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**MESA NEW YORK BIGHT PROJECT WATER COLUMN CHEMISTRY DATA  
CRUISES #6-12 OF THE NOAA SHIP *FERREL*  
APRIL - NOVEMBER 1974**

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Miami, Florida  
November 1997

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## Table of Contents

List of Tables.....	i
List of Figures.....	ii
ABSTRACT.....	1
1. INTRODUCTION.....	1
2. FIELD PROCEDURES.....	2
3. LABORATORY ANALYSES.....	8
3.1. Salinity.....	8
3.2. Dissolved oxygen.....	8
3.3. Total dissolved trace metals.....	8
3.4. Dissolved nutrients.....	8
3.5. Particulate organics.....	9
4. DISCUSSION.....	9
5. ACKNOWLEDGMENTS.....	10
6. REFERENCES.....	10
APPENDIX I.....	13

## List of Tables

1.	MESA New York Bight Water Column Chemistry cruises, April - November, 1974...	3
2.	Samples drawn from Niskin bottles.....	7
3.	Operational characteristics of the nutrient analysis system.....	9

### Appendix I

I.1.	Water chemistry characterization cruise WCC 6 data.....	15
I.2.	Water chemistry characterization cruise WCC 7 data.....	22
I.3.	Water chemistry characterization cruise WCC 8 data.....	28
I.4.	Water chemistry characterization cruise WCC 9 data.....	35
I.5.	Water chemistry characterization cruise WCC 10 data.....	42
I.6.	Water chemistry characterization cruise WCC 11 data.....	49
I.7.	Water chemistry characterization cruise WCC 12 data.....	55

## List of Figures

1.	Location of stations in the apex of the New York Bight.....	2
2.	Track line of NOAA ship FERREL for WCC 6, April 1974.....	4
3.	Track line of NOAA ship FERREL for WCC 7, May 1974.....	4
4.	Track line of NOAA ship FERREL for WCC 8, June 1974.....	5
5.	Track line of NOAA ship FERREL for WCC 9, July 1974.....	5
6.	Track line of NOAA ship FERREL for WCC 10, August 1974.....	6
7.	Track line of NOAA ship FERREL for WCC 11, September - October 1974.....	6
8.	Track line of NOAA ship FERREL for WCC 12, November 1974.....	7

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## ABSTRACT

During the period April - November 1974, seven oceanographic cruises, denoted WCC 6-12, were conducted by NOAA Ship FERREL to obtain samples of sea water and suspended particulates from the New York Bight Apex for chemical analyses. This report presents the chemical data obtained from these samples.

## 1. INTRODUCTION

During 1973, the National Oceanic and Atmospheric Administration (NOAA) began an intensive investigation of the marine ecosystem of the continental shelf off New Jersey and New York, the area known as the New York Bight. This project is the first regional study of the Marine EcoSystem Analysis (MESA) Program. Detailed serial studies of the water chemistry in the New York Bight have not previously been performed. Therefore, the initial phase of investigations in the Bight has included an extensive physical, chemical, and oceanographic program to provide basic information concerning the geographical distribution and temporal variability of some representative chemical parameters of the sea water and its suspended particulate load.

The major contaminant sources, ocean dumping of sewage sludge, dredge spoil and acid waste, and outflow from the New York/New Jersey estuarine system, are all located in the Apex of the New York Bight. The initial phase of the marine chemistry observations was restricted to an area of approximately 40 km square in the Apex of the region (Fig. 1). From April to November, 1974, seven cruises were conducted in the New York Bight Apex covering a 26-station grid (Fig. 1) aboard NOAA Ship FERREL. These cruises were designated Water Column Characterization (WCC) cruise numbers 6 through 12 (Table 1). Cruises (1 through 5) had previously been conducted covering the same 26 stations during the period August to November 1973. However, these earlier cruises included only a very limited chemistry sampling program. Some of the resultant chemical data for WCC 1 through 5 have been reported by Hazelworth *et al.* (1974).

On cruises WCC 6 through 12, water column sampling was performed simultaneously with physical oceanographic data collection to define the density structure of the water column. Physical characterization of the collected suspended particulates is part of an investigation of suspended sediment transport processes. The physical oceanographic data from these cruises have been reported elsewhere (Hazelworth *et al.*, 1975a, 1975b). The water column chemistry data is listed in Appendix I.

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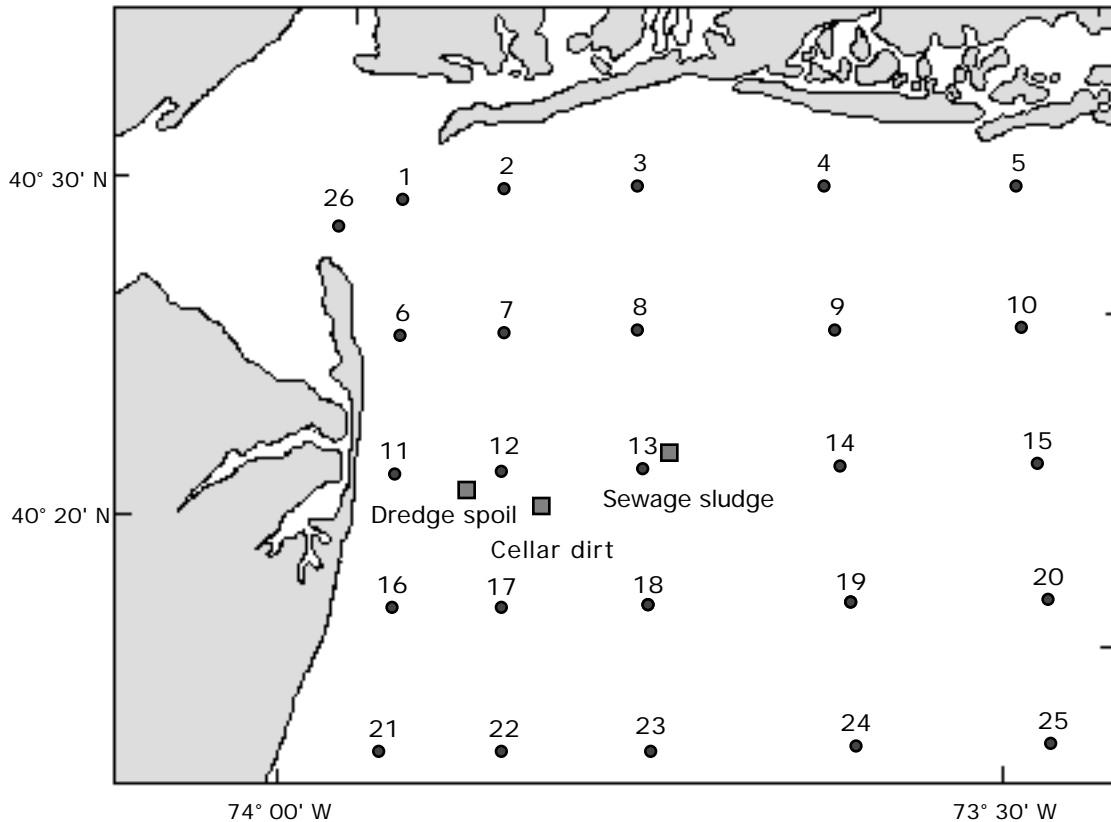


Figure 1. Location of stations in the apex of the New York Bight.

## 2. FIELD PROCEDURES

The 26-station Apex grid was occupied during daylight hours over a period of four to five days. The sequence of station occupation was modified on each cruise in response to weather, day length, and ship operational constraints. The sequence of occupation is shown in Figures 2 through 8 for cruises 6 through 12 respectively. On each of these cruises, except WCC 11, station 7 was occupied twice on separate days in order to investigate the gross temporal variability of the water column chemistry. On cruise WCC 8, station 3 was also occupied twice. Stations 16, 21, 22, and 23 could not be occupied on cruise WCC 7 due to adverse weather conditions. Station 26 was occupied on cruises WCC 11 and 12 only.

At each WCC station sampled, vertical profiles of temperature, salinity, conductivity, light transmissivity, dissolved oxygen, pH and Eh were measured using an Inter-Ocean model 513-10 CSTD. Equipment malfunction often precluded investigation of several of the parameters on a number of WCC cruises. The vertical profiles of the data obtained with the CSTD have been reported by Hazelworth *et al.* (1975a, 1975b). Water samples were collected at several depths with Niskin water sampling bottles. Standard 10-L Niskin bottles were used for sampling from a hydrowire for cruises WCC 6 through 9. On cruises 10, 11, and 12, samples were collected with 10-L, top-drop Niskin samplers mounted on a rosette multi-bottle



Table 1. MESA New York Bight Water Column Chemistry cruises, April - November, 1974.

Cruise	Date	AOML Personnel	Comments
6	Apr. 16-20, 1974	R. Starr G. Berberian D. Segar	Station 7 occupied twice. Station 26 not occupied
7	May 06-09, 1974	R. Starr G. Berberian L. Keister	Station 7 occupied twice Stations 16, 21, 22, and 23 not occupied, due to inclement weather. Station 26 not occupied.
8	June 10-13, 1974	J. Hazelworth D. Segar M. Weiselberg	Stations 3 and 7 occupied twice. Station 26 not occupied.
9	July 16-19, 1974	B. Kolitz P. Hatcher E. Forde	Station 7 occupied twice. Station 26 not occupied.
10	Aug. 21-24, 1974	J. Hazelworth D. Drake	Station 7 occupied twice. Station 26 not occupied.
11	Sept. 29 Oct. 2, 1974	R. Starr D. Segar K. Jamruz	
12	Nov. 4-7, 1974	B. Kolitz D. Segar M. McGrenra*	Station 7 occupied twice.

\* From MESA New York Bight Project Office.

sampler. The multi-bottle array was mounted immediately above the sensors of the InterOcean CSTD system, so that the bottom of the Niskin samplers were approximately level with the sensors.

When recovered, the Niskin bottles were immediately transferred to the ship's laboratory where the samples of water were drawn as shown in Table 2. The samples for dissolved oxygen analysis were obtained immediately in order to minimize atmospheric contamination and any temperature-induced changes. These samples were preserved with manganous sulfate and alkaline iodide reagents and later analyzed by the modified Winkler titration method of Strickland and Parsons (1968). The next samples drawn were those for dissolved trace metal and particulate concentration analyses. The samples for dissolved trace metal analysis were filtered through pre-weighed 47 mm Nuclepore (0.45  $\mu$  pore size) filters on all cruises except WCC 6. The filtered sea water, usually 1 L, was stored in an acid-cleaned, 1-L linear-polyethylene bottle and acidified with 1 mL of silicate distilled, concentrated nitric acid.

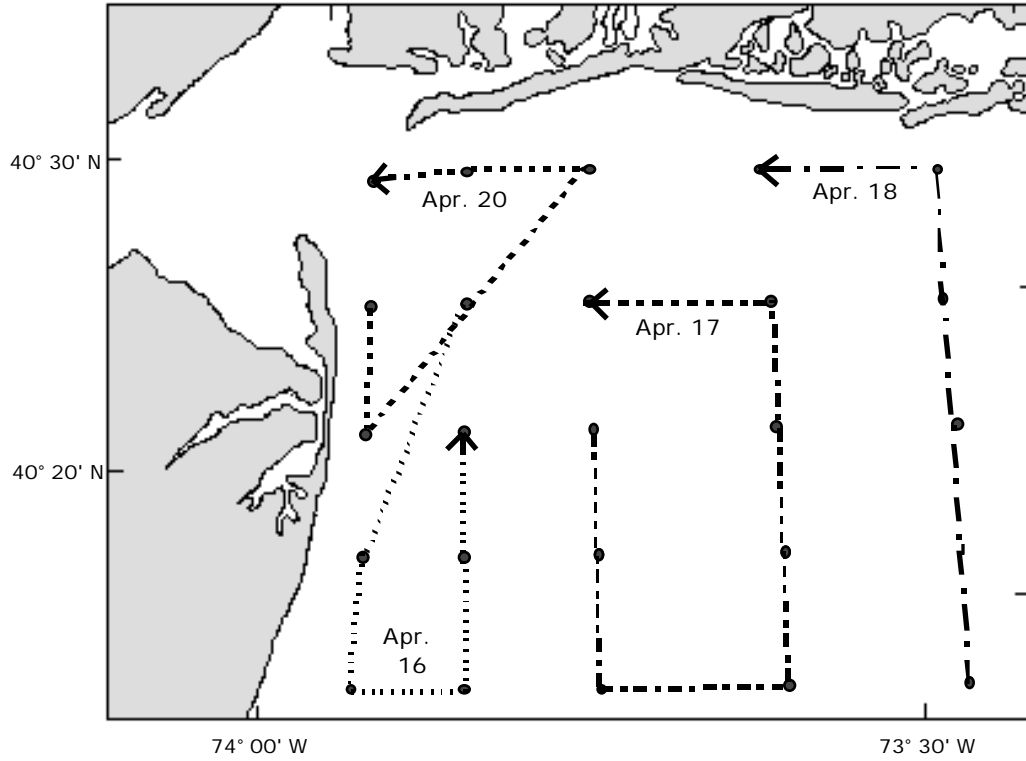


Figure 2. Track line of NOAA ship FERREL for WCC 6, April 1974.

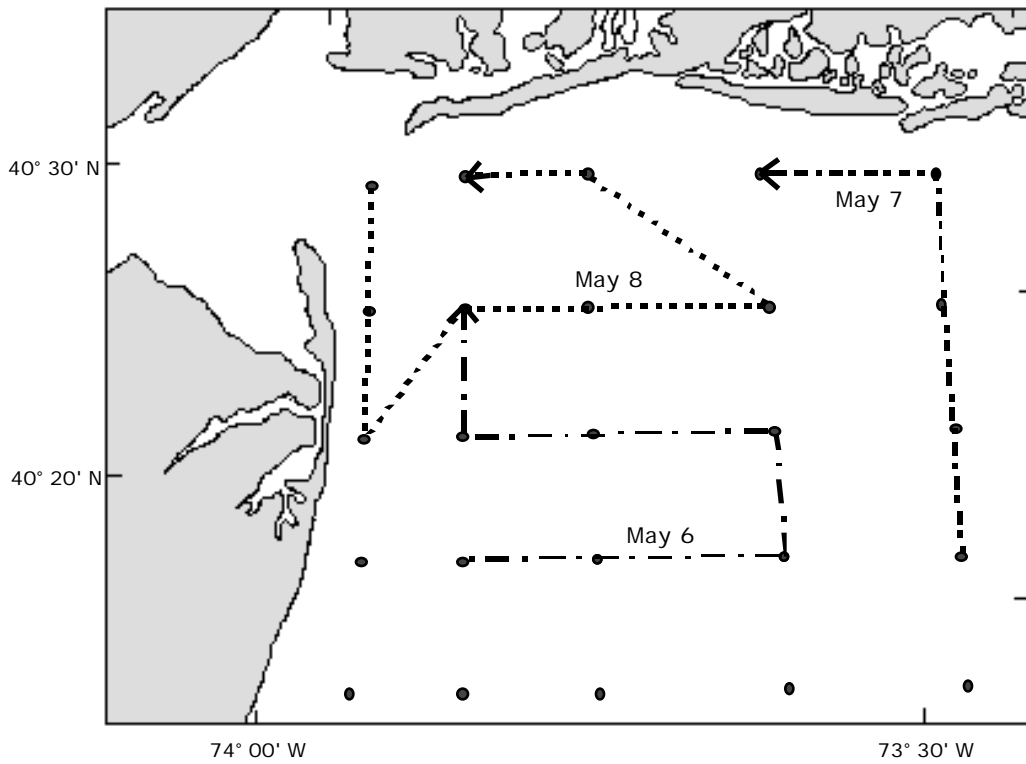


Figure 3. Track line of NOAA ship FERREL for WCC 7, May 1974.

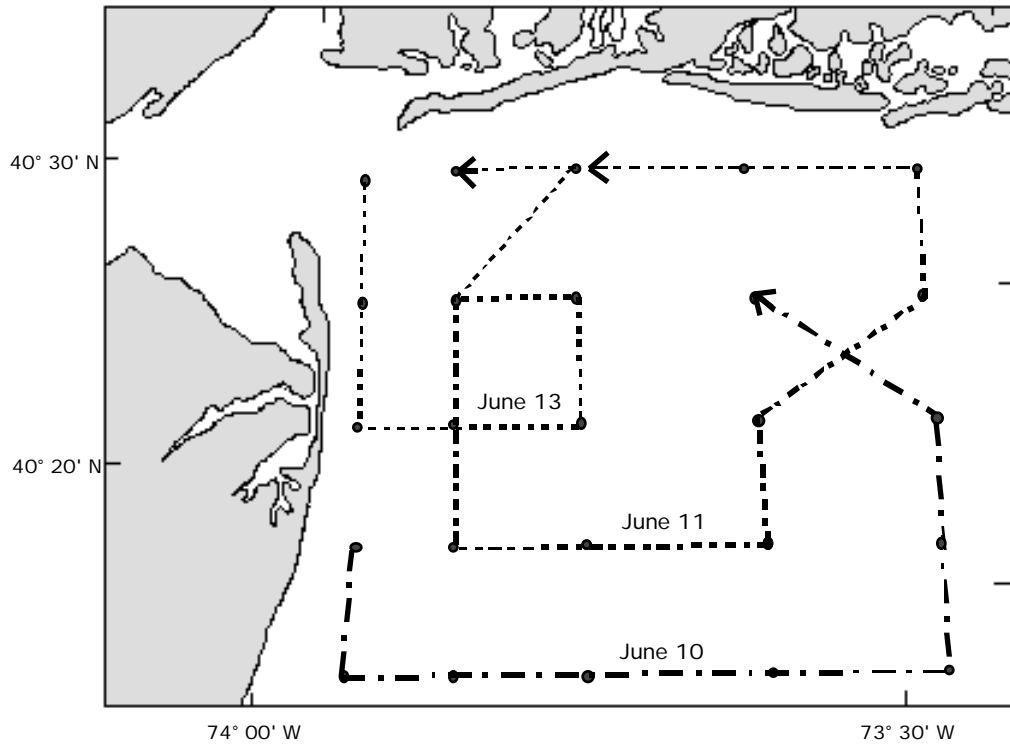


Figure 4. Track line of NOAA ship FERREL for WCC 8, June 1974.

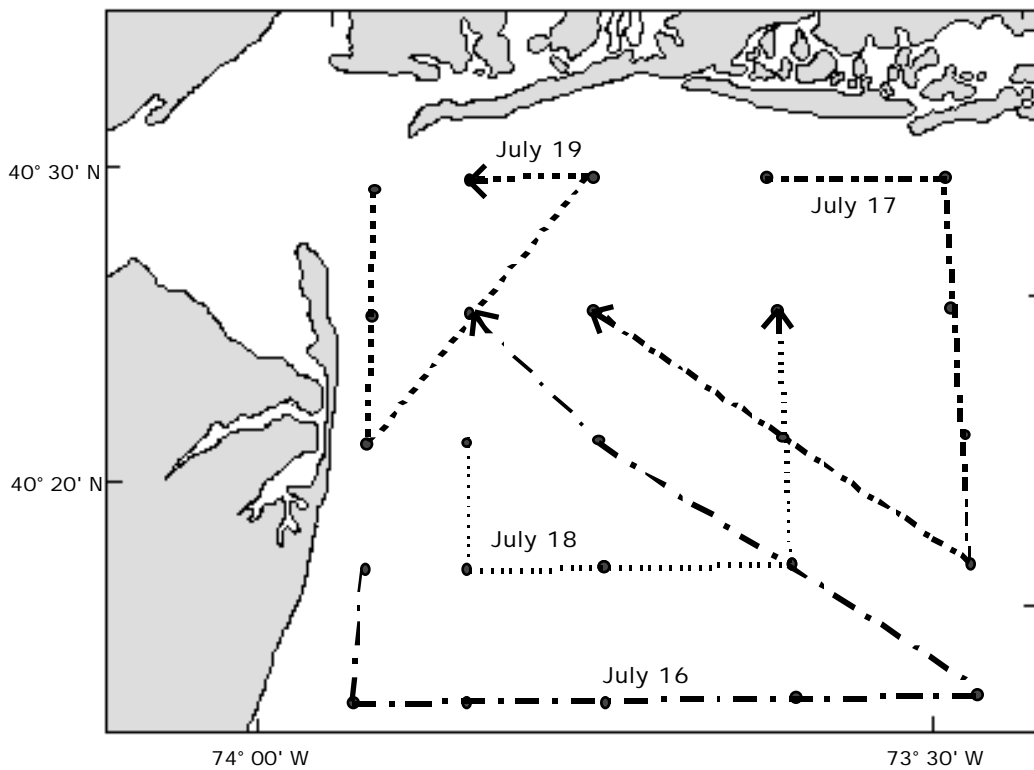


Figure 5. Track line of NOAA ship FERREL for WCC 9, July 1974.

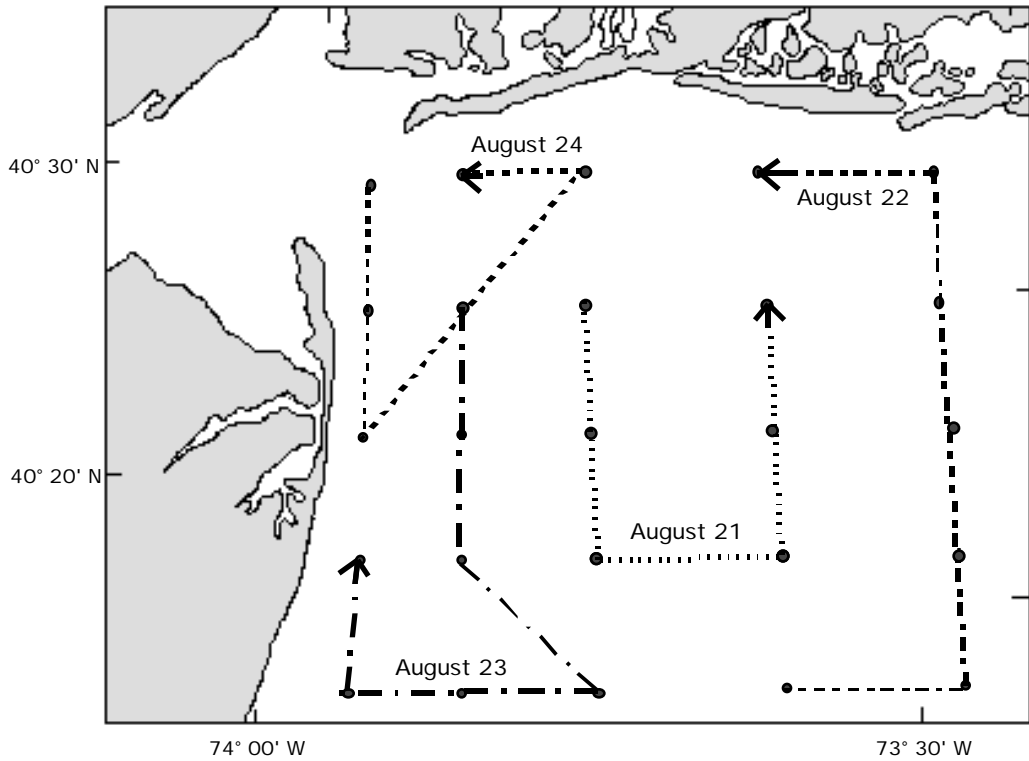


Figure 6. Track line of NOAA ship FERREL for WCC 10, August 1974.

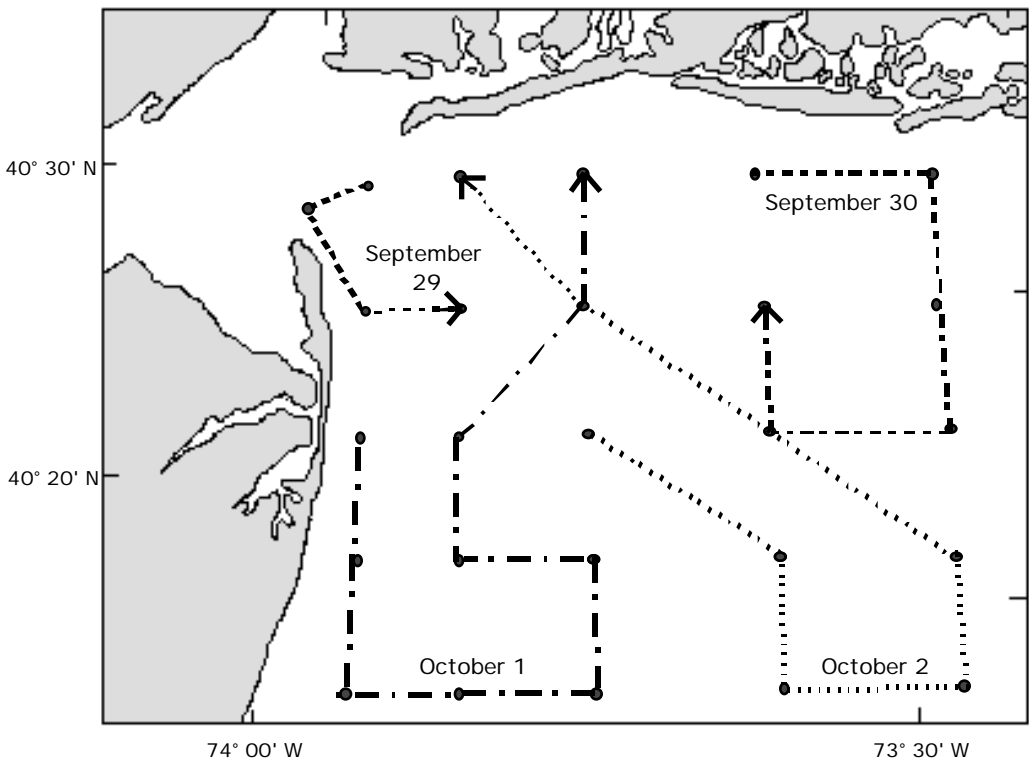


Figure 7. Track line of NOAA ship FERREL for WCC 11, September - October 1974.

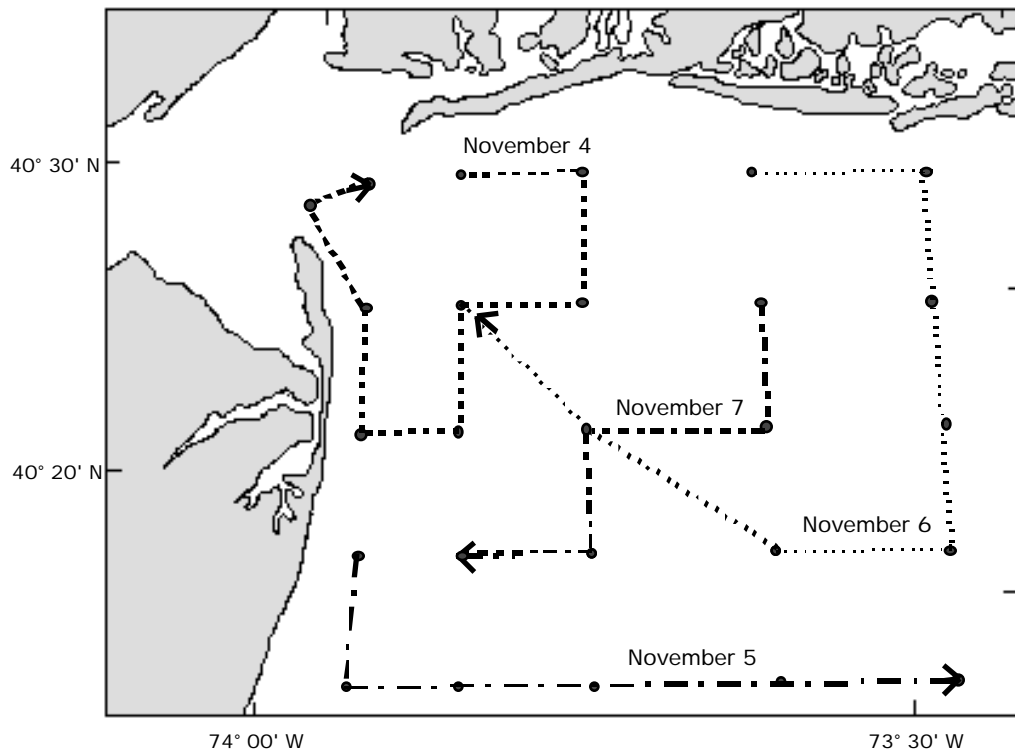


Figure 8. Track line of NOAA ship FERREL for WCC 12, November 1974.

Table 2. Samples drawn from Niskin bottles.

Sample	Volume	Treatment	Container
Oxygen	250 mL	Manganous sulfate and alkali iodide reagents	Amber glass bottle with ground glass stopper
Trace metals	1000 mL	Filtered through Nuclepore filter and acidified with nitric acid	Acid cleaned 1-L linear-polyethylene bottles. Filter was frozen.
Nutrients	100 mL	Frozen	"Aged" 250-mL polyethylene bottles
Particulate organics	2 x 2000 mL	Frozen	Duplicate glass fiber filters
pH	100 mL	On-board measurement	Beaker
Salinity	500 mL	None	500-mL glass
Particulates	50 mL	Frozen	Millipore filters

The Nuclepore filters were stored frozen for analysis of total suspended sediment loads and elemental metal composition. The nutrient samples were collected in aged 125-mL polyethylene bottles and frozen immediately. Approximately 1 to 2 L of sea water were filtered through a glass-fiber filter to collect suspended particulates for organic analysis. Two such filters were obtained, one for analysis of particular organic carbon and the other for analysis of particulate carbohydrates and proteins. Both filters were frozen immediately after collection. A sample of sea water was drawn and its pH obtained on board using a Orion-Model 701 pH meter standardized with Beckman pH 7 and 10 buffers. Samples for salinity determinations were collected in glass bottles and stored. One hundred mL of sea water were filtered through a Millipore filter for microscopic examination.

### 3. LABORATORY ANALYSES

#### 3.1. Salinity

The samples for salinity determination were also analyzed onshore, using a Plessey 6220 salinometer. The salinity values presented here are those derived from the salinity analysis of the water samples; they are sometimes in disagreement with the salinities obtained with the Inter-Ocean model 513-10 CSTD (and corrected by the Plessey 6220 salinity values) as reported by Hazelworth *et al.* (1975a, 1975b).

All other samples collected were shipped, frozen when necessary, to the NOAA Atlantic Oceanographic and Meteorological Laboratories (AOML) in Miami, Florida, for analyses, or analyzed on shore.

#### 3.2. Dissolved oxygen

The analysis of the samples preserved for oxygen determination (by the modified Winkler method) was carried out on shore immediately after each of the FERREL cruises, WCC 6 through 12. Calculation of the percent saturation of oxygen was performed using the results of the modified Winkler oxygen analysis, the salinity values obtained with the salinometer, and the temperature recorded by the CSTD system, by using the equation of Weiss (1970).

#### 3.3. Total dissolved trace metals

The sea water samples were analyzed for total dissolved Fe, Mn, Cu, and Cd by the method of Segar and Cantillo (1976), using a Perkin-Elmer Atomic Absorption Spectrophotometer Model 503 equipped with a Heated Graphite Atomizer (HGA 2100). The analysis was generally completed within three months after collection of the samples. The samples collected on WCC 6 were not filtered, and the results obtained are a measure of the total metal in the sea water. The samples for cruises WCC 10, 11, and 12 were also analyzed for total dissolved Zn by the method of Segar and Cantillo (1976). The approximate detection limits of the dissolved trace metal analyses are as follows: Fe, 0.4 µg/kg; Mn, 0.3 µg/kg; Cu, 0.5 µg/kg; Cd, 0.01 µg/kg; and Zn, 0.01 µg/kg. The precision of trace metal analysis varied, but it was always better than ±15% for concentrations in excess of 10 times the detection limit.

#### 3.4. Dissolved nutrients

Water samples were analyzed for dissolved nitrate (NO<sub>3</sub>-N), nitrite (NO<sub>2</sub>-N), orthophosphate (PO<sub>4</sub>-P), and silicate (SiO<sub>3</sub>-Si) with a fourchannel Technicon Autoanalyzer, generally within a period of six weeks after their collection.

Table 3. Operational characteristics of the nutrient analysis system.

	( $\mu\text{g-at/L}$ )	( $\mu\text{g-at/L}$ )	(95% confidence level) (% at $\mu\text{g-at/L}$ )
$\text{NO}_3\text{-N}$	0.0 - 50.0	0.5	0.17 at 15.0
$\text{NO}_2\text{-N}$	0.0 - 20.0	0.1	1.2 at 3.2
$\text{PO}_4\text{-P}$	0.0 - 20.0	0.05	1.6 at 0.64
$\text{SiO}_3\text{-Si}$	0.0 - 50.0	0.5	2.3 at 33.0

The analytical procedures used in the analyses for nitrate and nitrite are described by Armstrong *et al.* (1967). The orthophosphate procedure is described by Grasshoff (1965), and the silicate procedure is described by Strickland and Parsons (1968). The water used for standardization, blank determinations, and wash between samples is filtered Gulf Stream sea water obtained from the surface of the Straits of Florida. The detection limits and accuracies of analysis for the four nutrients are listed in Table 3.

### 3.5. Particulate organics

Suspended sediments were collected on glass-fiber filters and analyzed for particulate organic carbon by combustion in the presence of oxygen at 650°C. The  $\text{CO}_2$  resulting from the combustion was measured by using thermal conductivity detectors on a Perkin-Elmer 240 Elemental Analyzer. The amount of carbon present in the total filter is calculated from the amount of  $\text{CO}_2$  produced. This method is a modification of the methods proposed by Konrad *et al.* (1970) and by Hatcher (1974) for the analysis of total organic carbon in sediments. Analyses were performed under contract by Galbraith Laboratories, Knoxville, Tennessee. Precision of the method is usually  $\pm 1\%$ ; however, if sampling errors are considered, the total analytical precision is generally  $\pm 10\%$ . Detection limits are 10  $\mu\text{g/L}$ .

Suspended sediments collected on glass-fiber filters were analyzed for particulate carbohydrates and proteins, using the same filter. The freeze dried filter was homogenized by ultrasonification in 10 mL distilled water. Two aliquots were then taken for particulate carbohydrate analysis by the phenol sulfuric acid method of Gerchakov and Hatcher (1972). The remaining homogenate was treated with sodium hydroxide and allowed to stand overnight to solubilize proteins. Subsequently, the homogenate was centrifuged and aliquots were taken for particulate protein analysis by the Biuret method (Ellman, 1962). The relative standard deviation for both methods is roughly 8%; however, if sampling errors, are considered, the total relative standard deviations are generally  $\pm 15\%$ . Detection limits for particulate carbohydrates and proteins are 5 and 10  $\mu\text{g/L}$ , respectively.

## 4. DISCUSSION

The data generated during the MESA New York Project cruises has been discussed in numerous publications (e.g., Atwood *et al.*, 1979; Segar and Berberian, 1976; Segar and Cantillo, 1976; and others). This data report was originally written in 1977 and remained unpublished. Publication at this time is part of an effort to document the chemistry data in a form accessible to future investigators in the Bight.

## 5. ACKNOWLEDGMENTS

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## APPENIDIX I

### Chemistry data

#### Parameters and units

D	Depth (meters)
SAL	Salinity (‰)
O <sub>2</sub>	Oxygen (mL/L)
%O <sub>2</sub>	Percent saturation of oxygen
pH	pH
PCH	Particulate carbohydrates (µg/L)
PPRO	Particulate proteins (µg/L)
POC	Particulate organic carbon (µg/L)
Fe	Total dissolved iron (µg/L)
Mn	Total dissolved manganese (µg/L)
Cu	Total dissolved copper (µg/L)
Cd	Total dissolved cadmium (µg/L)
Zn	Total dissolved zinc (µg/L)
NO <sub>2</sub> <sup>-</sup>	Dissolved nitrite (µg-at/L)
NO <sub>3</sub> <sup>-</sup>	Dissolved nitrate (µg-at/L)
	Dissolved silicate (µg-at/L)
PO <sub>4</sub> <sup>+3</sup>	Dissolved phosphate (µg-at/L)



Table I.1. Water chemistry characterization cruise WCC 6 data.

Depth (m)	Salinity ( $^{\circ}/\text{oo}$ )	O <sub>2</sub> (mL/L)	%O <sub>2</sub>	pH	Particulate _ organics ( $\mu\text{g}/\text{L}$ ) _			Dissolved trace metals ( $\mu\text{g}/\text{L}$ )					Dissolved nutrients ( $\mu\text{g-at}/\text{L}$ )			
					PCH	PPRO	POC	Fe	Mn	Cu	Cd	Zn	NO <sub>2</sub> <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SiO <sub>3</sub> <sup>-2</sup>	PO <sub>4</sub> <sup>+3</sup>
Station 1		Lat (N): 40 29.9			Long (W): 73 57.5			GMT: 19.1					Date: 4/20/74			
1	24.49	7.38	104	8.13	350	670	750	120	56	2.6	1.4	-	0.53	13.97	7.97	0.75
6	29.22	7.07	102	8.09	310	520	630	140	21	3.9	0.33	-	0.37	7.22	1.47	0.56
Station 2		Lat (N): 40 31.1			Long (W): 73 53.5			GMT: 18.4					Date: 4/20/74			
1	29.55	8.59	127	8.27	760	790	700	40	20	1.3	0.29	-	0.33	3.11	<0.40	0.28
10	32.55	6.37	92	8.10	190	260	420	76	9.0	2.6	0.21	-	0.18	2.08	<0.40	0.57
Station 3		Lat (N): 40 31.6			Long (W): 73 48.5			GMT: 17.5					Date: 4/20/74			
1	27.49	9.74	143	8.28	860	890	740	100	32	1.3	0.37	-	0.40	2.12	<0.40	0.16
10	32.66	6.27	91	8.05	250	400	470	53	7.5	2.6	0.21	-	0.18	2.10	<0.40	0.57
Station 4		Lat (N): 40 32.5			Long (W): 73 40.3			GMT: 19.1					Date: 4/18/74			
1	-	8.33	-	7.90	930	700	710	60	27	2.7	0.33	-	0.19	3.90	<0.40	0.25
10	-	7.49	-	7.84	440	470	550	49	17	1.8	0.16	-	0.09	1.67	<0.40	0.28
15	-	6.26	-	7.75	180	110	390	130	14	1.5	0.16	-	0.06	1.11	<0.40	0.39
Station 5		Lat (N): 40 33.2			Long (W): 73 32.4			GMT: 18.0					Date: 4/18/74			
1	30.65	7.38	109	7.82	470	390	530	61	14	1.5	0.25	-	0.16	3.42	<0.40	0.40
11	32.33	6.44	92	7.76	330	270	560	150	11	1.8	0.16	-	0.07	1.78	<0.40	0.51

Table I.1. Water chemistry characterization cruise WCC 6 data (cont.).

Depth (m)	Salinity (‰)	O <sub>2</sub> (mL/L)	%O <sub>2</sub>	pH	Particulate organics (µg/L)			Dissolved trace metals (µg/L)					Dissolved nutrients (µg-at/L)			
					PCH	PPRO	POC	Fe	Mn	Cu	Cd	Zn	NO <sub>2</sub> <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SiO <sub>3</sub> <sup>-2</sup>	PO <sub>4</sub> <sup>+3</sup>
Station 6		Lat (N): 40 26.3			Long (W): 73 56.9			GMT: 14.6					Date: 4/20/74			
1	25.37	7.65	109	7.92	400	840	730	120	58	3.1	0.41	-	0.50	13.85	3.79	0.50
10	32.64	5.94	86	7.80	340	170	860	230	17	3.3	0.29	-	0.21	2.46	<0.40	1.43
Station 7		Lat (N): 40 26.6			Long (W): 73 52.7			GMT: 14.2					Date: 4/16/74			
1	23.07	7.13	98	7.66	320	120	470	93	44	34	0.41	-	0.58	17.46	16.73	0.97
10	24.34	7.13	98	7.50	340	270	700	100	68	3.0	0.54	-	0.59	16.39	12.51	0.95
19	32.56	6.69	96	7.55	150	80	430	99	8.0	3.2	0.33	-	0.13	1.82	<0.40	0.66
Station 7		Lat (N): 40 26.7			Long (W): 73 52.9			GMT: 16.5					Date: 4/20/74			
1	23.21	8.48	120	8.13	720	1100	760	95	36	4.0	0.54	-	0.67	17.53	4.03	0.49
10	28.67	8.23	120	8.06	630	630	900	90	22	2.4	1.7	-	0.33	4.84	<0.40	0.25
20	33.13	6.04	87	7.94	740	230	390	66	7.8	2.2	0.21	-	0.14	1.78	1.15	0.60
Station 8		Lat (N): 40 27.5			Long (W): 73 47.6			GMT: 21.9					Date: 4/17/74			
1	23.84	9.26	130	8.07	810	1100	940	110	49	2.7	0.39	-	0.56	11.08	3.28	0.32
10	31.78	6.87	99	7.90	160	190	300	48	6.0	3.5	0.60	-	0.19	2.58	<0.40	0.36
25	33.16	6.38	92	7.87	100	20	160	77	4.5	47	0.72	-	0.11	1.18	0.80	0.33

Table I.1. Water chemistry characterization cruise WCC 6 data (cont.).

Depth (m)	Salinity (‰)	O <sub>2</sub> (mL/L)	%O <sub>2</sub>	pH	Particulate organics (µg/L)			Dissolved trace metals (µg/L)					Dissolved nutrients (µg-at/L)			
					PCH	PPRO	POC	Fe	Mn	Cu	Cd	Zn	NO <sub>2</sub> <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SiO <sub>3</sub> <sup>-2</sup>	PO <sub>4</sub> <sup>+3</sup>
Station 9		Lat (N): 40 28.3			Long (W): 73 39.7			GMT: 20.4					Date: 4/17/74			
1	23.32	9.26	128	8.00	890	1020	940	95	49	3.4	0.37	-	0.70	15.33	8.62	0.49
10	32.45	6.82	97	7.88	100	140	260	250	7.2	2.2	0.16	-	0.15	2.10	<0.40	0.47
20	32.93	6.88	98	7.83	170	90	290	90	5.9	3.5	0.25	-	0.14	1.77	0.82	0.51
Station 10		Lat (N): 40 29.2			Long (W): 73 31.5			GMT: 17.2					Date: 4/18/74			
1	-	8.14	-	7.95	580	510	540	75	29	3.0	0.50	-	0.25	5.25	<0.40	0.30
10	-	6.78	-	7.81	120	160	300	47	8.4	1.5	0.25	-	0.13	2.57	<0.40	0.53
20	-	6.28	-	7.75	160	110	230	50	8.7	2.2	0.37	-	0.05	1.34	<0.40	0.45
Station 11		Lat (N): 40 22.1			Long (W): 73 56.7			GMT: 15.5					Date: 4/20/74			
1	24.87	8.33	119	8.13	400	720	710	93	44	5.1	0.68	-	0.40	9.29	1.08	0.35
10	32.50	5.87	85	7.95	270	510	590	100	15	18	0.25	-	0.19	2.69	<0.40	0.78
Station 12		Lat (N): 40 22.7			Long (W): 73 52.4			GMT: 21.4					Date: 4/15/74			
1	26.62	8.15	117	7.98	670	710	720	78	25	3.0	0.50	-	0.46	11.25	4.42	0.55
10	30.04	7.39	107	7.98	300	380	560	53	10	2.0	0.25	-	0.25	4.33	<0.40	0.39
20	32.93	6.43	92	7.92	70	60	150	46	7.2	2.0	0.25	-	0.08	1.76	0.81	0.58
25	-	-	-	7.88	-	-	-	-	-	-	-	-	0.32	1.65	1.83	1.23

Table I.1. Water chemistry characterization cruise WCC 6 data (cont.).

Depth (m)	Salinity (‰)	O <sub>2</sub> (mL/L)	%O <sub>2</sub>	pH	Particulate organics (µg/L)			Dissolved trace metals (µg/L)					Dissolved nutrients (µg-at/L)			
					PCH	PPRO	POC	Fe	Mn	Cu	Cd	Zn	NO <sub>2</sub> <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SiO <sub>3</sub> <sup>-2</sup>	PO <sub>4</sub> <sup>+3</sup>
Station 13		Lat (N): 40 23.2			Long (W): 73 46.8			GMT: 13.8					Date: 4/17/74			
1	27.04	8.07	115	7.61	470	500	760	74	26	3.0	0.33	-	0.42	10.33	1.01	0.53
10	31.09	7.13	103	7.62	210	230	380	63	10	0.84	0.33	-	0.18	3.41	<0.40	0.46
25	-	6.42	-	7.32	60	40	120	56	6.4	0.84	0.16	-	0.05	1.17	<0.40	0.52
Station 14		Lat (N): 40 24.3			Long (W): 73 38.7			GMT: 19.5					Date: 4/17/74			
1	25.91	8.81	125	7.82	1010	840	710	63	31	4.9	0.46	-	0.46	8.83	1.99	0.38
10	30.60	7.25	104	7.75	210	330	490	87	13	2.8	0.56	-	0.20	2.80	<0.40	0.23
20	32.54	6.14	87	7.68	250	200	400	100	10	1.1	0.33	-	0.14	1.81	<0.40	0.46
Station 15		Lat (N): 40 25.2			Long (W): 73 30.4			GMT: 16.3					Date: 4/18/74			
1	27.01	9.06	129	7.93	880	950	570	68	21	1.5	0.29	-	0.43	6.45	<0.40	0.24
5	50.02	7.32	106	7.82	400	670	650	37	17	1.6	0.25	-	0.25	4.83	<0.40	0.45
10	31.91	7.03	101	7.78	140	130	250	28	5.0	1.2	0.37	-	0.12	2.52	<0.40	0.50
20	32.30	6.16	87	7.75	200	250	360	67	8.0	63	1.1	-	0.08	2.82	<0.40	0.69
Station 16		Lat (N): 40 18.1			Long (W): 73 56.2			GMT: 16.2					Date: 4/16/74			
1	27.81	7.82	111	7.65	550	550	620	43	24	1.2	0.29	-	0.41	8.56	<0.40	0.41
11	31.89	6.50	93	7.93	150	190	350	89	9.2	2.0	0.21	-	0.15	2.47	<0.40	0.53
15	32.81	6.01	86	7.90	140	190	360	130	14	2.2	1.1	-	0.15	2.04	0.62	0.71



Table I.1. Water chemistry characterization cruise WCC 6 data (cont.).

Depth (m)	Salinity (‰)	O <sub>2</sub> (mL/L)	%O <sub>2</sub>	pH	Particulate organics (µg/L)			Dissolved trace metals (µg/L)					Dissolved nutrients (µg-at/L)			
					PCH	PPRO	POC	Fe	Mn	Cu	Cd	Zn	NO <sub>2</sub> <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SiO <sub>3</sub> <sup>-2</sup>	PO <sub>4</sub> <sup>+3</sup>
Station 17		Lat (N): 40 16.5			Long (W): 73 51.8			GMT: 20.0					Date: 4/16/74			
1	28.75	8.22	120	7.89	820	680	600	93	14	1.7	0.41	-	0.34	5.81	<0.40	0.29
10	30.77	7.41	107	7.89	280	330	480	53	10	3.5	0.50	-	0.18	2.96	<0.40	0.29
22	32.84	6.62	95	7.87	110	50	180	130	5.7	1.2	0.33	-	0.08	1.64	<0.40	0.55
Station 18		Lat (N): 40 19.2			Long (W): 73 46.3			GMT: 14.6					Date: 4/17/74			
1	29.39	7.92	115	7.98	370	320	420	130	12	5.7	0.46	-	0.29	5.88	<0.40	0.35
10	30.27	7.27	104	7.96	320	320	550	150	11	2.1	0.33	-	0.24	4.23	2.57	0.36
20	33.03	6.96	101	7.91	60	40	90	35	4.1	0.84	0.79	-	0.06	0.63	<0.40	0.30
30	33.16	6.76	98	7.91	290	130	360	270	9.4	1.9	0.65	-	0.10	1.42	<0.40	0.56
Station 19		Lat (N): 40 20.3			Long (W): 73 37.7			GMT: 18.5					Date: 4/17/74			
1	27.49	8.00	115	8.00	450	350	470	37	21	2.0	0.25	-	0.38	8.22	1.55	0.31
10	30.37	7.58	109	7.95	310	340	550	94	10	2.5	0.33	-	0.20	2.03	<0.40	0.18
25	32.75	6.54	93	7.87	500	380	720	210	12	3.2	0.29	-	0.20	2.00	<0.40	0.72
Station 20		Lat (N): 40 21.1			Long (W): 73 29.3			GMT: 15.5					Date: 4/18/74			
1	26.99	8.92	129	7.97	680	840	960	67	36	3.6	0.68	-	0.38	4.67	<0.40	0.21
10	29.47	7.33	104	7.98	290	520	570	72	11	3.1	1.6	-	0.28	5.52	<0.40	0.43
20	31.80	6.86	97	7.80	150	150	250	63	6.9	3.0	0.41	-	0.13	2.73	<0.40	0.47
25	32.43	6.39	91	7.73	200	160	330	92	7.7	3.3	0.54	-	0.10	2.73	<0.40	0.65

Table I.1. Water chemistry characterization cruise WCC 6 data (cont.).

Depth (m)	Salinity (‰)	O <sub>2</sub> (mL/L)	%O <sub>2</sub>	pH	Particulate _ organics (µg/L) _			Dissolved trace metals (µg/L)					Dissolved nutrients (µg-at/L)			
					PCH	PPRO	POC	Fe	Mn	Cu	Cd	Zn	NO <sub>2</sub> <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SiO <sub>3</sub> <sup>-2</sup>	PO <sub>4</sub> <sup>+3</sup>
Station 21		Lat (N): 40 13.5			Long (W): 73 56.0			GMT: 17.6					Date: 4/16/74			
1	29.24	8.01	116	8.04	510	480	530	51	17	3.5	0.25	-	0.34	5.40	<0.40	0.31
10	31.87	6.68	95	7.96	120	140	380	78	8.6	2.0	0.41	-	0.17	2.59	<0.40	0.55
18	32.63	6.25	89	7.97	140	30	270	95	7.1	2.5	0.25	-	0.10	1.66	<0.40	0.53
Station 22		Lat (N): 40 14.2			Long (W): 73 51.2			GMT: 18.7					Date: 4/16/74			
1	30.25	7.90	115	7.55	320	510	580	120	15	2.7	0.97	-	0.27	4.08	<0.40	0.36
10	30.59	7.42	107	7.56	350	230	470	140	11	4.0	0.29	-	0.24	3.68	<0.40	0.34
20	33.02	6.89	99	7.55	70	50	90	34	8.6	1.0	0.87	-	0.08	1.49	<0.40	0.52
Station 23		Lat (N): 40 14.9			Long (W): 73 45.7			GMT: 16.1					Date: 4/17/74			
1	30.57	7.92	116	8.01	280	190	400	32	6.6	1.9	0.29	-	0.22	2.19	<0.40	0.25
10	32.21	7.27	105	7.96	260	230	390	16	3.7	1.9	0.16	-	0.10	1.38	<0.40	0.37
20	33.01	6.96	102	7.94	190	60	210	7.0	2.1	0.84	0.25	-	0.07	0.94	<0.40	0.40
35	33.24	6.76	99	7.91	40	0	110	14	3.0	0.84	0.21	-	0.07	0.96	<0.40	0.38
Station 24		Lat (N): 40 15.9			Long (W): 73 37.0			GMT: 17.3					Date: 4/17/74			
1	30.35	8.22	122	7.95	350	370	570	27	11	1.8	0.33	-	0.22	1.64	<0.40	0.21
10	30.85	7.33	106	7.90	260	240	430	56	7.5	2.2	0.29	-	0.16	2.41	1.78	0.31
25	33.00	6.73	97	7.92	150	20	130	32	4.4	1.4	0.75	-	0.13	0.46	<0.40	0.32

Table I.1. Water chemistry characterization cruise WCC 6 data (cont.).

Depth (m)	Salinity ( $^{\circ}$ /oo)	O <sub>2</sub> (mL/L)	%O <sub>2</sub>	pH	Particulate _ organics (μg/L) _			Dissolved trace metals (μg/L)					Dissolved nutrients (μg-at/L)			
					PCH	PPRO	POC	Fe	Mn	Cu	Cd	Zn	NO <sub>2</sub> <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SiO <sub>3</sub> <sup>-2</sup>	PO <sub>4</sub> <sup>+3</sup>
Station 25					Lat (N): 40 16.9      Long (W): 73 28.3			GMT: 14.5					Date: 4/18/74			
1	27.27	8.52	122	7.88	450	610	720	47	31	14	0.41	-	0.36	1.10	<0.40	0.28
10	31.27	7.13	102	7.78	140	200	370	64	6.8	2.1	0.45	-	0.64	2.70	<0.40	0.44
20	32.84	6.73	97	7.74	70	30	150	19	4.9	1.8	0.16	-	0.06	1.76	<0.40	0.52
30	32.85	6.73	97	7.73	110	80	150	26	3.6	1.8	0.21	-	0.03	0.93	<0.40	0.40

Table I.2. Water chemistry characterization cruise WCC 7 data.

Depth (m)	Salinity (‰)	O <sub>2</sub> (mL/L)	%O <sub>2</sub>	pH	Particulate organics (µg/L)			Dissolved trace metals (µg/L)					Dissolved nutrients (µg-at/L)			
					PCH	PPRO	POC	Fe	Mn	Cu	Cd	Zn	NO <sub>2</sub> <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SiO <sub>3</sub> <sup>-2</sup>	PO <sub>4</sub> <sup>+3</sup>
Station 1		Lat (N): 40 29.9		Long (W): 73 57.3		GMT: 13.1			Date: 5/8/74							
1	29.40	6.60	100	8.13	240	370	570	5.0	21	5.0	0.25	-	0.49	4.37	2.87	0.89
10	31.32	6.30	96	8.13	710	250	1190	21	4.3	4.4	0.58	-	0.28	1.20	1.08	0.78
Station 2		Lat (N): 40 31.0		Long (W): 73 53.6		GMT: 19.1			Date: 5/8/74							
1	30.42	6.71	105	8.21	400	650	610	1.1	3.0	1.7	0.33	-	0.24	1.48	<0.40	0.57
6	30.99	7.00	109	8.21	450	650	650	4.8	1.2	5.1	0.33	-	0.08	0.27	<0.40	0.31
Station 3		Lat (N): 40 31.5		Long (W): 73 48.4		GMT: 18.4			Date: 5/8/74							
1	31.18	6.75	107	8.25	490	420	530	-	-	-	-	-	<0.01	<0.10	<0.40	0.10
10	31.23	6.72	105	8.22	520	530	390	-	-	-	-	-	0.03	<0.10	<0.40	0.06
Station 4		Lat (N): 40 32.4		Long (W): 73 40.3		GMT: 19.3			Date: 5/7/74							
1	31.10	6.77	106	8.28	570	500	530	5.9	3.1	3.0	0.45	-	0.14	<0.10	<0.40	0.11
10	31.15	6.72	105	8.28	570	470	560	3.9	3.8	1.5	0.21	-	<0.01	<0.10	<0.40	0.13
Station 5		Lat (N): 40 33.2		Long (W): 73 32.3		GMT: 18.3			Date: 5/7/74							
1	31.08	6.80	106	8.25	460	530	560	4.9	4.8	8.7	0.58	-	<0.01	<0.10	<0.40	0.10
10	31.23	6.57	102	8.26	340	280	480	7.6	1.9	36	0.29	-	0.15	<0.10	<0.40	0.12

Table I.2. Water chemistry characterization cruise WCC 7 data (cont.).

Depth (m)	Salinity (‰)	O <sub>2</sub> (mL/L)	%O <sub>2</sub>	pH	Particulate organics (µg/L)			Dissolved trace metals (µg/L)					Dissolved nutrients (µg-at/L)			
					PCH	PPRO	POC	Fe	Mn	Cu	Cd	Zn	NO <sub>2</sub> <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SiO <sub>3</sub> <sup>-2</sup>	PO <sub>4</sub> <sup>+3</sup>
Station 6		Lat (N): 40 26.3			Long (W): 73 57.0			GMT: 13.8					Date: 5/8/74			
1	27.77	6.46	99	8.08	170	220	550	16	20	4.4	0.58	-	0.74	8.79	1.12	1.04
9	30.03	5.90	88	8.07	290	490	520	8.8	8.1	1.1	0.29	-	0.30	1.78	0.69	0.64
Station 7		Lat (N): 40 26.8			Long (W): 73 53.2			GMT: 22.5					Date: 5/6/74			
1	29.59	-	-	8.22	240	420	460	11	14	3.8	0.41	-	0.22	1.91	0.99	0.37
10	32.39	-	-	8.20	120	220	320	6.4	3.5	0.95	0.25	-	0.25	0.13	<0.40	0.28
18	32.82	-	-	8.16	230	290	420	15	8.9	2.3	0.37	-	0.13	1.44	1.74	0.70
Station 7		Lat (N): 40 26.8			Long (W): 73 53.0			GMT: 15.5					Date: 5/8/74			
1	30.13	6.81	105	8.14	250	290	420	8.2	12	1.7	0.37	-	0.48	4.63	2.08	0.72
10	31.75	5.34	82	8.14	210	320	630	6.5	3.1	7.9	0.45	-	0.10	0.79	0.96	0.52
20	32.48	5.49	80	8.04	240	270	470	10	2.9	5.2	0.50	-	0.21	1.12	2.56	0.78
Station 8		Lat (N): 40 27.4			Long (W): 73 47.6			GMT: 16.2					Date: 5/8/74			
1	31.38	6.65	105	8.20	180	120	220	1.6	1.3	3.9	0.29	-	<0.01	<0.10	<0.40	0.10
10	31.49	6.50	102	8.23	490	360	500	0.93	3.1	1.6	0.25	--	<0.01	<0.10	<0.40	0.16
20	32.54	5.15	74	8.05	110	110	210	2.7	4.1	-	0.33	-	0.14	2.02	2.69	0.69
25	32.57	5.15	74	8.03	130	90	220	1.4	4.5	<0.50	0.16	-	0.16	1.61	2.01	0.66

Table I.2. Water chemistry characterization cruise WCC 7 data (cont.).

Depth (m)	Salinity (‰)	O <sub>2</sub> (mL/L)	%O <sub>2</sub>	pH	Particulate organics (µg/L)			Dissolved trace metals (µg/L)					Dissolved nutrients (µg-at/L)			
					PCH	PPRO	POC	Fe	Mn	Cu	Cd	Zn	NO <sub>2</sub> <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SiO <sub>3</sub> <sup>-2</sup>	PO <sub>4</sub> <sup>+3</sup>
Station 9		Lat (N): 40 28.3			Long (W): 73 39.7			GMT: 17.3					Date: 5/8/74			
1	30.98	6.70	106	8.26	450	350	470	9.9	0.90	1.7	0.21	-	<0.01	<0.10	<0.40	0.12
10	31.04	6.62	104	8.21	370	320	410	4.2	2.7	0.86	0.58	-	0.01	<0.10	<0.40	0.06
20	32.38	5.43	79	8.02	200	210	400	1.3	1.1	0.86	0.29	-	0.26	0.47	0.69	0.46
Station 10		Lat (N): 40 29.1			Long (W): 73 31.4			GMT: 17.6					Date: 5/7/74			
1	30.92	6.74	106	8.27	290	260	410	8.8	2.2	2.0	0.41	-	0.10	<0.10	<0.40	0.08
10	30.94	6.65	103	8.27	240	150	390	6.9	1.3	2.4	0.29	-	0.11	<0.10	<0.40	<0.01
19	32.36	5.64	83	8.15	1100	680	860	4.3	3.0	4.8	0.25	-	0.24	0.51	2.28	0.51
Station 11		Lat (N): 40 22.1			Long (W): 73 56.7			GMT: 14.6					Date: 5/8/74			
1	28.46	6.90	105	8.15	170	330	470	12	18	2.6	0.41	-	0.46	4.38	0.52	0.57
10	30.40	6.14	94	8.15	160	190	400	6.2	9.8	4.3	0.29	-	0.44	0.59	<0.40	0.42
Station 12		Lat (N): 40 22.7			Long (W): 73 52.2			GMT: 21.4					Date: 5/6/74			
1	28.97	-	-	8.27	420	560	520	11	18	2.8	0.79	-	0.33	2.95	0.96	0.53
10	30.82	-	-	8.31	360	440	500	6.2	6.9	1.9	0.50	-	0.16	0.97	<0.40	0.31
20	33.16	-	-	8.21	110	170	300	9.2	6.3	2.8	0.29	-	0.15	0.84	3.58	0.62
25	33.17	-	-	8.17	180	230	470	2.6	10	4.0	0.16	-	0.19	0.92	3.83	0.83

Table I.2. Water chemistry characterization cruise WCC 7 data (cont.).

Depth (m)	Salinity ( $^{\circ}$ / $\infty$ )	O <sub>2</sub> (mL/L)	%O <sub>2</sub>	pH	Particulate _ organics ( $\mu$ g/L) _			Dissolved trace metals ( $\mu$ g/L)					Dissolved nutrients ( $\mu$ g-at/L)			
					PCH	PPRO	POC	Fe	Mn	Cu	Cd	Zn	NO <sub>2</sub> <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SiO <sub>3</sub> <sup>-2</sup>	PO <sub>4</sub> <sup>+3</sup>
Station 13		Lat (N): 40 23.1			Long (W): 73 47.0			GMT: 20.3					Date: 5/6/74			
1	31.17	-	-	8.30	540	530	560	15	5.3	3.8	0.37	-	<0.01	<0.10	<0.40	0.18
10	31.60	-	-	8.26	140	330	430	22	3.8	1.9	0.79	-	0.11	<0.10	<0.40	0.18
20	33.23	-	-	8.17	90	120	160	5.9	7.3	2.8	0.89	-	0.10	0.87	2.56	0.58
35	33.30	-	-	8.16	70	80	170	4.2	7.9	2.3	0.33	-	0.14	0.90	3.14	0.62
Station 14		Lat (N): 40 24.3			Long (W): 73 38.7			GMT: 18.9					Date: 5/6/74			
1	31.38	-	-	8.30	500	410	480	4.8	2.2	3.3	0.41	-	<0.01	<0.10	<0.40	0.08
10	31.39	-	-	8.33	520	350	470	2.8	1.9	1.9	0.25	-	0.04	<0.10	<0.40	0.08
20	32.50	-	-	8.14	230	180	330	15	7.0	1.4	0.62	-	0.14	1.98	2.51	0.69
Station 15		Lat (N): 40 25.2			Long (W): 73 30.3			GMT: 16.5					Date: 5/7/74			
1	31.00	6.66	104	8.29	300	270	260	20	1.5	2.6	0.50	-	<0.01	<0.10	<0.40	<0.01
10	31.03	6.71	104	8.26	280	290	360	12	1.3	3.2	0.25	-	0.12	<0.10	<0.40	0.05
20	32.60	5.96	87	8.17	340	230	590	7.2	3.5	4.0	0.21	-	0.17	0.30	1.29	0.38
Station 17		Lat (N): 40 18.4			Long (W): 73 51.9			GMT: 14.6					Date: 5/6/74			
1	30.92	-	-	8.25	220	330	410	9.3	4.8	5.7	0.41	-	0.14	1.65	<0.40	0.40
10	31.17	-	-	8.25	200	270	350	5.0	5.9	1.7	0.21	-	0.08	1.17	<0.40	0.29
20	33.21	-	-	8.16	80	120	200	5.9	8.7	1.3	0.21	-	0.13	1.45	3.03	0.23

Table I.2. Water chemistry characterization cruise WCC 7 data (cont.).

Depth (m)	Salinity ( $^{\circ}$ / $_{\infty}$ )	O <sub>2</sub> (mL/L)	%O <sub>2</sub>	pH	Particulate _ organics ( $\mu$ g/L) _			Dissolved trace metals ( $\mu$ g/L)					Dissolved nutrients ( $\mu$ g-at/L)			
					PCH	PPRO	POC	Fe	Mn	Cu	Cd	Zn	NO <sub>2</sub> <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SiO <sub>3</sub> <sup>-2</sup>	PO <sub>4</sub> <sup>+3</sup>
Station 18		Lat (N): 40 19.1			Long (W): 73 46.2			GMT: 16.1					Date: 5/6/74			
1	31.46	-	-	8.26	500	410	520	2.3	1.9	2.1	0.33	-	0.07	<0.10	<0.40	0.18
10	31.51	-	-	8.29	510	400	490	11	2.3	1.3	0.58	-	<0.01	<0.10	<0.40	0.10
20	32.34	-	-	8.27	130	200	260	3.6	1.7	27	0.21	-	<0.01	<0.10	<0.40	0.22
30	33.30	-	-	8.22	260	150	450	7.3	7.1	2.1	0.37	-	0.07	0.23	1.14	0.38
Station 19		Lat (N): 40 20.3			Long (W): 73 37.7			GMT: 17.6					Date: 5/6/74			
1	31.44	-	-	8.30	470	370	460	6.0	1.4	1.7	0.29	-	<0.01	<0.10	<0.40	0.08
10	31.44	-	-	8.31	480	350	460	-	-	-	-	-	<0.01	<0.10	<0.40	0.08
20	32.72	-	-	8.22	100	110	300	-	-	-	-	-	0.13	1.05	2.22	0.60
25	32.71	-	-	8.17	250	160	360	-	-	-	-	-	0.14	0.77	1.56	0.54
Station 20		Lat (N): 40 21.0			Long (W): 73 29.2			GMT: 15.4					Date: 5/7/74			
1	31.33	6.69	104	8.25	270	250	360	2.5	1.5	4.5	0.79	-	<0.01	<0.10	<0.40	0.16
10	31.34	6.71	104	8.28	270	240	350	11	1.7	16	0.54	-	0.13	<0.10	<0.40	0.09
20	32.46	6.48	94	8.20	120	200	220	17	3.5	4.4	0.25	-	0.11	0.24	0.92	0.30
28	32.85	5.84	85	8.16	550	400	290	4.5	4.0	3.5	0.41	-	0.16	0.40	1.66	0.49
Station 24		Lat (N): 40 15.8			Long (W): 73 37.0			GMT: 18.1					Date: 5/9/74			
1	31.28	6.65	106	8.23	480	350	510	4.8	1.5	1.7	0.37	-	<0.01	<0.10	<0.40	0.05
10	31.37	6.63	105	8.27	410	300	450	2.5	1.3	1.8	0.21	-	<0.01	<0.10	<0.40	<0.01
20	32.94	5.74	84	8.15	130	90	170	7.4	3.2	1.7	0.33	-	0.11	0.31	1.15	0.31
25	32.95	5.74	84	8.10	90	70	140	8.3	2.7	14	0.25	-	0.13	0.45	1.57	0.39



Table I.2. Water chemistry characterization cruise WCC 7 data (cont.).

Depth (m)	Salinity ( $^{\circ}$ /oo)	O <sub>2</sub> (mL/L)	%O <sub>2</sub>	pH	Particulate _ organics ( $\mu$ g/L) _			Dissolved trace metals ( $\mu$ g/L)					Dissolved nutrients ( $\mu$ g-at/L)			
					PCH	PPRO	POC	Fe	Mn	Cu	Cd	Zn	NO <sub>2</sub> <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SiO <sub>3</sub> <sup>-2</sup>	PO <sub>4</sub> <sup>+3</sup>
Station 25					Lat (N): 40 16.9      Long (W): 73 28.5			GMT: 16.7					Date: 5/9/74			
1	31.11	6.66	105	8.22	340	230	400	5.4	3.8	1.7	0.41	-	0.01	<0.10	<0.40	0.14
10	31.20	6.70	105	8.26	350	380	500	31	2.2	1.7	0.41	-	0.11	<0.10	<0.40	0.13
20	32.61	6.09	94	8.18	290	160	380	9.8	2.7	2.1	0.41	-	0.12	0.16	0.78	0.21
30	32.81	5.89	86	8.14	50	50	120	36	4.4	1.3	1.0	-	0.09	0.74	3.11	0.50

Table I.3. Water chemistry characterization cruise WCC 8 data.

Depth (m)	Salinity (‰)	O <sub>2</sub> (mL/L)	%O <sub>2</sub>	pH	Particulate organics (µg/L)			Dissolved trace metals (µg/L)					Dissolved nutrients (µg-at/L)			
					PCH	PPRO	POC	Fe	Mn	Cu	Cd	Zn	NO <sub>2</sub> <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SiO <sub>3</sub> <sup>-2</sup>	PO <sub>4</sub> <sup>+3</sup>
Station 1		Lat (N): 40 29.0			Long (W): 73 57.2			GMT: 12.8					Date: 6/13/74			
1	23.83	4.31	75	7.95	180	210	510	31	34	5.1	1.6	-	1.26	6.59	3.62	1.81
8	27.46	4.96	86	8.03	200	260	400	22	44	3.7	0.73	-	0.30	1.22	<0.40	0.85
Station 2		Lat (N): 40 30.9			Long (W): 73 53.5			GMT: 19.7					Date: 6/13/74			
1	28.60	6.76	119	8.23	410	390	770	24	25	3.7	1.9	-	0.61	2.11	1.03	0.56
10	31.07	5.44	91	8.16	110	170	200	8.3	2.3	1.8	0.29	-	<0.01	0.14	1.39	0.29
Station 3		Lat (N): 40 31.3			Long (W): 73 48.4			GMT: 21.7					Date: 6/11/74			
1	30.39	6.74	121	8.30	150	250	700	7.1	3.3	3.2	3.4	-	<0.01	<0.10	<0.40	0.21
9	30.95	5.97	100	8.20	410	580	250	49	3.0	1.8	0.47	-	<0.01	<0.10	<0.40	0.22
Station 3		Lat (N): 40 31.5			Long (W): 73 48.3			GMT: 19.0					Date: 6/13/74			
1	29.06	7.50	133	8.27	550	440	680	5.0	14	1.8	0.74	-	0.15	0.20	<0.40	0.25
5	30.95	6.16	109	8.21	200	80	210	7.7	2.0	1.8	0.21	-	<0.01	<0.10	<0.40	<0.01
15	31.13	4.83	82	8.12	120	40	140	9.3	8.6	3.2	0.26	-	0.09	0.33	5.87	0.42
Station 4		Lat (N): 40 32.5			Long (W): 73 40.3			GMT: 20.6					Date: 6/11/74			
1	30.60	6.17	113	8.25	330	270	610	2.7	1.5	2.3	0.29	-	<0.01	<0.10	<0.40	0.17
10	30.88	5.66	97	8.18	150	80	230	12	4.7	9.5	7.0	-	<0.01	0.12	<0.40	0.25
15	30.88	5.67	95	8.15	210	70	230	7.5	5.8	1.8	0.45	-	<0.01	0.12	0.45	0.21

Table I.3. Water chemistry characterization cruise WCC 8 data (cont.).

Depth (m)	Salinity ( $^{\circ}/\text{oo}$ )	O <sub>2</sub> (mL/L)	%O <sub>2</sub>	pH	Particulate _ organics ( $\mu\text{g/L}$ ) _			Dissolved trace metals ( $\mu\text{g/L}$ )					Dissolved nutrients ( $\mu\text{g-at/L}$ )			
					PCH	PPRO	POC	Fe	Mn	Cu	Cd	Zn	NO <sub>2</sub> <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SiO <sub>3</sub> <sup>-2</sup>	PO <sub>4</sub> <sup>+3</sup>
Station 5		Lat (N): 40 33.3			Long (W): 73 32.2			GMT: 19.4					Date: 6/11/74			
1	30.66	5.43	98	8.18	300	260	470	5.0	7.0	1.8	0.19	-	0.10	0.15	1.88	0.43
10	31.07	5.88	99	8.18	160	80	190	2.3	3.4	1.8	0.29	-	0.02	0.19	1.18	0.20
15	30.69	5.77	97	8.17	150	40	200	2.5	4.4	1.8	0.47	-	<0.01	0.12	<0.40	0.20
Station 6		Lat (N): 40 26.4			Long (W): 73 56.9			GMT: 13.6					Date: 6/13/74			
1	25.53	6.49	113	8.17	90	210	610	19	54	4.6	1.1	-	0.72	2.58	<0.40	0.70
9	28.72	5.79	100	8.18	300	290	400	4.2	7.3	2.8	0.30	-	0.38	0.92	<0.40	0.55
Station 7		Lat (N): 40 26.8			Long (W): 73 53.0			GMT: 13.5					Date: 6/11/74			
1	27.89	6.01	105	8.19	330	150	620	5.2	5.2	3.1	0.47	-	0.38	1.49	<0.40	0.49
10	31.08	6.03	104	8.21	210	150	270	2.5	3.1	2.1	0.35	-	<0.01	<0.10	<0.40	0.18
20	31.08	5.95	99	8.20	180	140	250	7.1	15	6.3	0.34	-	<0.01	<0.10	<0.40	0.19
Station 7		Lat (N): 40 26.8			Long (W): 73 53.0			GMT: 17.9					Date: 6/13/74			
1	29.50	7.56	134	8.30	120	280	980	-	-	-	-	-	0.87	3.52	2.26	0.95
10	30.96	5.72	96	8.15	110	140	290	-	20	3.7	0.40	-	0.07	<0.10	<0.40	0.22
20	31.91	3.08	48	7.88	150	240	190	13	1.5	1.8	0.35	-	0.25	0.53	12.39	0.83

Table I.3. Water chemistry characterization cruise WCC 8 data (cont.).

Depth (m)	Salinity (‰)	O <sub>2</sub> (mL/L)	%O <sub>2</sub>	pH	Particulate _ organics (µg/L) _			Dissolved trace metals (µg/L)					Dissolved nutrients (µg-at/L)			
					PCH	PPRO	POC	Fe	Mn	Cu	Cd	Zn	NO <sub>2</sub> <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SiO <sub>3</sub> <sup>-2</sup>	PO <sub>4</sub> <sup>+3</sup>
Station 8		Lat (N): 40 27.4			Long (W): 73 47.6			GMT: 17.1					Date: 6/13/74			
1	30.80	6.25	112	8.07	80	50	400	10	4.5	18	0.85	-	<0.01	<0.10	<0.40	0.21
10	30.89	6.16	108	8.21	110	150	400	6.9	4.1	1.8	0.68	-	<0.01	<0.10	<0.40	0.10
20	31.56	4.88	78	8.09	290	320	190	3.6	2.8	9.3	0.30	-	0.02	0.22	3.06	0.32
27	32.08	3.76	57	7.97	570	-	220	13	12	1.4	0.20	-	0.07	0.17	2.87	0.46
Station 9		Lat (N): 40 28.3			Long (W): 73 39.5			GMT: 22.3					Date: 6/10/74			
1	30.94	6.43	114	8.28	420	270	420	2.3	3.2	2.1	0.23	-	<0.01	<0.10	<0.40	0.06
10	30.95	6.12	107	8.28	420	380	470	5.0	3.2	2.1	0.22	-	<0.01	<0.10	<0.40	0.13
20	31.49	5.43	91	8.20	160	200	300	19	4.7	6.3	0.23	-	<0.01	<0.10	1.09	0.29
Station 10		Lat (N): 40 29.1			Long (W): 73 31.4			GMT: 18.6					Date: 6/11/74			
1	30.84	6.04	109	8.22	420	280	410	2.8	1.5	1.8	0.29	-	<0.01	<0.10	<0.40	0.16
10	34.99	6.44	111	8.23	300	200	270	2.8	1.9	1.8	0.29	-	<0.01	<0.10	<0.40	0.12
18	31.33	5.71	95	8.19	150	90	130	9.4	5.5	3.6	0.34	-	0.05	0.11	<0.40	0.15
Station 11		Lat (N): 40 22.2			Long (W): 73 56.7			GMT: 14.5					Date: 6/13/74			
1	27.78	7.76	138	8.37	80	120	730	19	12	3.2	0.34	-	0.23	<0.10	<0.40	0.37
10	30.87	5.10	87	8.23	500	490	210	9.6	5.0	1.4	0.21	-	0.09	<0.10	1.16	0.40
14	31.20	4.65	77	8.14	270	240	170	6.6	15	2.3	0.20	-	0.07	0.17	3.76	0.56

Table I.3. Water chemistry characterization cruise WCC 8 data (cont.).

Depth (m)	Salinity ( $^{\circ}$ / $\infty$ )	O <sub>2</sub> (mL/L)	%O <sub>2</sub>	pH	Particulate _ organics ( $\mu$ g/L) _			Dissolved trace metals ( $\mu$ g/L)					Dissolved nutrients ( $\mu$ g-at/L)			
					PCH	PPRO	POC	Fe	Mn	Cu	Cd	Zn	NO <sub>2</sub> <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SiO <sub>3</sub> <sup>-2</sup>	PO <sub>4</sub> <sup>+3</sup>
Station 12		Lat (N): 40 22.6			Long (W): 73 52.3			GMT: 15.2					Date: 6/13/74			
1	29.67	7.32	130	8.27	60	60	500	13	3.9	1.4	0.24	-	<0.01	<0.10	<0.40	0.19
10	30.54	5.60	96	8.26	80	50	300	4.7	1.9	3.2	0.32	-	0.07	<0.10	<0.40	0.24
20	31.94	3.36	55	8.05	130	140	150	5.0	14	1.4	0.21	-	0.11	0.28	6.85	0.56
24	32.23	3.37	51	7.88	150	120	160	4.9	17	1.2	1.5	-	0.13	0.52	8.43	0.75
Station 13		Lat (N): 40 23.3			Long (W): 73 47.0			GMT: 16.3					Date: 6/13/74			
1	30.90	6.04	108	8.11	70	50	230	6.9	4.1	2.8	0.28	-	0.13	<0.10	1.20	0.17
10	31.19	6.10	107	8.20	100	70	240	2.5	2.3	1.8	0.32	-	<0.01	<0.10	<0.40	0.14
20	31.42	4.87	78	8.14	160	120	120	4.9	4.3	2.4	0.53	-	0.22	<0.10	1.89	0.33
35	32.44	3.94	58	7.99	220	340	90	6.8	4.1	1.2	0.21	-	0.11	0.43	4.94	0.66
Station 14		Lat (N): 40 24.2			Long (W): 73 38.7			GMT: 17.5					Date: 6/11/74			
1	30.30	6.78	121	8.26	710	570	520	2.2	3.7	4.1	0.38	-	0.03	<0.10	<0.40	<0.01
10	31.02	6.16	105	8.22	330	250	300	92	2.1	2.2	0.24	-	<0.01	<0.10	<0.40	<0.01
20	31.51	5.91	99	8.19	140	120	180	6.3	4.1	1.3	0.38	-	0.03	<0.10	<0.40	0.12
Station 15		Lat (N): 40 25.1			Long (W): 73 30.3			GMT: 21.1					Date: 6/10/74			
1	31.47	6.19	111	8.24	130	90	190	18	1.8	3.2	0.64	-	<0.01	<0.10	<0.40	0.07
10	31.65	6.31	108	8.27	200	180	200	4.7	1.8	2.4	0.63	-	<0.01	<0.10	<0.40	<0.01
20	31.59	6.09	103	8.26	180	160	230	17	2.3	2.1	0.50	-	<0.01	<0.10	<0.40	0.06

Table I.3. Water chemistry characterization cruise WCC 8 data (cont.).

Depth (m)	Salinity (‰)	O <sub>2</sub> (mL/L)	%O <sub>2</sub>	pH	Particulate organics (µg/L)			Dissolved trace metals (µg/L)					Dissolved nutrients (µg-at/L)			
					PCH	PPRO	POC	Fe	Mn	Cu	Cd	Zn	NO <sub>2</sub> <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SiO <sub>3</sub> <sup>-2</sup>	PO <sub>4</sub> <sup>+3</sup>
Station 16		Lat (N): 40 18.1			Long (W): 73 56.3			GMT: 14.7					Date: 6/10/74			
1	29.11	6.25	108	8.23	860	410	770	7.6	1.5	4.6	0.76	-	0.40	1.27	1.87	0.70
10	30.85	5.75	98	8.22	160	150	330	4.7	6.0	3.7	0.76	-	<0.01	<0.10	<0.40	0.27
15	30.90	5.72	97	8.22	170	170	320	12	7.7	3.2	0.71	-	0.02	0.10	0.90	0.27
Station 17		Lat (N): 40 18.5			Long (W): 73 51.8			GMT: 14.8					Date: 6/11/74			
1	28.01	8.15	143	8.41	900	570	1500	3.0	3.9	2.6	0.58	-	0.10	0.27	2.37	0.22
10	30.97	5.92	100	8.24	140	120	200	4.4	2.3	2.1	0.62	-	<0.01	<0.10	<0.40	0.11
20	31.58	4.06	66	8.09	120	110	160	4.2	7.8	6.6	1.2	-	0.09	0.38	5.54	0.34
Station 18		Lat (N): 40 19.2			Long (W): 73 46.4			GMT: 15.6					Date: 6/11/74			
1	30.02	7.15	126	8.27	470	-	780	3.3	3.4	1.4	0.20	-	0.07	<0.10	<0.40	0.11
10	31.55	6.50	111	8.25	180	160	230	5.0	1.8	6.3	0.43	-	<0.01	<0.10	<0.40	<0.01
20	31.52	4.47	72	8.13	100	110	180	41	5.2	2.1	0.38	-	0.11	0.44	5.49	0.42
30	32.13	3.68	56	7.97	90	80	140	15	14	2.6	0.58	-	0.13	0.93	11.43	0.81
Station 19		Lat (N): 40 20.2			Long (W): 73 37.7			GMT: 16.7					Date: 6/11/74			
1	30.98	6.13	107	8.15	120	170	240	17	2.3	3.2	0.34	-	<0.01	<0.10	<0.40	0.17
10	31.69	6.24	108	8.21	140	160	210	3.3	1.3	1.0	0.48	-	<0.01	<0.10	<0.40	<0.01
20	31.57	5.86	98	8.17	230	180	260	6.1	2.6	1.4	0.24	-	<0.01	<0.10	<0.40	<0.01
24	31.56	5.80	96	8.15	160	210	180	3.3	2.9	2.2	0.48	-	0.08	0.13	0.96	<0.01

Table I.3. Water chemistry characterization cruise WCC 8 data (cont.).

Depth (m)	Salinity (‰)	O <sub>2</sub> (mL/L)	%O <sub>2</sub>	pH	Particulate organics (µg/L)			Dissolved trace metals (µg/L)					Dissolved nutrients (µg-at/L)			
					PCH	PPRO	POC	Fe	Mn	Cu	Cd	Zn	NO <sub>2</sub> <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SiO <sub>3</sub> <sup>-2</sup>	PO <sub>4</sub> <sup>+3</sup>
Station 20		Lat (N): 40 21.1			Long (W): 73 29.3			GMT: 20.3					Date: 6/10/74			
1	31.32	6.31	110	8.26	160	170	220	8.8	3.0	2.3	0.20	-	<0.01	<0.10	<0.40	0.06
10	31.20	6.41	109	8.28	340	30	340	15	2.9	14	0.20	-	<0.01	<0.10	<0.40	0.16
20	31.38	5.91	48	8.22	170	60	240	8.3	2.4	3.1	0.79	-	<0.01	<0.10	<0.40	0.16
25	31.49	5.63	92	8.19	90	90	140	4.2	3.5	3.2	0.12	-	<0.01	0.12	1.00	0.23
Station 21		Lat (N): 40 13.4			Long (W): 73 56.0			GMT: 15.7					Date: 6/10/74			
1	28.23	8.40	151	8.45	1230	1240	1090	10	2.9	9.8	0.38	-	0.14	<0.10	<0.40	0.42
9	30.25	5.90	102	8.42	400	420	590	7.9	3.3	2.8	1.4	-	0.13	<0.10	<0.40	0.12
19	30.92	5.69	96	8.35	-	-	-	-	-	-	-	-	0.06	<0.10	<0.40	0.29
Station 22		Lat (N): 40 14.1			Long (W): 73 51.1			GMT: 16.5					Date: 6/10/74			
1	29.72	7.25	132	8.39	670	670	700	10	6.9	2.8	0.38	-	0.05	<0.10	<0.40	0.12
5	30.97	6.30	110	8.34	200	120	270	6.9	1.7	2.3	0.28	-	0.01	<0.10	<0.40	<0.01
15	31.37	4.49	76	8.16	150	40	180	4.9	5.2	4.2	0.86	-	0.07	0.16	2.01	0.24
25	31.58	3.68	59	8.05	110	100	180	25	12	2.8	0.28	-	0.12	0.70	7.56	0.50
Station 23		Lat (N): 40 14.1			Long (W): 73 45.6			GMT: 17.4					Date: 6/10/74			
1	31.05	6.18	109	8.32	160	320	390	6.7	2.0	1.4	0.23	-	<0.01	<0.10	<0.40	0.16
10	31.39	6.21	105	8.36	200	80	220	21	2.2	1.8	0.19	-	0.02	0.12	<0.40	0.11
20	31.70	4.94	78	8.15	90	20	160	10	7.6	3.7	0.48	-	0.15	0.66	5.78	0.50
35	32.05	4.70	71	8.06	70	100	160	7.9	1.8	2.8	0.86	-	0.16	0.71	3.54	0.41

Table I.3. Water chemistry characterization cruise WCC 8 data (cont.).

Depth (m)	Salinity (‰)	O <sub>2</sub> (mL/L)	%O <sub>2</sub>	pH	Particulate _ organics (µg/L) _			Dissolved trace metals (µg/L)					Dissolved nutrients (µg-at/L)			
					PCH	PPRO	POC	Fe	Mn	Cu	Cd	Zn	NO <sub>2</sub> <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SiO <sub>3</sub> <sup>-2</sup>	PO <sub>4</sub> <sup>+3</sup>
Station 24		Lat (N): 40 15.7			Long (W): 73 37.0			GMT: 18.5					Date: 6/10/74			
1	31.51	6.16	110	8.23	180	190	170	5.4	2.0	2.3	0.29	-	<0.01	<0.10	<0.40	0.03
10	31.61	6.54	111	8.27	290	80	270	4.9	1.4	10	0.28	-	<0.01	<0.10	<0.40	<0.01
20	31.69	5.55	89	8.19	-	60	170	9.3	2.1	4.6	0.19	-	<0.01	0.18	0.49	0.17
25	31.68	5.27	83	8.16	90	140	160	8.5	4.1	2.8	0.28	-	0.04	0.30	1.87	0.26
Station 25		Lat (N): 40 16.9			Long (W): 73 28.3			GMT: 19.5					Date: 6/10/74			
1	31.13	6.18	108	8.23	190	230	210	5.1	1.5	1.4	0.35	-	0.14	0.12	<0.40	0.10
10	31.69	6.36	109	8.27	190	90	270	6.4	1.8	2.8	0.24	-	<0.01	<0.10	<0.40	0.06
20	31.73	5.58	88	8.20	250	40	260	5.3	3.1	1.8	0.38	-	<0.01	0.16	0.95	0.23
30	31.82	5.44	85	8.14	70	80	100	3.6	5.4	1.8	0.28	-	<0.01	0.37	2.07	0.29



Table I.4. Water chemistry characterization cruise WCC 9 data.

Depth (m)	Salinity ( $^{\circ}$ / $\infty$ )	O <sub>2</sub> (mL/L)	%O <sub>2</sub>	pH	Particulate _ organics ( $\mu$ g/L) _			Dissolved trace metals ( $\mu$ g/L)					Dissolved nutrients ( $\mu$ g-at/L)			
					PCH	PPRO	POC	Fe	Mn	Cu	Cd	Zn	NO <sub>2</sub> <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SiO <sub>3</sub> <sup>-2</sup>	PO <sub>4</sub> <sup>+3</sup>
Station 1		Lat (N): 40 29.9		Long (W): 73 57.4		GMT: 13.0			Date: 7/19/74							
1	27.76	-	-	8.21	440	870	1010	27	27	5.8	10	-	0.57	1.73	<0.40	1.19
10	31.04	-	-	8.03	170	220	360	28	12	14	1.9	-	0.19	0.56	3.95	0.83
Station 2		Lat (N): 40 30.9		Long (W): 73 53.4		GMT: 17.0			Date: 7/19/74							
1	30.36	-	-	7.97	520	690	810	22	27	15	4.7	-	0.43	1.37	2.50	1.24
10	31.52	-	-	7.95	140	30	410	47	19	5.4	4.9	-	0.10	0.35	3.56	0.65
Station 3		Lat (N): 40 31.5		Long (W): 73 48.3		GMT: 16.2			Date: 7/19/74							
1	30.15	-	-	8.15	310	710	680	17	5.6	3.4	0.20	-	0.09	<0.10	<0.40	0.52
13	31.80	-	-	7.89	140	200	290	25	15	8.3	2.7	-	0.06	0.12	3.24	0.59
Station 4		Lat (N): 40 31.9		Long (W): 73 40.2		GMT: 14.0			Date: 7/17/74							
1	31.42	-	-	8.16	270	280	350	25	11	18	1.4	-	0.06	<0.10	<0.40	0.48
10	31.46	-	-	8.13	460	130	480	12	7.0	10	0.58	-	<0.01	<0.10	<0.40	0.53
15	31.86	-	-	7.90	150	150	240	14	21	11	1.3	-	0.08	0.12	2.33	0.84
Station 5		Lat (N): 40 33.3		Long (W): 73 32.4		GMT: 15.0			Date: 7/17/74							
1	31.58	-	-	8.18	170	170	230	23	4.8	4.9	0.86	-	0.17	<0.10	<0.40	3.21
10	31.83	-	-	8.09	450	420	480	48	11	9.3	4.3	-	0.27	2.29	2.62	5.34
15	31.93	-	-	8.08	200	250	340	18	6.5	3.9	0.71	-	<0.01	<0.10	7.37	1.36

Table I.4. Water chemistry characterization cruise WCC 9 data (cont.).

Depth (m)	Salinity (‰)	O <sub>2</sub> (mL/L)	%O <sub>2</sub>	pH	Particulate _ organics (µg/L) _			Dissolved trace metals (µg/L)					Dissolved nutrients (µg-at/L)			
					PCH	PPRO	POC	Fe	Mn	Cu	Cd	Zn	NO <sub>2</sub> <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SiO <sub>3</sub> <sup>-2</sup>	PO <sub>4</sub> <sup>+3</sup>
Station 6		Lat (N): 40 26.3		Long (W): 73 56.9		GMT: 13.7			Date: 7/19/74							
1	27.99	-	-	8.24	410	930	1040	13	23	11	1.2	-	0.72	2.73	1.11	1.29
10	31.71	-	-	7.48	190	150	340	25	25	12	2.0	-	0.11	0.33	4.47	0.84
Station 7		Lat (N): 40 26.9		Long (W): 73 53.0		GMT: 21.8			Date: 7/16/74							
1	26.81	-	-	8.34	1720	1660	700	25	13	5.4	0.82	-	0.86	2.42	<0.40	1.25
10	31.57	-	-	8.02	190	200	300	18	7.0	4.9	0.53	-	0.07	1.00	4.26	0.73
20	32.02	-	-	7.96	120	90	320	12	24	5.4	1.3	-	0.07	0.16	3.95	0.80
Station 7		Lat (N): 40 26.8		Long (W): 73 53.0		GMT: 15.3			Date: 7/16/74							
1	30.36	-	-	8.12	190	720	670	9.5	13	8.8	1.4	-	0.23	0.93	0.50	0.75
10	31.84	-	-	7.97	140	260	310	14	10	4.1	0.70	-	<0.01	0.36	5.75	0.76
20	32.04	-	-	7.96	70	120	280	17	15	5.1	1.3	-	0.15	0.56	7.23	0.88
Station 8		Lat (N): 40 27.4		Long (W): 73 47.8		GMT: 19.2			Date: 7/17/74							
1	28.87	-	-	8.40	430	540	690	19	4.5	6.6	0.82	-	0.19	0.79	<0.40	0.97
10	30.97	-	-	8.20	180	170	280	17	1.9	4.0	0.15	-	0.06	0.14	0.68	0.29
25	32.21	-	-	8.07	120	100	170	17	8.3	3.4	3.3	-	0.09	0.22	5.32	0.59

Table I.4. Water chemistry characterization cruise WCC 9 data (cont.).

Depth (m)	Salinity (‰)	O <sub>2</sub> (mL/L)	%O <sub>2</sub>	pH	Particulate organics (µg/L)			Dissolved trace metals (µg/L)					Dissolved nutrients (µg-at/L)			
					PCH	PPRO	POC	Fe	Mn	Cu	Cd	Zn	NO <sub>2</sub> <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SiO <sub>3</sub> <sup>-2</sup>	PO <sub>4</sub> <sup>+3</sup>
Station 9		Lat (N): 40 28.3			Long (W): 73 39.5			GMT: 17.7					Date: 7/16/74			
1	28.57	-	-	8.23	490	110	850	19	3.9	13	1.4	-	0.15	<0.10	<0.40	0.71
10	31.50	-	-	7.99	370	330	530	46	23	19	7.0	-	0.08	0.44	<0.40	0.76
20	31.80	-	-	7.75	140	200	360	26	19	5.8	0.89	-	0.09	0.59	5.29	0.77
Station 10		Lat (N): 40 29.1			Long (W): 73 31.5			GMT: 15.7					Date: 7/17/74			
1	31.64	-	-	8.25	150	130	190	11	3.8	4.9	0.58	-	<0.01	<0.10	<0.40	0.32
10	31.48	-	-	8.18	340	270	290	42	2.1	3.4	2.1	-	<0.01	<0.10	<0.40	0.31
19	31.96	-	-	7.87	130	130	170	18	6.7	2.9	0.36	-	0.05	0.20	3.48	1.42
Station 11		Lat (N): 40 22.1			Long (W): 73 56.6			GMT: 14.5					Date: 7/19/74			
1	31.34	-	-	7.91	210	240	320	15	10	5.2	0.81	-	0.18	0.74	3.08	0.85
13	31.91	-	-	8.00	130	190	250	87	18	9.6	2.0	-	0.09	0.59	6.60	0.92
Station 12		Lat (N): 40 22.6			Long (W): 73 52.3			GMT: 13.7					Date: 7/18/74			
1	29.21	-	-	8.27	140	340	390	37	4.6	4.9	1.3	-	0.09	0.18	<0.40	0.33
10	31.26	-	-	8.00	160	350	360	23	0.70	5.4	1.1	-	0.06	0.44	2.22	0.71
20	31.02	-	-	7.87	110	140	300	33	17	5.4	1.3	-	0.10	0.31	6.64	0.88
24	32.07	-	-	7.84	160	180	300	23	14	7.8	2.0	-	0.09	0.20	3.30	0.87

Table I.4. Water chemistry characterization cruise WCC 9 data (cont.).

Depth (m)	Salinity (‰)	O <sub>2</sub> (mL/L)	%O <sub>2</sub>	pH	Particulate organics (µg/L)			Dissolved trace metals (µg/L)					Dissolved nutrients (µg-at/L)			
					PCH	PPRO	POC	Fe	Mn	Cu	Cd	Zn	NO <sub>2</sub> <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SiO <sub>3</sub> <sup>-2</sup>	PO <sub>4</sub> <sup>+3</sup>
Station 13		Lat (N): 40 23.2		Long (W): 73 46.9		GMT: 20.8			Date: 7/16/74							
1	28.70	-	-	8.41	350	550	490	37	7.8	5.6	2.9	-	0.06	<0.10	<0.40	0.34
10	30.62	-	-	8.22	430	450	430	18	3.8	5.4	0.82	-	0.10	0.21	<0.40	0.35
20	31.01	-	-	8.07	390	150	360	28	0.88	2.9	0.76	-	0.07	<0.10	2.13	0.44
30	32.25	-	-	8.03	90	80	150	12	6.0	2.4	0.66	-	0.07	0.14	2.73	0.50
Station 14		Lat (N): 40 24.3		Long (W): 73 38.6		GMT: 17.0			Date: 7/18/74							
1	29.40	-	-	8.22	250	480	470	42	17	25	0.70	-	0.04	<0.10	<0.40	0.30
10	31.35	-	-	8.01	220	310	350	13	1.5	4.5	1.4	-	0.03	<0.10	<0.40	0.26
20	31.91	-	-	7.78	170	340	480	22	14	12	4.3	-	0.09	0.17	2.90	0.71
Station 15		Lat (N): 40 25.1		Long (W): 73 30.3		GMT: 16.5			Date: 7/17/74							
1	31.22	-	-	8.20	320	200	260	14	2.2	3.9	0.35	-	<0.01	<0.10	<0.40	0.24
10	31.76	-	-	8.09	1060	520	650	14	1.0	2.3	1.0	-	<0.01	<0.10	<0.40	0.36
20	31.96	-	-	7.90	210	280	260	42	9.8	5.4	2.2	-	0.12	0.38	3.84	0.72
Station 16		Lat (N): 40 18.0		Long (W): 73 56.3		GMT: 14.0			Date: 7/16/74							
1	28.14	-	-	8.55	330	680	540	26	5.0	5.4	1.7	-	<0.01	<0.10	<0.40	0.42
10	30.12	-	-	8.27	480	440	470	22	4.6	4.5	2.0	-	<0.01	<0.10	<0.40	0.30
17	32.25	-	-	7.87	270	240	270	19	12	7.9	4.2	-	0.31	1.99	11.55	1.34

Table I.4. Water chemistry characterization cruise WCC 9 data (cont.).

Depth (m)	Salinity (‰)	O <sub>2</sub> (mL/L)	%O <sub>2</sub>	pH	Particulate organics (µg/L)			Dissolved trace metals (µg/L)					Dissolved nutrients (µg-at/L)			
					PCH	PPRO	POC	Fe	Mn	Cu	Cd	Zn	NO <sub>2</sub> <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SiO <sub>3</sub> <sup>-2</sup>	PO <sub>4</sub> <sup>+3</sup>
Station 17		Lat (N): 40 18.4		Long (W): 73 51.9		GMT: 14.5			Date: 7/18/74							
1	29.23	-	-	8.23	180	330	350	17	3.5	3.4	0.42	-	<0.01	<0.10	<0.40	0.26
10	30.72	-	-	8.18	90	90	170	12	4.0	3.9	0.85	-	0.04	<0.10	<0.40	0.21
20	32.06	-	-	7.81	180	180	250	21	13	2.3	1.5	-	0.15	0.56	6.42	0.93
Station 18		Lat (N): 40 19.2		Long (W): 73 46.3		GMT: 15.1			Date: 7/18/74							
1	30.19	-	-	8.18	170	190	250	25	6.3	3.4	1.8	-	0.06	<0.10	<0.40	0.14
10	30.53	-	-	8.12	210	410	2410	30	4.7	13	2.3	-	-	-	-	-
20	32.28	-	-	8.02	400	100	360	19	2.4	22	0.95	-	0.06	0.14	2.03	0.43
30	32.36	-	-	7.59	120	90	150	34	14	10	3.7	-	0.04	0.17	2.13	0.35
Station 19		Lat (N): 40 20.3		Long (W): 73 37.7		GMT: 16.2			Date: 7/18/74							
1	29.85	-	-	8.21	190	360	390	32	8.0	6.1	1.4	-	0.05	<0.10	<0.40	0.30
10	30.66	-	-	8.14	100	140	260	25	4.1	2.9	0.37	-	<0.01	<0.10	<0.40	0.15
20	32.03	-	-	7.86	220	170	410	20	3.8	3.9	1.0	-	0.15	0.73	6.60	0.70
23	32.06	-	-	7.75	200	210	330	4.4	7.4	1.9	0.30	-	0.43	0.19	2.74	0.64
Station 20		Lat (N): 40 21.1		Long (W): 73 29.4		GMT: 17.2			Date: 7/17/74							
1	30.92	-	-	8.29	220	190	270	13	3.1	3.4	0.41	-	<0.01	<0.10	<0.40	0.26
10	31.49	-	-	8.20	360	270	460	15	1.0	1.9	1.4	-	<0.01	<0.10	<0.40	0.23
20	32.02	-	-	7.98	<5	210	330	32	2.4	3.4	2.1	-	0.06	0.25	4.02	0.71
23	32.09	-	-	7.94	150	180	270	18	1.2	3.4	0.53	-	0.15	0.51	4.61	0.75

Table I.4. Water chemistry characterization cruise WCC 9 data (cont.).

Depth (m)	Salinity (‰)	O <sub>2</sub> (mL/L)	%O <sub>2</sub>	pH	Particulate organics (µg/L)			Dissolved trace metals (µg/L)					Dissolved nutrients (µg-at/L)			
					PCH	PPRO	POC	Fe	Mn	Cu	Cd	Zn	NO <sub>2</sub> <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SiO <sub>3</sub> <sup>-2</sup>	PO <sub>4</sub> <sup>+3</sup>
Station 21		Lat (N): 40 13.2		Long (W): 73 56.1		GMT: 14.9			Date: 7/16/74							
1	29.80	-	-	8.32	260	410	450	13	5.1	6.3	1.2	-	0.05	1.04	<0.40	0.29
10	30.84	-	-	8.25	180	310	330	23	3.9	6.3	2.1	-	<0.01	<0.10	<0.40	0.25
18	32.00	-	-	7.78	750	600	450	44	42	15	1.5	-	0.53	2.96	18.33	2.15
Station 22		Lat (N): 40 14.0		Long (W): 73 51.1		GMT: 16.0			Date: 7/16/74							
1	30.72	-	-	8.26	120	170	190	12	7.0	4.5	1.4	-	<0.01	0.21	<0.40	0.19
10	31.11	-	-	8.25	140	180	200	15	2.2	1.8	1.1	-	<0.01	0.10	<0.40	0.24
20	31.99	-	-	7.99	250	210	290	13	1.8	6.1	1.0	-	0.08	0.34	3.85	0.76
23	32.16	-	-	7.81	100	110	90	35	25	6.5	3.7	-	0.22	1.31	6.91	1.08
Station 23		Lat (N): 40 14.7		Long (W): 73 45.7		GMT: 16.8			Date: 7/16/74							
1	30.50	-	-	8.29	140	120	170	36	9.2	3.1	0.95	-	<0.01	<0.10	<0.40	0.11
10	31.20	-	-	8.23	200	210	250	15	4.3	3.6	0.45	-	<0.01	<0.10	<0.40	0.15
20	31.98	-	-	8.12	<5	170	280	21	1.7	1.8	1.3	-	<0.01	<0.10	1.24	0.29
30	32.63	-	-	8.01	90	70	140	15	2.8	4.9	1.8	-	0.12	1.15	7.21	0.68
Station 24		Lat (N): 40 16.1		Long (W): 73 36.0		GMT: 17.8			Date: 7/16/74							
1	30.22	-	-	8.29	210	180	270	17	10	4.9	2.4	-	<0.01	<0.10	<0.40	0.10
10	30.74	-	-	8.17	440	300	410	15	11	3.6	3.9	-	<0.01	<0.10	<0.40	0.19
20	31.99	-	-	8.07	340	160	280	21	1.4	3.2	1.4	-	0.05	0.26	6.38	0.58
23	32.41	-	-	8.01	120	120	150	14	1.5	3.2	0.99	-	0.11	1.14	6.87	0.65

Table I.4. Water chemistry characterization cruise WCC 9 data (cont.).

Depth (m)	Salinity ( $^{\circ}/\text{oo}$ )	O <sub>2</sub> (mL/L)	%O <sub>2</sub>	pH	Particulate _ organics ( $\mu\text{g/L}$ ) _			Dissolved trace metals ( $\mu\text{g/L}$ )					Dissolved nutrients ( $\mu\text{g-at/L}$ )					
					PCH	PPRO	POC	Fe	Mn	Cu	Cd	Zn	NO <sub>2</sub> <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SiO <sub>3</sub> <sup>-2</sup>	PO <sub>4</sub> <sup>+3</sup>		
Station 25					Lat (N): 40 17.1		Long (W): 73 25.1			GMT: 19.0				Date: 7/16/74				
1	30.26	-	-	8.31	150	180	240	18	5.3	4.9	2.1	-	<0.01	<0.10	<0.40	0.29		
10	31.66	-	-	8.11	550	360	470	9.7	1.2	5.6	0.36	-	<0.01	<0.10	1.68	0.45		
20	32.00	-	-	8.07	270	200	310	48	1.9	5.4	2.3	-	<0.01	<0.10	2.67	0.45		
30	32.48	-	-	7.99	80	110	130	16	3.2	2.4	2.1	-	0.21	1.84	10.36	0.86		

Table I.5. Water chemistry characterization cruise WCC 10 data.

Depth (m)	Salinity ( $^{\circ}$ / $_{\infty}$ )	O <sub>2</sub> (mL/L)	%O <sub>2</sub>	pH	Particulate _ organics ( $\mu$ g/L) _			Dissolved trace metals ( $\mu$ g/L)					Dissolved nutrients ( $\mu$ g-at/L)			
					PCH	PPRO	POC	Fe	Mn	Cu	Cd	Zn	NO <sub>2</sub> <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SiO <sub>3</sub> <sup>-2</sup>	PO <sub>4</sub> <sup>+3</sup>
Station 1		Lat (N): 40 29.9			Long (W): 73 57.5			GMT: 13.0					Date: 8/24/74			
1	27.52	3.36	65	7.39	220	390	480	17	52	2.5	0.42	14	1.66	6.01	5.73	2.98
8	27.93	3.69	72	7.62	190	350	480	14	33	2.7	0.54	20	1.83	6.74	5.62	2.84
Station 2		Lat (N): 40 31.0			Long (W): 73 53.5			GMT: 20.2					Date: 8/24/74			
1	29.80	5.68	113	8.21	190	250	570	10	2.6	5.0	0.86	18	0.10	0.24	<0.40	0.75
10	30.98	3.55	69	7.98	260	450	570	10	3.3	3.0	0.46	25	0.24	0.42	<0.40	0.63
Station 3		Lat (N): 40 31.5			Long (W): 73 48.4			GMT: 19.3					Date: 8/24/74			
1	30.13	6.15	125	8.29	130	220	280	8.2	2.0	1.7	1.0	34	0.06	<0.10	<0.40	0.25
10	31.01	4.94	98	8.12	80	100	130	8.9	7.0	4.7	0.73	15	0.04	<0.10	<0.40	0.19
14	31.49	3.42	64	7.91	240	520	220	7.5	3.1	4.1	0.32	10	0.17	1.05	2.13	0.90
Station 4		Lat (N): 40 32.8			Long (W): 73 40.5			GMT: 21.8					Date: 8/22/74			
1	31.15	4.00	81	8.01	320	490	630	9.3	3.5	2.0	0.35	17	0.15	0.31	3.82	1.07
14	31.24	3.67	71	7.94	300	500	670	9.3	3.9	2.0	0.33	33	0.11	0.16	3.71	1.13
Station 5		Lat (N): 40 33.4			Long (W): 73 32.6			GMT: 20.5					Date: 8/22/74			
1	30.65	5.90	119	8.28	110	130	160	19	3.8	6.6	0.68	71	0.07	0.18	<0.40	0.25
12	31.32	4.11	78	7.98	320	500	670	11	3.0	2.0	4.4	64	0.09	<0.10	<0.40	0.65



Table I.5. Water chemistry characterization cruise WCC 10 data (cont.).

Depth (m)	Salinity ( $^{\circ}$ /oo)	O <sub>2</sub> (mL/L)	%O <sub>2</sub>	pH	Particulate _ organics ( $\mu$ g/L) _			Dissolved trace metals ( $\mu$ g/L)					Dissolved nutrients ( $\mu$ g-at/L)			
					PCH	PPRO	POC	Fe	Mn	Cu	Cd	Zn	NO <sub>2</sub> <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SiO <sub>3</sub> <sup>-2</sup>	PO <sub>4</sub> <sup>+3</sup>
Station 6		Lat (N): 40 26.4			Long (W): 73 56.9			GMT: 13.8					Date: 8/24/74			
1	31.88	4.46	90	7.86	270	630	820	7.0	16	3.5	0.36	11	1.33	5.08	<0.40	2.11
9	30.16	3.70	71	7.89	970	1830	1990	7.0	4.1	2.1	0.45	12	0.89	2.03	2.56	2.13
Station 7		Lat (N): 40 26.9			Long (W): 73 53.1			GMT: 15.5					Date: 8/24/74			
1	28.86	4.97	98	7.89	130	290	390	26	19	4.6	1.2	39	0.56	1.71	<0.40	0.99
10	30.60	5.38	107	8.08	170	350	360	10	4.6	2.4	1.2	18	0.05	<0.10	<0.40	0.51
23	31.37	3.58	69	7.99	220	300	330	12	14	8.0	0.35	26	0.58	1.56	7.52	1.18
Station 7		Lat (N): 40 26.8			Long (W): 73 53.1			GMT: 13.4					Date: 8/23/74			
1	29.18	5.12	101	8.12	160	320	410	6.4	4.5	2.7	0.53	28	0.93	3.25	0.72	1.58
10	31.14	4.75	94	8.07	50	140	180	11	3.3	1.7	0.98	14	0.11	<0.10	<0.40	0.53
21	31.85	2.73	49	7.85	160	400	520	21	15	1.9	0.27	16	0.20	0.37	2.30	0.76
Station 8		Lat (N): 40 27.5			Long (W): 73 47.8			GMT: 13.7					Date: 8/21/74			
1	29.21	6.24	122	7.76	160	<10	640	-	-	-	-	-	0.42	2.01	<0.40	0.79
20	32.31	1.69	29	7.58	130	60	270	5.9	21	8.2	0.27	29	1.06	1.99	11.85	1.20
28	32.31	1.67	28	7.55	90	60	260	10	19	8.2	0.36	44	0.57	0.78	5.66	1.05

Table I.5. Water chemistry characterization cruise WCC 10 data (cont.).

Depth (m)	Salinity (‰)	O <sub>2</sub> (mL/L)	%O <sub>2</sub>	pH	Particulate _ organics (µg/L) _			Dissolved trace metals (µg/L)					Dissolved nutrients (µg-at/L)			
					PCH	PPRO	POC	Fe	Mn	Cu	Cd	Zn	NO <sub>2</sub> <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SiO <sub>3</sub> <sup>-2</sup>	PO <sub>4</sub> <sup>+3</sup>
Station 9		Lat (N): 40 28.4			Long (W): 73 39.8			GMT: 21.5					Date: 8/21/74			
1	30.88	5.68	114	8.02	50	30	130	6.5	2.9	1.7	1.0	27	<0.01	<0.10	<0.40	0.16
10	31.12	5.35	105	7.98	80	70	140	16	4.8	1.1	0.53	19	<0.01	<0.10	<0.40	0.19
21	31.88	3.00	53	7.78	160	350	510	8.1	5.5	2.0	0.91	48	0.52	1.86	6.65	0.94
Station 10		Lat (N): 40 29.3			Long (W): 73 31.7			GMT: 19.8					Date: 8/22/74			
1	31.17	5.40	108	8.13	60	80	140	15	2.9	2.0	1.1	42	<0.01	<0.10	<0.40	0.20
10	31.15	5.08	100	8.08	90	120	200	10	3.1	3.2	0.86	48	<0.01	<0.10	<0.40	0.26
20	31.57	3.71	68	7.92	230	490	600	19	2.6	2.0	1.3	54	0.13	0.30	<0.40	0.65
Station 11		Lat (N): 40 22.2			Long (W): 73 56.8			GMT: 14.6					Date: 8/24/74			
1	38.83	5.74	113	8.13	250	930	1080	6.4	3.3	1.9	0.27	13	0.94	2.58	<0.40	1.3
11	30.54	4.31	83	8.03	210	260	400	13	2.8	3.2	1.5	28	0.22	0.53	<0.40	0.84
Station 12		Lat (N): 40 22.6			Long (W): 73 52.4			GMT: 14.3					Date: 8/23/74			
1	29.57	5.92	116	7.99	410	550	860	16	3.0	6.0	0.86	23	0.19	<0.10	<0.40	0.63
10	30.94	4.07	77	7.99	<5	<10	260	9.1	3.0	6.3	0.46	50	0.34	1.05	1.93	0.85
20	31.97	1.75	31	7.80	130	170	310	14	43	6.0	0.31	28	0.71	1.11	11.05	1.45

Table I.5. Water chemistry characterization cruise WCC 10 data (cont.).

Depth (m)	Salinity ( $^{\circ}$ /oo)	O <sub>2</sub> (mL/L)	%O <sub>2</sub>	pH	Particulate _ organics ( $\mu$ g/L) _			Dissolved trace metals ( $\mu$ g/L)					Dissolved nutrients ( $\mu$ g-at/L)			
					PCH	PPRO	POC	Fe	Mn	Cu	Cd	Zn	NO <sub>2</sub> <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SiO <sub>3</sub> <sup>-2</sup>	PO <sub>4</sub> <sup>+3</sup>
Station 13		Lat (N): 40 23.3			Long (W): 73 47.1			GMT: 16.2					Date: 8/21/74			
1	30.44	5.94	119	7.78	80	40	170	19	4.7	7.3	0.98	110	<0.01	<0.10	<<0.40	0.78
10	30.75	-	-	7.78	60	250	170	6.8	3.0	6.9	2.1	110	<0.01	<0.10	<0.40	0.33
20	32.03	2.30	40	7.70	110	40	290	13	3.6	7.9	0.23	14	0.98	1.50	10.03	1.21
30	32.36	1.84	31	7.53	110	140	360	8.1	22	9.6	0.41	24	0.72	0.98	7.49	1.08
37	32.57	1.69	28	7.47	180	210	370	11	30	2.6	0.27	20	0.68	1.23	11.27	1.21
Station 14		Lat (N): 40 24.3			Long (W): 73 38.9			GMT: 20.1					Date: 8/21/74			
1	30.98	5.55	111	7.95	70	60	100	8.8	5.4	2.0	1.1	17	0.06	<0.10	<0.40	0.12
10	31.09	5.37	106	7.84	50	50	130	11	8.1	1.1	0.46	21	<0.01	<0.10	<0.40	0.20
21	31.93	2.62	46	7.76	250	450	580	10	11	0.56	0.94	32	0.48	1.77	8.24	1.21
Station 15		Lat (N): 40 25.2			Long (W): 73 30.6			GMT: 18.8					Date: 8/22/74			
1	-	5.42	-	8.18	110	120	210	7.6	2.2	0.85	0.46	12	<0.01	<0.10	<0.40	0.20
10	31.23	5.46	109	8.19	130	150	270	12	2.1	2.5	0.46	19	<0.01	<0.10	<0.40	0.24
20	31.64	4.92	88	8.15	80	180	230	10	2.3	0.85	0.36	16	0.26	0.87	1.83	0.52
24	31.76	3.85	69	7.95	130	190	290	12	5.5	1.4	0.52	32	0.22	1.14	4.23	0.75
Station 16		Lat (N): 40 18.1			Long (W): 73 56.4			GMT: 19.2					Date: 8/23/74			
1	29.91	6.23	124	8.15	130	400	420	9.1	6.6	1.7	0.78	6.2	0.17	<0.10	<0.40	0.95
10	30.33	5.48	109	8.20	60	150	190	11	8.4	1.7	0.65	6.5	<0.01	<0.10	<0.40	0.29
14	30.91	5.23	104	8.17	40	100	70	7.9	23	1.5	1.1	9.5	<0.01	<0.10	<0.40	0.34

Table I.5. Water chemistry characterization cruise WCC 10 data (cont.).

Depth (m)	Salinity ( $^{\circ}/\text{oo}$ )	O <sub>2</sub> (mL/L)	%O <sub>2</sub>	pH	Particulate _ organics ( $\mu\text{g/L}$ ) _			Dissolved trace metals ( $\mu\text{g/L}$ )					Dissolved nutrients ( $\mu\text{g-at/L}$ )			
					PCH	PPRO	POC	Fe	Mn	Cu	Cd	Zn	NO <sub>2</sub> <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SiO <sub>3</sub> <sup>-2</sup>	PO <sub>4</sub> <sup>+3</sup>
Station 17		Lat (N): 40 18.5			Long (W): 73 51.9			GMT: 15.2					Date: 8/23/74			
1	29.28	6.38	125	8.12	290	860	600	4.8	3.5	8.2	1.3	76	0.65	1.64	<0.40	0.88
10	-	5.22	-	8.09	40	80	90	16	4.6	3.2	0.26	13	0.09	0.41	<0.40	0.39
24	-	2.07	-	7.78	120	250	420	10	19	3.8	0.54	42	0.45	0.94	6.34	1.18
Station 18		Lat (N): 40 19.1			Long (W): 73 46.5			GMT: 17.5					Date: 8/21/74			
1	30.87	5.47	110	7.82	60	<0.10	70	5.9	5.8	8.0	0.59	17	0.05	<0.10	<0.40	0.17
10	31.04	5.56	111	7.90	40	40	90	2.8	5.8	1.6	1.1	40	0.06	<0.10	<0.40	0.32
20	32.11	2.24	39	7.53	70	190	350	2.8	3.8	1.2	4.1	44	1.14	2.05	11.88	1.34
31	32.34	2.00	34	7.58	180	270	500	66	30	2.8	1.2	25	0.52	1.08	5.89	0.96
Station 19		Lat (N): 40 20.3			Long (W): 73 37.7			GMT: 19.0					Date: 8/21/74			
1	31.12	5.30	107	7.85	70	40	150	22	4.3	2.8	1.5	47	0.03	<0.10	<0.40	0.11
10	31.21	5.44	108	7.87	90	130	1950	18	4.6	1.1	0.72	31	<0.01	<0.10	<0.40	0.15
20	31.97	3.56	65	7.63	110	80	240	16	7.3	1.1	0.47	44	0.18	0.70	3.27	0.64
25	32.01	3.32	58	7.70	170	310	330	12	13	0.85	1.8	45	0.31	1.34	7.40	0.78
Station 20		Lat (N): 40 21.1			Long (W): 73 29.4			GMT: 17.8					Date: 8/22/74			
1	31.14	5.46	109	8.12	80	100	160	11	4.1	1.4	0.66	19	<0.01	<0.10	<0.40	0.24
10	31.22	5.62	109	8.12	50	110	420	12	1.7	1.4	1.4	15	<0.01	<0.10	<0.40	0.60
20	31.80	5.55	103	8.13	120	40	200	5.2	2.1	0.85	0.46	36	<0.01	<0.10	0.50	0.25
28	31.88	3.72	65	7.93	90	130	300	12	11	0.85	0.46	11	0.27	1.60	10.01	1.02

Table I.5. Water chemistry characterization cruise WCC 10 data (cont.).

Depth (m)	Salinity (‰)	O <sub>2</sub> (mL/L)	%O <sub>2</sub>	pH	Particulate organics (µg/L)			Dissolved trace metals (µg/L)					Dissolved nutrients (µg-at/L)			
					PCH	PPRO	POC	Fe	Mn	Cu	Cd	Zn	NO <sub>2</sub> <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SiO <sub>3</sub> <sup>-2</sup>	PO <sub>4</sub> <sup>+3</sup>
Station 21		Lat (N): 40 13.5			Long (W): 73 56.1			GMT: 18.4					Date: 8/23/74			
1	30.38	5.78	115	8.15	110	180	360	29	4.1	3.2	1.1	30	<.01	<0.10	<0.40	0.20
10	31.15	4.89	96	8.04	20	170	240	15	3.4	3.2	1.2	55	<.01	<0.10	<0.40	0.33
19	31.52	2.66	49	7.86	170	230	290	21	11	2.6	1.5	44	0.33	0.85	3.68	0.94
Station 22		Lat (N): 40 14.2			Long (W): 73 51.3			GMT: 17.5					Date: 8/23/74			
1	30.59	5.38	107	8.05	60	70	110	6.6	2.2	1.5	0.26	16	<0.01	<0.10	<0.40	0.39
10	30.97	5.21	104	8.08	40	80	80	17	2.4	1.4	0.70	11	<0.01	<0.10	<0.40	0.25
20	31.91	1.70	30	7.95	60	140	220	5.7	21	3.4	0.68	17	0.65	1.53	10.00	1.07
Station 23		Lat (N): 40 14.9			Long (W): 73 45.6			GMT: 16.2					Date: 8/23/74			
1	30.66	5.07	101	8.05	40	60	50	30	6.0	7.0	0.73	190	<0.01	<0.10	<0.40	0.24
10	30.93	5.34	107	8.14	50	80	90	27	5.6	2.8	0.56	19	<0.01	<0.10	<0.40	0.30
20	31.57	3.07	56	7.87	60	90	120	6.0	1.9	4.5	0.29	15	0.55	1.30	5.30	0.94
29	32.01	2.95	50	7.86	90	130	150	15	3.2	1.5	1.1	13	0.94	2.27	12.72	1.21
43	32.45	1.91	32	7.75	120	<10	240	21	27	2.3	1.1	47	1.27	2.86	23.56	1.43
Station 24		Lat (N): 40 15.3			Long (W): 73 37.2			GMT: 15.2					Date: 8/22/74			
1	31.35	5.28	105	8.16	90	90	130	16	3.0	5.0	5.1	90	<0.01	<0.10	<0.40	0.20
10	31.32	5.44	107	8.17	110	100	180	24	1.3	9.9	0.78	33	<0.01	<0.10	<0.40	1.4
20	31.79	5.82	106	8.08	50	40	110	18	1.9	5.2	0.94	58	<0.01	<0.10	<0.40	0.27
28	32.07	3.39	58	7.94	90	50	190	17	6.3	3.6	1.8	89	0.25	1.05	5.82	0.85

Table I.5. Water chemistry characterization cruise WCC 10 data (cont.).

Depth (m)	Salinity (‰)	O <sub>2</sub> (mL/L)	%O <sub>2</sub>	pH	Particulate _ organics (µg/L) _			Dissolved trace metals (µg/L)					Dissolved nutrients (µg-at/L)				
					PCH	PPRO	POC	Fe	Mn	Cu	Cd	Zn	NO <sub>2</sub> <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SiO <sub>3</sub> <sup>-2</sup>	PO <sub>4</sub> <sup>+3</sup>	
Station 25					Lat (N): 40 16.9		Long (W): 73 28.7				GMT: 16.8					Date: 8/22/74	
1	31.27	5.48	108	8.09	120	60	210	8.6	1.1	25	0.94	41	<0.01	<0.10	<0.40	0.19	
10	31.26	5.51	108	8.15	80	120	240	9.1	2.2	3.2	0.86	40	<0.01	<0.10	<0.40	0.23	
20	32.10	5.87	109	8.11	110	130	220	13	1.5	1.7	0.56	49	<0.01	<0.10	<0.40	0.20	
32	32.20	3.52	59	7.85	80	20	180	12	2.8	1.6	0.47	20	0.31	1.49	7.49	0.73	

Table I.6. Water chemistry characterization cruise WCC 11 data.

Depth (m)	Salinity (‰)	O <sub>2</sub> (mL/L)	%O <sub>2</sub>	pH	Particulate _ organics (µg/L) _			Dissolved trace metals (µg/L)					Dissolved nutrients (µg-at/L)			
					PCH	PPRO	POC	Fe	Mn	Cu	Cd	Zn	NO <sub>2</sub> <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SiO <sub>3</sub> <sup>-2</sup>	PO <sub>4</sub> <sup>+3</sup>
Station 1		Lat (N): 40 30.1			Long (W): 73 57.6			GMT: 12.8					Date: 9/29/74			
1	28.71	5.69	103	8.04	160	280	400	4.1	21	3.7	1.1	25	1.80	8.91	3.71	2.35
Station 2		Lat (N): 40 30.9			Long (W): 73 53.5			GMT: 21.5					Date: 10/2/74			
1	31.56	4.22	75	7.96	140	70	240	6.3	11	1.5	6.1	4.9	0.75	6.29	11.95	1.80
3	31.56	4.20	75	7.95	150	120	270	1.6	8.3	1.5	0.14	63	0.42	3.43	6.44	1.13
5	32.30	3.42	59	7.92	200	120	290	0.59	5.4	2.3	0.17	37	0.28	3.78	9.41	1.13
i	32.01	3.72	63	7.93	140	80	250	0.68	8.9	5.4	6.8	38	0.49	6.18	13.82	1.67
10	32.33	3.35	57	7.92	140	80	200	1.4	8.8	5.8	4.0	39	0.45	7.21	17.19	1.61
Station 3		Lat (N): 40 31.5			Long (W): 73 48.3			GMT: 22.7					Date: 10/1/74			
1	30.56	4.76	87	8.28	300	380	-	3.0	9.1	1.8	0.25	4.2	0.40	2.29	1.04	1.16
15	32.53	3.56	58	8.00	100	70	150	6.7	7.4	1.9	0.30	2.8	0.40	8.24	20.22	1.28
Station 4		Lat (N): 40 32.8			Long (W): 73 40.3			GMT: 14.2					Date: 9/30/74			
14	32.20	3.36	61	7.83	200	160	400	4.6	13	5.0	0.46	37	0.42	2.58	7.51	1.54
Station 5		Lat (N): 40 33.3			Long (W): 73 32.4			GMT: 15.4					Date: 9/30/74			
1	30.57	5.63	103	8.01	420	830	740	5.6	5.8	3.7	0.15	34	0.80	2.96	<0.40	1.61
10	30.50	5.48	100	8.01	290	870	830	5.6	6.9	5.0	0.05	10	0.40	2.93	<0.40	1.30

Table I.6. Water chemistry characterization cruise WCC 11 data (cont.).

Depth (m)	Salinity (‰)	O <sub>2</sub> (mL/L)	%O <sub>2</sub>	pH	Particulate _ organics (µg/L) _			Dissolved trace metals (µg/L)					Dissolved nutrients (µg-at/L)			
					PCH	PPRO	POC	Fe	Mn	Cu	Cd	Zn	NO <sub>2</sub> <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SiO <sub>3</sub> <sup>-2</sup>	PO <sub>4</sub> <sup>+3</sup>
Station 6		Lat (N): 40 26.4			Long (W): 73 56.9			GMT: 14.9					Date: 9/29/74			
1	27.91	6.96	126	8.17	210	650	600	4.5	25	14	0.25	152	0.85	3.66	<0.40	1.73
10	30.81	4.73	86	8.06	270	360	490	1.8	4.5	3.7	0.53	39	0.92	3.97	3.05	1.90
Station 7		Lat (N): 40 26.9			Long (W): 73 53.0			GMT: 17.0					Date: 9/29/74			
1	24.50	7.38	136	8.32	190	710	570	3.3	8.8	8.7	0.37	37	1.51	3.88	<0.40	1.45
Station 8		Lat (N): 40 27.4			Long (W): 73 47.7			GMT: 21.7					Date: 10/1/74			
1	31.40	6.29	117	8.39	110	150	190	8.0	5.8	1.8	0.85	8.5	0.05	1.27	<0.40	0.53
9	31.40	6.21	115	8.37	130	200	230	3.1	6.1	0.60	1.2	6.3	0.04	0.21	<0.40	0.57
20	32.68	3.99	64	8.00	90	80	100	4.5	6.4	1.2	0.86	9.8	0.51	9.39	18.70	1.13
27	32.69	4.02	64	8.00	<5	50	100	4.2	6.4	1.8	0.20	4.5	0.52	9.47	19.31	1.15
Station 9		Lat (N): 40 28.3			Long (W): 73 39.6			GMT: 20.2					Date: 9/30/74			
1	31.15	6.30	116	8.06	240	310	530	12	7.1	4.8	0.59	17	0.28	0.77	<0.40	0.65
10	31.25	6.22	114	8.06	230	270	500	32	5.3	4.2	0.15	35	0.32	1.45	<0.40	0.69
21	32.36	4.21	73	7.86	150	340	260	18	6.2	3.6	0.10	9.2	0.61	4.79	12.75	1.13
Station 10		Lat (N): 40 29.2			Long (W): 73 31.5			GMT: 16.7					Date: 9/30/74			
1	31.06	6.10	113	8.09	160	280	370	11	7.0	3.7	1.4	42	0.48	1.33	<0.40	0.95
10	31.06	6.04	111	8.08	180	180	350	3.6	11	6.2	0.58	48	0.20	0.50	<0.40	0.55
20	31.06	6.01	111	8.08	160	460	740	4.2	9.2	3.1	0.11	58	0.42	1.24	<0.40	0.85



Table I.6. Water chemistry characterization cruise WCC 11 data (cont.).

Depth (m)	Salinity (‰)	O <sub>2</sub> (mL/L)	%O <sub>2</sub>	pH	Particulate organics (µg/L)			Dissolved trace metals (µg/L)					Dissolved nutrients (µg-at/L)			
					PCH	PPRO	POC	Fe	Mn	Cu	Cd	Zn	NO <sub>2</sub> <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SiO <sub>3</sub> <sup>-2</sup>	PO <sub>4</sub> <sup>+3</sup>
Station 11		Lat (N): 40 22.1			Long (W): 73 56.7			GMT: 13.8					Date: 10/1/74			
1	30.14	5.42	97	7.99	150	270	370	11	16	7.8	0.90	26	0.93	4.61	4.22	1.66
14	32.24	2.75	47	7.79	200	150	430	12	24	6.8	0.46	12	0.31	3.35	8.82	1.34
Station 12		Lat (N): 40 22.7			Long (W): 73 52.4			GMT: 20.6					Date: 10/1/74			
1	31.38	6.29	116	8.30	150	220	300	9.6	6.8	3.0	0.20	4.4	0.10	0.38	<0.40	0.69
10	31.60	4.68	86	8.16	80	190	240	5.1	8.8	0.60	0.30	2.8	0.13	0.97	<0.40	0.88
20	32.61	3.47	56	7.90	80	100	130	7.3	9.9	1.2	0.25	11	0.78	10.58	22.90	1.38
24	32.62	3.40	54	7.89	130	110	-	6.1	14	1.8	1.2	24	0.78	10.39	22.78	1.50
Station 13		Lat (N): 40 23.3			Long (W): 73 46.9			GMT: 13.9					Date: 10/2/74			
1	31.58	5.84	108	8.32	80	190	140	3.4	5.2	4.8	0.45	86	0.05	0.37	<0.40	0.49
10	31.59	6.17	114	8.30	110	160	100	3.4	6.4	3.6	0.14	81	0.07	0.39	<0.40	0.58
20	31.59	5.84	96	8.26	110	130	200	2.3	4.5	4.8	0.30	27	0.13	0.56	<0.40	0.76
30	32.66	4.34	69	8.02	110	60	180	2.3	2.9	5.0	1.1	14	0.53	6.35	12.67	0.98
35	32.72	4.37	70	7.98	90	140	80	4.1	4.1	4.9	0.17	4.3	0.24	4.42	9.22	0.59
Station 14		Lat (N): 40 24.4			Long (W): 73 38.7			GMT: 19.1					Date: 9/30/74			
1	31.56	6.21	116	8.09	140	120	210	9.9	18	27	0.23	22	0.13	<0.10	<0.40	0.43
10	31.57	6.23	116	8.10	190	70	230	11	18	4.2	0.52	18	0.14	0.22	<0.40	0.44
20	31.98	4.73	88	7.93	470	-	470	16	17	21	1.8	25	0.72	1.94	6.52	1.15
22	31.97	4.66	-	7.93	-	210	470	8.8	17	3.0	0.45	7.4	0.44	1.09	3.68	0.82

Table I.6. Water chemistry characterization cruise WCC 11 data (cont.).

Depth (m)	Salinity (‰)	O <sub>2</sub> (mL/L)	%O <sub>2</sub>	pH	Particulate organics (µg/L)			Dissolved trace metals (µg/L)					Dissolved nutrients (µg-at/L)			
					PCH	PPRO	POC	Fe	Mn	Cu	Cd	Zn	NO <sub>2</sub> <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SiO <sub>3</sub> <sup>-2</sup>	PO <sub>4</sub> <sup>+3</sup>
Station 15		Lat (N): 40 25.2			Long (W): 73 30.4			GMT: 17.8					Date: 9/30/74			
1	31.32	6.45	120	8.15	150	240	310	4.2	7.9	8.3	1.7	31	0.22	0.16	<0.40	0.61
10	31.33	6.36	118	8.12	200	230	270	11	5.1	2.4	0.05	5.7	0.17	0.30	<0.40	0.61
20	31.50	5.88	110	8.08	150	150	300	13	16	4.8	0.29	4.3	0.22	0.47	<0.40	0.66
Station 16		Lat (N): 40 18.1			Long (W): 73 56.4			GMT: 14.5					Date: 10/1/74			
1	31.59	4.93	90	7.94	100	120	250	15	11	8.3	1.8	17	0.31	1.08	1.65	1.27
17	32.27	3.09	53	7.78	90	30	170	7.0	12	9.2	1.5	3.1	0.37	3.67	9.05	1.08
Station 17		Lat (N): 40 18.5			Long (W): 73 51.9			GMT: 19.7					Date: 10/1/74			
1	31.47	5.89	109	8.25	70	1800	500	6.0	9.2	2.4	0.30	5.3	0.10	0.32	<0.40	0.63
10	31.63	4.51	82	7.99	50	160	210	12	9.0	11	0.63	20	0.49	2.30	5.00	1.67
20	32.20	3.46	58	7.93	40	110	140	10	8.9	10	0.10	61	0.22	3.02	6.47	0.95
24	32.66	3.31	52	7.85	50	250	150	8.7	18	7.2	0.10	11	0.64	7.30	16.19	0.84
Station 18		Lat (N): 40 19.3			Long (W): 73 46.4			GMT: 18.7					Date: 10/1/74			
1	31.63	6.41	120	8.35	230	60	270	4.8	4.6	2.3	0.16	3.6	0.02	<0.10	<0.40	0.38
10	31.61	6.21	116	8.32	130	890	210	3.7	4.8	7.3	0.77	17	0.05	<0.10	<0.40	0.33
20	32.57	4.43	75	8.05	20	1400	80	6.9	4.3	2.3	0.82	11	0.42	6.77	13.27	0.95
30	32.69	4.20	67	7.99	50	230	110	6.7	8.4	2.4	0.06	12	0.23	4.74	9.64	0.82

Table I.6. Water chemistry characterization cruise WCC 11 data (cont.).

Depth (m)	Salinity (‰)	O <sub>2</sub> (mL/L)	%O <sub>2</sub>	pH	Particulate organics (µg/L)			Dissolved trace metals (µg/L)					Dissolved nutrients (µg-at/L)			
					PCH	PPRO	POC	Fe	Mn	Cu	Cd	Zn	NO <sub>2</sub> <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SiO <sub>3</sub> <sup>-2</sup>	PO <sub>4</sub> <sup>+3</sup>
Station 19		Lat (N): 40 20.3			Long (W): 73 37.7			GMT: 15.3					Date: 10/2/74			
1	31.71	6.31	117	8.29	50	30	230	5.2	2.9	7.5	0.26	4.9	0.04	<0.10	<0.40	0.17
10	31.99	5.92	110	8.29	130	100	100	2.3	7.9	4.4	0.16	2.9	0.06	<0.10	<0.40	0.15
25	32.30	4.49	78	8.09	50	40	180	5.2	21	5.6	1.1	12	0.29	2.71	5.26	0.49
Station 20		Lat (N): 40 21.1			Long (W): 73 29.3			GMT: 18.4					Date: 10/2/74			
1	30.78	6.98	126	8.25	250	510	480	3.8	5.2	7.5	0.73	8.7	0.19	0.41	<0.40	0.33
10	30.90	6.81	124	8.24	250	400	490	5.1	5.5	5.0	0.26	8.7	0.14	0.42	<0.40	0.23
20	31.57	5.12	93	8.16	150	220	240	4.0	4.8	6.2	0.35	6.7	0.18	0.47	<0.40	0.39
27	32.30	3.91	68	7.97	260	110	230	7.4	20	7.5	1.0	13	0.54	5.10	13.18	1.23
Station 21		Lat (N): 40 13.5			Long (W): 73 56.0			GMT: 15.4					Date: 10/1/74			
1	31.44	5.89	108	8.10	100	-	170	11	5.7	4.6	0.33	7.8	0.18	0.45	<0.40	0.68
11	31.70	3.49	64	7.88	120	130	310	12	16	3.1	2.8	15	0.63	2.73	6.28	1.61
18	31.98	3.13	56	7.82	<5	50	200	9.0	17	4.6	0.53	25	0.35	2.69	6.80	1.05
Station 22		Lat (N): 40 14.1			Long (W): 73 51.2			GMT: 16.3					Date: 10/1/74			
1	31.45	6.26	116	8.16	<5	<10	130	5.9	5.5	3.8	0.21	13	0.07	<0.10	<0.40	0.42
10	31.46	6.09	113	8.15	60	200	190	9.7	6.7	4.6	1.3	21	0.06	<0.10	<0.40	0.44
20	31.88	4.56	82	7.97	50	30	140	15	28	6.9	0.57	49	0.15	1.29	1.53	0.67
22	32.12	3.48	60	7.83	100	160	150	11	13	8.5	1.4	31	0.14	1.66	2.51	0.72

Table I.6. Water chemistry characterization cruise WCC 11 data (cont.).

Depth (m)	Salinity (‰)	O <sub>2</sub> (mL/L)	%O <sub>2</sub>	pH	Particulate organics (µg/L)			Dissolved trace metals (µg/L)					Dissolved nutrients (µg-at/L)			
					PCH	PPRO	POC	Fe	Mn	Cu	Cd	Zn	NO <sub>2</sub> <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SiO <sub>3</sub> <sup>-2</sup>	PO <sub>4</sub> <sup>+3</sup>
Station 23		Lat (N): 40 14.9			Long (W): 73 45.6			GMT: 17.5					Date: 10/1/74			
1	31.76	6.19	115	8.30	40	270	110	5.4	4.0	6.9	0.26	4.2	0.05	0.11	<0.40	0.32
10	31.92	6.21	115	8.30	60	350	110	11	4.8	2.3	0.13	5.6	0.07	<0.10	<0.40	0.25
20	32.01	6.13	101	8.29	30	-	50	5.9	2.6	1.9	0.34	2.1	0.06	<0.10	<0.40	0.25
30	32.70	4.71	77	7.98	80	60	80	5.7	7.4	5.4	1.2	18	0.36	6.96	13.60	0.87
42	32.77	4.98	78	7.04	50	20	110	11	5.0	2.3	0.42	7.8	0.11	4.04	7.30	0.60
Station 24		Lat (N): 40 15.8			Long (W): 73 36.9			GMT: 16.2					Date: 10/2/74			
1	31.52	6.17	114	8.27	120	160	180	4.7	5.7	12	0.29	6.3	0.09	<0.10	<0.40	0.37
10	31.52	6.12	113	8.28	120	160	190	6.9	6.6	10	0.31	6.3	<0.01	<0.10	<0.40	<0.01
25	31.76	5.96	110	8.25	80	90	190	3.4	3.4	29	0.45	6.9	0.06	0.32	<0.40	0.45
Station 25		Lat (N): 40 16.9			Long (W): 73 28.3			GMT: 17.2					Date: 10/2/74			
1	31.67	5.99	111	8.26	100	130	150	3.9	4.6	6.2	0.87	11	0.14	0.30	<0.40	0.53
10	31.64	6.01	111	8.24	100	100	150	4.6	6.7	13	0.53	73	0.12	0.21	<0.40	0.34
20	31.64	5.95	110	8.24	120	140	160	3.9	13	12	0.59	20	0.12	0.37	<0.40	0.42
31	32.43	4.63	81	8.07	130	100	120	10	5.7	6.9	0.19	7.9	0.42	2.68	6.32	0.65
Station 26		Lat (N): 40 29.3			Long (W): 73 59.4			GMT: 13.9					Date: 9/29/74			
1	26.46	6.09	109	7.99	310	1110	490	5.0	36	5.0	1.1	22	3.17	14.85	8.38	3.29
10	29.63	5.05	92	8.03	240	350	460	11	15	36	1.1	28	1.55	7.78	4.10	2.31

Table I.7. Water chemistry characterization cruise WCC 12 data.

Depth (m)	Salinity (‰)	O <sub>2</sub> (mL/L)	%O <sub>2</sub>	pH	Particulate _ organics (µg/L) _			Dissolved trace metals (µg/L)					Dissolved nutrients (µg-at/L)			
					PCH	PPRO	POC	Fe	Mn	Cu	Cd	Zn	NO <sub>2</sub> <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SiO <sub>3</sub> <sup>-2</sup>	PO <sub>4</sub> <sup>+3</sup>
Station 1		Lat (N): 40 30.0			Long (W): 73 57.5			GMT: 20.9					Date: 11/4/74			
1	27.69	4.53	75	7.77	260	500	420	9.3	44	3.9	0.46	54	0.51	3.40	1.51	0.94
7	29.31	4.73	78	7.87	170	150	370	15	24	4.6	0.77	54	0.64	3.87	2.17	0.90
Station 2		Lat (N): 40 31.0			Long (W): 73 53.6			GMT: 13.3					Date: 11/4/74			
1	31.70	2.79	47	7.89	220	480	680	5.1	3.9	6.3	2.0	20	0.14	1.22	<0.40	0.56
5	31.98	2.37	40	8.02	140	350	420	5.7	2.3	2.1	1.0	21	0.21	1.96	3.41	0.72
11	32.06	2.11	35	8.11	70	250	310	6.8	3.1	8.6	0.93	36	0.27	2.97	4.33	0.70
Station 3		Lat (N): 40 31.1			Long (W): 73 48.8			GMT: 14.2					Date: 11/4/74			
1	31.54	3.43	58	8.15	270	610	670	4.6	2.3	6.2	1.5	37	0.07	<0.10	<0.40	0.39
10	32.17	2.21	37	7.98	80	80	230	7.7	0.96	2.8	0.52	66	0.39	2.82	4.86	0.87
15	32.23	2.68	45	7.99	90	180	260	4.6	1.2	2.8	0.84	26	0.16	0.81	0.80	0.54
Station 4		Lat (N): 40 32.7			Long (W): 73 40.4			GMT: 14.2					Date: 11/6/74			
1	31.82	6.79	115	8.17	240	720	580	5.8	2.2	3.4	0.30	20	0.05	0.30	<0.40	0.52
10	31.87	6.10	103	8.18	190	430	410	7.7	3.6	3.8	0.29	49	0.04	0.67	<0.40	0.50
14	32.07	5.12	86	8.12	170	130	350	8.8	2.3	3.9	0.20	35	0.11	1.53	1.43	0.75

Table I.7. Water chemistry characterization cruise WCC 12 data (cont.).

Depth (m)	Salinity ( $^{\circ}$ /oo)	O <sub>2</sub> (mL/L)	%O <sub>2</sub>	pH	Particulate _ organics ( $\mu$ g/L) _			Dissolved trace metals ( $\mu$ g/L)					Dissolved nutrients ( $\mu$ g-at/L)					
					PCH	PPRO	POC	Fe	Mn	Cu	Cd	Zn	NO <sub>2</sub> <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SiO <sub>3</sub> <sup>-2</sup>	PO <sub>4</sub> <sup>+3</sup>		
Station 5					Lat (N): 40 33.3		Long (W): 73 32.5			GMT: 15.3				Date: 11/6/74				
1	31.83	5.78	98	8.08	240	400	400	7.8	1.3	1.5	0.35	27	0.08	0.57	<0.40	1.03		
9	31.86	5.32	90	8.09	200	340	390	4.7	1.2	3.0	1.8	23	0.14	0.80	<0.40	0.57		
14	31.86	5.65	95	8.15	250	250	400	6.3	2.0	5.3	0.40	30	0.11	0.73	<0.40	0.57		
Station 6					Lat (N): 40 26.4		Long (W): 73 57.0			GMT: 19.3				Date: 11/4/74				
1	30.80	5.08	85	7.97	200	250	350	5.0	9.5	3.9	0.48	30	0.35	2.45	1.64	0.55		
9	31.15	4.83	80	7.96	170	200	330	6.7	1.1	5.9	0.46	61	0.59	4.85	4.50	0.99		
Station 7					Lat (N): 40 26.9		Long (W): 73 53.0			GMT: 16.5				Date: 11/4/74				
1	31.66	-	-	8.11	680	110	570	2.3	0.89	2.8	0.17	23	0.22	1.43	<0.40	0.51		
10	32.12	-	-	8.10	160	110	290	13	1.3	2.8	0.23	47	0.11	1.79	<0.40	0.27		
18	32.31	-	-	8.01	140	40	240	5.9	2.6	2.1	0.20	15	0.24	0.45	1.41	0.53		
Station 7					Lat (N): 40 26.9		Long (W): 73 53.0			GMT: 20.8				Date: 11/6/74				
1	31.04	3.61	61	8.29	380	480	490	4.3	2.7	2.1	0.17	61	0.08	<0.10	<0.40	0.42		
10	32.62	5.60	95	8.18	50	120	100	3.3	1.2	2.1	0.17	16	0.17	1.30	1.31	0.58		
20	32.64	5.15	87	8.11	150	50	180	7.6	3.6	1.4	0.09	24	0.23	2.05	2.59	0.80		

Table I.7. Water chemistry characterization cruise WCC 12 data (cont.).

Depth (m)	Salinity (‰)	O <sub>2</sub> (mL/L)	%O <sub>2</sub>	pH	Particulate _ organics (µg/L) _			Dissolved trace metals (µg/L)					Dissolved nutrients (µg-at/L)				
					PCH	PPRO	POC	Fe	Mn	Cu	Cd	Zn	NO <sub>2</sub> <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SiO <sub>3</sub> <sup>-2</sup>	PO <sub>4</sub> <sup>+3</sup>	
Station 8					Lat (N): 40 27.3		Long (W): 73 47.8			GMT: 15.1			Date: 11/4/74				
1	31.78	2.83	48	8.09	90	320	400	4.3	1.7	1.4	0.58	21	0.20	0.91	0.59	0.48	
10	32.42	2.90	49	8.09	60	150	160	9.1	0.73	3.5	0.75	32	0.11	<0.10	<0.40	0.27	
20	32.60	2.81	48	8.08	50	120	100	6.0	1.0	1.4	0.19	23	0.20	<0.10	<0.40	0.40	
28	32.74	1.81	30	7.93	140	70	290	10	9.2	3.5	1.8	56	0.36	2.72	6.37	0.79	
Station 9					Lat (N): 40 28.2		Long (W): 73 39.7			GMT: 14.2			Date: 11/7/74				
1	31.82	5.91	100	8.34	190	300	370	4.3	0.85	2.1	2.8	36	0.15	0.76	<0.40	0.68	
10	32.19	4.79	81	8.21	110	70	170	13	58	6.0	0.28	33	0.18	0.99	<0.40	0.54	
21	32.46	2.63	44	8.10	100	90	140	8.3	5.6	1.8	0.25	39	0.15	3.33	4.55	0.82	
Station 10					Lat (N): 40 29.2		Long (W): 73 31.6			GMT: 16.1			Date: 11/6/74				
1	31.82	5.92	100	8.19	270	420	360	6.3	0.52	2.3	0.55	57	0.19	1.06	0.82	0.55	
10	31.85	5.56	94	8.22	200	220	260	7.8	0.76	3.0	0.14	25	0.19	0.95	0.90	0.52	
20	32.30	4.52	76	8.12	130	20	170	6.1	2.6	2.7	0.11	29	0.19	1.66	2.78	0.16	
Station 11					Lat (N): 40 22.2		Long (W): 73 56.8			GMT: 18.5			Date: 11/4/74				
1	28.75	2.68	45	7.98	350	460	-	9.3	22	4.6	0.54	38	0.73	5.35	2.52	1.20	
13	32.09	2.02	34	7.92	110	170	340	5.9	5.6	1.3	0.25	18	0.24	2.88	2.93	0.61	

Table I.7. Water chemistry characterization cruise WCC 12 data (cont.).

Depth (m)	Salinity (‰)	O <sub>2</sub> (mL/L)	%O <sub>2</sub>	pH	Particulate _ organics (µg/L) _			Dissolved trace metals (µg/L)					Dissolved nutrients (µg-at/L)			
					PCH	PPRO	POC	Fe	Mn	Cu	Cd	Zn	NO <sub>2</sub> <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SiO <sub>3</sub> <sup>-2</sup>	PO <sub>4</sub> <sup>+3</sup>
Station 12		Lat (N): 40 22.7			Long (W): 73 52.3			GMT: 17.5					Date: 11/4/74			
1	29.36	2.41	40	7.94	260	380	530	10	18	2.8	0.99	23	0.77	5.55	3.89	1.18
10	32.49	4.63	82	8.03	80	130	130	9.1	1.2	0.85	0.40	27	0.20	0.36	0.59	0.33
20	32.60	1.47	24	7.86	150	110	360	13	16	1.9	0.19	71	3.19	1.21	5.31	0.74
25	32.65	1.42	23	7.84	210	140	-	7.4	21	1.9	0.30	40	3.20	0.09	4.88	1.06
Station 13		Lat (N): 40 23.3			Long (W): 73 47.0			GMT: 16.0					Date: 11/7/74			
1	31.71	3.80	64	8.09	290	410	650	10	2.9	3.6	0.45	25	0.31	0.88	<0.40	0.94
10	32.36	1.54	26	8.07	50	110	200	7.5	2.1	3.6	0.24	33	0.21	1.05	1.66	0.59
20	32.60	4.23	71	8.04	-	120	130	7.6	2.9	7.3	0.19	40	0.21	1.52	3.50	0.74
30	32.75	2.50	41	-	30	130	130	19	11	2.7	0.09	57	0.45	5.76	11.51	1.04
36	32.87	2.91	47	7.93	80	110	130	21	14	1.8	0.64	30	0.43	6.07	12.42	1.04
Station 14		Lat (N): 40 24.3			Long (W): 73 38.8			GMT: 15.0					Date: 11/7/74			
1	31.83	3.64	61	7.97	230	140	330	7.5	2.2	0.85	1.2	27	0.23	0.76	<0.40	0.47
10	31.85	4.56	77	7.84	200	300	310	41	2.8	4.6	0.17	37	0.23	0.83	0.46	0.54
24	32.28	4.63	78	7.13	140	110	170	-	-	-	-	-	0.17	1.14	1.66	0.57
Station 15		Lat (N): 40 25.2			Long (W): 73 30.4			GMT: 17.0					Date: 11/6/74			
1	31.87	5.93	100	8.13	230	220	350	4.7	1.5	2.7	0.33	16	0.17	0.68	0.64	0.55
10	31.88	5.90	100	8.12	120	230	250	7.0	1.9	2.7	0.76	26	0.14	0.71	0.95	0.55
20	32.41	4.29	72	8.01	110	40	120	5.5	4.8	2.7	1.1	22	0.18	1.86	3.24	0.74
24	32.40	4.36	73	8.00	80	<10	130	9.4	5.0	2.7	0.24	41	0.21	2.84	4.66	0.82



Table I.7. Water chemistry characterization cruise WCC 12 data (cont.).

Depth (m)	Salinity (‰)	O <sub>2</sub> (mL/L)	%O <sub>2</sub>	pH	Particulate _ organics (µg/L) _			Dissolved trace metals (µg/L)					Dissolved nutrients (µg-at/L)			
					PCH	PPRO	POC	Fe	Mn	Cu	Cd	Zn	NO <sub>2</sub> <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SiO <sub>3</sub> <sup>-2</sup>	PO <sub>4</sub> <sup>+3</sup>
Station 16		Lat (N): 40 18.1			Long (W): 73 56.5			GMT: 14.5					Date: 11/5/74			
1	30.10	5.87	98	8.12	130	400	400	9.1	11	3.3	0.84	60	0.51	3.74	1.11	0.79
10	31.96	4.72	79	8.10	70	60	160	7.0	9.7	3.9	0.64	74	0.20	1.24	1.07	0.47
15	32.40	3.63	61	8.07	50	150	300	1.6	6.4	3.9	0.29	83	0.30	1.28	7.11	1.10
Station 17		Lat (N): 40 18.5			Long (W): 73 51.9			GMT: 17.8					Date: 11/7/74			
1	31.86	4.84	82	8.06	240	740	340	9.1	2.4	13	0.64	58	0.31	1.42	1.13	0.62
10	32.04	5.56	94	8.15	130	200	260	11	3.?	6.3	0.52	84	0.27	0.83	0.55	0.49
19	31.94	3.90	66	8.11	30	140	130	4.3	5.4	3.9	0.43	22	0.33	0.89	2.29	0.59
24	32.65	3.72	63	8.10	50	110	140	8.0	8.9	3.2	0.64	47	0.31	0.97	2.73	0.56
Station 18		Lat (N): 40 19.2			Long (W): 73 46.5			GMT: 17.0					Date: 11/7/74			
1	51.93	4.39	74	8.09	180	210	310	6.1	2.1	8.3	0.17	36	0.27	0.33	<0.40	0.42
10	31.96	1.84	31	8.08	210	240	380	12	3.6	5.5	0.74	48	0.19	0.34	<0.40	0.36
20	32.55	4.37	74	8.07	40	110	120	49	2.3	6.3	0.25	35	0.22	0.65	0.72	0.48
32	32.87	2.43	40	7.92	110	130	170	15	9.9	13	0.35	60	0.25	4.48	9.46	0.82

Table I.7. Water chemistry characterization cruise WCC 12 data (cont.).

Depth (m)	Salinity (‰)	O <sub>2</sub> (mL/L)	%O <sub>2</sub>	pH	Particulate organics (µg/L)			Dissolved trace metals (µg/L)					Dissolved nutrients (µg-at/L)			
					PCH	PPRO	POC	Fe	Mn	Cu	Cd	Zn	NO <sub>2</sub> <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SiO <sub>3</sub> <sup>-2</sup>	PO <sub>4</sub> <sup>+3</sup>
Station 19		Lat (N): 40 20.1			Long (W): 73 37.8			GMT: 18.9					Date: 11/6/74			
1	31.81	5.83	99	8.19	400	440	410	5.9	1.5	1.5	0.76	17	0.17	0.48	<0.40	0.49
4	31.83	3.98	67	8.16	260	180	330	4.6	1.2	1.5	0.49	15	0.18	0.52	<0.40	0.49
8	31.92	5.49	93	8.16	160	150	229	4.6	0.55	4.6	0.67	26	0.13	0.56	<0.40	0.45
12	32.00	5.41	91	8.15	100	120	210	4.6	1.7	6.8	0.25	9.0	0.24	1.20	1.66	0.60
16	32.38	4.91	83	8.13	90	40	170	6.4	1.0	1.5	0.14	30	0.22	0.99	1.26	0.65
21	32.40	-	-	8.12	100	40	120	5.9	1.3	2.7	0.09	28	0.32	1.34	2.66	0.74
26	32.42	4.80	81	8.12	130	40	170	8.3	1.3	11	0.69	33	0.46	2.22	4.27	0.91
Station 20		Lat (N): 40 21.1			Long (W): 73 29.4			GMT: 17.8					Date: 11/6/74			
1	31.90	5.29	100	8.13	190	POO	300	1.6	2.0	1.8	0.25	15	0.20	0.88	1.66	0.71
10	33.92	5.89	100	8.10	100	100	280	11	0.82	1.5	1.8	13	0.13	0.30	<0.40	0.50
20	32.50	3.14	53	7.97	60	10	100	6.6	3.9	3.8	0.48	39	0.18	3.10	5.19	0.81
25	32.61	2.90	1.9	7.93	110	10	150	5.9	5.8	2.3	0.71	19	0.10	2.39	4.24	0.86
Station 21		Lat (N): 40 13.5			Long (W): 73 56.2			GMT: 15.4					Date: 11/5/74			
1	29.01	5.70	94	8.05	230	600	380	9.0	9.9	3.3	0.11	41	0.77	0.13	3.31	1.05
10	32.16	5.80	98	8.19	70	170	160	1.5	1.2	1.9	0.55	12	0.21	<0.10	0.51	0.32
18	32.41	4.18	71	8.08	100	t30	210	4.1	6.3	1.3	0.20	14	0.22	0.25	<0.40	0.63

Table I.7. Water chemistry characterization cruise WCC 12 data (cont.).

Depth (m)	Salinity ( $^{\circ}$ /oo)	O <sub>2</sub> (mL/L)	%O <sub>2</sub>	pH	Particulate _ organics ( $\mu$ g/L) _			Dissolved trace metals ( $\mu$ g/L)					Dissolved nutrients ( $\mu$ g-at/L)			
					PCH	PPRO	POC	Fe	Mn	Cu	Cd	Zn	NO <sub>2</sub> <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SiO <sub>3</sub> <sup>-2</sup>	PO <sub>4</sub> <sup>+3</sup>
Station 22		Lat (N): 40 14.1			Long (W): 73 51.2			GMT: 16.4					Date: 11/5/74			
1	29.82	5.70	95	8.10	240	530	410	5.4	14	1.9	0.25	15	0.57	4.32	1.12	0.84
10	32.13	2.32	48	8.07	80	40	150	26	1.5	2.6	0.84	20	0.20	0.42	<0.40	0.45
23	32.78	3.51	58	7.98	60	90	130	9.6	6.8	0.96	0.30	19	0.28	2.85	5.01	0.57
Station 23		Lat (N): 40 14.8			Long (W): 73 45.7			GMT: 17.5					Date: 11/5/74			
1	30.04	5.73	95	8.11	240	480	490	7.3	10	0.96	0.28	25	0.68	4.64	2.09	1.02
10	32.87	2.92	50	7.87	80	620	90	3.9	9.0	0.96	0.25	12	0.30	4.54	8.05	0.92
20	32.68	5.11	98	7.86	20	120	80	7.3	4.2	1.9	0.19	28	0.33	<0.10	1.29	0.50
35	32.17	5.53	89	8.17	80	590	190	63	1.7	1.9	0.43	46	0.27	0.67	1.08	0.49
45	32.85	2.69	43	7.82	90	120	110	13	8.2	1.9	0.71	26	0.39	6.51	11.77	0.58
Station 24		Lat (N): 40 15.8			Long (W): 73 37.1			GMT: 19.0					Date: 11/5/74			
1	32.56	5.95	102	8.19	100	700	180	8.1	0.62	0.96	0.28	65	<0.01	0.21	<0.40	0.42
10	32.61	5.88	101	8.19	<5	<10	180	12	0.57	0.96	0.29	26	0.03	0.27	<0.40	0.39
20	32.82	5.32	90	8.14	80	150	130	11	2.1	1.9	0.19	22	0.10	0.53	0.68	0.40
25	32.84	5.23	88	8.14	140	200	140	9.0	2.2	1.9	0.23	42	0.15	1.15	1.06	0.50

Table I.7. Water chemistry characterization cruise WCC 12 data (cont.).

Depth (m)	Salinity ( $^{\circ}/\text{oo}$ )	O <sub>2</sub> (mL/L)	%O <sub>2</sub>	pH	Particulate _ organics ( $\mu\text{g/L}$ ) _			Dissolved trace metals ( $\mu\text{g/L}$ )					Dissolved nutrients ( $\mu\text{g-at/L}$ )			
					PCH	PPRO	POC	Fe	Mn	Cu	Cd	Zn	NO <sub>2</sub> <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SiO <sub>3</sub> <sup>-2</sup>	PO <sub>4</sub> <sup>+3</sup>
Station 25		Lat (N): 40 16.9			Long (W): 73 28.4			GMT: 20.2					Date: 11/5/74			
1	32.03	4.70	80	8.16	170	110	320	10	1.2	1.9	0.33	25	0.09	0.14	<0.40	0.41
10	32.29	5.22	89	8.13	80	180	-	7.7	1.0	1.9	0.28	49	0.21	1.04	1.07	0.59
20	32.04	5.92	100	8.21	110	240	230	8.1	1.2	2.9	0.23	33	0.20	1.56	1.38	0.62
24	32.80	3.64	61	8.03	120	120	111	7.0	4.8	2.4	0.35	28	0.22	1.25	4.86	0.79
Station 26		Lat (N): 40 29.1			Long (W): 73 59.5			GMT: 20.3					Date: 11/4/74			
1	27.22	2.94	48	7.73	150	250	440	7.1	49	3.3	0.46	62	1.03	6.73	3.99	1.86
10	27.23	4.24	69	7.75	140	260	410	7.9	50	3.9	0.81	45	0.88	5.94	3.16	1.11