	0.01	1.42	21.40	0.045	0.00
234	10.93	35.28	27.03		3.26	1.40	--	1.40	14.80	0.050	0.00
312	9.20	35.15	27.22		3.05	1.65	0.01	1.56	16.70	0.045	0.00
396	7.75	35.11	27.42		3.46	1.49	--	1.65	20.80	0.015	0.00
472	6.29	34.96	27.51		4.13	1.64	0.18	1.60	13.80	0.080	1.10
629	4.86	34.95	27.69		4.88	1.37	--	1.34	14.20	0.060	0.00
790	4.63	35.00	27.74		5.15	1.34	0.18	--	18.60	0.075	3.43
950	4.32	34.97	27.75		5.49	1.35	--	1.23	16.40	0.040	0.00
1118	4.06	34.95	27.76		5.62	1.23	0.02	1.24	13.80	0.065	0.00
1300	3.86	34.93	27.77		5.74	1.31	--	1.22	11.40	0.060	0.00
1492	3.75	34.96	27.80		5.82	1.32	--	1.18	12.00	0.060	0.00
1689	3.61	34.94	27.80		5.73	1.14	0.02	1.28	13.50	0.060	0.00

CRAWFORD CRUISE NO. 13 STATION NO. 196 LOCATION

DATE July 13, 1957 LAT. 36°22.5' N LONG. 70° 31.5' W

DEPTH 4570 (chart) m GMT 2255

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	27.25	36.03	23.45		4.24	0.10		0.29		0.075	
46	24.71	36.28	24.42		4.46	0.02		0.10		0.050	
91	20.37	36.50	25.83		4.83	0.06		0.14		0.050	
267	18.34	36.54	26.38		4.34	0.22		0.27		0.032	
445	17.64	36.43	26.47		4.24	0.42		0.41		0.045	
615	15.86	36.07	26.78		3.76	0.66		0.65		0.045	
704	14.21	35.84	26.81		3.45	0.94		0.85		0.040	
800	12.22	35.53	26.98		3.22	1.20		1.12		0.025	
990	10.64	35.26	27.06		2.97			1.40		0.045	
1083	6.33	35.02	27.55		4.14	1.26		1.28		0.090	
1255	4.93	34.78	27.52		4.83	1.22		1.21		0.008	
1480	4.26	34.98	27.76		5.37	1.21		1.25		0.030	
1708	4.01	34.93	27.75		5.66	1.22		1.26		0.025	
2170	3.62	34.94	27.80		5.71	1.21		1.27		0.010	
2645	3.33	34.97	27.85		5.52	1.19		1.28		0.030	
3130	2.88	34.74	27.91		5.67	1.25		1.13		0.040	
3621	2.48	34.93	27.90		5.56	1.10		1.09		0.032	
4120	2.29	34.89	27.88		5.65	1.45		1.27		0.025	

CRAWFORD CRUISE NO. 13 | STATION NO. 197 | LOCATION K

DATE July 15, 1957 | LAT. 39° 20.0' N | LONG. 72° 03.0' W

DEPTH 1929 (chart) m | GMT 0442

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	23.84	33.74	22.75	0.10	4.72	0.16	0.04	0.36	0.80	0.025	0.00
10	23.16	34.53	23.54	0.07	5.34	0.09	0.06	0.34	0.86	0.040	1.40
25	18.58	35.29	25.35	0.28	5.61	0.14	0.08	0.30	0.40	0.025	0.00
50	16.18	35.58	26.18	1.00	4.24	0.43	0.06	0.47	2.60	0.210	0.00
75	14.53	35.76	26.68	0.14	4.11	0.70	0.04	0.74	6.60	0.050	0.00
100	13.96	35.74	26.80	0.12	3.87	0.77	0.02	0.80	12.30	0.045	0.00
149	13.43	35.71	26.88		4.37	--	--	0.74	9.60	0.032	0.00
196	11.99	35.54	27.02		3.33	1.23	0.00	1.23	17.20	0.050	0.00
294	9.00	35.14	27.25		2.97		0.01	1.51	17.60	0.050	0.00
279	9.54	35.24	27.23		2.90	1.51	--	1.49	14.20	0.025	0.00
372	7.36	35.02	27.41		3.63	1.51	0.01	1.53	18.00	0.040	0.00
460	5.82	34.99	27.59		4.39	1.31	--	1.34	16.40	0.010	0.00
552	5.19	34.99	27.67		4.82	1.35	0.01	1.44	19.10	0.015	0.00
736	4.23	34.95	27.75		5.43	1.22	--	1.18	14.10	0.025	0.00
923	4.07	34.97	27.77		5.97	1.18	0.01	1.24	13.00	0.009	4.29
1104	3.93	34.95	27.78		5.69	1.20	--	1.24	16.50	0.010	0.00
1274	3.89	34.93	27.77		5.90	1.21	0.01	1.23	15.20	--	0.00

CRAWFORD CRUISE NO. 13 STATION NO. 198 LOCATION L

DATE July 15, 1957 LAT. 39° 26.5' N LONG. 72° 11.3' W

DEPTH 1000 (chart) m GMT 0927

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
2	23.32	32.48	21.96	(a) 0.16	4.87	0.19	0.05	0.50	0.40	0.060	0.00
11	23.36	35.06	23.88	(b) 0.27	4.75	0.16	0.05	0.27	0.43	0.030	1.14
27	18.29	35.26	25.39	(c) 0.60	5.96	0.31	0.01	0.29	0.43	0.045	0.00
53	14.61	35.35	26.35	(d) 0.75	4.56	0.48	0.01	0.58	--	0.100	0.60
78	14.73	35.64	26.55	(e) 0.06	4.25	0.70	0.00	0.74	7.40	0.045	0.00
104	13.73	35.56	26.70	(f) 0.29	4.08	0.77	0.01	0.85	10.80	0.045	0.00
153	13.28	35.65	26.87		4.46	0.86	--	0.78	10.00	0.032	0.30
202	11.81	35.45	27.00		3.12	1.32	0.01	1.31	17.40	0.020	0.00
204	11.64	35.47	27.06		3.08	1.30	--	1.30	19.10	0.030	0.00
300	8.22	35.17	27.40		3.39	1.60	0.00	1.43	19.60	0.050	0.00
397	5.91	35.04	27.61		4.39	1.42	0.00	1.45	13.10	0.045	0.00
495	5.28	35.00	27.66		4.82	1.43	--	1.33	14.60	0.060	0.00
597	4.74	34.97	27.70		5.15	1.28	0.02	1.33	15.60	0.060	0.00
796	4.29	34.93	27.72		5.52	1.28	0.01	1.32	15.60	0.020	1.10

(a) 0 m; (b) 10 m; (c) 25 m; (d) 50 m; (e) 75 m; (f) 100 m.

CRAWFORD CRUISE NO. 13 STATION NO. 199 LOCATION M

DATE July 15, 1957 LAT. 39° 35.7' N LONG. 72°. 24.3' W

DEPTH 455 (chart) m GMT 1240

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	22.53	31.85	21.70	0.22	4.99	0.22	0.09	0.47	0.52	0.020	0.00
11	21.82	31.97	21.99	0.54	5.04	0.23	0.09	0.28	0.50	0.040	1.70
26	8.98	33.17	25.71	0.77	6.12	0.59	0.12	0.16	0.96	0.090	0.00
52	10.36	34.32	26.39	0.26	4.79	0.80	0.003	0.80	7.40	0.050	0.00
78	12.72	35.27	26.68	0.02	4.56	0.75	0.02	0.75	7.50	0.060	0.00
103	12.56	35.36	26.77	0.01	4.14	0.89	0.02	0.89	10.50	0.075	0.00
152	11.94	35.49	27.00		3.50	0.54	--	1.10	12.60	0.045	0.00
197	10.57	35.35	27.14		3.22	1.42	0.00	1.33	12.20	0.075	0.00
294	7.87	35.13	27.42		3.77	1.46	0.02	1.48	14.60	0.075	0.00
392	6.33	35.04	27.56		4.34	1.43	0.04	1.50	15.20	0.090	0.00

CRAWFORD CRUISE NO. 13 STATION NO. 200 LOCATION N

DATE July 15, 1957 LAT. 39° 37.5' N LONG. 72° 39.5' W

DEPTH 73 (chart) m GMT 1455

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	22.56	31.84	21.69	0.27	5.16	0.25	0.14	0.62	0.81	0.050	0.00
10	20.84	31.68	22.04	1.06	5.30	0.29	0.14	0.56	0.52	0.045	0.00
20	11.85	32.57	24.94	2.17	7.00	0.23	0.19	0.61	1.14	0.190	0.00
30	6.80	32.73	25.68	--	5.63	0.77	0.14	0.98	1.52	0.190	1.10
40	8.12	33.55	26.14	1.50	5.26	0.83	0.04	0.87	5.10	0.202	0.00
50	8.27	33.68	26.22	--	4.77	0.97	0.03	1.05	8.60	0.075	0.00
60	9.11	34.03	26.77	0.18	4.83	0.79	0.04	1.01	7.40	0.060	0.00

CRAWFORD CRUISE NO. 13 STATION NO. 201 LOCATION O

DATE July 15, 1957 LAT. 39° 37.5' N LONG. 72° 53.5' W

DEPTH 64 (chart) m GMT 1818

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	22.63	32.04	21.82	0.45	5.01	0.26	0.03	0.62	0.52	0.015	0.00
10	21.04	31.96	22.20	1.08	5.26	0.26	0.18	0.69	0.62	0.040	0.00
20	9.97	32.71	25.19	1.48	7.02	0.24	0.02	0.50	0.40	0.040	0.00
30	7.09	32.73	25.65	--	5.70	0.48	0.03	0.88	0.74	0.070	0.00
40	8.18	33.29	25.93	0.27	5.55	0.73	0.08	0.90	2.83	0.210	0.00
50	8.96	33.96	26.33	--	4.98	0.86	0.09	1.03	7.80	0.085	0.00
60	9.05	34.05	26.39	0.10	4.62	1.00	0.02	1.03	8.60	0.125	0.00

CRAWFORD CRUISE NO. 13 STATION NO. 202 LOCATION P

DATE July 15, 1957 LAT. 39° 39.5' N LONG. 73° 08.5' W

DEPTH 63 m GMT 2023

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	22.67	32.11	21.11	0.47	5.12	0.30	0.12	0.59	0.64	0.090	0.00
10	21.77	32.06	22.07	0.62	5.14	0.28	0.12	0.56	0.52	0.030	5.10
20	14.52	32.24	23.97	1.25	6.13	0.36	0.08	0.66	0.45	0.032	0.00
30	6.92	33.00	25.88	1.00	5.15	1.10	0.08	1.08	2.74	0.195	0.00

CRAWFORD CRUISE NO. 13 STATION NO. 203 LOCATION Q

DATE July 15, 1957 LAT. 39° 42.4' N LONG. 73° 20.3' W

DEPTH 36 m GMT 2149

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	22.61	32.08	21.85	0.50	5.15	--	0.16	0.57	0.52	0.020	0.30
10	21.22	32.60	22.63	0.50	5.15	0.29	0.22	0.68	0.52	0.050	0.00
20	9.66	32.91	25.40	1.23	5.57	0.56	0.16	0.93	0.70	0.020	0.00
30	8.40	32.93	25.63	3.22	5.04	1.16	0.18	1.12	1.20	0.090	0.00

CRAWFORD CRUISE NO. 13 STATION NO. 204 LOCATION R

DATE July 15, 1957 LAT. 39° 44.4' N LONG. 73° 31.3' W

DEPTH 36 m GMT 2320

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	22.77	32.48	22.11	0.44	4.94	0.19	0.14	0.56	0.88	0.060	0.00
10	22.14	32.44	22.26	0.39	5.04	0.19	0.10	0.52	1.08	0.050	0.00
20	11.95	32.85	24.95	1.50	5.84	0.44	0.19	0.82	0.80	0.050	0.00
30	9.15	32.93	25.50	2.25	5.41	0.67	0.09	0.92	1.11	0.060	0.30

CRAWFORD CRUISE NO. 13 STATION NO. 205 LOCATION S

DATE July 16, 1957 LAT. 39° 45.9' N LONG. 73° 53.5' W

DEPTH 27 (chart) m GMT 0115

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	21.12	32.13	22.03	0.62	5.49	0.35	0.24	0.86	1.02	0.040	0.00
10	10.14	32.53	25.02	0.86	4.83	0.82	0.27	1.13	1.64	0.045	2.00
20	9.34	32.66	25.26	2.05	4.67	0.84	0.23	1.13	1.32	0.065	0.00

CRAWFORD CRUISE NO. 13 STATION NO. 206 LOCATION T

DATE July 16, 1957 LAT. 39° 54.2' N LONG. 73° 39.7' W

DEPTH 31 m GMT 0259

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	22.53	32.44	22.15	0.30	5.00	0.20	0.14	0.62	1.20	0.032	0.00
10	21.85	32.44	22.34	0.23	4.98	0.23	0.04	0.67	0.86	0.025	0.00
20	8.69	32.64	25.34	1.50	5.93	0.54	0.27	1.19	0.96	0.040	0.00
30	7.22	32.85	25.73	4.70	4.47	1.07	0.13	1.38	3.00	0.150	1.14

CRAWFORD CRUISE NO. 13 STATION NO. 207 LOCATION U

DATE July 16, 1957 LAT. 40° 02.0' N LONG. 73° 24.7' W

DEPTH 65 (chart) m GMT 0405

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	22.24	32.39	22.19	0.30	5.10	0.18	0.13	0.55	1.02	0.070	0.00
10	21.79	32.33	22.27	0.27	5.16	0.14	0.15	0.73	0.92	0.050	0.00
20	11.93	32.13	24.40	2.23	6.15	0.44	0.24	0.85	1.24	0.060	0.00
30	7.99	32.78	25.56	1.50	5.73	0.53	0.21	1.15	1.21	0.065	0.00
40	6.87	32.75	25.85	0.52	5.08	0.94	0.07	1.12	3.00	0.125	0.00
60	6.86	32.98	25.87	0.75	4.54	1.15	0.09	1.28	3.06	0.162	0.00

CRAWFORD CRUISE NO. 13 STATION NO. 208 LOCATION V

DATE July 16, 1957 LAT. 40° 09.5' N LONG. 73° 08.0' W

DEPTH 45 (chart) m GMT 0705

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	20.67	31.52	21.97	0.50	5.18	0.55	0.16	0.82	0.84	0.050	0.00
10	16.76	32.01	23.40	0.56	5.51	0.55	0.21	0.99	1.42	0.080	1.71
20	6.44	32.78	25.76	2.20	4.50	1.03	0.15	1.29	3.50	0.175	0.30
30	6.34	32.78	25.78	0.22	4.45	1.20	0.08	1.34	5.20	0.220	0.30

CRAWFORD CRUISE NO. 13 STATION NO. 209 LOCATION W

DATE July 16, 1957 LAT. 40° 20.8' N LONG. 72° 52.5' W

DEPTH 45 m GMT 0914

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	20.39	31:86	22.29	0.40	5.20	0.48	0.24	0.98	0.96	0.065	0.00
10	20.30	31.90	22.55	0.57	5.24	0.36	0.15	0.77	0.50	0.045	0.57
20	9.10	32.85	24.67	1.62	6.10	0.54	0.31	1.04	1.17	0.065	0.00
30	7.11	32.97	25.05	0.25	4.36	0.41	0.07	1.25	4.50	0.290	0.00

CRAWFORD CRUISE NO. 13 STATION NO. 210 LOCATION X

DATE July 16, 1957 LAT. 40° 30.7' N LONG. 72° 36.0' W

DEPTH 47 m GMT 1909

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	20.05	32.01	22.50	0.40	5.09	0.49	0.11	0.71	1.08	0.055	0.00
10	11.14	32.67	24.97	0.85	5.61	0.55	0.11	0.89	1.03	0.065	0.29
20	8.69	32.95	25.58	2.50	5.05	0.78	0.22	1.16	1.18	0.100	0.00
30	8.30	33.02	25.70	1.28	4.75	0.89	0.09	1.20	3.10	0.370	0.00

CRAWFORD CRUISE NO. 13 STATION NO. 211 LOCATION Y

DATE July 16, 1957 LAT. 40° 40.0' N LONG. 72° 20.5' W

DEPTH 43 (chart) m GMT 2111

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	20.47	31.93	22.33	0.52	5.30	0.42	0.13	0.80	1.35	0.045	0.00
10	18.88	32.10	22.86	0.33	5.67	0.52	0.12	0.71	1.10	0.040	0.00
20	9.29	32.91	25.46	0.92	6.30	0.47	0.11	0.77	1.13	0.050	0.00
30	8.28	33.07	25.74	1.00	4.78	0.99	0.13	1.18	3.40	0.355	0.00

CRAWFORD CRUISE NO. 13 STATION NO. 212 LOCATION Z

DATE July 16, 1957 LAT. 40° 46.6' N LONG. 72° 03.3' W

DEPTH 43 m GMT 2256

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	21.09	32.24	22.39	0.27	5.14	0.34	0.12	0.70	0.78	0.025	0.00
10	21.01	32.21	22.39	0.42	5.20	0.32	0.08	0.66	1.20	0.060	0.00
21	9.94	32.89	25.34	0.77	6.73	0.43	0.11	0.64	0.98	0.040	0.00
30	8.45	32.96	25.64	0.85	5.43	0.85	0.08	0.94	2.34	0.350	0.00
40	8.20	32.96	25.67	--	5.16	0.86	0.08	0.97	2.64	0.350	0.00

CRAWFORD CRUISE NO. 13 STATION NO. 213 LOCATION Aa

DATE July 17, 1957 LAT. 40° 57.9' N LONG. 71° 48.7' W

DEPTH 33 m GMT 0052

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	17.29	31.44	22.75	0.47	5.61	0.66	0.17	1.06	1.17	0.070	0.00
10	16.88	31.73	23.06	3.76	5.54	0.66	0.18	0.92	0.94	0.040	0.00
20	14.89	32.26	23.91	3.75	5.33	0.62	0.13	0.92	1.42	0.040	0.00
30	10.07	32.80	25.24	1.68	5.27	0.88	--	--	2.12	0.225	8.00

CRAWFORD CRUISE NO. 13 STATION NO. 214 LOCATION Bb

DATE July 17, 1957 LAT. 40° 44.2' N LONG. 71° 41.3' W

DEPTH 68 m GMT 0240

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	21.40	32.31	22.62	0.49	5.20	0.25	0.10	0.57	0.84	0.010	0.00
10	20.39	32.31	22.64	0.42	5.25	0.29	0.11	0.50	0.94	0.040	0.00
20	10.64	32.82	25.16	1.70	6.67	0.37	0.20	0.70	0.86	0.025	0.30
40	7.51	33.00	25.80	2.00	6.53	0.73	0.10	0.69	1.10	0.075	0.00
60	6.97	33.14	25.98	0.47	5.09	1.03	0.05	1.03	--	0.150	0.00

CRAWFORD CRUISE NO. 13 STATION NO. 215 LOCATION Cc

DATE July 17, 1957 LAT. 40° 31.0' N LONG. 71° 34.0' W

DEPTH 76 m GMT 0410

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	20.91	32.24	22.44	0.50	5.23	0.35	0.13	0.63	1.56	0.045	0.00
10	20.93	32.19	22.40	0.50	5.24	0.31	0.11	0.60	0.96	0.040	0.00
20	12.13	33.04	25.06	1.25	6.83	0.48	0.11	0.67	1.42	0.050	0.00
40	7.95	33.20	25.89	0.75	6.55	0.59	0.08	0.68	1.10	0.080	0.00
59	6.95	33.34	26.14	0.34	5.29	1.06	0.06	0.99	6.00	0.060	0.29

CRAWFORD CRUISE NO. 13 STATION NO. 216 LOCATION Dd

DATE July 17, 1957 LAT. 40° 18.0' N LONG. 71° 28.0' W

DEPTH 84 m GMT 0551

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	22.04	32.39	22.24	0.48	5.08	0.26	0.13	0.43	1.02	0.032	0.00
10	22.06	32.31	22.18	0.43	5.04	0.32	0.12	0.50	1.32	0.065	7.40
20	16.72	32.29	24.21	1.22	6.25	0.29	0.15	0.54	1.06	0.040	0.00
40	9.16	33.38	25.85	0.92	6.15	0.55	0.07	0.58	1.44	0.260	0.00
60	7.62	33.38	26.08	0.44	5.77	0.79	0.06	0.76	4.30	0.350	--

CRAWFORD CRUISE NO. 13 STATION NO. 217 LOCATION Ee

DATE July 17, 1957 LAT. 39° 59.8' N LONG. 71° 19.0' W

DEPTH 347 m GMT 0808

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	21.88	32.49	22.37	0.27			0.11	0.49			
10	21.82	32.45	22.36	0.34			0.13	0.46			
50	12.52	34.48	26.10	0.07			0.07	0.48			
75	12.94	35.14	26.53	0.25			0.05	0.38			
100	13.41	35.57	26.77	--			0.05	0.70			
149	12.93	35.65	26.93	--			0.02	0.81			
198	11.40	35.40	27.03	--			0.01	1.28			
293	8.77	35.22	27.34	--			0.02	1.52			

BEAR CRUISE 174

September 16-20, 1957

Scientific Personnel

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Chief Scientist
Nathaniel Corwin
Herbert C. Curl, Jr.
Edward M. Hulburt
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David Menzel
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Langley Wood
Charles S. Yentsch

BEAR CRUISE NO. 174 STATION NO. 179 LOCATION A

DATE Sept. 17, 1957 LAT. 40°57.8' N LONG. 71° 48.0' W

DEPTH 31 m GMT 0116

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	19.35	31.86	22.55	4.30	5.32	0.69	0.05	1.02	0.53	0.106	0.00
10	19.36	31.94	22.62	3.82	5.32	0.57	0.03	0.95	0.91	0.445	0.38
20	19.85	33.05	23.33	0.88	5.14	0.28	0.13	0.65	0.19	0.160	0.51
30	15.79	32.91	24.20	1.13	5.00	0.73	0.10	0.95	1.25	0.274	1.26

BEAR CRUISE NO. 174 STATION NO. 180 LOCATION Z

DATE Sept. 17, 1957 LAT. 40° 48.4' N LONG. 72° 02.5' W

DEPTH 32 m GMT 0420

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	21.49	33.00	22.86	0.32	5.00	0.32	0.04	0.57	0.19	0.100	0.17
10	21.48	33.02	22.88	0.32	4.89	0.28	0.08	0.58	0.16	0.029	0.00
20	18.88	33.38	33.84	0.28	5.36	0.28	0.05	0.61	0.13	0.054	0.40
40	11.44	32.93	25.10	1.70	4.39	1.11	0.04	1.22	3.12	0.400	0.86

BEAR CRUISE NO. 174 STATION NO. 181 LOCATION Y

DATE Sept. 17, 1957 LAT. 40° 39.5' N LONG. 72° 19.9' W

DEPTH 40 m GMT 0729

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	21.42	32.47	22.47	0.28	5.04	0.25	0.04	0.57	0.21	0.060	0.00
10	21.42	32.54	22.52	0.46	5.08	0.32	0.08	0.66	0.14	0.074	0.92
20	13.75	33.02	24.72	0.45	5.69	0.55	0.08	0.70	0.20	0.057	0.29
35	11.69	33.01	25.13	1.28	4.88	0.84	0.08	0.94	2.41	0.386	2.03

BEAR CRUISE NO. 174 STATION NO. 182 LOCATION X

DATE Sept. 17, 1957 LAT. 40° 31.3' N LONG. 72° 36.0' W

DEPTH 30 m GMT 0952

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	20.61	32.33	22.51	0.20	5.15	0.41	0.07	0.69	0.25	0.046	0.11
10	19.46	32.71	23.17	0.41	5.23	0.37	0.16	0.75	0.24	0.069	0.75
20	11.93	32.83	24.94	1.30	4.46	1.13	0.00	1.25	2.21	0.166	0.57
30	10.68	32.98	25.29	1.90	5.06	0.88	0.13	1.22	2.16	0.510	0.18

BEAR CRUISE NO. 174 STATION NO. 183 LOCATION W

DATE Sept. 17, 1957 LAT. 40° 20.7' N LONG. 72° 51.7' W

DEPTH 43 m GMT 1224

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	21.19	32.11	22.26	0.88	4.95	0.41	0.08	0.69	0.29	0.066	0.12
10	21.26	32.26	22.35	0.50	4.98	0.59	0.20	0.91	0.61	0.043	0.75
20	17.22	33.05	23.99	0.78	6.26	0.34	0.12	0.71	0.25	0.066	0.63
30	11.04	32.93	25.18	--	5.09	0.76	0.16	1.22	1.70	0.261	0.97
40	10.35	32.98	25.34	2.25	4.73	0.87	0.10	1.02	3.07	0.318	1.46

BEAR CRUISE NO. 174 STATION NO. 184 LOCATION V

DATE Sept. 17, 1957 LAT. 40° 09.7' N LONG. 73°09.0' W

DEPTH 38 m GMT 1401

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	21.45	32.44	22.44	0.40	4.94	0.30	0.31	0.76	0.33	0.060	0.72
10	21.54	32.42	22.44	0.38	4.89	0.30	0.11	0.56	0.46	0.026	0.34
20	13.48	32.80	24.61	0.35	6.90	0.33	0.19	0.56	0.23	0.034	0.29
30	10.29	32.79	25.20	1.53	4.94	0.80	0.17	1.02	0.76	0.043	0.29
40	9.45	32.89	25.42	--	3.84	1.11	0.11	1.32	--	0.220	0.19

BEAR CRUISE NO. 174 STATION NO. 185 LOCATION U

DATE Sept. 17, 1957 LAT. 40° 02.5' N LONG. 73° 25.2' W

DEPTH 70 m GMT 1715

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	21.74	32.33	22.27	0.46	4.87	0.40	0.08	0.66	0.43	0.020	0.34
10	21.73	32.31	22.26	0.41	4.89	0.32	0.12	0.60	0.30	0.032	0.79
20	19.73	32.56	22.88	0.50	5.21	0.33	0.15	0.65	0.37	0.066	0.06
30	9.51	32.78	25.32	12.75	5.37	0.75	0.26	1.13	0.28	0.057	0.09
40	9.18	32.91	25.48	6.97	5.12	0.84	0.15	1.21	2.56	0.192	3.72
60	7.16	32.90	25.47	2.80	4.93	0.86	0.13	1.18	3.12	0.565	0.00

BEAR CRUISE NO. 174 STATION NO. 186 LOCATION T

DATE Sept. 17, 1957 LAT. 38° 54.7' N LONG. 73° 40.0' W

DEPTH 30 m GMT 1944

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	21.70	32.09	22.10	1.87	5.03	0.44	0.16	0.99	0.29	0.060	2.55
10	21.70	32.09	22.10	0.96	5.00	0.43	0.13	1.07	0.23	0.066	0.31
20	14.30	32.58	24.27	0.58	4.58	0.81	0.13	1.17	0.16	0.121	1.20
25	12.84	32.64	24.61	6.65	4.93	0.86	0.18	1.21	1.32	0.132	0.00

BEAR CRUISE NO. 174 STATION NO. 187 LOCATION S

DATE Sept. 17, 1957 LAT. 38° 46.3' N LONG. 73° 53.0' W

DEPTH 21 m GMT 2147

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	21.85	31.85	21.88	1.20	5.05	0.13	0.16	1.06	0.54	0.034	0.31
10	21.79	31.77	21.85	1.06	5.04	0.75	0.42	2.23	0.28	0.054	0.62
20	14.66	32.50	24.14	2.25	--	0.79	0.23	1.20	2.42	0.352	3.12

BEAR CRUISE NO. 174 STATION NO. 188 LOCATION R

DATE Sept. 18, 1957 LAT. 39° 44.0' N LONG. 73° 32.0' W

DEPTH 32 m GMT 0024

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	21.69	32.07	22.09	0.88	4.95	0.37	0.11	0.72	0.33	0.057	0.14
10	21.70	32.10	22.12	0.90	4.98	0.44	0.19	0.94	0.22	0.034	0.31
20	19.45	32.35	22.89	2.12	4.89	0.44	0.11	0.70	0.00	0.049	0.31
30	10.22	32.82	25.23	10.75	5.02	0.89	0.22	1.24	1.59	0.143	0.74

BEAR CRUISE NO. 174 STATION NO. 189 LOCATION Q

DATE Sept. 18, 1957 LAT. 38° 41.5' N LONG. 73° 20.3' W

DEPTH 35 (chart) m GMT 0218

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	21.67	32.37	22.33	0.70	4.88	0.30	0.07	0.51	0.25	0.192	0.00
10	21.67	32.33	22.30	0.45	4.88	0.32	0.07	0.81	0.21	0.057	0.96
20	13.46	32.85	24.65	1.03	6.52	0.44	0.21	0.84	0.13	0.060	1.03
30	9.02	32.95	25.52	5.32	4.79	1.21	0.25	1.49	3.11	0.132	0.63

BEAR CRUISE NO. 174 STATION NO. 191 LOCATION P

DATE Sept. 19, 1957 LAT. 39° 39.5' N LONG. 73° 15.2' W

DEPTH 32 m GMT 1223

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	21.94	32.69	22.50	0.29	4.89	0.25	0.10	0.67	0.55	0.020	5.55
10	21.96	32.70	22.49	0.23	4.89	0.22	0.09	0.58	0.61	0.106	0.00
20	21.25	32.69	22.69	0.24	4.89	0.36	0.12	0.64	0.56	0.180	0.40
30	8.87	33.05	25.63	1.21	5.21	0.98	0.40	1.59	2.66	0.180	0.92

BEAR CRUISE NO. 174 STATION NO. 192 LOCATION O

DATE Sept. 19, 1957 LAT. 39° 38.1' N LONG. 72° 54.0' W

DEPTH 64 (chart) m GMT 1938

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	21.53	32.68	22.60	(a) 0.38	5.01	0.29	0.17		0.46	0.017	0.97
10	21.43	33.07	22.92	0.36	4.88	0.30	0.09	0.55	0.16	0.043	0.66
20	13.57	32.66	24.48	0.26	7.19	0.26	0.31	0.91	0.50	0.051	0.11
30	9.76	33.12	25.54		6.16	0.62	0.14	0.89	0.61	0.072	0.25
40	8.18	33.02	25.72	1.00	4.36	1.08	0.08	1.25	7.22	0.895	0.00
49	8.07	33.05	25.76		4.46	1.06	0.08	1.27	7.09	0.730	0.00
58	8.01	33.00	25.72	(b) 1.05	4.46	1.09	0.10	1.29	6.52	0.625	0.00

(a) 0 m; (b) 60 m.

BEAR CRUISE NO. 174 STATION NO. 193 LOCATION N

DATE Sept. 19, 1957 LAT. 39° 36.8' N LONG. 72° 39.4' W

DEPTH 66 m GMT 2216

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	21.84	33.44	23.09	0.33	4.89	0.19	0.10	0.55	0.39	0.011	0.17
10	21.81	33.45	23.11	0.25	4.93	0.26	0.10	0.54	0.57	0.014	0.62
20	20.76	34.00	23.81	0.42	5.21	0.26	0.12	--	0.97	0.023	0.40
30	15.39	33.86	25.02	--	6.12	0.37	0.13	0.65	0.60	0.034	0.17
40	9.62	33.40	25.78	0.88	5.19	0.75	0.12	0.99	5.51	0.262	2.80
50	8.79	33.36	25.89	--	4.71	0.94	0.09	1.35	6.29	0.166	0.29
59	8.62	33.38	25.95	0.40	5.16	0.97	0.09	1.10	8.14	0.146	1.09

BEAR CRUISE NO. 174 STATION NO. 194 LOCATION M

DATE Sept. 20, 1957 LAT. 39° 34.5' N LONG. 72° 25.0' W

DEPTH 370 m GMT 0045

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	22.13	33.55	23.10	0.40	4.80	0.18	0.08	0.71	0.21	0.026	0.06
10	22.15	33.54	23.08	0.19	4.81	0.18	0.07	0.48	0.16	0.023	0.34
24	18.96	33.64	24.02	0.80	5.49	0.26	0.03	0.47	0.58	0.017	1.20
48	9.71	33.43	25.79	2.50	5.26	0.82	0.06	0.99	0.51	0.283	0.00
72	9.52	33.69	26.03	0.33	4.61	0.89	0.03	1.06	7.47	0.066	0.00
96	12.58	34.90	26.41	0.17	4.10	0.85	0.02	0.95	7.40	0.129	1.12
145	12.12	35.25	26.77		3.78	1.10	--	1.09	11.17	0.129	0.00
194	11.97	35.34	26.88		3.33	1.29	0.00	1.49	15.10	0.541	0.00
290	9.75	35.08	27.06		4.21	1.45	--		15.39	0.129	0.39
368	6.83	35.28	27.68		3.32	1.41	0.02	1.49	14.28	0.564	0.31

BEAR CRUISE NO. 174 STATION NO. 195 LOCATION L

DATE Sept. 20, 1957 LAT. 39° 26.5' N LONG. 72° 12.0' W

DEPTH 1000 (chart) m GMT 0458

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	23.85	35.27	23.90	0.25	4.61	0.15	0.03	0.35	0.59	0.026	0.17
10	23.88	35.35	23.95	0.22	4.58	0.18	0.04	0.44	0.33	0.054	0.21
25	22.27	35.09	24.23	0.24	4.91	0.14	0.05	--	0.20	0.054	0.00
50	8.91	33.38	25.88	1.00	4.86	0.96	0.06	--	6.59	0.086	0.00
74	12.21	34.66	26.29	0.11	4.25	0.71	0.01	0.92	7.40	0.063	0.09
99	14.60	35.82	26.70	0.19	3.65	0.88	0.02	0.91	9.62	0.074	0.00
148	12.67	35.61	26.94		4.25	1.15	--	1.29	15.10	0.040	0.24
198	11.82	35.53	27.04		--	1.33	0.02	1.38	15.84	0.026	0.25
248	10.29	35.26	27.11		2.99	1.64	--	1.69	20.94	0.046	0.23
347	9.27	35.20	27.24		3.00	1.54	0.00	1.66	17.91	0.074	0.00
446	6.36	35.09	27.59		3.82	1.54	--	1.65	19.83	0.080	0.02
544	4.85	34.97	27.69		4.95	1.45	0.00	--	11.77	0.029	0.07
642	4.70	35.02	27.74		5.32	1.21	--	--	21.76	0.097	0.42
836	4.20	34.98	27.77		5.58	1.24	0.06	--	13.36	0.329	0.00

BEAR CRUISE NO. 174 STATION NO. 196 LOCATION K

DATE Sept. 20, 1957 LAT. 39° 20.4' N LONG. 72° 03.2' W

DEPTH 1900 (chart) m GMT 0825

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	24.02	35.43	23.96	0.26	4.63	0.12	0.04	0.32	0.47	0.011	0.09
10	24.09	35.43	23.95	0.34	4.63	0.08	0.03	0.30	0.30	0.074	1.15
25	24.04	35.44	23.97	0.35	4.63	0.11	0.03	0.39	0.23	0.026	0.51
49	16.17	35.20	25.87	1.60	4.92	0.44	0.06	0.57	2.72	0.092	0.37
73	14.66	35.66	26.56	0.39	3.83	0.71	0.03	0.88	8.44	0.049	0.17
97	14.19	35.79	26.77	0.17	3.51	0.91	0.02	0.98	11.54	0.043	0.11
144	12.75	35.66	26.96		3.35		--	1.27	13.54	0.034	0.08
192	10.61	35.40	27.16		3.09	1.55	0.03	1.58	20.35	0.043	0.60
373	6.57	35.04	27.52		4.10	1.54	--	1.58	20.42	0.095	0.02
268	8.36	35.15	27.35			1.60	0.03	1.68	21.76	0.051	0.00
361	6.48	35.20	27.66			1.42	--	1.56	20.13	0.057	0.60
455	5.57	35.02	27.63			1.29	0.03	--	18.06	0.032	0.00
552	5.03	35.00	27.69			1.31	--	1.50	17.32	0.037	0.00
740	4.25	34.99	27.76			1.22	0.02	1.36	15.39	0.129	0.31
916	4.08	34.98	27.78			1.25	--	1.31	13.10	0.097	0.00
1060	4.00	35.00	27.80			1.24	--	1.38	13.32	0.094	0.00
1193	3.89	34.97	27.88			1.28	0.01	1.41	14.01	0.386	0.07
1362	3.88										

BEAR CRUISE NO. 174 STATION NO. 197 LOCATION J

DATE Sept. 20, 1957 LAT. 39° 11.6' N LONG. 71° 50.7' W

DEPTH 2200 (chart) m GMT 2215

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	22.48	33.79	23.19	0.25	4.93	0.27	0.08	0.57	0.39	0.029	0.54
10	22.28	34.01	23.41	0.21	4.92	0.19	0.05	0.48	0.33	0.054	0.00
24	22.26	34.88	24.07	0.24	4.89	0.12	0.06	0.34	0.19	0.023	0.00
48	16.82	35.33	25.99	1.25	4.97	0.35	0.07	0.56	1.72	0.232	2.34
72	16.12	36.01	26.51	0.26	3.53	0.74	0.09	1.09	8.44	0.026	0.37
96	14.87	35.94	26.73	0.10	3.55	0.90	0.03	1.06	11.47	0.066	0.00
143	13.17	35.73	26.93		3.72	1.05	--	1.22	13.39	0.074	0.01
190	11.47	35.47	27.60		2.99	1.38	0.03	1.62	15.39	0.077	0.09
282	8.71	35.17	27.32		3.06	1.61	--	1.65	19.31	0.490	0.01
282	8.42	35.18	27.36		3.14	1.61	0.03	1.80	22.64	0.043	0.20
376	6.67	35.11	27.56		3.87	1.54	--	1.65	19.24	0.037	0.20
470	5.44	35.08	27.69		4.72	1.53	0.03	1.58	18.57	0.000	0.00
562	4.86	35.04	27.73		5.12	1.38	--	1.44	16.21	0.032	0.00
747	4.38	35.09	27.83		5.48	1.26	0.00	1.34	12.21	0.029	0.00
932	4.13	35.04	27.84		5.64	1.26	--	1.24	13.91	0.318	0.00
1117	3.79	35.00	27.82		5.94	1.24	0.00	1.46	16.28	0.034	0.00
1305	3.74	35.04	27.85		6.01	1.23	--	1.30	14.80	0.049	0.24
1488	3.63	35.00	27.83		5.88	1.22	0.03	1.29	14.58	0.043	0.49
1675	3.58	34.98	27.82		5.87		--	1.26	17.61	0.089	0.00
1863	3.45	34.98	27.84		5.82	1.32	0.00	1.32	11.10	0.043	0.09

BEAR CRUISE NO. 174 STATION NO. 198 LOCATION H

DATE Sept. 21, 1957 LAT. 39° 26.7' N LONG. 71° 27.0' W

DEPTH 1950 (chart) m GMT 0349

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	24.01	35.27	23.84	0.23	4.63	0.10	0.05	0.26	0.21	0.029	0.29
10	24.07	35.29	23.84	0.24	4.64	0.16	0.05	0.37	0.18	0.023	0.38
25	24.51	35.77	24.08	0.25	4.52	0.12	0.05	0.24	0.17	0.009	0.17
49	24.22	35.94	24.30	0.78	4.59	0.19	0.05	0.39	0.29	0.069	1.55
73	18.16	36.27	26.22	0.50	3.55	0.50	0.05	0.67	5.05	0.040	0.00
97	17.75	36.43	26.44	0.12	3.37	0.57	0.04	--	6.36	0.060	0.00
143	17.19	36.48	26.62		4.08	0.40	--	0.58	3.92	0.063	0.50
187	15.81	36.19	26.72		3.58	0.69	--	--	7.47	0.072	0.00
279	12.40	36.62	27.01		3.28	1.06	--	1.24	11.32	0.063	0.55
258	11.47	35.49	27.08		3.09	1.22	0.04	1.42	14.73	0.037	0.40
344	9.14	35.21	27.27		3.02	1.54	--	1.58	20.42	0.009	1.27
426	7.31	35.09	27.46		3.61	1.61	0.05	1.62	15.84	0.054	0.08
510	6.01	35.09	27.63		4.36	1.45	--	1.56	16.72	0.014	0.33
676	4.99	35.06	27.74		5.02	1.27	0.00	1.28	17.61	0.046	0.00
838	4.48	35.03	27.78		5.37	1.19	--	1.26	15.24	0.014	0.50
996	4.20	35.15	27.91		5.64	1.16	0.00	1.28	15.84	0.032	0.00
1150	3.94	35.01	27.82		5.52	--	--	1.19	13.54	0.017	0.00
1312	3.74	34.93	27.77		5.43		0.00	1.15	--	0.057	0.00
1477	3.70	34.97	27.80		5.01	1.20	--	1.20	--	0.400	--
1670	3.61	34.97	27.81		5.53	1.23	0.00	1.23	14.95	0.032	0.00

BEAR CRUISE NO. 174 STATION NO. 199 LOCATION G

DATE Sept. 21, 1957 LAT. 39° 36.0' N LONG. 71° 06.2' W

DEPTH 2270 (chart) m GMT 0823

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	24.03	35.89	24.33	0.55	4.53	0.16	0.04	0.32	0.14	0.000	12.90
10	24.09	35.54	24.05	0.12	4.56	0.05	0.02	0.24	0.00	0.046	0.41
25	24.50	36.12	24.36	0.03	4.52	0.13	0.01	0.25	0.30	0.040	0.97
50	21.24	36.57	25.64	0.48	4.50	0.13	0.02	0.25	0.13	0.037	0.06
74	19.90	36.61	26.03	0.48	4.04	0.27	0.04	0.37	1.85	0.152	0.34
98	18.81	36.56	26.29	0.41	4.20	0.18	0.00	0.63	2.01	0.060	0.00
143	18.11	36.50	26.42		4.31	0.25	--	0.31	--	0.086	--
184	17.58	36.42	26.47		4.20	0.40	0.03	0.49	3.83	0.057	--
278	15.32	36.01	26.70		3.68	0.51	--	0.79	9.03	0.037	0.52
244	15.42	36.05	26.71		3.67	0.78	0.01	0.84	10.8	0.026	--
440	14.18	35.92	26.87		3.61	0.84	--	0.94	10.43	0.046	--
467	11.90	35.49	27.01		3.17	1.36	0.00	1.42	13.39	0.026	--
486	8.79	35.21	27.31		2.93	1.51	--	1.51	16.72	0.063	--
510	6.94	35.11	27.52		3.60	1.47	0.01	1.48	16.13	0.069	--
600	5.64	34.98	27.59		4.63	1.32	--	1.47	13.99	0.043	--
752	4.87	34.98	27.68		5.10	1.25	0.08	1.48	13.62	0.060	--

BEAR CRUISE NO. 174 STATION NO. 200 LOCATION F

DATE Sept. 21, 1957 LAT. 39° 47.7' N LONG. 71° 08.0' W

DEPTH 1160 (chart) m GMT 1307

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	23.21	34.56	23.54	0.23	4.66	0.18	0.05	0.33	0.18	0.023	3.66
10	23.19	34.50	23.51	0.16	4.71	0.12	0.03	0.43	0.20	0.034	0.00
25	24.73	35.81	24.05	0.00	4.55	0.12	0.03	0.29	0.25	0.069	0.46
50	22.84	36.25	24.95	0.38	4.67	0.14	0.03	0.54	0.21	0.052	0.00
75	18.54	36.32	26.17	0.50	3.83	0.43	0.03	0.59	3.72	0.094	0.34
100	18.01	36.39	26.35	0.15	3.33	0.65	0.03	0.85	6.57	0.074	2.18
150	16.07	36.10	26.59		3.45	0.66	--	0.79	7.26	0.034	0.00
192	14.76	35.90	26.72		3.53	0.90	0.01	0.90	9.40	0.020	0.05
153	15.93	36.05	26.74		3.55	0.74	--	0.79	7.62	0.026	0.05
218	13.29	35.72	26.91		3.65	1.06	0.00	1.04	9.84	0.043	0.00
285	10.48	35.30	27.11		3.03	1.49	--	--	16.43	0.069	0.64
362	8.91	35.13	27.24		3.06	1.51	0.00	1.51	16.43	0.052	0.07
416	7.23	35.02	27.42		3.67	1.53	--	1.50	14.50	0.034	0.52
559	5.56	35.01	27.63		4.17	1.32	0.07	1.39	13.84	0.037	0.00
716	4.66	34.98	27.72		5.19	1.32	0.01	1.35	13.17	0.017	0.26

BEAR CRUISE NO. 174 STATION NO. 201 LOCATION E

DATE Sept. 21, 1957 LAT. 39° 57.6' N LONG. 71° 17.2' W

DEPTH 395 m GMT 1700

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	23.94	35.09	23.74	0.30	4.70	0.12	0.03		0.38	0.017	0.94
10	23.94	35.15	23.78	0.23	4.62	0.15	0.03	0.30	0.32	0.054	0.00
24	23.92	35.31	23.91	0.30	4.61	0.16	0.04	0.39	0.34	0.043	0.57
48	19.07	35.20	25.18	0.88	5.16	0.22	0.03	0.44	0.38	0.040	0.92
72	14.89	35.40	26.32	0.48	3.99	0.65	0.03	0.84	5.74	0.103	0.00
96	14.21	35.63	26.64	0.25	3.67	0.81	0.01	0.99	--	0.097	0.06
143	12.68	35.60	26.94		3.44	1.07	--	1.25	11.17	0.037	0.71
188	11.66	35.47	27.03		3.12	1.31	0.01	1.41	13.39	0.066	0.19
276	8.53	35.11	27.30		3.15	1.55	0.02	1.60	16.58	0.040	0.17

BEAR CRUISE NO. 174 STATION NO. 202 LOCATION D

DATE Sept. 21, 1957 LAT. 40° 20.7' N LONG. 71° 28.7' W

DEPTH 84 m GMT 2040

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	22.35	34.15	23.20	(a) 0.46	4.83	0.19	0.03	0.53	0.33	0.066	0.40
10	23.61	35.11	23.84	0.15	4.58	0.15	0.05	0.36	0.16	0.049	0.21
20	23.63	35.10	23.82	0.26	4.67	0.12	0.04	0.53	0.26	0.057	1.32
29	20.00	34.93	24.72		--	0.21	0.06	0.39	0.14	0.029	1.23
39	14.20	34.15	25.50	(b) 4.88	5.19	0.55	0.06	0.76	2.87	0.228	2.44
49	13.34	34.42	25.89		4.70	0.71	0.04	0.89	5.44	0.140	0.00
59	12.02	34.36	26.10	(c) 0.25	4.20	0.96	0.09	1.26	7.92	0.140	0.51

(a) 0 m; (b) 40 m; (c) 60 m.

BEAR CRUISE NO. 174 STATION NO. 203 LOCATION C

DATE Sept. 21, 1957 LAT. 40° 32.4' N LONG. 71° 34.2' W

DEPTH 82 m GMT 2255

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	21.92	34.01	23.50	(a)0.68	4.84	0.29	0.08	0.54	0.34	0.046	0.00
9	21.85	34.12	23.61	(b)0.48	4.84	0.20	0.06	0.53	0.27	0.009	0.66
18	22.08	34.62	23.92	(c)0.75	4.87	0.20	0.10	0.58	0.00	0.029	0.57
28	17.35	34.00	24.67		5.56	0.29	0.10	0.83	0.16	0.029	1.03
37	13.29	33.79	25.41	(d)1.38	4.27	0.61	0.05	1.01	2.21	0.143	1.14
46	10.67	33.72	25.86		4.73	0.89	0.05	1.03	6.18	0.063	1.32
55	10.48	33.78	25.93		4.58	0.88	0.03	--	6.70	0.100	0.00

(a) 0 m; (b) 10 m; (c) 20 m; (d) 40 m.

BEAR CRUISE NO. 174 STATION NO. 204 LOCATION B

DATE Sept. 21, 1957 LAT. 40° 44.0' N LONG. 71° 40.5' W

DEPTH 80 m GMT 0103

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	21.24	33.22	23.09	0.28	4.95	0.22	0.07	0.58	0.34	0.040	0.00
10	20.75	33.07	23.11	0.45	4.95	0.23	0.10	0.55	0.16	0.069	0.00
20	20.53	33.14	23.22	0.35	5.00	0.28	0.07	0.55	0.00	0.034	0.63
30	20.67	33.36	23.35	--	5.11	0.20	0.04	0.46	0.00	0.043	0.09
40	16.99	33.29	24.22	1.19	6.03	0.41	0.09	0.61	0.00	0.031	0.00
50	11.99	33.16	25.18	--	5.51	0.68	0.13	0.94	1.58	0.126	0.00
60	10.08	33.14	25.50	0.45	4.63	1.04	0.06	1.17	--	--	--

BEAR CRUISE 179

November 18-23, 1957

Scientific Personnel

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BEAR CRUISE NO. 179 STATION NO. 205 LOCATION A

DATE Nov. 21, 1957 LAT. 40° 58.3' N LONG. 71° 47.0' W

DEPTH 35 m GMT 0242

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	12.06	32.55	24.69	4.00	5.24	1.13	0.29	2.10	1.98	0.517	
10	12.08	32.53	24.67	4.20	5.30	0.97	0.27	3.14	1.57	0.509	
20	12.04	32.51	24.67	5.30	5.18	0.88	0.26	2.39	1.87	0.483	
30	12.14	32.91	24.96	3.86	4.66	0.80	0.23	1.73	3.71	0.363	

BEAR CRUISE NO. 179 STATION NO. 206 LOCATION B

DATE Nov. 21, 1957 LAT. 40° 44.1' N LONG. 70° 40.6' W

DEPTH 66 m GMT 1415

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	12.62	33.18	25.07	2.25	5.68	0.53	0.21		0.57	0.303	1.16
10	12.64	33.16	25.05	2.10	5.76	0.48	0.21		0.30	0.329	0.00
20	12.61	33.15	25.05	3.87	5.62	0.53	0.23		0.63	0.300	0.00
30	12.67	33.16	25.03	--	5.59	0.55	0.19		0.59	0.292	0.00
40	12.68	33.18	25.06	3.44	5.65	0.56	0.19		0.49	0.314	0.00
50	12.78	33.29	25.12	--	5.60	0.51	0.27		0.75	0.423	0.00
60	11.40	33.26	25.30	1.63	3.87	1.11	0.18		8.99	1.77	0.00

BEAR CRUISE NO. 179 STATION NO. 207 LOCATION C

DATE Nov. 21, 1957 LAT. 40° 31.3' N LONG. 71° 35.0' W

DEPTH 70 m GMT 1711

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	12.98	33.45	25.21	3.00	3.93	0.60	0.20		1.26	0.378	0.000
10	13.02	33.43	25.19	2.45	5.56	0.39	0.17		1.02	0.369	0.195
20	12.99	33.40	25.17	2.50	5.55	0.54	0.17		1.19	0.429	0.068
30	13.03	33.39	25.16	--	5.54	0.50	0.16		1.13	0.346	0.205
40	13.02	33.41	25.17	2.54	5.92	0.50	0.16		0.93	0.372	0.137
50	12.95	33.40	25.18	--	5.94	0.46	0.17		1.08	0.372	1.01

BEAR CRUISE NO. 179 STATION NO. 208 LOCATION D

DATE Nov. 21, 1957 LAT. 40° 19.0' N LONG. 71° 28.0' W

DEPTH 84 m GMT 2003

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	13.05	33.22	25.02	5.50	5.62	0.51	0.21	0.87	1.10	0.198	0.820
10	12.91	33.22	25.05	4.15	5.67	0.61	0.22	0.99	1.04	0.237	0.890
20	13.07	33.21	25.01	3.70	5.62	0.57	0.23		1.22	0.280	0.205
30	13.14	33.22	25.00	--	5.62	0.51	0.22	0.88	0.98	0.209	0.376
40	14.99	34.08	25.28	3.30	5.30	0.44	0.18	0.72	0.98	0.489	0.068
50	15.00	34.38	25.50	--	5.04	0.48	0.34		1.54	0.378	0.000
60	14.93	34.51	25.62	0.63	4.82	0.43	0.30	0.97	3.54	0.266	0.034
70	14.39	--	--	0.33	4.60	0.69	0.10	0.90	5.19	0.152	2.16

BEAR CRUISE NO. 179 STATION NO. 209 LOCATION Y'

DATE Nov. 22, 1957 LAT. 40° 40.2' N LONG. 72° 18.0' W

DEPTH 45 m GMT 0834

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	12.72	32.96	24.89	1.75	5.50	0.84	0.16		1.31	0.358	0.958
10	12.78	32.96	24.88	2.65	--	0.73	0.23		0.98	0.349	0.991
20	12.75	32.95	24.87	1.70	5.36	0.81	0.14		1.30	0.398	1.20
30	12.79	32.98	24.89	2.00	5.50	0.84	0.16		1.12	0.320	0.000
40	12.75	32.95	24.87	--	5.35	0.71	0.16		2.15	0.346	0.718

BEAR CRUISE NO. 179 STATION NO. 210 LOCATION X'

DATE Nov. 22, 1957 LAT. 40° 22.3' N LONG. 72° 08.6' W

DEPTH 60 m GMT 1203

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	12.38	33.14	25.08	5.24	5.73	0.50	0.24		0.31	0.266	0.000
10	12.42	33.14	25.08	3.54	5.70	0.50	0.23		1.93	0.266	0.137
20	12.42	33.11	25.06	4.67	5.70	0.49	0.18		0.25	0.260	0.000
30	12.47	33.14	25.07	--	5.70	0.51	0.19		0.45	0.260	0.000
40	12.56	33.16	25.07	2.36	5.75	0.53	0.20		0.91	0.332	0.992
50	12.97	33.42	25.19	--	6.26	0.56	0.19		1.24	0.585	0.615
60	12.15	33.43	25.34	1.10	4.35	0.84	0.20		6.00	0.366	0.000

BEAR CRUISE NO. 179 STATION NO. 211 LOCATION W'

DATE Nov. 22, 1957 LAT. 40° 01.3' N LONG. 72° 34.4' W

DEPTH 64 m GMT 1648

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	12.48	33.15	25.00	4.64	6.11	0.51	0.24	1.13	0.21	0.220	0.000
10	12.53	33.16	25.00	3.74	5.85	0.51	0.20	0.91	0.89	0.198	0.000
20	12.50	33.16	25.01	5.34	5.75	0.41	0.22	0.91	0.53	0.180	0.650
30	12.56	33.20	25.10	--	5.79	0.50	0.21	0.84	0.25	0.195	0.000
40	12.57	33.19	25.10	4.00	5.64	0.46	0.23	0.85	0.39	0.198	0.000
50	11.82	33.43	25.46	--	4.40	0.82	0.13	1.05	0.35	0.203	0.410
60	11.72	33.42	25.45	0.67	4.50	0.98	0.13	1.13	5.19	0.224	0.000

BEAR CRUISE NO. 179 STATION NO. 212 LOCATION V'

DATE Nov. 22, 1957 LAT. 40° 20.0' N LONG. 72° 51.5' W

DEPTH 44 m GMT 2052

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	13.01	33.22	25.02	1.65	5.60	0.74	0.26	0.88	0.50	0.206	0.000
10	13.06	33.16	24.97	1.75	5.54	0.51	0.14	0.89	0.36	0.218	0.752
20	13.02	33.17	24.98	2.00	5.54	0.53	0.15	0.93	1.23	0.180	0.205
30	13.06	33.16	24.97	1.63	5.54	0.54	0.15	0.82	0.55	0.212	1.20
40	13.06	33.16	24.97	--	5.54	0.63	0.13	0.78	0.38	0.243	0.000

BEAR CRUISE NO. 179 STATION NO. 213 LOCATION U

DATE Nov. 23, 1957 LAT. 40° 01.0' N LONG. 73° 25.0' W

DEPTH 58 m GMT 0150

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	12.94	33.41	25.19	3.97	5.54	0.50	0.24	0.93	0.82	0.232	0.034
10	13.01	33.40	25.17	4.60	5.51	0.49	0.11	0.76	0.59	0.232	0.000
20	12.96	33.38	25.16	4.10	5.50	0.59	0.16	0.79	0.72	0.243	0.000
30	13.00	33.38	25.15	3.40	5.51	0.64	0.20	0.83	0.91	0.234	0.068
40	13.04	33.41	25.17	--	5.50	0.54	0.18	0.82	0.80	0.272	0.000
50	13.06	33.41	25.16	3.08	5.44	0.57	0.22	0.86	0.98	0.295	0.068

BEAR CRUISE NO. 179 STATION NO. 214 LOCATION T

DATE Nov. 23, 1957 LAT. 39° 53.5' N LONG. 73° 39.5' W

DEPTH 26 m GMT 0429

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	12.56	33.34	25.21	2.32	5.69	0.60	0.17	0.87	0.16	0.112	0.958
10	12.72	33.32	25.16	2.74	5.65	0.67	0.15	0.80	0.12	0.123	0.000
20	12.57	33.36	25.22	2.68	5.65	0.51	0.15	0.74	0.16	0.086	0.000
25	12.61	33.31	25.17	2.70	5.67	0.54	0.16	0.78	0.25	0.072	0.855

BEAR CRUISE NO. 179 STATION NO. 215 LOCATION S

DATE Nov. 23, 1957 LAT. 39° 45.1' N LONG. 73° 54.5' W

DEPTH 24 m GMT 0715

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	12.64	32.48	24.52	6.00	5.80	0.82	0.22	1.28	0.33	0.066	0.445
10	11.68	32.49	24.73	5.50	5.81	0.69	0.32	1.24	0.32	0.057	1.68
20	11.66	32.48	24.72	7.08	6.03	0.79	0.35	1.22	0.58	0.040	0.000

BEAR CRUISE NO. 179 STATION NO. 216 LOCATION R

DATE Nov. 23, 1957 LAT. 39° 42.5' N LONG. 73° 32.7' W

DEPTH 34 m GMT 0943

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	12.90	33.38	25.19	2.25	5.58	0.48	0.17	0.93	0.34	0.097	0.000
10	12.95	33.39	25.19	2.10	5.58	0.54	0.17	0.88	0.41	0.126	0.000
20	12.92	33.41	25.20	1.93	5.58	0.56	0.18	0.82	0.28	0.091	0.717
30	12.95	33.38	25.17	2.04	5.60	0.55	0.14	0.70	0.29	0.112	0.753

BEAR CRUISE NO. 179 STATION NO. 217 LOCATION P'

DATE Nov. 23, 1957 LAT. 39° 40.5' N LONG. 73° 09.1' W

DEPTH 40 m GMT 1225

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	13.10	33.66	25.35	2.33	5.54	0.53	0.23	0.86	0.37	0.106	0.000
10	13.16	33.67	25.35	2.04	5.54	0.55	0.12	0.80	0.47	0.180	3.83
20	13.10	33.70	25.38	2.37	5.49	0.58	0.16	0.77	0.32	0.080	0.787
30	13.13	33.65	25.35	1.97	5.54	0.63	0.16	0.73	0.46	0.054	0.171

BEAR CRUISE NO. 179 STATION NO. 218 LOCATION N'

DATE Nov. 23, 1957 LAT. 39° 37.8' N LONG. 72° 47.6' W

DEPTH 67 m GMT 1515

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	12.98	33.50	25.25	3.85	5.55	0.55	0.17	0.75	0.68	0.252	0.410
10	13.02	33.46	25.22	4.78	5.55	0.56	0.20	0.81	0.68	0.203	0.000
20	12.99	33.49	25.24	5.10	5.54	0.48	0.14	1.10	0.86	0.243	0.000
30	13.05	33.49	25.23	--	5.50	0.51	0.15	0.90	0.88	0.217	0.000
40	13.06	33.63	25.34	4.05	5.54	0.53	0.09	0.75	0.85	0.249	0.684
50	13.10	33.73	25.41	--	5.06	0.63	0.06	0.76	2.26	0.555	0.958
60	12.69	33.90	25.62	--	4.54	0.63	0.00	1.06	5.79	0.180	5.60

BEAR CRUISE NO. 179 STATION NO. 219 LOCATION M

DATE Nov. 23, 1957 LAT. 39° 34.0' N LONG. 72° 25.5' W

DEPTH 450 (chart) m GMT 1754

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	13.53	33.83	25.40	5.15	5.55	0.42	0.05	0.63	0.63	0.320	0.342
10	13.85	33.86	25.38	2.40	5.56	0.48	0.08	0.57	0.64	0.332	0.068
25	14.40	34.07	25.56	2.60	5.38	0.42	0.05	0.52	0.85	0.432	0.000
50	15.00	34.54	25.63	0.45	5.05	0.53	0.01	0.63	2.28	0.502	0.308
75	13.70	34.63	25.98	0.17	5.11	0.42	0.02	0.57	1.93	0.548	0.991
100	13.78	34.99	26.08	0.07	4.56	0.70	0.01	0.92	6.79	0.200	2.74
114	13.54	35.57	26.73		3.67	0.89	--	1.15	11.50	0.077	0.581
173	12.62	35.61	26.97		3.73	1.15	0.03	1.38	14.40	0.054	0.581
284	10.99	35.41	27.12		3.42	1.19	--	1.44	15.70	0.200	0.581
400	9.09	35.20	27.28		3.77	1.21	--	--	12.80	0.218	0.581

BEAR CRUISE NO. 179 STATION NO. 220 LOCATION K'

DATE Nov. 23, 1957 LAT. 39° 25.0' N LONG. 72°13.0' W

DEPTH 1900 (chart) m GMT 2117

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	14.43	34.62	25.83	2.50	5.39	0.35	0.07	0.49	0.19	0.112	0.581
10	14.49	24.61	25.80	2.00	5.40	0.34	0.08	0.54	0.17	0.077	0.000
25	14.72	34.71	25.82	2.10	5.33	0.25	0.05	0.47	0.24	0.143	0.000
50	15.11	34.94	25.91	1.20	5.27	0.26	0.06	0.53	0.45	0.132	0.000
75	14.98	35.54	26.41	1.10	3.92	0.53	0.01	0.82	7.88	0.069	0.752
100	14.08	35.63	26.58	0.24	3.74	0.81	0.00	0.96	10.10	0.063	0.581
150	13.11	35.64	26.89		4.30	0.75	0.00	0.77	10.10	0.037	0.000
200	11.87	35.56	27.08		3.31	1.23	--		16.50	0.040	0.000
179	12.67	35.60	26.95		3.80	0.89	0.89	0.81	10.90	0.054	0.000
266	10.51	35.30	27.29		3.01	1.34	1.34	1.39	19.70	0.057	0.957
355	8.37	--			3.27	1.50	1.50	1.65	21.20	0.040	0.957
445	7.13	35.07	27.48		3.83	1.20	1.20	--	17.80	0.149	0.957
536	5.81	--			4.46	1.33	1.33	--	15.40	0.069	0.479
720	4.83	--			5.22	1.06	1.06	--	16.10	0.106	0.479
910	4.27	34.99	27.78		5.89	1.18	1.18	--	13.50	0.046	0.479

BEAR CRUISE NO. 179 STATION NO. 221 LOCATION J

DATE Nov. 24, 1957 LAT. 39° 09.7' N LONG. 71° 11.0' W

DEPTH 2225 (chart) m GMT 0335

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	14.42	34.42	25.67	2.90	5.34	0.49	0.09	0.54	0.19	0.117	0.000
10	14.49	34.42	25.75	2.66	5.42	0.38	0.09	0.45	0.43	0.143	8.07
25	14.66	34.51	25.78	2.23	5.44	0.32	0.08	0.47	0.21	0.174	0.820
50	13.92	35.31	26.45	0.25	4.79	0.53	0.00	0.68	5.79	0.132	0.000
75	13.07	35.61	26.87	0.00	4.87	0.62	--	0.70	8.50	0.043	0.445
100	13.12	35.64	26.87	0.14	4.90	0.57	0.00	0.67	8.71	0.017	0.137
150	13.13	35.63	26.88		4.90	0.66		0.82	7.40	0.043	0.992
197	13.10	35.62	26.88		4.99	0.56	0.00	0.68	8.09	0.046	0.992
298	11.30	35.41	27.04		3.40	1.16		1.16	15.90	0.026	0.992
282	11.75	35.50	27.05		--	1.16		1.19	20.60	0.071	1.61
372	8.95	35.17	27.28		3.60	1.35	0.00	1.47	18.70	0.029	1.61
466	6.85	35.07	27.52		4.14	1.36		1.49	15.90	0.026	1.61
560	5.44	34.96	27.62		4.73	1.32		1.41	16.90	0.069	0.957
750	4.61	34.96	27.60		5.27	1.24	0.07	1.37	12.20	0.017	0.957
940	4.24	35.05	27.71		5.60	1.18		1.25	14.30	0.049	0.957
1135	3.97	34.96	27.78		5.82	1.11		1.20	12.30	0.051	0.957
1330	3.80	34.95	27.78		--	1.19		1.22	14.60	0.031	0.957
1525	3.72	34.93	27.79		6.07	1.07	0.00	1.39	20.10	0.054	0.171
1722	3.64	34.60	27.81		5.92	1.21		1.47	11.00	0.069	0.171
1920	3.49	34.95	27.82		5.92	1.28		1.33	11.20	0.069	0.171

BEAR CRUISE NO. 179 STATION NO. 222 LOCATION H

DATE Nov. 24, 1957 LAT. 39° 25.0' N LONG. 71° 29.1' W

DEPTH 2200 (chart) m GMT 1441

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	14.72	34.48	25.65		5.38	0.35	0.12	0.87	0.48	0.243	0.753
10	14.75	34.49	25.64		5.39	0.33	0.11	0.97	0.35	0.286	2.22
25	14.73	34.49	25.66		5.30	0.33	0.08	--	0.55	0.023	--
50	15.42	35.13	26.08		4.64	0.48	0.05	--	3.62	0.286	0.513
75	14.18	35.53	26.57		3.72	0.91	0.04	0.90	9.30	0.112	0.205
99	13.67	35.63	26.77		3.60	0.85	0.01	0.89	11.00	0.031	0.684
148	12.48	35.55	26.94		3.50	1.06		1.30	14.70	0.046	
195	11.36	--	--		3.18	1.30	0.02	1.30	17.50	0.040	
293	8.91	35.15	27.27		4.18	1.48		1.51	13.70	0.046	1.16
410	6.55	34.90	27.49		4.04	1.18	--	1.38	18.80	0.031	
596	5.94	--	--		3.65	--	--	1.17	11.70	0.086	
680	4.95	35.00	27.70		5.06	1.17		1.34	12.60	0.060	0.00
842	--	--	--		--	--	0.06	--	--	--	--
1000	--	34.96	--		5.74	1.09		1.39	15.30	0.031	
1157	4.85	34.97	27.70		5.37	1.17	--	1.51	14.90	0.106	0.00
1306	3.79	34.95	27.78		5.85	1.16	--	1.36	14.50	0.031	

BEAR CRUISE NO. 179 STATION NO. 223 LOCATION G

DATE Nov. 24, 1957 LAT. 39° 36.0' N LONG. 71° 05.8' W

DEPTH 1995 (chart) m GMT 2240

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	16.63	35.29	25.85	1.20	5.22	0.27		0.60	0.63	0.204	0.034
10	16.68	35.30	25.82	0.90	5.10	0.22		0.66	0.56	0.237	0.000
24	16.65	35.30	25.84	1.27	5.16	0.23		0.41	0.69	0.010	0.000
48	16.69	35.30	25.84	1.07	5.10	0.20		0.47	0.84	0.186	2.36
73	15.54	35.44	26.20	0.15	3.95	0.67		0.91	5.66	0.091	0.342
97	14.41	35.76	26.71	0.35	3.95	0.85		0.93	10.8	0.369	0.342
87	--	35.45	--		4.01	0.72		1.00	8.00	0.129	0.000
175	--	35.70	--		3.58	0.88		1.09	9.11	0.080	0.000
251	8.84	35.16	27.29		2.99	1.42		1.40	21.2	0.091	0.000
292	8.85	35.15	27.28		3.06	1.65			14.9	0.056	0.274
526	5.69	34.97	27.58		5.02	1.23		1.47	12.8	0.043	0.274
763	4.40	34.98	27.74		5.15	1.02		1.42	14.8	0.043	0.274
1002	4.08	35.01	27.81		5.41	1.11		1.44	15.5	0.037	0.000
1497	3.74	34.92	27.77		5.80	1.06		1.28	14.6	0.046	0.000
1729	3.64	34.94	27.79		5.80	1.06		1.36	13.8	0.037	0.000
1973	3.53	34.95	27.81		5.78	1.30		1.39	12.4	0.091	0.000

BEAR CRUISE NO. 179 STATION NO. 224 LOCATION F

DATE Nov. 25, 1957 LAT. 39° 49.7' N LONG. 71° 12.2' W

DEPTH 1125 (chart) m GMT 0111

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	16.69	35.34	25.88		4.89	0.28		0.37	0.78	0.254	0.445
9	16.71	35.31	25.85		5.05	0.22		0.36	0.72	0.243	0.000
23	16.68	35.34	25.88		5.00	0.36		0.36	0.80	0.237	0.855
47	16.80	35.37	25.87		5.11	0.28		0.41	0.79	0.246	0.171
70	15.29	35.30	26.15		3.97	0.74		0.66	5.73	0.086	0.260
93	13.68	35.57	26.71		3.82	0.97		0.81	8.15	0.091	0.000
192	11.88	35.52	27.05		3.20	1.33		1.24	11.5	0.077	0.000
292	9.13	35.48	27.48		3.14	1.26		1.30	16.9	0.020	0.000

BEAR CRUISE NO. 179 STATION NO. 225 LOCATION E

DATE Nov. 25, 1957 LAT. 39° 58.0' N LONG. 71° 18.5' W

DEPTH 290 (chart) m GMT 0510

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	14.97	34.63	25.71		5.32	0.30		0.56	0.92	0.229	0.034
7	15.07	34.61	25.67		5.18	0.37		0.54	0.73	0.274	0.410
19	15.21	34.71	25.71		5.32	0.42		0.41	0.75	0.289	0.445
42	16.70	35.29	25.82		5.06	0.28		0.31	0.99	0.232	0.000
65	16.78	35.35	25.85		4.97	0.26		0.32	1.14	0.276	1.64
88	14.20	35.67	25.68		3.55	0.81		0.85	11.4	0.034	2.60
186	11.95	35.54	27.04		3.23	1.29		1.48	16.0	0.040	0.00
278	7.34	35.24	27.58		3.04	1.39		1.24	13.6	0.083	0.00

BEAR CRUISE 181

January 21-27, 1958

Scientific Personnel

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BEAR CRUISE NO. 181 STATION NO. 226 LOCATION A

DATE Jan. 21, 1958 LAT. 40° 51.8' N LONG. 71° 49.2' W

DEPTH 30 m GMT 2219

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	4.83	31.88	25.25	3.20	6.75	1.15	0.30	1.62	5.58	0.143	0.68
10	4.91	31.98	25.32	1.91	6.70	1.07	0.22	1.62	7.14	1.17	0.68
20	5.14	32.05	25.34	2.48	6.54		0.16	1.22	5.66	0.063	0.48
30	6.53	32.70	25.69	2.80	6.34	1.04	0.14	1.32	4.77	0.077	0.00

BEAR CRUISE NO. 181 STATION NO. 227 LOCATION B

DATE Jan. 22, 1958 LAT. 40° 44.0' N LONG. 71° 40.2' W

DEPTH 65 m GMT 0117

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	8.56	33.53	26.06	1.20	5.92	0.95	0.15	1.28	5.45	0.057	0.00
10	8.62	33.56	26.07	1.06	5.96	0.82	0.11	1.28	5.09	0.146	0.00
20	8.61	33.54	26.06	1.25	5.96	0.83	0.11	1.21	5.10	0.115	0.00
30	8.66	33.56	26.07	--	5.93	0.84	--	0.84	4.97	0.071	0.27
40	8.68	33.57	26.07	1.13	5.90	0.79	0.09	0.99	4.82	0.103	0.00
50	8.68	33.57	26.07	--	5.93	0.81	--	1.11	4.18	0.122	0.07
60	8.69	33.57	26.07	0.99	5.92	0.80	0.08	1.04	3.34	0.094	0.00

BEAR CRUISE NO. 181 STATION NO. 228 LOCATION C

DATE Jan. 22, 1958 LAT. 40° 31.5' N LONG. 71° 36.5' W

DEPTH 67 (chart) m GMT 0448

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	9.19	33.83	26.20	1.48	5.89	0.86	0.12	0.91	5.04	0.060	0.00
10	9.21	33.81	26.18	0.79	5.92	0.64	0.10	1.10	5.09	0.137	0.00
20	9.22	33.83	26.20	0.80	5.93	0.77	0.10	1.32	5.09	0.049	0.00
30	--	33.83	--	--	5.93	0.74	--	0.90	4.99	0.066	0.00
40	9.24	33.81	26.18	0.83	5.97	0.62	0.10	1.60	5.25	0.086	0.00
50	9.36	33.85	26.19		5.95	0.73	--	0.96	5.25	0.097	0.17
60	9.54	33.94	26.22		5.88	0.70	0.15	1.18	5.25	0.103	0.31

BEAR CRUISE NO. 181 STATION NO. 229 LOCATION D

DATE Jan. 22, 1958 LAT. 40° 19.7' N LONG. 71° 31.5' W

DEPTH 80 m GMT 1005

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	10.10	34.06	26.22	0.85	5.70	0.74	0.10	1.06	5.45	0.086	0.00
10	10.11	34.10	26.25	0.69	5.69	0.74	0.07	1.01	6.20	0.077	0.21
20	10.08	34.07	26.24	0.65	5.69	0.77	0.10	0.98	6.05	0.080	0.00
30	--	34.09	--	--	5.74	0.71	--	1.00	6.04	0.082	0.86
40	10.10	34.07	26.23	0.65	5.74	0.71	0.10	0.98	5.09	0.131	0.00
50	10.10	34.08	26.24	--	5.74	0.74	--	1.23	5.09	0.063	0.00
60	10.36	34.16	26.26	0.35	5.70	0.68	0.14	1.09	5.61	0.083	0.00

BEAR CRUISE NO. 181 STATION NO. 230 LOCATION E

DATE Jan. 22, 1958 LAT. 39° 59.5' N LONG. 71° 19.0' W

DEPTH 390 m GMT 1557

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	9.76	33.93	26.19	1.03	5.87	0.73	0.10	0.95	5.93	0.103	0.31
10	9.78	33.93	26.18	0.87	5.83	0.68	0.10	0.95	5.35	0.089	0.03
25	9.72	33.93	26.18	0.22	5.83	0.65	0.09	0.78	5.50	0.046	0.31
50	12.35	34.80	26.39	0.73	5.02	0.69	0.07	0.94	6.84	0.054	1.03
74	13.23	35.27	26.57	0.27	4.35	0.68	0.07	1.11	8.95	0.043	0.00
99	13.74	35.61	26.73	0.20	4.03	0.80	0.06	1.07	10.6	0.046	0.10
149	12.50	35.55	26.93		3.39	1.08		1.21	16.0	0.057	
198	11.78	35.52	27.06		3.35	1.00	0.07	1.52	18.3	0.060	0.48
297	9.12	35.24	27.30		3.39	1.62		1.64	22.6	0.020	

BEAR CRUISE NO. 181 STATION NO. 231 LOCATION F

DATE Jan. 22, 1958 LAT. 39° 48.6' N LONG. 71° 12.3' W

DEPTH 1010 (chart) m GMT 1937

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	10.49	34.39	26.41	0.85	5.75	0.67	0.08	0.87	5.35	0.111	0.14
10	10.50	34.41	26.42	0.90	5.75	0.71	0.13		6.20	0.092	0.03
25	10.57	34.42	26.41	0.85	5.59	0.84	0.07	0.81	5.45	0.092	0.00
50	--	35.04	--	0.37	4.61	0.80	0.07	0.94	8.56	0.080	0.00
74	13.39	35.48	26.70	0.14	3.78	0.91	--	--	13.70	0.020	0.00
99	13.01	35.57	26.85	0.09	3.47	1.04		1.70	15.50	0.020	0.48
149	12.04	35.53	27.02		--	1.26	0.17	1.30	17.10	0.040	
198	11.20	35.40	27.08		3.15	1.43	0.17	1.48	17.20	0.026	
188	11.25	35.40	27.07		3.10	1.40		1.50	13.90	0.029	0.00
283	10.59	35.23	27.04		2.98	1.44	0.33	1.47	23.50	0.020	
378	7.68	35.08	27.41		3.74	1.50		1.65	21.10	0.040	
473	5.95	35.06	27.63		4.45	1.28		1.31	20.10	0.074	
568	5.30	35.02	27.68		4.69	1.26	0.15	1.29	19.90	0.169	0.00
760	4.68	35.02	27.75		5.31	1.22		1.30	17.90	0.066	

BEAR CRUISE NO. 181 STATION NO. 232 LOCATION P'

DATE Jan. 24, 1958 LAT. 39° 40.5' N LONG. 73° 09.0' W

DEPTH 41 m GMT 0138

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	6.78	33.45	26.25	1.54	6.30	0.69	0.11	0.86	1.28	0.066	0.86
10	6.76	33.43	26.24	1.25	6.30	0.68	0.09	0.79	1.17	0.063	0.00
20	--	33.43	--	0.98	6.36	0.77	0.12	0.89	1.13	0.077	0.00
30	6.81	33.46	26.26	1.37	6.35	0.72	0.10	0.82	1.20	0.080	0.17

BEAR CRUISE NO. 181 STATION NO. 233 LOCATION R

DATE Jan. 24, 1958 LAT. 39° 42.5' N LONG. 73° 32.0' W

DEPTH 35 m GMT 0605

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	5.13	33.11	26.19	4.13	6.67	0.80	0.14	0.95	1.40	0.049	1.13
10	5.11	33.10	26.18	3.70	6.60	0.75	0.14	0.93	0.76	0.066	0.00
20	5.16	33.11	26.19	3.90	6.64	0.71	0.12	0.85	0.54	0.023	0.00
30	5.22	33.13	26.19	3.96	6.85	0.78	0.13	0.99	9.20	0.049	0.00

BEAR CRUISE NO. 181 STATION NO. 234 LOCATION S

DATE Jan. 24, 1958 LAT. 39° 44.8' N LONG. 73° 53.8' W

DEPTH 25 m GMT 0920

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	4.41	32.54	25.81	2.25	6.73	0.92	0.21	1.21	3.61	0.103	2.05
10	4.42	32.54	25.81	2.03	6.73	0.85	0.16	1.15	3.56	0.126	0.78
20	4.45	32.57	25.83	2.21	6.73	0.85	0.16	1.12	3.71	0.146	0.00

BEAR CRUISE NO. 181 STATION NO. 235 LOCATION T

DATE Jan. 24, 1958 LAT. 39° 53.8' N LONG. 73° 40.4' W

DEPTH 29 m GMT 1155

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	5.58	33.23	26.22	1.18	6.53	0.66	0.21	0.96	0.085	0.020	0.00
10	5.57	33.27	26.26	2.50	6.47	0.59	0.17	0.91	0.212	0.054	0.00
20	5.57	33.24	26.24	3.90	6.46	0.56	0.15	0.81	0.133	0.037	0.00
25	5.57	33.25	26.25	2.97	6.57	0.57	0.14	0.82	0.165	0.023	0.60

BEAR CRUISE NO. 181 STATION NO. 236 LOCATION V'

DATE Jan. 27, 1958 LAT. 40° 20.7' N LONG. 72° 53.0' W

DEPTH 43 m GMT 0241

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	7.47	33.32	26.05	1.23	6.14	0.85	0.10	1.01	4.09	0.082	0.03
10	7.44	33.32	26.06	1.30	6.19	0.80	0.06	1.06	4.04	0.080	0.41
20	7.48	33.34	26.07	1.23	6.14	0.89	0.10	1.02	4.03	0.106	0.00
30	7.49	33.34	26.07	1.54	6.08	0.83	0.12	0.96	3.28	0.103	0.00
40	7.43	33.34	26.08	--	6.08	0.84	0.11	1.09	4.19	0.163	0.00

BEAR CRUISE NO. 181 STATION NO. 237 LOCATION W'

DATE Jan. 27, 1958 LAT. 40° 02.1'N LONG. 73° 35.5' W

DEPTH 59 m GMT 0513

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	8.29	33.60	26.16	1.00	5.95	0.73	0.10	0.99	4.08	0.074	0.00
10	8.32	33.63	26.18	0.87	6.05	0.70	0.07	0.93	4.35	0.077	0.00
20	8.27	33.61	26.17	1.00	5.93	0.77	0.05	0.86	4.72	0.063	1.37
30	8.36	33.65	26.19	--	6.08	0.81	--	0.85	4.35	0.089	0.44
40	8.45	33.66	26.18	0.70	5.98	0.68	0.06	0.81	4.19	0.065	0.00
50	8.47	33.76	26.25	--	6.19	0.61	--	0.83	4.19	0.109	0.00
60	8.44	33.69	26.20	0.85	5.86	0.67	0.08	0.84	4.03	0.089	0.00

BEAR CRUISE NO. 181 STATION NO. 238 LOCATION M

DATE Jan. 27, 1958 LAT. 39° 34.5' N LONG. 72° 24.4' W

DEPTH 435 (chart) m GMT 0954

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	10.04	34.27	26.40	1.55	5.67	--	0.05	0.78	5.99	0.077	0.00
9	10.03	34.30	26.42	1.06	5.76	0.73	0.08	0.83	5.84	0.100	0.00
24	10.07	34.31	26.43	1.07	5.71	0.70	0.14	0.86	6.10	0.094	0.00
47	11.15	34.68	26.52	0.78	5.65	0.60	0.04	0.70	5.72	0.096	0.00
70	11.31	34.73	26.53	0.63	5.59	0.57	0.06	0.82	5.09	0.120	0.00
94	--	34.79	--	0.48	5.54	0.58	0.05	0.81	5.99	0.115	0.00
139	12.41	35.25	26.72		4.46	0.77		0.88	9.71	0.072	
186	12.40	35.33	26.79		4.02	0.67	0.08	0.98	12.80	0.040	2.19
268	9.72	35.28	27.23		3.21	1.35		1.43	21.30	0.057	
339	9.06	35.20	27.29		3.44			1.78	19.50	0.286	

BEAR CRUISE NO. 181 STATION NO. 239 LOCATION K'

DATE Jan. 27, 1958 LAT. 39° 26.0' N LONG. 72° 10.5' W

DEPTH 1640 (chart) m GMT 1250

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	10.15	34.23	26.35	1.23	5.75	0.73	0.04	0.89	4.45	0.131	0.27
10	10.11	34.24	26.37	1.16	5.70	0.64	0.06	1.06	6.10	0.096	0.14
25	10.64	34.43	26.42	0.85	5.57	0.65	0.05	0.86	6.25	0.074	0.00
49	11.29	34.66	26.49	0.85	5.33	0.65	0.01	0.85	7.05	0.068	0.00
74	11.49	34.79	26.55	0.27	5.57	0.61	0.07	0.82	5.89	0.076	0.00
99	12.79	35.25	26.65	0.65	4.72	0.61	0.02	0.86	7.52	0.057	0.00
148	12.76	35.58	26.91		4.14	1.13	0.00	1.09	16.10	0.034	
197	11.41	35.44	27.05		2.47	1.37		1.38	19.50	0.031	
194	11.44	35.44	27.05		3.02	1.25		1.25	19.40	0.023	
292	8.93	35.17	27.29		3.14	1.49		1.43	20.80	0.034	0.00
389	7.05	35.08	27.50		3.74	1.51			22.00	0.017	
486	5.99	35.00	27.58		4.45	1.30	0.00	1.48	18.10	0.029	
583	5.28	35.00	27.66		4.78	1.38		--	19.80	0.006	
778	4.48	34.97	27.73		5.44	1.20		1.25	16.30	0.029	
972	4.09	34.97	27.77		5.64	1.31		1.39	16.00	0.037	

BEAR CRUISE NO. 181 STATION NO. 240 LOCATION J

DATE Jan. 27, 1958 LAT. 39° 10.5' N LONG. 71° 51.3' W

DEPTH 2206 (chart) m GMT 1757

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	11.03	34.70	26.55	1.47	5.57	0.62	0.07		6.89	0.114	0.00
10	11.03	34.70	26.55	0.85	5.55	0.62	0.05	0.82	5.79	0.094	0.00
24	11.25	34.77	26.57	0.65	5.53	0.70	0.01	0.75	5.72	0.109	0.86
48	12.14	35.12	26.68	0.73	5.36	0.59	0.02	0.67	5.67	0.100	0.00
73	12.30	35.13	26.65	0.50	5.29	0.60	0.03	0.90	7.26	0.080	0.00
97	12.46	35.20	26.67	0.29	5.20	0.60	0.01	0.76	8.00	0.094	4.70
145	12.65	35.53	26.90		3.40	1.12		1.20	14.90	0.020	0.00
193	10.91	35.36	27.09		3.04	1.46	0.19	1.46	20.40	0.023	0.00
290	7.92	35.08	27.35		3.48	1.55		--	23.20	0.034	0.00
387	6.30	35.00	27.53		4.18	1.40		1.44	20.00	0.031	0.00
538	5.03	34.95	27.66		5.08	1.35		1.35	18.90	0.000	3.20
630	4.89	34.97	27.68		5.11	1.26		1.20	19.60	0.111	0.00
817	4.39	34.97	27.73		5.48	1.19	0.00	1.31	17.60	0.029	0.00
1005	4.14	34.97	27.77		5.69	1.23		1.30	18.20	0.000	0.00
1197	*4.95	34.96	27.67		5.86	1.27		1.28	16.00	0.037	0.00
1392	3.75	34.97	27.80		5.90	1.21		1.23	13.70	0.014	0.00
1581	3.70	34.97	27.81		5.93	1.14		1.16	16.1	0.026	1.23
1770	3.62	34.98	27.83		5.87	1.14	0.00	1.28	17.1	0.026	0.00
1960	3.59	34.98	27.83		5.91	1.21		1.27	14.8	0.029	0.00

*Thermometer probably misread

BEAR CRUISE NO. 181 STATION NO. 241 LOCATION H

DATE Jan. 28, 1958 LAT. 39° 25.1' N LONG. 71° 30.0' W

DEPTH 2300 (chart) m GMT 0058

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	10.24	34.18	26.30	1.35	5.77	0.62	0.04	0.83	6.15	0.101	0.00
9	10.23	34.18	26.30	1.00	5.76	0.63	0.03	0.86	5.67	0.100	0.00
24	10.27	34.18	26.29	0.85	5.76	0.72	0.04	0.87	5.76	0.092	0.00
47	12.29	34.86	26.45	0.36	4.76	0.58	0.03	0.94	6.52	0.063	0.00
71	13.22	35.28	26.58	0.14	4.12	0.73	0.03	1.07	11.00	0.023	0.03
95	13.63	35.59	26.74	0.13	3.84	0.89	0.02	1.11	12.60	0.029	0.00
142	12.75	35.58	26.93		3.23	1.12		1.26	17.90	0.012	
189	10.90	35.36	27.10		3.00		0.02	1.46	21.80	0.020	1.23
284	8.73	35.13	27.28		3.31	1.45		1.50	23.10	0.020	
378	6.81	35.05	27.50		4.04	1.42		1.41	22.10	0.026	
488	--	35.03	--		4.35	1.39		1.44	20.60	0.014	
575	5.17	34.99	27.67		4.54	1.27	0.03	1.34	18.60	0.000	0.00
665	5.46	35.04	27.67		3.83	1.37		1.41	21.80	0.009	
945	4.89	34.98	27.70		5.22	1.30		1.38	18.60	0.017	
1116	4.85	34.98	27.70		5.59	1.18	0.04	1.17	17.80	0.014	0.00
1295	4.19	34.98	27.75		5.76	1.18		1.26	16.50	0.000	
1476	3.91	34.97	27.79		5.77	1.18		1.21	17.90	0.017	
1656	3.69	35.00	27.84		5.92	--	0.04	1.22	17.30	0.009	
1836	3.46	34.96	27.82		5.42	1.18		1.24	16.30	0.017	

BEAR CRUISE NO. 181 STATION NO. 242 LOCATION G

DATE Jan. 28, 1958 LAT. 39° 36.1' N LONG. 71° 06.4' W

DEPTH 2208 (chart) m GMT 0810

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	12.16	35.08	26.64	3.00	5.26	0.60	0.07	0.83	6.63	0.149	0.00
10	12.20	35.03	26.58	0.43	5.27	0.62	0.08	0.70	6.63	0.103	0.51
24	13.44	35.40	26.63	0.42	5.16	0.55	0.01	0.55	6.95	0.163	0.68
49	15.06	--	--	0.41	4.84	0.48	0.02	0.59	6.52	0.169	0.07
73	15.05	--	--	0.38	4.83	0.58	0.02	0.63	6.62	0.189	0.17
97	15.13	--	--	0.29	4.83	0.52	0.01	0.58	7.05	0.189	0.00
182	12.22	35.50	26.96		3.28	1.22		1.32	15.60	0.020	
273	9.59	35.24	27.23		3.07	1.48	0.04	1.48	20.40	0.026	0.00
378	6.98	35.11	27.53		3.62	1.49		1.43	21.10	0.040	
469	5.97	35.01	27.59		4.39	1.34		1.41	18.80	0.014	

BEAR CRUISE 183

March 6-10, 1958

Scientific Personnel

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BEAR CRUISE NO. 183 STATION NO. 243 LOCATION A

DATE March 6, 1958 LAT. 40° 57.9' N LONG. 71° 48.9' W

DEPTH 37 m GMT 2203

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	2.91	31.81	25.36	2.57	7.36	0.95	0.17	1.40	4.24	0.143	0.00
10	2.94	31.81	25.35	0.70	6.98	0.95	0.18	1.31	5.09		0.44
20	2.77	32.28	25.74	1.50	7.09	1.05	0.18	1.34	4.56	0.186	0.31
30	3.06	32.57	25.95	1.30	6.96	0.98	0.13	1.18	3.67	0.214	0.03

BEAR CRUISE NO. 183 STATION NO. 244 LOCATION B

DATE March 7, 1958 LAT. 40° 43.8' N LONG. 71° 40.7' W

DEPTH 64 m GMT 0049

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	2.94	32.88	26.21	0.28	6.91	0.73	0.07	1.07	3.98	0.097	0.41
10	3.43	32.88	26.18	0.28	6.93	0.78	0.08	1.09	4.61	0.218	1.71
20	3.41	32.87	26.16	0.30	6.93	0.90	0.06	1.06	4.66	0.249	1.09
30	3.47	32.89	26.17	--	6.90	0.77	--	1.09	4.29	0.229	1.09
40	3.73	32.91	26.17	0.40	6.91	0.78	0.05	1.00	3.28	0.117	0.62
50	3.93	32.96	26.18	--	6.72	0.80	--	1.02	6.31	0.214	0.99
60	4.14	33.04	26.23	--	6.67	0.75	0.03	0.94	6.10	0.332	1.16

BEAR CRUISE NO. 183 STATION NO. 245 LOCATION C

DATE March 7, 1958 LAT. 40° 31.2' N LONG. 71° 34.5' W

DEPTH 71 m GMT 0218

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	4.85	33.18	26.27	0.97	6.70	0.90	0.06	1.17	7.74	0.209	0.00
10	5.38	33.18	26.21	1.14	6.67	0.86	0.07	1.15	8.26	0.209	0.00
20	5.41	33.18	26.20	1.20	6.75	0.93	0.10	1.14	5.78	0.161	0.07
30	5.39	33.18	26.21	--	6.76	0.93	--	1.13	6.20	0.180	0.00
40	5.54	33.21	26.22	1.23	6.70	0.89	0.10	1.21	7.36	0.180	0.00
50	5.54	33.25	26.24	--	6.62	1.00	--	1.14	7.42	0.186	0.00
60	5.93	33.35	26.27	0.82	6.46	0.96	0.08	1.17	5.62	0.238	0.00

BEAR CRUISE NO. 183 STATION NO. 246 LOCATION D

DATE March 7, 1958 LAT. 40° 18.4' N LONG. 71° 28.8' W

DEPTH 73 m GMT 0552

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	4.70	33.05	26.18	1.00	6.60	1.02	0.06	1.15	8.16	0.206	0.14
10	4.75	33.05	26.18	1.25	6.97	0.98	0.07	1.10	7.64	0.157	0.51
20	4.76	33.05	26.18	0.78	6.71	1.02	0.07	1.14	8.26	0.192	0.07
30	4.73	33.04	26.17	--	--	0.97	--	1.04	8.00	0.197	0.55
40	4.78	33.04	26.16	0.80	6.69	0.91	0.07	1.11	8.49	0.162	0.10
50	4.75	33.04	26.17	--	6.61	0.95	--	1.09	7.42	0.218	0.00
60	4.71	33.04	26.17	0.80	6.82	0.99	0.07	1.16	8.10	0.166	0.27

BEAR CRUISE NO. 183 STATION NO. 247 LOCATION E

DATE March 7, 1958 LAT. 39° 59.5' N LONG. 71° 18.8' W

DEPTH 274 m GMT 0924

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	8.35	34.10	26.54	0.75	6.02	0.74	0.09	0.94	2.44	0.140	0.00
8	8.68	34.24	26.60	1.28	5.99	0.76	0.09	0.94	7.74	0.189	0.00
21	10.40	34.91	26.82	0.87	5.65	0.76	0.08	0.95	8.48	0.169	0.00
45	10.43	35.19	27.03	0.47	5.35	0.73	0.04	0.90	8.44	0.177	0.00
68	12.00	35.46	26.96	0.05	5.10	0.67	0.07	0.94	10.60	0.120	0.72
91	12.71	35.67	26.98		4.30	0.92	0.05	1.04	12.10	0.080	0.00
140	12.28	35.63	27.04		4.61	0.93	0.08	1.03	12.70	0.074	0.00
190	11.73	35.52	27.06		3.94	0.95	0.08	1.04	16.60	0.063	0.00
288	11.20	35.44	27.09		3.66	1.28	0.08	1.30	18.30	0.089	0.00

BEAR CRUISE NO. 183 STATION NO. 249 LOCATION S

DATE March 8, 1958 LAT. 39° 46.0' N LONG. 73° 54.0' W

DEPTH 25 m GMT 1429

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	3.46	32.78	26.09	2.23	7.15	0.81	0.14	1.06	4.08	0.140	0.21
10	3.48	32.80	26.10	2.38	7.11	0.80	0.17	1.11	3.98	0.151	0.00
20	3.49	--	--	--	6.68	0.87	0.13	1.04	3.29	0.151	0.00

BEAR CRUISE NO. 183 STATION NO. 250 LOCATION R

DATE March 8, 1958 LAT. 39° 42.6' N LONG. 73° 33.1' W

DEPTH 35 m GMT 1742

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	3.80	33.05	26.27	1.30	6.89	0.84	0.19	1.17	3.06	0.117	0.75
10	3.80	33.05	26.27	1.00	6.89	0.84	0.13	1.17	3.39	0.117	0.55
20	3.78	33.04	26.27	1.00	6.89	0.97	0.13	1.13	3.24	0.109	0.65
30	3.79	33.05	26.27	1.38	6.89	0.97	0.15	1.20	3.29	0.123	0.10

BEAR CRUISE NO. 183 STATION NO. 251 LOCATION P'

DATE March 8, 1958 LAT. 39° 40.1' N LONG. 73° 10.7' W

DEPTH 42 m GMT 2053

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	5.48	33.54	26.48	3.21	6.82	0.77	0.14	0.97	3.50	0.144	
10	5.51	33.57	26.49	3.26	6.72	0.75	0.14	0.94	3.92	0.151	0.00
20	5.48	33.56	26.50	3.38	6.75	0.78	0.13	0.93	3.60	0.132	1.64
30	5.46	33.56	26.50	1.03	6.69	0.81	0.11	1.05	3.55	0.143	0.00

BEAR CRUISE NO. 183 STATION NO. 252 LOCATION N'

DATE March 8, 1958 LAT. 39° 38.0' N LONG. 72° 46.8' W

DEPTH 64 m GMT 2350

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	7.39	34.04	26.62	1.20	6.29	0.87	0.11	1.04	7.00	0.305	0.00
10	7.40	34.02	26.61	1.05	5.72	0.77	0.07	0.97	6.84	0.160	0.17
20	7.43	34.02	26.60	1.10	6.30	0.88	0.08	0.98	11.90	0.174	0.72
30	7.51	34.02	26.60	--	6.21	0.85	--	0.88	6.89	0.200	0.14
40	7.75	34.13	26.64	1.38	6.18	0.65	0.07	0.90	6.00	0.160	0.44
50	8.30	34.33	26.71	--	5.90	0.82	--	0.86	13.10	0.166	0.07
60	8.87	34.53	26.78	0.88	5.52	0.88	0.05	0.94	8.21	0.195	0.00

BEAR CRUISE NO. 183 STATION NO. 253 LOCATION M

DATE March 9, 1958 LAT. 39° 33.3' N LONG. 72° 28.0' W

DEPTH 527 m GMT 0315

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	8.76	34.46	26.74	1.53	6.31	0.76	0.10	0.91	7.15	0.157	1.12
9	8.82	34.43	26.72	1.78	6.03	0.73	0.10	1.00	6.41	0.169	0.00
24	8.95	34.48	26.73	1.55	5.88	0.78	0.10	0.92	6.79	0.177	0.00
48	9.53	34.67	26.78	0.97	5.83	0.73	0.07	0.88	7.74	0.189	0.31
72	11.26	35.26	26.95	0.50	5.27	0.77	0.06	1.21	8.80	0.200	0.00
94	11.90	35.42	26.95	0.82	5.23	0.77	0.14	1.14	9.70	0.169	0.27
141	12.31	35.54	26.97		5.39	0.76	0.12	0.81	9.28	0.169	
279	11.70	35.37	26.95		5.27	0.84	0.12	0.86	9.11	0.157	0.00
365	8.91	35.19	27.30		4.10	1.24	0.12	1.26	18.10	0.066	

BEAR CRUISE NO. 183 STATION NO. 254 LOCATION K

DATE March 9, 1958 LAT. 39° 25.2' N LONG. 72° 10.0' W

DEPTH 1247 m GMT 0608

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	12.82	35.76	27.03	0.36	4.89	0.79	0.03	0.85	9.55	0.109	0.00
9	12.85	35.76	27.02	0.31	4.95	0.76			10.10	0.112	0.24
23	12.85	35.76	27.02	0.31	5.00	0.80	0.06	0.90	10.10	0.123	0.00
46	12.77	35.76	27.04	0.40	4.97	0.77	0.05	0.92	9.50	0.166	0.00
69	12.86	35.75	27.01	0.29	5.00	0.77	0.04	0.86	10.10	0.106	0.62
92	12.71	35.74	27.04	0.31	4.83	0.74	0.07	0.99	9.11	0.106	0.00
138	12.64	35.70	27.03		4.89	0.84	0.11	0.83	10.30	0.137	
184	12.37	35.69	27.07		5.07	0.82	0.11	0.88	10.90	0.129	
188	12.44	35.70	27.07		4.89	0.82	0.17	0.86	10.40	0.126	0.24
283	11.38	35.52	27.12		4.17	1.12	0.17	1.13	15.40	0.037	
377	8.16	35.17	27.40		3.35	1.65	0.17	1.65	22.90	0.051	
472	6.32	35.02	27.54		3.86	1.37	0.17	1.40	20.70		
566	5.47	34.97	27.62		4.64	1.40	0.08	1.43	20.40	0.043	
756	4.67	34.96	27.70		4.66	1.30	0.08	1.30	18.40	0.020	0.00
945	4.35	34.96	27.73		5.42	1.21	0.08	1.25	16.50	0.071	

BEAR CRUISE NO. 183 STATION NO. 255 LOCATION J

DATE March 9, 1958 LAT. 39°03.0' N LONG. 71° 50.8' W

DEPTH 2000 m GMT 1032

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	12.10	35.70	27.13	0.45	5.62	0.89	0.08	1.08	11.10	0.129	0.00
10	12.12	35.70	27.13	0.10	5.03	0.88	0.03	0.97	11.50	0.120	0.00
24	12.13	35.71	27.14	0.44	5.03	0.92	0.03	0.99	12.20	0.126	0.51
49	12.19	35.70	27.11	0.43	5.03	0.88	0.02	1.02	12.20	0.129	0.00
73	12.07	35.68	27.12	0.40	4.96	0.79	0.03	0.98	7.00	0.169	0.00
98	12.04	35.70	27.14	0.36	5.03	0.92	0.04	1.02	11.90	0.114	0.00
196	10.76	35.44	27.17		3.83		0.01	1.22	19.20	0.071	0.03
392	6.28	35.02	27.54		3.87	1.67			22.10	0.023	0.00
489	5.70	35.00	27.61		4.64	1.42		1.44	20.10	0.080	0.14
776	4.45	34.96	27.72		5.50	1.10	0.02	1.34	14.30	0.017	0.00
976	4.27	34.95	27.74		5.73	1.14		1.20	17.60	0.011	0.00
1168	3.89	34.95	27.78		5.73	1.19		1.20	17.70	0.017	0.00
1364	3.75	34.95	27.79		5.89	1.22		1.19	16.40	0.057	0.00
1558	3.58	34.95	27.81		5.89	1.19	0.01	1.21	16.20	0.014	0.00
1754	3.49	34.96	27.83		5.89			1.19	18.00	0.034	0.00
1948	3.31	34.93	27.82		5.89	1.16		1.19	16.50	0.051	0.00

BEAR CRUISE NO. 183 STATION NO. 256 LOCATION H

DATE March 9, 1958 LAT. 39° 24.9' N LONG. 71° 30.3' W

DEPTH 2400 m GMT 1925

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	12.41	35.57	26.96	0.76	4.94	0.71	0.03	0.94	10.40	0.123	0.00
10	12.43	35.58	26.97	0.59	4.96	0.72	0.03	0.83	8.75	0.154	0.00
25	12.39	35.56	26.96	0.63	4.94	0.74	0.04	0.83	9.44	0.160	0.00
50	12.43	35.60	26.98	0.39	5.03	0.73	0.02	0.91	12.90	0.160	0.00
74	12.59	35.67	27.01	0.73	4.73	0.73	0.02	0.84	9.22	0.137	0.00
99	12.81	35.72	27.01	0.55	5.00	0.74		0.85	9.44	0.163	0.00
198	12.88	35.75	27.02		5.00	0.78		0.87	9.80	0.166	0.00
396	7.69	35.06	27.37		3.46	1.61		1.63	25.00	0.031	0.00
489	5.66	34.98	27.59		4.36	1.43		1.48	19.80	0.046	1.64
782	4.63	34.98	27.71		5.49	1.20		1.26	18.60	0.031	
978	4.20	34.98	27.76		5.70				17.20	0.037	0.00
1173	3.91	34.95	27.77		5.75	1.25		1.28	17.60	0.026	
1369	3.76	34.94	27.78		5.82	1.14		1.23	17.10	0.029	
1565	3.61	34.95	27.80		5.60	1.24		1.28	17.90	0.023	0.21
1762	3.55	34.96	27.82		5.88	1.14		1.20	16.20	0.043	
1958	3.42	34.95	27.82		5.65	1.11		1.30	14.70	0.020	

BEAR CRUISE NO. 183 STATION NO. 257 LOCATION G

DATE March 10, 1958 LAT. 39° 36.5' N LONG. 71° 08.0' W

DEPTH 2194 m GMT 0245

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	13.33	35.83	26.98	0.30	4.90	0.72	0.03	0.82	9.54	0.120	0.00
9	13.37	35.87	27.00	0.28	4.99	0.64	0.03	0.76	9.75	0.100	0.00
24	13.34	35.86	27.01	0.27	4.94	0.70	0.05	0.80	9.33	0.114	0.00
47	13.36	35.81	26.97	0.26	4.90	0.68	0.03	0.74	6.57	0.149	0.00
71	13.13	35.89	27.07	0.26	4.99	0.67	0.03	0.73	10.40	0.114	0.14
188	12.83	35.78	27.04		5.10	0.74	0.03	0.86	9.91	0.123	0.03
289	11.66	35.58	27.12		4.50	1.03	--	1.07	15.00	0.043	0.03
386	7.86	35.07	27.36		3.55	1.68	--	1.68	23.80	0.014	0.03
669	4.86	34.98	27.69		5.07	1.32	--	1.32	17.80	0.020	0.00
765	4.62	34.95	27.69		5.38	1.21	--	1.23	12.20	0.031	0.00
956	4.20	34.95	27.74		5.67	1.13	--	1.17	17.10	0.023	0.00
1147	3.97	34.95	27.77		5.70	1.14	--	1.16	17.70	0.014	0.00
1338	3.79	34.96	27.80		5.70	1.18	--	1.19	18.50	0.011	0.00
1530	3.68	34.96	27.81		5.80	1.15		1.18	16.90	0.017	0.00
1721	3.56	34.95	27.81		5.80	1.21		1.23	15.60	0.074	0.00
1912	3.44	34.96	27.83		5.79	1.18		1.19	15.60	0.057	0.00

BEAR CRUISE NO. 183 STATION NO. 258 LOCATION F

DATE March 10, 1958 LAT. 39° 48.2' N LONG. 71° 13.5' W

DEPTH 1218 m GMT 0702

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l
1	13.53	35.59	26.75	1.12	5.00	0.66	0.04	0.73	8.95	0.154	0.00
9	13.60	35.82	26.92	1.11	5.33	0.60	0.04	0.79	8.26	0.186	0.00
24	13.57	35.85	26.95	1.35	4.87	0.63	0.05	0.80	9.65	0.152	0.72
48	13.59	35.85	26.94	0.95	5.10	0.67	0.04	0.88	6.74	0.160	0.14
72	13.61	35.84	26.93	--	4.95	0.67	0.03	0.72	9.28	0.149	0.00
96	13.54	35.85	26.95	0.24	4.88	0.75	0.03	0.72	9.00	0.175	0.00
144	13.34	35.79	26.95		4.67	0.79	0.02	0.82	10.2	0.132	--
192	12.39	35.59	26.99		3.56	1.13	0.02	1.16	15.6	0.043	--
266	10.08	35.27	27.16		2.91	1.47	0.04	1.51	23.9	0.043	
354	8.15	35.15	27.39		3.17	1.52	0.04	1.55	22.8	0.030	
442	6.59	35.03	27.52		3.71	1.44	0.04	1.46	22.6	0.014	0.41
533	5.27	34.95	27.62		4.84	1.40	0.00	1.41	19.1	0.017	
722	4.60	34.96	27.71		5.33	1.26	0.00	1.26	19.1	0.066	
918	4.28	34.94	27.73		5.54	1.24	0.00	1.25	17.1	0.020	

BEAR CRUISE 185

May 12-16, 1958

Scientific Personnel

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BEAR CRUISE NO. 185 STATION NO. 259 LOCATION A

DATE May 12, 1958 LAT. 40° 57.8' N LONG. 71° 49.2' W

DEPTH 30 m GMT 2218

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l	Silicate µg at/l
1	9.68	28.49	21.96 (a)	1.50	6.31	0.70	0.20	1.03	2.16	0.229	0.61	
10	7.93	30.72	23.95	3.30	6.51	0.50	0.18	0.81	1.01	0.163	0.27	3.96
20	7.55	31.84	24.88	2.00	6.19	0.46	0.10	0.77	0.87	0.166	0.07	3.32
30	7.43	31.99	25.02 (b)	2.55	6.21	0.58	0.14	1.01	1.26	0.232	0.71	3.58

(a) 0 m; (b) 40 m.

BEAR CRUISE NO. 185 STATION NO. 260 LOCATION B

DATE May 13, 1958 LAT. 40° 43.7' N LONG. 71° 41.0' W

DEPTH 58 m GMT 0138

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l	Silicate µg at/l
1	9.41	32.33	25.00 (a)	0.98	6.58	0.49	0.17	0.71	0.63	0.066	0.00	2.05
10	8.54	32.47	25.23	1.43	6.74	0.45	0.21	0.72	0.46	0.092	--	1.66
20	8.38	32.58	25.34	1.10	6.84	0.38	0.16	0.62	0.10	0.043	0.44	0.51
30	8.08	32.62	25.42		6.76	0.42	--	0.61	0.07	0.044	0.00	0.51
40	7.99	32.98	25.72	0.53	6.68	0.50	0.12	0.69	0.63	0.186	0.00	1.04
50	5.46	33.05	26.10		6.40	1.00	--	1.03	5.78	0.269	0.68	7.43
60	5.10	32.96	26.08	1.50	6.15	0.87	0.11	1.06	--	0.349	--	9.10

(a) 0 m.

BEAR CRUISE NO. 185 STATION NO. 261 LOCATION C

DATE May 13, 1958 LAT. 40° 38.8' N LONG. 71° 35.3' W

DEPTH 67 (chart) m GMT 0434

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l	Silicate µg at/l
1	8.93	32.71	25.37	0.75	6.57	0.42	0.07	0.66	0.16	0.057	--	0.77
10	8.82	32.73	25.40	1.10	6.54	0.43	0.15	0.64	0.10	0.046	0.20	0.51
20	8.36	32.79	25.52	0.95	6.75	0.40	0.14	0.60	0.34	0.077	0.85	0.51
30	7.28	32.96	25.80	0.42	6.50	0.54	--	0.61	2.12	0.114	0.20	0.26
40	5.12	32.99	26.10	0.50	6.05	1.04	0.12	1.16	7.25	0.249	0.24	8.05
50	5.04	32.98	26.09	--	6.06	1.11	--	1.14	7.95	0.234	0.54	7.50
60	5.05	33.02	26.13	--	6.06	1.08	0.10	1.21	--	--	0.00	7.30

BEAR CRUISE NO. 185 STATION NO. 262 LOCATION D

DATE May 13, 1958 LAT. 40° 19.2' N LONG. 71° 28.9' W

DEPTH 77 (chart) m GMT 0650

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l	Silicate µg at/l
1	8.78	32.75	25.42	0.95	6.52	0.33	0.20	0.80	0.34	0.063	0.14	0.51
10	8.77	32.75	25.42	1.00	6.55	0.41	0.11	0.57	0.54	0.074	0.00	0.77
20	8.65	32.78	25.47	0.75	6.54	0.38	0.08	0.61	0.45	0.072	0.00	0.64
30	7.77	32.85	25.65	--	6.69	0.39	--	0.53	0.56	0.074	0.07	0.77
40	6.90	32.93	25.83	0.26	6.53	0.67	0.08	0.84	8.25	0.143	0.00	1.92
50	5.48	32.98	26.05	--	6.27	1.03	--	1.14	7.10	0.258	0.07	5.63
60	5.22	33.00	26.09	0.40	6.12	1.05	0.07	1.21	5.89	0.252	0.48	8.19

BEAR CRUISE NO. 185 STATION NO. 263 LOCATION E

DATE May 13, 1958 LAT. 39° 59.7' N LONG. 71° 19.0' W

DEPTH 313 (chart) m GMT 1011

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l	Silicate µg at/l
1	9.58	33.31	25.73	2.20	6.30	0.37	0.14	0.71	0.06	0.043	0.07	1.66
10	9.60	33.33	25.74	1.53	6.59	0.29	0.13	0.73	0.00	0.031	0.14	1.92
24	9.46	33.58	25.96	1.28	6.43	0.43	0.08	0.69	0.91	0.097	0.14	3.08
48	9.17	34.11	26.41	0.43	6.05	0.57	--	0.78	3.64	0.172	0.20	4.73
72	12.21	35.14	26.68	0.245	5.22	0.60	0.04	0.71	6.67	0.180	0.00	4.35
96	13.36	35.55	26.76	0.23	5.09	0.66	0.01	0.81	8.30	0.120		4.22
144	12.42	35.49	26.91	--	4.47	0.94		1.05	10.90	0.086	0.14	8.19
193	10.97	35.35	27.09	--	3.72	1.20	0.03	1.27	13.40	0.206		12.15
289	8.67	35.08	27.25	--	3.37	1.54		1.62	16.10	0.060		16.12

BEAR CRUISE NO. 185 STATION NO. 264 LOCATION F

DATE May 13, 1958 LAT. 39° 47.5' N LONG. 71° 11.7' W

DEPTH 1240 (chart) m GMT 1317

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l	Silic µg at
1	11.37	34.08	25.98	0.80	6.19	0.25	0.12	0.61	0.13	0.127	0.14	2.6
10	11.39	34.09	26.02	1.00	6.14	0.30	0.11	0.51	0.38	0.046	0.00	2.9
25	10.33	34.41	26.45	1.73	5.53		0.04	0.77	4.86	0.238	0.10	4.6
49	13.15	35.47	26.73	0.35	5.29	0.60		0.64	5.76	0.080	0.00	4.0
74	13.63	35.60	26.74	0.23	5.00	0.61	0.03	0.69	7.25	0.086	0.00	3.7
98	13.44	35.58	26.76	0.00	5.02	0.66	0.00	0.85	7.62	0.069	0.14	3.4
147	12.51	35.53	26.92		4.76	0.96	0.04	0.91	11.30	0.020		4.8
196	12.42	35.62	27.02		4.55	0.96		0.91	13.90	0.060	0.14	7.4
165	12.46	35.54	26.94		4.53	0.82		0.86	10.90	0.049		6.5
250	11.19	35.39	27.05		3.73	1.18	0.03	1.17	15.50	0.057		11.2
335	8.38	35.04	27.27		3.23	1.51		1.52	21.80	0.063		17.1
422	6.99	35.04	27.47		3.96	1.46		1.49	14.10	0.169		16.6
512	5.70	35.04	26.65		4.44	1.41	0.00	1.38	16.10	0.066	0.00	15.4
696	4.54	34.95	27.70		5.24	1.27		1.22	13.00	0.072		13.3
887	4.28	35.02	27.79		5.46	1.21		1.22	19.60	0.043		13.0

BEAR CRUISE NO. 185 STATION NO. 265 LOCATION G

DATE May 13, 1958 LAT. 39° 36.3' N LONG. 71° 07.5' W

DEPTH 2185 (chart) m GMT 1638

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l	Silicat µg at/l
1	12.09	34.14	25.91	0.50	5.88	0.25	0.10	0.37	0.04	0.060	0.17	3.20
10	12.01	34.17	25.94	0.63	5.92	0.20	0.09	0.36	0.26	0.043	0.03	3.71
25	11.38	34.24	26.13	1.28	6.06	0.24	0.07	0.36	0.00	0.026	0.00	3.32
50	11.81	34.99	26.64	0.148	5.22	0.59	--	0.61	6.90	0.106	0.00	4.22
75	12.98	35.44	26.75	0.12	4.87		0.02	0.68	8.48	0.086	0.10	4.73
100	12.24	35.37	26.85	0.12	4.65	0.78	0.05	1.01	8.05	0.054	0.00	5.50
149	12.59	35.56	26.94		4.46	0.86		1.03	10.60	0.049		6.53
199	11.76	35.44	27.00		4.00		0.01	1.12	15.50	0.054	0.10	9.21
299	9.14	35.13	27.22		2.98	1.64		1.55	23.50	0.086		16.50
398	7.36	35.00	27.39		3.52	1.59		1.61	20.20	0.068		17.66
486	6.07	34.97	27.53		4.34	1.47		1.51	16.30	0.049		15.73
583	5.40	34.98	27.63		--	1.41	0.12	1.42	20.40	0.066		15.10
778	4.62	34.99	27.73		5.20	1.50		1.31	16.30	0.031	0.00	13.82
995	4.23	34.95	27.75		5.51	1.29		1.26	15.70	0.034		13.31
1194	3.96	34.91	27.74		5.75	1.29	0.03	1.33	12.80	0.103		12.67
1393	3.79	34.89	27.74		5.90	1.23		1.26	17.00	0.063		12.54
1592	3.70	34.89	27.75		5.84	1.23		1.23	11.70	0.037		13.43
1791	3.61	34.90	27.76		5.76	1.30	0.03	1.18	17.60	0.054	0.00	13.49
1990	3.47	34.92	27.79		5.57	1.33		1.25	16.90	0.046		16.25

BEAR CRUISE NO. 185 STATION NO. 266 LOCATION H

DATE May 13, 1958 LAT. 39° 25.2' N LONG. 71° 31.4' W

DEPTH 2350 (chart) m GMT 2251

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l	Silica µg at/
1	12.17	34.04	25.82	0.38	6.01	0.27	0.10	0.47	0.07	0.023	0.14	3.20
10	12.15	34.08	25.86	0.50	6.50	0.16	0.11	0.43	0.16	0.063	0.03	2.94
25	10.81	33.87	25.95	1.20	6.25	0.30	0.12	0.57	0.57	0.074	0.00	1.92
49	8.67	33.99	26.40	0.45	5.95	0.69	--	0.85	5.56	0.306	0.03	4.99
74	13.29	35.54	26.76	0.24	4.43	0.62	0.01	0.67	7.79	0.094	0.07	4.73
99	12.73	35.47	26.83	1.05	5.69		0.01	0.78	10.90	0.077	0.00	5.63
148	12.71	35.67	26.99		4.77	0.79		0.90	10.20	0.343		6.27
197	12.01	35.56	27.04		5.04	1.06	0.03	1.02	11.20	0.052	0.03	7.55
296	9.50	35.17	27.19		2.84	1.51		1.53	19.80	0.060		15.48
394	7.03	34.97	27.41		3.75	1.48		1.67	19.60	0.043		15.99
484	6.16	34.97	27.52		4.36	1.45		1.47	16.70	0.057	0.03	15.73
581	5.22	34.94	27.63		4.78	1.39	0.05	1.54	18.60	0.086		14.97
774	4.51	34.97	27.72		5.34	1.40		1.39	19.10	0.094	0.07	13.69
968	4.19	34.92	27.72		5.60	1.18		--	15.10	0.026		12.79
1162	3.98	34.91	27.73		5.64	1.29	0.08	1.34	16.40	0.040		12.92
1355	3.82	34.91	27.75		5.74	1.15		1.19	15.10	0.037	0.37	12.28
1549	3.73	34.93	27.78		5.65	1.17		1.15	11.30	0.031		13.31
1742	3.64	34.95	27.80		5.70	1.21	0.08	1.20	12.50	0.026	0.37	14.33
1936	3.50	34.94	27.81		5.81	1.20		1.25	12.90	0.037		15.10

BEAR CRUISE NO. 185 STATION NO. 267 LOCATION J

DATE May 14, 1958 LAT. 39° 11.0' N LONG. 71° 50.5' W

DEPTH 2300 (chart) m GMT 0620

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l	Silicate µg at/l
1	17.33	34.88	25.36	0.28	5.19	0.18	0.13	--	0.77	0.060	0.00	1.41
9	17.35	34.89	25.36	0.19	5.15	0.26	0.08	0.41	0.64	0.037	0.34	1.41
21	19.30	36.05	25.78	1.09	4.45	0.19	0.08	0.39	1.38	0.057	0.00	2.05
42	18.51	36.24	26.12	0.125	3.82	0.44	--	0.54	4.71	0.066	0.41	2.30
62	17.47	36.17	26.31	0.24	3.22	0.73	0.03	0.80	7.85	0.049	0.00	3.20
83	15.72	35.82	26.46		3.69	0.70	0.01	0.81	8.95	0.117	0.00	4.86
123	14.86	35.89	26.71		3.40			0.89	13.20	0.057	0.03	4.42
160	13.30	35.62	26.83		3.50	0.98		1.00	13.70	0.063	0.00	7.81
240	12.17	35.53	27.00		--	0.98	0.06	1.00	11.70	0.029	0.00	7.42
333	10.35	35.22	27.08		3.48	1.24		1.30	17.60	0.063	0.00	11.77
426	8.38	35.06	27.28		2.47	1.64		1.67	20.60	0.077	0.20	17.40
865	4.59	34.97	27.72		5.31	1.42		1.50	20.20	0.063	0.07	14.07
1043	4.28	34.93	27.72		5.47	1.35		1.34	17.70	0.072	0.24	13.43
1221	4.02	34.94	27.76		5.31	1.21	0.05	1.22	12.70	0.066	0.00	12.67
1401	3.87	34.94	27.78		5.00	1.08		1.15	10.60	0.034	0.48	12.79
1587	3.71	34.94	27.79		5.16	1.16		1.17	14.00	0.031	0.75	13.56
1778	3.61	34.93	27.80		5.03	1.11		1.25	7.66	0.029	0.00	14.07
1969	3.46	34.93	27.81		6.57	1.22	0.05	1.39	16.10	0.089	0.65	15.35
2250	3.21	34.94	27.84		--	--		--	--	--	0.24	24.94

BEAR CRUISE NO. 185 STATION NO. 268 LOCATION K

DATE May 14, 1958 LAT. 39° 25.9' N LONG. 72° 10.4' W

DEPTH 2000 (chart) m GMT 1340

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l	Silicate µg at/l
1	11.60	34.07	25.98	2.05	6.03	0.42	0.17	0.77	0.84	0.132	0.24	2.56
10	11.26	34.12	26.07	1.63	6.08	0.43	0.13	0.66	0.43	0.020	0.86	3.07
25	11.15	34.12	26.09	1.75	6.11	0.50	0.14	0.69	0.63	0.089	0.03	2.94
51	9.07	34.17	26.49	0.75	5.55	0.78	--	0.78	6.66	0.286	0.07	5.24
77	9.98	34.50	26.59	0.18	5.37	0.81	0.02	0.76	8.90	0.140	0.24	6.14
102	11.90	35.19	26.78	0.095	4.97	0.76	0.03	0.77	9.21	0.083	0.14	5.88
153	12.36	35.47	26.90		4.46	0.85	0.07	0.85	9.00	0.040	0.07	6.14
204	11.76	35.48	27.02		4.15	1.01		1.06	10.00	0.057		5.88
294	8.85	35.11	27.25		3.24	1.71		1.54	17.70	0.054		15.86
392	6.91	34.98	27.44		3.75	1.63	0.07	1.50	18.80	0.052		16.37
495	5.81	34.98	27.58		4.34	1.37		1.37	20.90	0.046	0.00	15.22
589	5.35	34.97	27.63		4.62	1.36		1.40	15.10	0.057		14.97
785	4.74	34.98	27.71		5.15	1.42	0.00	1.41	16.90	0.031		13.94
982	--	35.05	--		5.42	1.50		1.46	16.60	0.083		

BEAR CRUISE NO. 185 STATION NO. 269 LOCATION M

DATE May 14, 1958 LAT. 39° 32.3' N LONG. 72° 21.4' W

DEPTH 470 (chart) m GMT 1922

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l	Silicate µg at/l
1	9.67	32.92	25.42	0.78	6.59	0.44	0.13	1.10	0.22	0.049	0.00	1.02
10	7.96	33.32	25.99	0.83	5.68	0.62	0.11	0.89	3.86	0.140	0.27	2.94
25	6.81	33.40	26.22	0.44	5.93	0.85	0.06	1.08	6.15	0.295	0.24	6.39
50	6.99	33.56	26.32	0.238	5.82	0.98	--	1.02	7.20	0.254	0.17	--
75	8.66	33.96	26.39	0.245	5.62	0.81	0.06	0.91		0.232	0.27	7.30
99	9.89	34.56	26.67	0.105	5.23	0.83	0.05	0.96	8.75	0.166	0.00	7.04
149	12.12	35.26	26.78		4.76	0.78		0.87	6.72	0.120		6.65
199	11.29	35.38	27.06		4.02	1.03	0.08	1.29	12.30	0.046	0.00	9.60
298	8.48	35.18	27.36		3.96	1.47		1.42	16.6	0.091		13.90
398	6.86	35.04	27.49		4.50	1.57		1.56	16.7	0.114		15.22

BEAR CRUISE NO. 185 STATION NO. 270 LOCATION N'

DATE May 14, 1958 LAT. 39° 38.0' N LONG. 72° 47.0' W

DEPTH 61 m GMT 2301

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l	Silicate µg at/l
1	9.75	32.82	25.32	0.595	6.58	0.37	0.09	1.04	0.11	0.043	0.00	0.64
10	9.28	32.85	25.43	0.72	6.75	0.41	0.11	0.81	0.00	0.040	0.03	--
20	8.51	32.95	25.62	1.95	6.98	0.45	0.12	0.90	0.19	0.034	0.10	0.64
30	7.62	33.04	25.82	--	6.85	0.45	0.09	0.65	1.64	0.080	0.00	0.90
40	5.30	32.91	26.01	0.65	6.19	0.97	0.06	1.08	7.30	0.154	0.17	6.39
50	5.31	32.96	26.05	--	6.27	0.95	--	1.01	6.72	0.172	0.51	7.04
60	5.42	33.05	26.11	0.76	6.12	1.15	0.15	1.34	7.36	0.183	0.37	7.17

BEAR CRUISE NO. 185 STATION NO. 271 LOCATION P'

DATE May 15, 1958 LAT. 39° 40.4' N LONG. 73° 09.5' W

DEPTH 36 m GMT 0206

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l	Silicate µg at/l
1	9.63	32.26	24.90	0.53	6.70	0.36	0.14	0.78	0.03	0.037	0.14	0.00
10	9.40	32.56	25.17	0.72	6.97	0.26	0.15	0.57	0.05	0.029	0.51	0.26
20	8.16	32.66	25.44	1.23	6.02	0.29	0.13	0.68	0.06	0.020	0.10	0.13
30	5.69	32.49	25.64	1.75	6.39	0.64	0.11	0.85	1.26	0.046	0.14	1.92

BEAR CRUISE NO. 185 STATION NO. 272 LOCATION R

DATE May 15, 1958 LAT. 39° 43.0' N LONG. 73° 32.0' W

DEPTH 36 (chart) m GMT 0445

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l	Silicate µg at/l
1	9.72	31.75	24.49	0.60	6.67	0.37	0.16	--	0.09	0.043	0.14	0.13
10	8.20	31.97	24.89	0.60	6.92	0.44	0.15	0.75	0.14	0.023	0.24	0.13
20	7.44	31.95	24.99	0.76	6.67	0.36	0.14	0.78	0.01	0.029	0.00	0.38
30	5.64	31.66	24.99	1.73	6.97	0.57	0.18	0.82	0.80	0.072	0.48	0.13

BEAR CRUISE NO. 185 STATION NO. 273 LOCATION S

DATE May 15, 1958 LAT. 39° 45.6' N LONG. 73° 53.3' W

DEPTH 27 (chart) m GMT 0652

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l	Silicat µg at/l
1	11.00	31.66	24.20	7.00	7.18	0.29	0.08	0.54	0.06	0.043	0.20	0.38
10	8.38	31.25	24.30	0.84	6.65	0.33	0.23	0.88	0.04	0.034	0.31	0.13
20	7.18	31.56	24.72	3.35	6.00	0.66	0.18	0.88	0.33	0.057	0.10	6.51

BEAR CRUISE NO. 185 STATION NO. 274 LOCATION T

DATE May 15, 1958 LAT. 39° 54.0' N LONG. 73° 40.0' W

DEPTH 28 m GMT 1058

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l	Silicat µg at/l
1	10.08	31.43	24.18	(a) 0.80	6.69	0.40	0.21	0.77	0.13	0.009	0.37	0.51
10	8.93	31.50	24.42	(b) 0.95	6.79	0.46	0.14	0.68	0.14	0.034	0.00	0.00
20	7.94	31.70	24.72	(c) 0.85	6.65	0.45	0.15	0.76	0.12	0.037	0.14	0.00
25	7.77	31.81	24.83	(d) 3.00	6.63	0.37	0.15	0.72	0.03	0.052	0.10	0.26

(a) 0 m; (b) 5 m; (c) 10 m; (d) 20 m.

BEAR CRUISE NO. 185 STATION NO. 275 LOCATION U

DATE May 15, 1958 LAT. 40° 02.2' N LONG. 73° 25.3' W

DEPTH 68 m GMT 1129

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l	Silicat µg at/l
1	9.72	31.45	24.25	1.25	6.83	0.29	0.25	0.67	0.00	0.048	0.00	0.13
10	9.58	31.44	24.27	1.35	6.79	0.43	0.27	0.75	0.23	0.057	0.27	0.38
20	7.39	32.40	25.35	4.95	6.46	0.51	0.22	0.88	0.62	0.057	0.07	1.41
30	6.68	32.58	25.58	--	6.16	0.72	--	1.55	1.59	0.057	0.44	3.07
40	5.34	32.58	25.74	1.25	6.16	0.84	0.14	1.11	2.91	0.072	0.95	5.75
50	5.16	32.66	25.83	--	6.04	0.94	--	1.04	4.45	0.109	0.51	
60	5.11	32.78	25.92	0.90	6.14	1.12	0.12	1.34	7.00	0.228	0.71	7.30

BEAR CRUISE NO. 185 STATION NO. 276 LOCATION Y'

DATE May 15, 1958 LAT. 40° 21.5' N LONG. 72° 52.8' W

DEPTH 42 m GMT 1559

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l	Silicate µg at/l
1	9.30	31.68	24.50,	1.50	6.61	0.37	0.35	0.91	0.00	0.072	0.00	0.64
10	9.32	31.75	24.55	2.60	6.59	0.35	0.38	0.84	0.02	0.057	0.38	0.77
20	7.83	32.39	25.28	1.28	6.40	0.43	0.13	0.61	0.30	0.057	0.00	2.69
30	7.43	32.57	25.48	0.75	6.25	0.56	0.14	0.65	0.68	0.057	0.17	3.45
40	6.09	32.60	25.67	--	6.00	0.69	0.12	0.85	2.06	0.086	1.60	6.39

BEAR CRUISE NO. 185 STATION NO. 277 LOCATION W'

DATE May 15, 1958 LAT. 40° 02.4' N LONG. 72° 36.0' W

DEPTH 54 m GMT 1919

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l	Silicate µg at/l
1	9.32	32.34	25.02	0.80	6.14	0.38	0.15	0.82	0.00	0.040	0.27	1.41
10	9.33	32.81	25.39	0.80	6.36	0.40	0.17	0.66	0.31	0.020	0.00	0.64
20	7.83	33.01	25.77	1.23	5.74	0.50	--	--	0.98	0.192	0.27	--
30	7.28	32.98	25.82	--	6.00	0.66	0.10	0.81	1.96	0.109	0.03	1.92
40	5.19	32.87	25.99	0.63	5.80	1.00	0.06	1.11	6.51	0.157	0.71	9.09
50	5.14	32.87	26.00	--	5.89		--	1.09	7.15	0.154	0.62	9.09
60	5.06	32.89	26.02	0.68	5.77	1.04	0.08	1.14	6.68	0.154	0.62	8.83

BEAR CRUISE NO. 185 STATION NO. 278 LOCATION X'

DATE May 15, 1958 LAT. 40° 21.6' N LONG. 72° 07.4' W

DEPTH 59 m GMT 2330

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l	Silicate µg at/l
1	8.99	32.57	25.25	0.90	6.95	0.37	0.15	0.71	0.10	0.037	0.72	1.02
10	9.01	32.57	25.24	1.63	6.86	0.33	0.21	0.72	0.10	0.040	0.48	0.00
20	8.13	32.58	25.38	0.85	6.63	0.48	0.13	0.62	0.22	0.046	0.72	0.64
30	5.55	32.56	25.71	--	6.00	0.88	0.10	1.00	4.07	0.149	1.85	6.90
40	4.92	32.73	25.91	0.40	5.96	1.20	0.11	1.54	8.30	0.250	0.79	11.90
50	4.92	32.80	25.96	--	5.77	1.13	0.07	1.28	7.62	0.204	0.38	11.90

BEAR CRUISE NO. 185 STATION NO. 279 LOCATION Y

DATE May 16, 1958 LAT. 40° 40.2' N LONG. 72° 20.0' W

DEPTH 42 (chart) m GMT 0207

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l	Silicat µg at/l
1	9.20	31.83	24.63	3.50	6.75	0.32	0.29	0.75	0.00	0.054	0.00	2.17
10	9.17	31.85	24.66	4.42	6.82	0.37	0.10	0.58	0.31	0.049	0.00	2.17
20	7.59	32.26	25.20	1.88	6.55	0.51	0.24	0.81	1.13	0.086	0.24	2.56
30	7.04	32.35	25.35	--	6.32	0.70	0.07	0.76	1.24	0.057	0.34	2.94
40	6.93	32.39	25.40	0.88	6.19	0.67	0.09	0.81	1.27	0.063	1.75	3.96

BEAR CRUISE 195

September 5-8, 1958

Scientific Personnel

Vaughan T. Bowen,
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John Barlow
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BEAR CRUISE NO. 195 STATION NO. 528 LOCATION A

DATE Sept. 6, 1958 LAT. 40° 38.0' N LONG. 71° 50.0' W

DEPTH 36 (chart) m GMT 0156

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l	Silicate µg at/l
1	15.98	30.73	22.50	6.95	5.73	0.61		0.97	0.42	0.049	0.14	2.19
10		30.73		8.15	5.71	0.70		1.13	0.38	0.060	0.00	3.47
20	15.26	31.72	23.42	2.70	4.87	0.73		0.94	0.64	0.152	0.00	4.24
30	12.06	32.09	24.33	1.33	4.91	0.94		1.03	1.75	0.374	0.03	8.62

BEAR CRUISE NO. 195 STATION NO. 529 LOCATION B

DATE Sept. 6, 1958 LAT. 40° 44.0' N LONG. 71° 42.0' W

DEPTH 55 m GMT 0457

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l	Silicate µg at/l
1	--	31.50	--	0.41	5.29	0.25		0.58	0.17	0.023	1.71	1.81
10	19.12	31.52	22.35	0.25	5.52	0.23		0.66	0.25	0.040	0.00	0.51
20	17.74	32.47	23.42	2.67	7.04	0.44		0.74	0.17	0.034	0.07	1.54
30	10.17	32.57	25.05	0.53	5.99	0.69		0.84	2.00	0.130	0.10	3.47
40	7.94			0.51	5.36	0.34		0.55	0.38	0.031	0.38	0.64
50	8.25			0.33	5.29	0.34		0.60	0.31	0.046	0.14	0.77
60	8.31	32.42	25.23	--	6.56	0.52		0.70	0.52	0.040	0.00	0.26

BEAR CRUISE NO. 195 STATION NO. 530 LOCATION C

DATE Sept. 6, 1958 LAT. 40° 31.0' N LONG. 71° 34.0' W

DEPTH 65 m GMT 0827

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l	Silicate µg at/l
1	20.88	31.38	21.80	0.31	5.01	0.27		0.46	0.31	0.172	0.00	0.51
10	20.83	31.39	21.82	0.35	4.99	0.21		0.48	0.22	0.040	0.00	0.90
20	18.88	32.52	23.18	0.39	5.46	0.47		0.68	0.19	0.043	0.00	2.44
30	9.87	32.60	25.13	--	6.07	0.69		0.89	2.18	0.092	0.14	3.73
40	8.75	32.72	25.40	1.60	5.86	0.98		0.94	7.15	0.077	0.00	7.97
50	7.95	32.81	25.59	--	5.38	1.02		1.21	7.47	0.063	--	14.66
60	7.76	32.81	25.62	0.47	4.87	--		--	0.20	0.029	0.17	

BEAR CRUISE NO. 195 STATION NO. 531 LOCATION D

DATE Sept. 6, 1958 LAT. 40° 19.0' N LONG. 71° 28.0' W

DEPTH 75 m GMT 1107

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l	Silicate µg at/l
1	20.67	31.60	22.03	0.45	4.99	0.21		0.45	0.18	0.043	0.51	1.54
10	20.45	31.59	22.08	0.59	5.07	0.18		0.47	0.19	0.031	0.00	0.77
20	18.17	31.75	22.78	1.20	5.45	0.28		0.46	0.38	0.048	0.10	1.16
30	14.61	32.19	23.92	--	5.80	0.40		0.53	0.26	0.037	0.17	1.80
40	9.47	32.45	25.09	2.15	5.98	0.64		0.69	1.05	0.206	0.00	3.73
50	8.37	32.48	25.27	--	5.36	0.85		0.99	5.45	0.054	0.00	7.84
60	8.07	32.56	25.37	0.51	5.21	0.94		1.21	6.05	0.043	0.00	9.52

BEAR CRUISE NO. 195 STATION NO. 532 LOCATION E

DATE Sept. 6, 1958 LAT. 40° 00.0' N LONG. 71° 20.0' W

DEPTH 274 m GMT 1417

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l	Silicate µg at/l
1	19.64	31.65	22.33	0.21	5.21	0.25		0.43	0.18	0.049	0.07	1.54
10	18.37	31.66	22.66	0.25	5.44	0.31		0.53	0.33	0.046	0.00	1.29
25	10.47	32.40	24.86	1.75	5.70	0.68		0.81	1.30	0.077	2.80	4.76
49	12.00	34.05	25.89	0.83	6.06	0.44		0.60	0.62	0.137	0.17	3.99
74	9.79	34.31	26.49	0.16	4.90	0.96		1.08	8.0	0.054	0.24	10.28
99	11.00	35.05	26.83	0.10	4.12	1.11		1.15	12.9	0.074	0.00	12.35
148	11.01	35.34	27.05		3.66	1.21		1.33	15.3	0.063	0.17	12.47
197	10.47	35.33	27.15		3.56	1.27		1.29	19.8	0.074	0.00	13.63
296	8.40	35.15	27.35		3.45	1.52		1.67	20.3	0.152	0.00	15.43

BEAR CRUISE NO. 195 STATION NO. 533 LOCATION F

DATE Sept. 6, 1958 LAT. 39° 48.0' N LONG. 71° 13.0' W

DEPTH 203 m GMT 1626

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l	Sili µg a
1	22.82	33.95	23.21	0.22	4.80	0.13		0.27	0.13	0.026	0.00	1.1
10	22.70	34.32	23.51	0.19	4.82	0.10		0.24	0.13	0.023	--	1.4
25	20.91	34.45	24.12	0.32	5.26	0.16		0.51	0.34	0.023	0.17	2.3
50	15.89	35.72	26.34	0.43	3.83	0.69		0.86	6.82	0.088	0.07	5.0
75	15.80	36.00	26.58	0.24	3.16	0.85		0.87	10.4	0.043	0.00	6.9
100	14.10	35.77	26.80	0.15	3.65	0.93		0.94	9.80	0.083	0.13	6.1
150	12.62	35.64	26.98		3.60	0.96		1.15	10.3	0.037	0.00	6.4
200	10.98	35.44	27.12		3.33	1.36		1.34	19.2	0.046	0.00	12.3
97	14.00	35.72	26.75		3.75	0.77		0.90	9.22	0.037	0.00	6.5
193	11.21	35.44	27.10		3.30	1.21		1.22	17.5	0.043	0.00	11.5
290	8.77	35.13	27.28		3.13	1.51		1.52	19.0	0.023	0.00	16.7
387	7.01	35.10	27.52		3.85	1.50		1.59	19.3	0.040	0.34	14.4
484	5.32	34.95	27.60		4.70	1.40		1.53	18.7	0.057	0.34	14.9
580	4.73	34.95	27.67		5.16	1.38		1.36	18.3	0.043	0.34	14.1
774	4.29	34.98	27.75		5.55	1.32		1.32	14.5	0.054	0.24	14.4
967		34.98			5.74	1.20		1.24	15.5	0.086	0.24	13.7

BEAR CRUISE NO. 195 STATION NO. 534 LOCATION G

DATE Sept. 7, 1958 LAT. 39° 40.0' N LONG. 71° 02.0' W

DEPTH 2540 m GMT 0215

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l	Silicate µg at/l
1	21.82	32.31	22.25	0.35	5.02	0.12		0.32	0.33	0.026	0.00	0.90
10	21.42	32.41	22.43	0.16	5.13	0.16		0.31	0.16	0.020	0.00	0.77
24	18.63	33.92	24.30	0.74	5.96	0.16		0.36	0.19	0.026	0.00	1.80
48	15.94	35.59	26.21	0.71	4.07	0.64		0.83	5.40	0.137	0.41	4.63
72	15.61	35.99	26.61	0.15	3.30	0.96		1.09	12.2	0.063	0.00	5.92
97	13.87	35.82	26.87		3.31	0.97		1.31	11.9	0.037	0.00	4.76
145	12.68	35.62	26.96		2.95	1.27		1.27	16.2	0.034	0.21	9.52
193	11.21	35.45	27.10		3.40	1.31		1.27	17.2	0.040	0.00	11.83
290	8.20	35.04	27.30		3.31	1.62		1.68	22.4	0.029	0.31	15.95
386	--	35.02	--		4.01	1.56		1.61	21.9	0.034	0.00	15.43
464	5.18	34.90	27.58		4.78	1.34		1.37		0.049	0.00	14.66
558	4.78	34.97	27.67		5.02	1.27		1.33	14.6	0.029	0.21	13.50
744	4.36	34.95	27.72		5.40	1.23		1.26	17.2	0.037	0.00	13.25
930	4.23	34.97	27.74		5.30	1.19		1.20	13.9	0.029	0.00	12.47
1116	4.01	34.98	27.78		5.60	1.14		1.24	14.7	0.031	0.00	12.73
1303	3.89	34.97	27.79		5.80	1.25		--	15.1	0.040	0.00	13.12
1490	3.77	34.97	27.80		5.88	1.17		1.23	16.6	0.020	0.00	13.25
1676	--	34.97	--		5.91	1.29		1.29	16.9	0.040	0.72	13.76

BEAR CRUISE NO. 195 STATION NO. 535 LOCATION W'

DATE Sept. 7, 1958 LAT. 40° 01.0' N LONG. 72° 20.0' W

DEPTH 61 m GMT 1635

DEPTH m	T °C	S ‰	σ_t	Chl.a µg/l	Oxygen ml/l	Inorganic Phosphate µg at/l	Particulate Phosphate µg at/l	Total Phosphorus µg at/l	Nitrate Nitrogen µg at/l	Nitrite Nitrogen µg at/l	Ammonia Nitrogen µg at/l	Silicate µg at/l
1	21.45	31.21	21.53	0.73	5.03	0.23		0.51	0.21	0.083	0.00	0.51
10	21.43	31.21	21.53	0.41	5.01	0.15		0.49	0.13	0.029	0.00	0.51
20	--	31.65	--	0.38	5.52	0.28		0.65	0.12	0.060		1.54
30	9.00	32.48	25.17	--	6.13	0.81		0.95	0.89	0.120	0.07	4.12
40	8.16	32.53	25.34	1.33	5.41	0.91		1.05	5.66	0.075	0.44	5.79
50	7.86	32.58	25.42	--	5.40	0.91		1.26	6.30	0.057	0.00	8.87
60	7.57	32.84	25.66	0.36	5.23	1.08		1.19	7.10	0.049	0.00	12.47
70	7.59	32.85	25.67		5.23	1.16		1.24	8.42	0.066	0.00	13.37