Semi-annual water column monitoring report

August – December 1998

Massachusetts Water Resources Authority

Environmental Quality Department
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Semi-Annual Water Column Monitoring Report
August – December 1998

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EXECUTIVE SUMMARY

The Massachusetts Water Resources Authority (MWRA) has collected water quality data in Massachusetts and Cape Cod Bays for the Harbor and Outfall Monitoring (HOM) Program since 1992. This monitoring is in support of the HOM Program mission to assess the potential environmental effects of the relocation of effluent discharge from Boston Harbor to Massachusetts Bay. The data are being collected to establish baseline water quality conditions and ultimately to provide the means to detect significant departure from that baseline. The surveys have been designed to evaluate water quality on both a high-frequency basis for a limited area in the vicinity of the outfall site (nearfield surveys) and a low-frequency basis over an extended area throughout Boston Harbor, Massachusetts Bay, and Cape Cod Bay (farfield). This semi-annual report summarizes water column monitoring results for the eight surveys conducted from August through December 1998.

The summer/fall time period is usually characterized by the overturn of the stratified water column and the return to winter physical, chemical, and biological conditions. In 1998, the breakdown of stratification was delayed. Regionally, seasonal stratification had deteriorated at the coastal stations and had begun to weaken at the offshore stations by the October survey (WF98E). The nearfield survey data indicated the pycnocline broke down in the eastern nearfield by October (WF98E), but the water column at the outer nearfield stations was not mixed until late November (WN98G). In fact, a deep halocline persisted into December at the eastern nearfield and deep offshore stations. Due to the persistence of stratified conditions, bottom water DO concentrations decreased over the entire August to December time period in the nearfield area. The delay in mixing, combined with a pulse of organic material from an atypical winter phytoplankton bloom, led to the annual minimum in bottom water DO concentration (7 mg L^{-1}) observed in December. The high initial bottom water DO concentration that was observed in June (11.2 mg L^{-1}) lessened the effect of the delay in returning to well-mixed winter conditions.

Upwelling events in August brought cooler, more saline and nutrient replete waters into the surface layer at coastal and western nearfield stations. The upwelled and harbor supplied nutrients supported the abundant phytoplankton assemblage that was observed in the nearfield area during the August survey (WF98B). Areal production measured in August was generally low at nearfield stations N04 and N18 (200-500 mg C m^{-3} d^{-1}), but achieved an annual peak at harbor station F23 (750 mg C m^{-3} d^{-1}). High chlorophyll values, however, were measured across the region during the August survey (WF98B) and were coincident with the high phytoplankton abundance.

Chlorophyll, productivity and phytoplankton data indicate that a fall bloom occurred over a one to two month period including the late September to October surveys. The bloom initiated in the shallow western portion of the nearfield and progressed offshore. In late September (WN98D), high chlorophyll concentrations were observed nearshore and they decreased to the east. Concurrent production and phytoplankton abundance data also exhibited an inshore to offshore decrease across the nearfield. By the October survey (WF98E), high chlorophyll concentrations were observed throughout nearfield area and peaks in annual production were measured at stations N04 and N18. Phytoplankton abundance was also high at each of the nearfield stations in October. Carbon-specific respiration and POC data suggest that the October survey was conducted near the conclusion of the fall bloom.

In November and December, anomalously high concentrations of ammonium and phosphate were observed in Boston Harbor and the western nearfield. The source of these nutrients was not determined, but may have been due to the transfer of south system sewage flows from Nut Island to the Deer Island facility, an ecological change in biological utilization of nutrients in the Harbor or other factors. The anomalously high NH_4 and PO_4 concentrations may have contributed to a bloom in chlorophyll and phytoplankton in the nearfield that was observed December. A concurrent bloom in chlorophyll was observed in Cape Cod Bay and throughout much of the western Gulf of Maine, but due to the lack of phytoplankton data in the farfield it is unclear if the nearfield phytoplankton bloom was part of a regional or a localized phenomena.

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[Note: These appendices are not available on-line. To obtain a printed copy, please call the Environmental Quality Department at (617) 788-4700.]

1.0 INTRODUCTION

1.1 Program Overview

The Massachusetts Water Resources Authority (MWRA) has implemented a long-term Harbor and Outfall Monitoring (HOM) Program for Massachusetts and Cape Cod Bays. The objectives of the HOM Program are to (1) test for compliance with NPDES permit requirements; (2) test whether the impact of the discharge on the environment is within the bounds projected by the SEIS; and (3) test whether change within the system exceeds the Contingency Plan thresholds. A detailed description of the monitoring and its rationale is provided in the Effluent Outfall Monitoring Plan developed for the baseline period and the post discharge monitoring plan (MWRA, 1997a).

To help establish the present water quality conditions with respect to nutrients, water properties, phytoplankton and zooplankton, and water-column respiration and productivity, the MWRA conducts baseline water quality surveys in Massachusetts and Cape Cod Bays. The surveys have been designed to evaluate water quality on both a high-frequency basis for a limited area (nearfield) and a low-frequency basis for an extended area (farfield). The nearfield stations are located in the vicinity of the outfall site (Figure 1-1) and the farfield stations are located throughout Boston Harbor, Massachusetts Bay, and Cape Cod Bay (Figure 1-2). The stations for the farfield surveys have been further separated into regional groupings according to geographic location to simplify regional data comparisons. This semi-annual report summarizes water column monitoring results for the eight surveys conducted from August through December 1998 (Table 1-1).

Table 1-1. Water Quality Surveys for WN98A-WN98H August to December 1998.

Survey #	Type of Survey	Survey Dates
WN98A	Nearfield	August 7
WF98B	Farfield/Nearfield	August 18 – 25
WN98C	Nearfield	September 3
WN98D	Nearfield	September 24
WF98E	Farfield/Nearfield	October 5 – 16
WN98F	Nearfield	November 4
WN98G	Nearfield	November 25
WN98H	Nearfield	December 16

Initial data summaries, along with specific field information, are available in individual survey reports submitted immediately following each survey. In addition, nutrient data reports (including calibration information, sensor and water chemistry data), plankton data reports, and productivity and respiration data reports are each submitted five times annually. Raw data summarized within this or any of the other reports are available from MWRA in hard copy and electronic formats.

1.2 Organization of the Semi-Annual Report

The scope of the semi-annual report is focused primarily towards providing an initial compilation of the water column data collected during the reporting period. Secondarily, integrated physical and biological results are discussed for key water column events. The report first provides a summary of the survey and laboratory methods (Section 2). The bulk of the report, as discussed in further detail below, presents results of water column data from the last eight surveys of 1998 (Sections 3-5). Finally, the major findings of the semi-annual period are summarized in Section 6.

Section 3 data are provided in data summary tables. The summary tables include the major numeric results of water column surveys in the semi-annual period by survey. A description of data selection, integration information, and summary statistics are included with that section.

Sections 4 (Results of Water Column Measurements) and 5 (Productivity, Respiration, and Plankton Results) include preliminary interpretation of the data including selected graphic representations of the horizontal and vertical distribution of water column parameters in both the farfield and nearfield. The horizontal distribution of physical parameters is presented through regional contour plots. The vertical distribution of water column parameters is presented using time-series plots of averaged surface and bottom water column parameters and along vertical transects in the survey area (Figure 1-3). The time-series plots utilize average values of the surface water sample (the "A" depth, as described in Section 3), and the bottom water collection depth (the "E" depth). Examining data trends along four farfield transects (Boston-Nearfield, Cohassett, Marshfield and Nearfield-Marshfield), and one nearfield transect, allows three-dimensional analysis of water column conditions during each survey. One offshore transect (Boundary) enables analysis of results in the outer most boundary of the survey area during farfield surveys.

Results of water column physical, nutrient, chlorophyll, and dissolved oxygen data, are provided in Section 4. Survey results were organized according to the physical characteristics of the water column during the semi-annual period. The timing of water column vertical stratification, and the physical and biological status of the water column during stratification, significantly affects the temporal response of the water quality parameters which provide a major focus for assessing effects of the outfall. This report describes the horizontal and vertical characterization of the water column during the summer stratification period (WN98A – WN98D) and the subsequent deterioration of stratification and return to winter conditions in the nearshore-nearfield, coastal, and harbor stations (WF98E – WN98H). Time-series data are commonly provided for the entire semi-annual period for clarity and context of the data presentation.

Productivity, respiration, and plankton measurements, along with corresponding discussion of chlorophyll and dissolved oxygen results, are provided in Section 5. Discussion of the biological processes and trends during the semi-annual period is included in this section. A summary of the major water column events and unusual features of the semi-annual period is presented in Section 6. References are provided in Section 7.

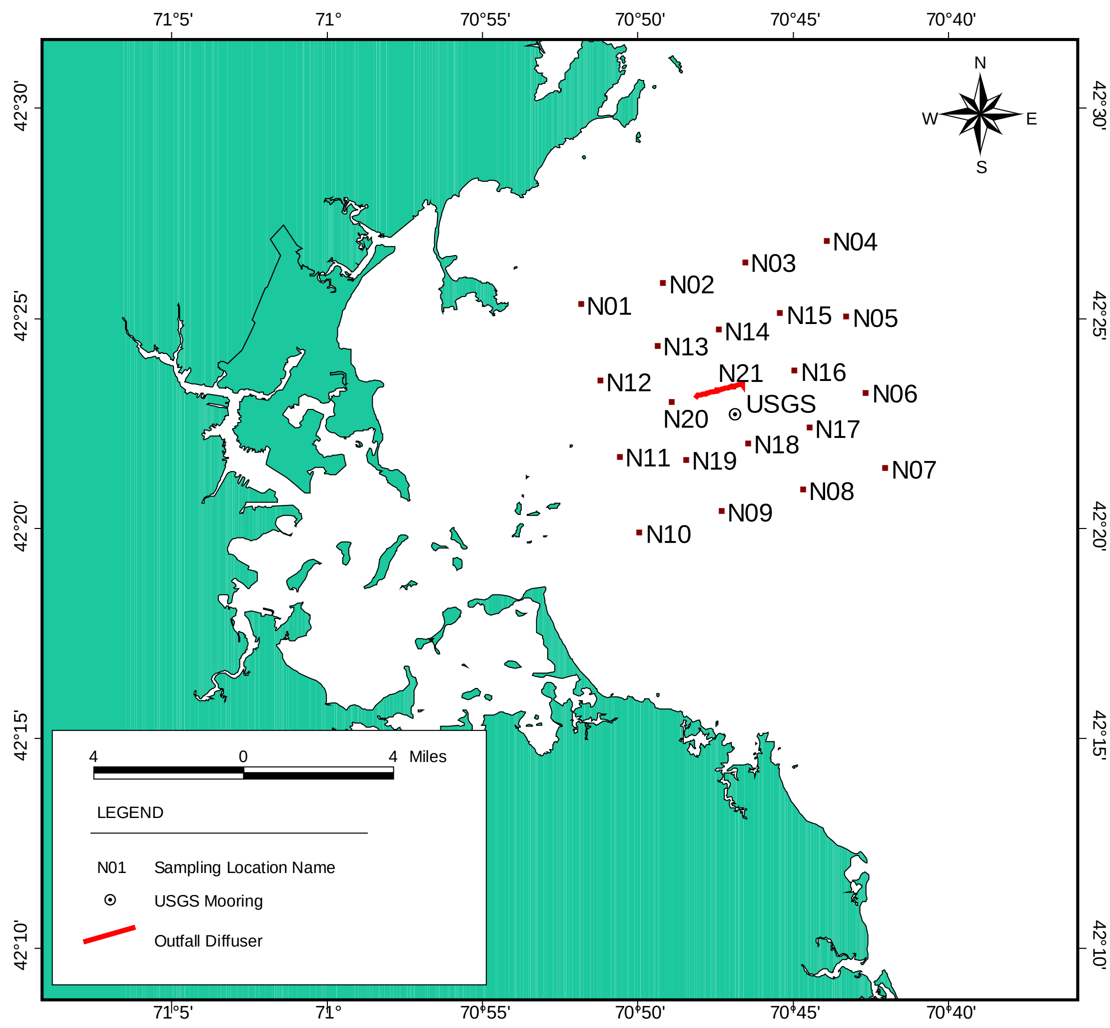


Figure 1-1. Locations of MWRA Offshore Outfall, Nearfield Stations and USGS Mooring.

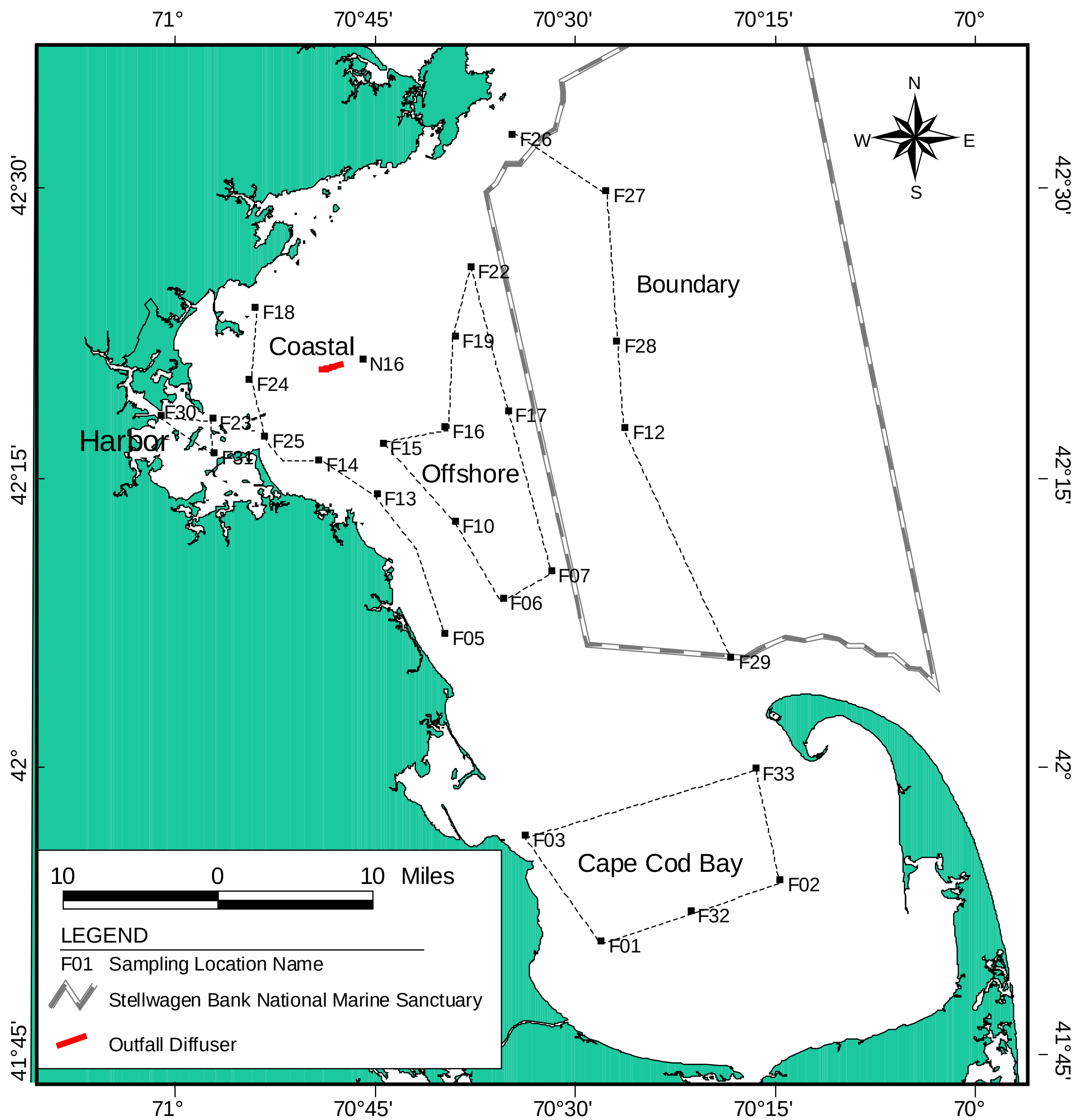


Figure 1-2. Locations of Farfield Stations.

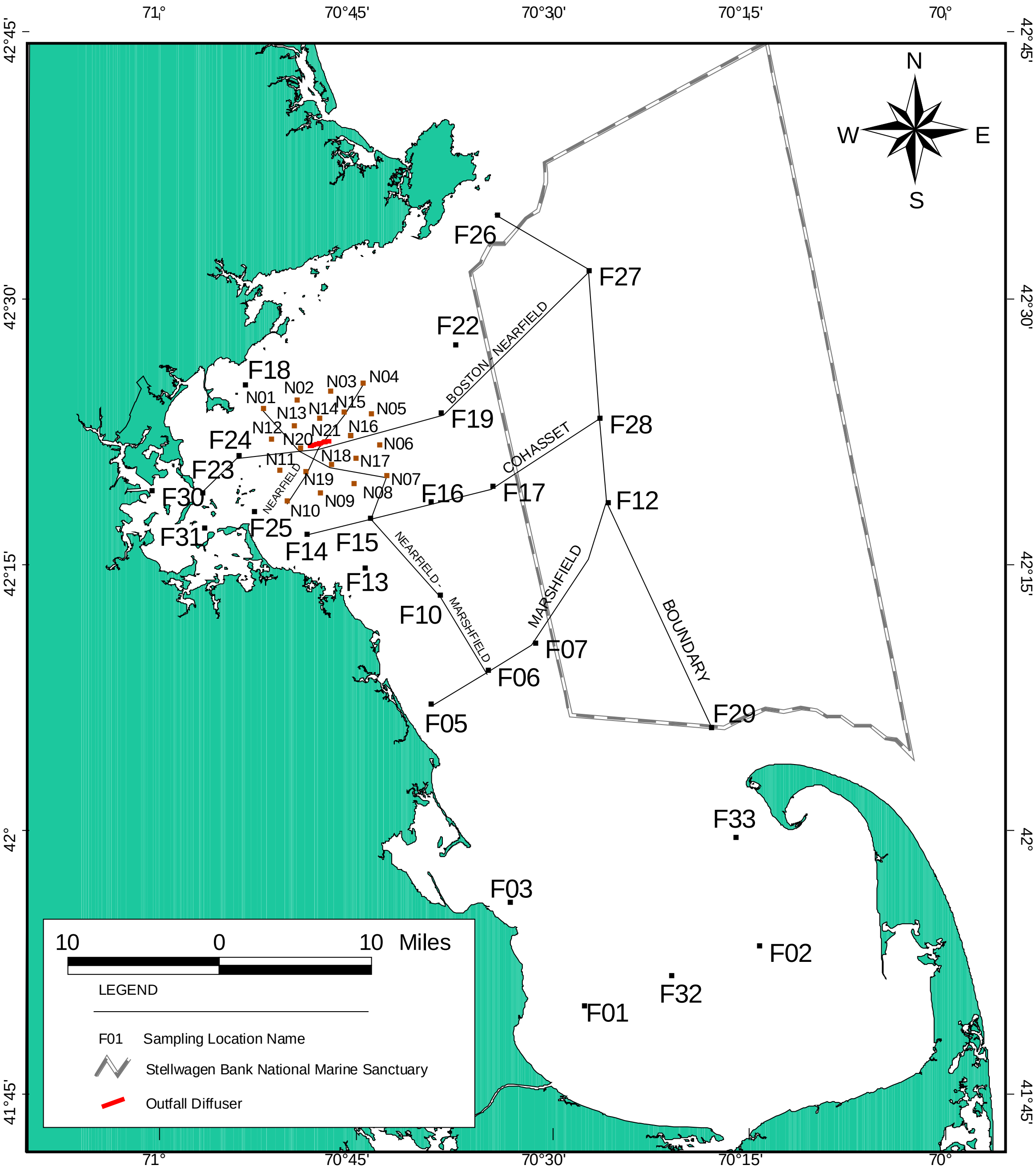


Figure 1-3. Location of Stations Selected for Vertical Transect Graphics Showing Transect Name.

2.0 METHODS

This section describes general methods of data collection and sampling for the last eight water column monitoring surveys of 1998. Section 2.1 describes data collection methods, including survey dates, sampling platforms, and analyses performed. Section 2.2 describes the sampling schema undertaken, and Section 2.3 details specific operations for the second 1998 semi-annual period. Specific details of field sampling and analytical procedures, laboratory sample processing and analysis, sample handling and custody, calibration and preventative maintenance, documentation, data evaluation, and data quality procedures are discussed in the Water Quality Monitoring CW/QAPP (Albro *et al*., 1998). Details on productivity sampling procedures and analytical methods are also available in Appendix A.

2.1 Data Collection

The farfield and nearfield water quality surveys for 1998 represent a continuation of the baseline water quality monitoring conducted from 1992 – 1997. The monitoring program has been improved over the years as more data have been collected and evaluated.

Water quality data for this report were collected from the sampling platform *R/V Aquamonitor*. Continuous vertical profiles of the water column and discrete water samples were collected using a CTD/Go-Flo Bottle Rosette system. This system includes a deck unit to control the system, display *in situ* data, and store the data, and an underwater unit comprised of several environmental sensors, including conductivity, temperature, depth, dissolved oxygen, transmissometry, irradiance, and fluorescence. These measurements were obtained at each station by deploying the CTD; in general, one cast was made at each station. Water column profile data were collected during the downcast, and water samples were collected during the upcast by closing the Go-Flo bottles at selected depths, as discussed below.

Water samples were collected at five depths at each station, except at stations F30, F31, F32, and F33. Stations F30 and F31 are shallow and require only three depths while only zooplankton samples are collected at F32 and F33. These depths were selected during CTD deployment based on positions relative to the pycnocline or subsurface chlorophyll maximum. The bottom depth (within 5 meters of the sea floor) and the surface depth (within 3 meters of the water surface) of each cast remained constant and the mid-bottom, middle and mid-surface depths were selected to represent any variability in the water column. In general, the selected middle depth corresponded with the chlorophyll maximum and or pycnocline. When the chlorophyll maximum occurred significantly below or above the middle depth, the mid-bottom or mid-surface sampling event was substituted with the mid-depth sampling event and the “mid-depth” sample was collected within the maximum. In essence, the “mid-depth” sample in these instances was not collected from the middle depth, but shallower or deeper in the water column in order to capture the chlorophyll maximum layer. These nomenclature semantics result from a combination of field logistics and scientific relevance. In the field, the switching of the “mid-depth” sample with the mid-surface or mid-bottom was transparent to everyone except the NAVSAM operator who observed the subsurface chlorophyll structure and marked the events. The samples were processed in a consistent manner and a more comprehensive set of analyses were conducted for the surface, mid-depth/chlorophyll maximum, and bottom samples.

Samples from each depth at each station were collected by subsampling from the Go-Flo bottles into the appropriate sample container. Analyses performed on the water samples are summarized in Table 2-1. Samples for dissolved inorganic nutrients (DIN), dissolved organic carbon (DOC), total dissolved nitrogen (TDN) and phosphorus (TDP), particulate organic carbon (POC) and nitrogen (PON), biogenic silica, particulate phosphorus (PP), chlorophyll *a* and phaeopigments, total suspended solids (TSS), urea, and phytoplankton (screened and rapid assessment) were filtered and preserved immediately after obtaining water from the appropriate Go-Flo bottles. Whole water phytoplankton samples (unfiltered) were obtained directly from the Go-Flo bottles and immediately preserved. Zooplankton samples were obtained by deploying a zooplankton net overboard and making an oblique tow of the upper two-thirds of the water column but with a maximum tow depth of 30 meters. Productivity samples were collected at the five depths from the Go-Flo bottles, stored on ice and transferred to University of Rhode Island (URI) employees. Incubations were started no more that six hours after initial water collection at URI's laboratory. Respiration samples were collected from the Go-Flo bottles at four stations (F19, F23, N04, and N18). Incubation of the dark bottles was started within 30 minutes of sample collection. The dark bottle samples were maintained at a temperature within 2°C of the collection temperature for five to nine days.

2.2 Sampling Schema

A synopsis of the sampling schema for the analyses described above is outlined in Tables 2-1, 2-2, and 2-3. Station designations were assigned according to the type of analyses performed at that station (see Table 2-1). Productivity and respiration analyses were also conducted at certain stations and represented by the letters P and R, respectively. Table 2-1 lists the different analyses performed at each station. Tables 2-2 (nearfield stations) and 2-3 (farfield stations) provide the station name and type, and show the analyses performed at each depth. Station N16 is considered both a nearfield station (where it is designated as type A) and a farfield station (where it is designated a type D). Stations F32 and F33 are occupied during the first three farfield surveys of each year and collect zooplankton samples and hydrocast data only (designated a type Z).

Table 2-1. Station Types and Numbers (Five Depths Collected Unless Otherwise Noted).

Station Type	**A**	**D**	**E**	**F**	**G[1]**	**P**	**R**	**Z**
Number of Stations	**5**	**8**	**26**	**3**	**2**	**3**	**4**	**2**
Analysis Type								
Dissolved inorganic nutrients (NH_4, NO_3, NO_2, PO_4, and SiO_4)	●	●	●	●	●	●		
Other nutrients (DOC, TDN, TDP, PC, PN, PP, Biogenic Si)[1]	●	●			●	●		
Chlorophyll [1]	●	●			●	●		
Total suspended solids [1]	●	●			●	●		
Dissolved oxygen	●	●		●	●	●		
Phytoplankton, urea [2]		●			●	●		
Zooplankton[3]		●			●	●		●
Respiration [1]						●	●	
Productivity, DIN						●		

[1]Samples collected at three depths (bottom, mid-depth, and surface)
[2]Samples collected at two depths (mid-depth and surface)
[3]Samples collected by oblique tow

2.3 Operations Summary

Field operations for water column sampling and analysis during the second semi-annual period were conducted as described above. Principal deviations from the CW/QAPP plan for each survey and the sampling schema are described below. For additional information about a specific survey, the individual survey reports may be consulted.

Deviations from the CW/QAPP for nearfield surveys WN98A, WN98C, WN98F, WN98G, and WN98H and farfield/nearfield survey WF98E had no effect on the data. During farfield/nearfield survey WF98B, station F23 and 7 Nearfield stations were collected on August 24 while the remaining 14 Nearfield stations were collected on August 25. One deviation from the CW/QAPP occurred during WN98D. Due to problems with the DO titrator, DO titrations were conducted at a land-based laboratory the day after the survey. The problems resulted in all of the samples being titrated 1 to 4 hours beyond the 24-hour holding time limit.

Table 2-2. Nearfield Water Column Sampling Plan (3 Pages).

Nearfield Water Column Sampling Plan																						
Station ID	Depth (m)	Station Type	Depths	Total Volume at Depth (L)	Number of 9-L GoFlos	Dissolved Inorganic Nutrients	Dissolved Organic Carbon	Total Dissolved Nitrogen and Phosphorous	Particulate Organic Carbon and Nitrogen	Particulate Phosphorous	Biogenic silica	Chlorophyll a	Total Suspended Solids	Dissolved Oxygen	Rapid Analysis Phytoplankton	Whole Water Phytoplankton	Screened Water Phytoplankton	Zooplankton	Urea	Respiration	Photosynthesis by carbon-14	Dissolved Inorganic Carbon
			Protocol Code			IN	OC	NP	PC	PP	BS	CH	TS	DO	RP	WW	SW	ZO	UR	RE	AP	IC
			Volume (L)			1	0.1	0.1	1	0.6	0.3	0.5	1	1	4	1	4	1	0.1	1	1	1
			1_Bottom	8.5	2	1	1	1	2	2	2	1	2	1								
			2_Mid-Bottom	2.5	1	1						1		1								
N01	30	A	3_Mid-Depth	10	2	2	1	1	2	2	2	2	2	1								
			4_Mid-Surface	2.5	1	1						1		1								
			5_Surface	8.5	2	1	1	1	2	2	2	1	2	1								
			1_Bottom	1	1	1																
			2_Mid-Bottom	1	1	1																
N02	40	E	3_Mid-Depth	1	1	1																
			4_Mid-Surface	1	1	1																
			5_Surface	1	1	1																
			1_Bottom	1	1	1																
			2_Mid-Bottom	1	1	1																
N03	44	E	3_Mid-Depth	1	1	1																
			4_Mid-Surface	1	1	1																
			5_Surface	1	1	1																
			1_Bottom	15.5	2	1	1	1	2	2	2	1	2							6	1	1
			2_Mid-Bottom	4.5	1	1						1		1							1	1
N04	50	D+	3_Mid-Depth	22.1	2	2	1	1	2	2	2	2	2			1	1		1	6	1	1
		R+	4_Mid-Surface	4.5	1	1						1		1							1	1
		P	5_Surface	20.6	2	1	1	1	2	2	2	1	2			1	1		1	6	1	1
			6_Net Tow															1				
			1_Bottom	1	1	1																
			2_Mid-Bottom	1	1	1																
N05	55	E	3_Mid-Depth	1	1	1																
			4_Mid-Surface	1	1	1																
			5_Surface	1	1	1																
			1_Bottom	1	1	1																
			2_Mid-Bottom	1	1	1																
N06	52	E	3_Mid-Depth	1	1	1																
			4_Mid-Surface	1	1	1																
			5_Surface	1	1	1																
			1_Bottom	10.5	2	1	1	1	2	2	2	1	2	3								
			2_Mid-Bottom	2.5	1	1						1		1								
N07	52	A	3_Mid-Depth	10	2	2	1	1	2	2	2	2	2	1								
			4_Mid-Surface	2.5	1	1						1		1								
			5_Surface	10.5	2	1	1	1	2	2	2	1	2	3								
			1_Bottom	1	1	1																
			2_Mid-Bottom	1	1	1																
N08	35	E	3_Mid-Depth	1	1	1																
			4_Mid-Surface	1	1	1																
			5_Surface	1	1	1																

Nearfield Water Column Sampling Plan

Station ID	Depth (m)	Station Type	Depths	Total Volume at Depth (L)	Number of 9-L GoFlos	Dissolved Inorganic Nutrients	Dissolved Organic Carbon	Total Dissolved Nitrogen and Phosphorous	Particulate Organic Carbon and Nitrogen	Particulate Phosphorous	Biogenic silica	Chlorophyll a	Total Suspended Solids	Dissolved Oxygen	Rapid Analysis Phytoplankton	Whole Water Phytoplankton	Screened Water Phytoplankton	Zooplankton	Urea	Respiration	Photosynthesis by carbon-14	Dissolved Inorganic Carbon
			Protocol Code			IN	OC	NP	PC	PP	BS	CH	TS	DO	RP	WW	SW	ZO	UR	RE	AP	IC
			1_Bottom	1	1	1																
			2_Mid-Bottom	1	1	1																
N09	32	E	3_Mid-Depth	1	1	1																
			4_Mid-Surface	1	1	1																
			5_Surface	1	1	1																
			1_Bottom	8.5	2	1	1	1	2	2	2	1	2	1								
			2_Mid-Bottom	2.5	1	1						1		1								
N10	25	A	3_Mid-Depth	10	2	2	1	1	2	2	2	2	2	1								
			4_Mid-Surface	2.5	1	1						1		1								
			5_Surface	8.5	2	1	1	1	2	2	2	1	2	1								
			1_Bottom	1	1	1																
			2_Mid-Bottom	1	1	1																
N11	32	E	3_Mid-Depth	1	1	1																
			4_Mid-Surface	1	1	1																
			5_Surface	1	1	1																
			1_Bottom	1	1	1																
			2_Mid-Bottom	1	1	1																
N12	26	E	3_Mid-Depth	1	1	1																
			4_Mid-Surface	1	1	1																
			5_Surface	1	1	1																
			1_Bottom	1	1	1																
			2_Mid-Bottom	1	1	1																
N13	32	E	3_Mid-Depth	1	1	1																
			4_Mid-Surface	1	1	1																
			5_Surface	1	1	1																
			1_Bottom	1	1	1																
			2_Mid-Bottom	1	1	1																
N14	34	E	3_Mid-Depth	1	1	1																
			4_Mid-Surface	1	1	1																
			5_Surface	1	1	1																
			1_Bottom	1	1	1																
			2_Mid-Bottom	1	1	1																
N15	42	E	3_Mid-Depth	1	1	1																
			4_Mid-Surface	1	1	1																
			5_Surface	1	1	1																
			1_Bottom	8.5	2	1	1	1	2	2	2	1	2	1								
			2_Mid-Bottom	2.5	1	1						1		1								
N16	40	A	3_Mid-Depth	10.2	2	2	2	2	2	2	2	2	2	1								
			4_Mid-Surface	2.5	1	1						1		1								
			5_Surface	8.5	2	1	1	1	2	2	2	1	2	1								
			1_Bottom	1	1	1																
			2_Mid-Bottom	1	1	1																
N17	36	E	3_Mid-Depth	1	1	1																
			4_Mid-Surface	1	1	1																

Nearfield Water Column Sampling Plan

Station ID	Depth (m)	Station Type	Depths	Total Volume at Depth (L)	Number of 9-L GoFlos	Dissolved Inorganic Nutrients	Dissolved Organic Carbon	Total Dissolved Nitrogen and Phosphorous	Particulate Organic Carbon and Nitrogen	Particulate Phosphorous	Biogenic silica	Chlorophyll a	Total Suspended Solids	Dissolved Oxygen	Rapid Analysis Phytoplankton	Whole Water Phytoplankton	Screened Water Phytoplankton	Zooplankton	Urea	Respiration	Photosynthesis by carbon-14	Dissolved Inorganic Carbon
			Protocol Code			IN	OC	NP	PC	PP	BS	CH	TS	DO	RP	WW	SW	ZO	UR	RE	AP	IC
			5_Surface	1	1	1																
			1_Bottom	15.5	2	1	1	1	2	2	2	1	2							6	1	1
		D+	2_Mid-Bottom	4.5	1	1						1		1							1	1
N18	30	R+	3_Mid-Depth	26.1	3	1	1	1	2	2	2	2	2		1	1	1		1	6	1	2
		P	4_Mid-Surface	4.5	1	1						1		1							1	1
			5_Surface	20.6	2	1	1	1	2	2	2	1	2			1	1		1	6	1	1
			6_Net Tow															1				
			1_Bottom	1	1	1																
			2_Mid-Bottom	1	1	1																
N19	24	E	3_Mid-Depth	1	1	1																
			4_Mid-Surface	1	1	1																
			5_Surface	1	1	1																
			1_Bottom	8.5	2	1	1	1	2	2	2	1	2	1								
			2_Mid-Bottom	2.5	1	1						1		1								
N20	32	A	3_Mid-Depth	10	2	2	1	1	2	2	2	2	2	1								
			4_Mid-Surface	2.5	1	1						1		1								
			5_Surface	8.5	2	1	1	1	2	2	2	1	2	1								
			1_Bottom	1	1	1																
			2_Mid-Bottom	1	1	1																
N21	34	E	3_Mid-Depth	1	1	1																
			4_Mid-Surface	1	1	1																
			5_Surface	1	1	1																
				Totals		111	22	22	42	42	42	42	42	33	1	4	4	2	4	36	10	11
Blanks A									1	1	1	1	1									

Table 2-3. Farfield Water Column Sampling Plan (3 Pages).

Farfield Water Column Sampling Plan

Station ID	Depth (m)	Station Type	Depths	Total Volume at Depth (L)	Number of 9-L GoFlos	Dissolved Inorganic	Dissolved Organic Carbon	Total Dissolved Nitrogen and	Particulate Organic Carbon	Particulate Phosphorous	Biogenic silica	Chlorophyll a	Total Suspended Solids	Dissolved Oxygen	Secchi Disk Reading	Whole Water Phytoplankton	Screened Water Phytoplankton	Zooplankton	Urea	Respiration	Photosynthesis by carbon-14	Dissolved Inorganic Carbon
			Protocol Code			IN	OC	NP	PC	PP	BS	CH	TS	DO	SE	WW	SW	ZO	UR	RE	AP	IC
			Volume (L)			1	0.1	0.1	1	0.3	0.3	0.5	1	1	0	1	4	1	0.1	1	1	1
			1_Bottom	7.9	2	1	1	1	2	2	2	1	2	3								
			2_Mid-Bottom	2.5	1	1						1		1								
F01	27	D	3_Mid-Depth	14	2	1	1	1	2	2	2	2	2	1		1	1		1			
			4_Mid-Surface	2.5	1	1						1		1								
			5_Surface	13	2	1	1	1	2	2	2	1	2	3	1	1	1		1			
			6_Net Tow															1				
			1_Bottom	7.9	2	1	1	1	2	2	2	1	2	1								
			2_Mid-Bottom	2.5	1	1						1		1								
F02	33	D	3_Mid-Depth	15	2	2	1	1	2	2	2	2	2	1		1	1		1			
			4_Mid-Surface	2.5	1	1						1		1								
			5_Surface	13	2	1	1	1	2	2	2	1	2	1	1	1	1		1			
			6_Net Tow															1				
			1_Bottom	1	1	1																
			2_Mid-Bottom	1	1	1																
F03	17	E	3_Mid-Depth	1	1	1																
			4_Mid-Surface	1	1	1																
			5_Surface	1	1	1									1							
			1_Bottom	1	1	1																
			2_Mid-Bottom	1	1	1																
F05	18	E	3_Mid-Depth	1	1	1																
			4_Mid-Surface	1	1	1																
			5_Surface	1	1	1									1							
			1_Bottom	7.9	2	1	1	1	2	2	2	1	2	3								
			2_Mid-Bottom	2.5	1	1						1		1								
F06	35	D	3_Mid-Depth	15	2	2	1	1	2	2	2	2	2	1		1	1		1			
			4_Mid-Surface	2.5	1	1						1		1								
			5_Surface	13	2	1	1	1	2	2	2	1	2	3	1	1	1		1			
			6_Net Tow															1				
			1_Bottom	1	1	1																
			2_Mid-Bottom	1	1	1																
F07	54	E	3_Mid-Depth	1	1	1																
			4_Mid-Surface	1	1	1																
			5_Surface	1	1	1									1							
			1_Bottom	1	1	1																
			2_Mid-Bottom	1	1	1																
F10	30	E	3_Mid-Depth	1	1	1																
			4_Mid-Surface	1	1	1																
			5_Surface	1	1	1									1							
			1_Bottom	4	1	1								1								
			2_Mid-Bottom	2	1	1								1								
F12	90	F	3_Mid-Depth	2	1	1								1								
			4_Mid-Surface	2	1	1								1								
			5_Surface	4	1	1								1	1							
			1_Bottom	7.9	2	1	1	1	2	2	2	1	2	1								
			2_Mid-Bottom	2.5	1	1						1		1								
F13	25	D	3_Mid-Depth	15	2	2	1	1	2	2	2	2	2	1		1	1		1			
			4_Mid-Surface	2.5	1	1						1		1								
			5_Surface	13	2	1	1	1	2	2	2	1	2	1	1	1	1		1			

Farfield Water Column Sampling Plan

Station ID	Depth (m)	Station Type	Depths	Total Volume at Depth (L)	Number of 9-L GoFlos	Dissolved Inorganic	Dissolved Organic Carbon	Total Dissolved Nitrogen and	Particulate Organic Carbon	Particulate Phosphorous	Biogenic silica	Chlorophyll a	Total Suspended Solids	Dissolved Oxygen	Secchi Disk Reading	Whole Water Phytoplankton	Screened Water Phytoplankton	Zooplankton	Urea	Respiration	Photosynthesis by carbon-14	Dissolved Inorganic Carbon
			Protocol Code			IN	OC	NP	PC	PP	BS	CH	TS	DO	SE	WW	SW	ZO	UR	RE	AP	IC
			6_Net Tow															1				
			1_Bottom	1	1	1																
			2_Mid-Bottom	1	1	1																
F14	20	E	3_Mid-Depth	1	1	1																
			4_Mid-Surface	1	1	1																
			5_Surface	1	1	1									1							
			1_Bottom	1	1	1																
			2_Mid-Bottom	1	1	1																
F15	39	E	3_Mid-Depth	1	1	1																
			4_Mid-Surface	1	1	1																
			5_Surface	1	1	1									1							
			1_Bottom	1	1	1																
			2_Mid-Bottom	1	1	1																
F16	60	E	3_Mid-Depth	1	1	1																
			4_Mid-Surface	1	1	1																
			5_Surface	1	1	1									1							
			1_Bottom	1	1	1																
			2_Mid-Bottom	1	1	1																
F17	78	E	3_Mid-Depth	1	1	1																
			4_Mid-Surface	1	1	1																
			5_Surface	1	1	1									1							
			1_Bottom	1	1	1																
			2_Mid-Bottom	1	1	1																
F18	24	E	3_Mid-Depth	1	1	1																
			4_Mid-Surface	1	1	1																
			5_Surface	1	1	1									1							
			1_Bottom	7	2	1														6		
			2_Mid-Bottom	2	1	1								1								
F19	81	F+R	3_Mid-Depth	7	2	1														6		
			4_Mid-Surface	2	1	1								1								
			5_Surface	7	2	1									1					6		
			1_Bottom	1	1	1																
			2_Mid-Bottom	1	1	1																
F22	80	E	3_Mid-Depth	1	1	1																
			4_Mid-Surface	1	1	1																
			5_Surface	1	1	1									1							
			1_Bottom	18	3	1	1	1	2	2	2	1	2							6	1	1
			2_Mid-Bottom	8.5	1	1						1		1							1	2
F23	25	D+R +P	3_Mid-Depth	24	3	1	1	1	2	2	2	2	2			1	1		1	6	1	1
			4_Mid-Surface	7.5	1	1						1		1							1	1
			5_Surface	23	3	1	1	1	2	2	2	1	2		1	1	1		1	6	1	1
			6_Net Tow															1				
			1_Bottom	7.9	2	1	1	1	2	2	2	1	2	3								
			2_Mid-Bottom	2.5	1	1						1		1								
F24	20	D	3_Mid-Depth	14	2	1	1	1	2	2	2	2	2	1		1	1		1			
			4_Mid-Surface	2.5	1	1						1		1								
			5_Surface	13	2	1	1	1	2	2	2	1	2	3	1	1	1		1			
			6_Net Tow															1				
			1_Bottom	9.9	2	1	1	1	2	2	2	1	2	1								
			2_Mid-Bottom	2.5	1	1						1		1								

Farfield Water Column Sampling Plan

Station ID	Depth (m)	Station Type	Depths	Total Volume at Depth (L)	Number of 9-L GoFlos	Dissolved Inorganic	Dissolved Organic Carbon	Total Dissolved Nitrogen and	Particulate Organic Carbon	Particulate Phosphorous	Biogenic silica	Chlorophyll a	Total Suspended Solids	Dissolved Oxygen	Secchi Disk Reading	Whole Water Phytoplankton	Screened Water Phytoplankton	Zooplankton	Urea	Respiration	Photosynthesis by carbon-14	Dissolved Inorganic Carbon
					Protocol Code	IN	OC	NP	PC	PP	BS	CH	TS	DO	SE	WW	SW	ZO	UR	RE	AP	IC
F25	15	D	_Mid-Depth	15	2	2	1	1	2	2	2	2	2	1		1	1		1			
			_Mid-Surface	2.5	1	1						1		1								
			_Surface	15	2	1	1	1	2	2	2	1	2	3	1	1	1		1			
			_Net Tow															1				
			_Bottom	1	1	1																
			_Mid-Bottom	1	1	1																
F26	56	E	_Mid-Depth	1	1	1																
			_Mid-Surface	1	1	1																
			_Surface	1	1	1									1							
			_Bottom	7.9	2	1	1	1	2	2	2	1	2	1								
			_Mid-Bottom	2.5	1	1						1		1								
F27	108	D	_Mid-Depth	15	2	2	1	1	2	2	2	2	2	1		1	1		1			
			_Mid-Surface	2.5	1	1						1		1								
			_Surface	13	2	1	1	1	2	2	2	1	2	1	1	1	1		1			
			_Net Tow															1				
			_Bottom	1	1	1																
			_Mid-Bottom	1	1	1																
F28	33	E	_Mid-Depth	1	1	1																
			_Mid-Surface	1	1	1																
			_Surface	1	1	1									1							
			_Bottom	2	1	1								1								
			_Mid-Bottom	2	1	1								1								
F29	66	F	_Mid-Depth	2	1	1								1								
			_Mid-Surface	2	1	1								1								
			_Surface	2	1	1								1	1							
			_Bottom	9.9	2	1	1	1	2	2	2	1	2	3								
			_Mid-Depth	14	2	1	1	1	2	2	2	2	2	1		1	1		1			
F30	15	G	_Surface	15	2	1	1	1	2	2	2	1	2	3	1	1	1		1			
			_Net Tow															1				
			_Bottom	9.9	2	1	1	1	2	2	2	1	2	3								
			_Mid-Depth	14	2	1	1	1	2	2	2	2	2	1		1	1		1			
F31	15	G	_Surface	15	2	1	1	1	2	2	2	1	2	3	1	1	1		1			
			_Net Tow															1				
F32	30	Z	_Surface												1							
			_Net Tow															1				
F33	30	Z	_Surface												1							
			_Net Tow															1				
			_Bottom	8.1	2	1	2	2	2	2	2	1	2	1								
			_Mid-Bottom	2.5	1	1						1		1								
N16	40	D	_Mid-Depth	15	2	2	2	2	2	2	2	2	2	1		1	1		1			
			_Mid-Surface	2.5	1	1						1		1								
			_Surface	13	2	1	1	1	2	2	2	1	2	1	1	1	1		1			
			_Net Tow															1				
					otals	132	35	35	66	66	66	62	66	76	28	22	22	13	22	36	5	6
			Blanks B						1	1	1	1	1									
			Blanks C						1	1	1	1	1									
			Blanks D						1	1	1	1	1									

3.0 DATA SUMMARY PRESENTATION

Data from each survey were compiled from the final HOM Program 1998 database and organized to facilitate regional comparisons between surveys, and to allow a quick evaluation of results for evaluating monitoring thresholds (Tables 3-1 through 3-8). Each table provides summary data from one survey. A discussion of which parameters were selected, how the data were grouped and integrated, and the assumptions behind the calculation of statistical values (average, minimum, and maximum) is provided below. Individual data summarized in this report are available from MWRA either in hard copy or electronic format.

The spatial pattern of data summary follows the sample design over major geographic areas of interest in Massachusetts Bay, Cape Cod Bay, and Boston Harbor (Section 3.1). Compilation of data both horizontally by region and vertically over the entire water column was conducted to provide an efficient way of assessing the status of the regions during a particular survey. Maximum and minimum values are provided because of the need to assess extremes of pre-outfall conditions relative to criteria being developed for contingency planning purposes (MWRA, 1997b).

Regional compilations of nutrient and biological water column data were conducted first by averaging individual laboratory replicates, followed by field duplicates, and then by station visit within a survey. Prior to regional compilation of the sensor data, the results were averaged by station visit. Significant figures for average values were selected based on precision of the specific data set. Detailed considerations for individual data sets are provided in the sections below.

3.1 Defined Geographic Areas

The primary partitioning of data is between the nearfield and farfield stations (Figures 1-1 and 1-2). Farfield data were additionally segmented into five geographic areas: stations in Boston Harbor (F23, F30, and F31), coastal stations (F05, F13, F14, F18, F24, F25), offshore stations (F06, F07, F10, F15, F16, F17, F19, and F22), boundary region stations (F12, F26, F27, F28, F29), and Cape Cod Bay stations (F01, F02, and F03; and F32 and F33 as appropriate). These regions are shown in Figure 1-2.

The data summary tables include data derived from all of the station data collected in each region. Average, maximum, and minimum values are reported from the cumulative horizontal and vertical dataset as described for each data type below.

3.2 Sensor Data

Six CTD profile parameters provided in the data summary tables include: temperature, salinity, density (σ_t), fluorescence (chlorophyll a), beam attenuation, and dissolved oxygen (DO) concentration. Statistical parameters (maximum, minimum, and average) were calculated from the upcast sensor readings collected at five depths through the water column (defined as A-E). The five depth values, rather than the entire set of profile data, were selected to reduce the statistical weighting of deep water data at the offshore and boundary stations. Generally, the samples were collected in an even depth-distributed pattern. The mid-depth sample (C) was typically located at the subsurface fluorescence (chlorophyll) peak in the water column, depending on the relative depth of the chlorophyll maximum. Details of the collection, calibration, and processing of CTD data are available in the Water Column Monitoring CW/QAPP (Albro *et al*., 1998), and are summarized in Section 2.

Following standard oceanographic practice, patterns of variability in water density are described using the derived parameter sigma-t ($\sigma_{t,}$), which is calculated by subtracting 1,000 kg/m^3 from the recorded density. During this semi-annual period, density varied from 1021.4 to 1025.4, meaning σ_t varied from 21.4 to 25.4.

Fluorescence data were calibrated using concomitant extracted chlorophyll *a* data from discrete water samples collected at a subset of the stations (see CW/QAPP or Tables 2-1, 2-2, 2-3). The calibrated fluorescence sensor values were used for all discussions of chlorophyll in this report. The concentrations of phaeopigments are included in the summary data tables as part of the nutrient parameters.

In addition to DO concentration, the derived percent saturation was also provided. Percent saturation was calculated prior to averaging station visits from the potential saturation value of the water (a function of the physical properties of the water) and the calibrated DO concentration (see CW/QAPP).

Finally, beam attenuation was provided on the summary tables. Beam attenuation is calculated from the natural logarithm of the ratio of light transmission relative to the initial light incidence, over the transmissometer path length and is provided in units of m^{-1}.

3.3 Nutrients

Analytical results for dissolved and particulate nutrient concentrations were extracted from the HOM database, and include: ammonia (NH_4), nitrite (NO_2), nitrate + nitrite (NO_3+NO_2), phosphate (PO_4), silicate (SiO_4), biogenic silica (BSI), dissolved and particulate organic carbon (DOC and POC), total dissolved and particulate organic nitrogen (TDN and PON), total dissolved and particulate phosphorous (TDP and PP), and urea. Total suspended solids (TSS) data are provided as a baseline for total particulate matter in the water column. Dissolved inorganic nutrients (NH_4, NO_2, NO_3+NO_2, PO_4, and SiO_4) were measured from water samples collected from each of the five (A-E) depths during CTD casts. The dissolved organic and particulate constituents were measured from water samples collected from the surface (A), mid-depth (C), and bottom (E) sampling depths (see Tables 2-1, 2-2, and 2-3 for specific sampling depths and stations. Information on the collection, processing, and analysis of nutrient samples can be found in the CW/QAPP (Albro *et al*., 1998).

3.4 Biological Water Column Parameters

Four productivity parameters have been presented in the data summary tables. Areal production, which is determined by integrating the measured productivity over the photic zone, and chlorophyll-specific areal production is included for the productivity stations (F23 representing the harbor, and N04 and N18, representing the nearfield). Because areal production is already depth-integrated, averages were calculated only among productivity stations for the two regions sampled. The derived parameters α (gC[gChla]$^{-1}$h^{-1}[μEm^{-2}s^{-1}]$^{-1}$) and Pmax (gC[gChla]$^{-1}$h^{-1}) are also included. The productivity parameters are discussed in detail in Appendix A.

Respiration rates were averaged over the respiration stations (the same harbor and nearfield stations as productivity, and additionally one offshore station [F19]), and over the three water column depths sampled (surface, mid- and bottom). The respiration samples were collected concurrently with the productivity samples. Detailed methods of sample collection, processing, and analysis are available in the CW/QAPP (Albro *et al*., 1998).

3.5 Plankton

Plankton results were extracted from the HOM database and include whole water phytoplankton, screened phytoplankton, and zooplankton. Phytoplankton samples were collected for whole-water and screened measurements during the water column CTD casts at the surface (A) and mid-depth (C) sampling events. As discussed in Section 2.1, when a subsurface chlorophyll maximum is observed, the mid-depth sampling event is associated with this layer. The screened phytoplankton samples were filtered through 20-µm Nitex mesh to retain and concentrate larger dinoflagellate species. Zooplankton samples were collected by oblique tows using a 102-µm mesh at all plankton stations. Detailed methods of sample collection, processing, and analysis are available in the CW/QAPP (Albro *et al*., 1998).

Final plankton values were derived from each station by first averaging analytical replicates, then averaging station visits. Regional results were summarized for total phytoplankton, total centric diatoms, nuisance algae (*Alexandrium tamarense, Phaeocystis pouchetii,* and *Pseudo-nitzschia pungens*), and total zooplankton (Tables 3-1 through 3-8).

Results for total phytoplankton and centric diatoms reported in Tables 3-1 through 3-8 are restricted to whole water surface samples. Results of the nuisance species *Phaeocystis pouchetii* and *Pseudo-nitzschia pungens* include the maximum of both whole water and screened analyses, at both the surface and mid-depth. Although the size and shape of both taxa might allow them to pass through the Nitex screen, both have colonial forms that in low densities might be overlooked in the whole-water samples. For *Alexandrium tamarense*, only the screened samples were reported.

3.6 Additional Data

Two additional data sources were utilized during interpretation of HOM Program semi-annual water column data. Temperature and chlorophyll a satellite images collected near survey dates were preliminarily interpreted for evidence of surface water events, including intrusions of surface water masses from the Gulf of Maine and upwelling (Appendix I). U.S. Geological Service continuous monitoring data, collected from a mooring located between nearfield stations N21 and N18 (Figure 1-1) were also reviewed. Hourly temperature and salinity data from the mid-depth (~20 m below surface) and near-bottom (1 m above bottom) are plotted in Figure 3-1. Chlorophyll a data from the MWRA Wetlab sensor from the mid-depth (~ 20m below surface) are plotted in Figure 3-2.

Table 3-1. Nearfield Survey WN98A (Aug 98) Data Summary.

Region		Nearfield		
Parameter	Unit	Min	Max	Avg
In Situ				
Temperature	C	5.05	17.9	9.68
Salinity	psu	29.8	31.6	30.9
Sigma_T		21.6	25.0	23.7
Beam Attenuation	m-1	0.57	2.54	1.13
DO Concentration	mg/L	8.86	13.9	11.10
DO Saturation	%	87.3	139.5	107.0
Fluorescence	ug/L	0.0043	13.0	3.10
Chlorophyll a	ug/L	0.38	11.10	3.15
Phaeopigment	ug/L	0.01	0.15	0.08
Nutrients				
NH4	uM	0.18	2.39	0.69
NO2	uM	0.02	0.27	0.14
NO2+NO3	uM	0.07	10.1	3.64
PO4	uM	0.06	1.08	0.58
SIO4	uM	0.01	10.2	4.68
BIOSI	uM	0.7	3.5	1.77
DOC	uM	134.7	272.3	192.5
PART P	uM	0.078	0.81	0.35
POC	uM	8.9	74.2	33.3
PON	uM	1.21	8.79	4.40
TDN	uM	11.3	29.83	15.5
TDP	uM	0.46	1.19	0.80
TSS	mg/L	1.37	10.7	4.82
Urea	uM	0.3	0.6	0.43
Productivity				
Alpha	ALPHA	0.01	0.05	0.03
Pmax	mgCm-3h-1	0.89	5.25	2.68
Areal Production	mgCm-2d-1	457.9	506.5	482.2
Chlorophyll Specific Areal Production	mgC(mg Chla)-1m-2d-1	149.1	161.1	155.1
Respiration [1]	uM/hr	-0.12	0.22	0.05
Plankton				
Total Phytoplankton	E6CELLS/L	1.50	3.43	
Centric diatoms	E6CELLS/L	0.38	1.74	
Alexandrium tamarense	CELLS/L	1.375	1.375	
Phaeocystis pouchettii	CELLS/L	ND	ND	
Pseudo-nitzschia pungens	CELLS/L	1479.22	9811.13	
Total Zooplankton	#/m3	33505.88	58272.67	

ND - Not detected in the sample

1 - Respiration values reported as negative numbers were determined to be correct

Table 3-2. Combined Farfield/Nearfield Survey WF98B (Aug 98) Data Summary.

		Farfield								
Region		Boundary			Cape Cod Bay			Coastal		
Parameter	Unit	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg
In Situ										
Temperature	C	4.95	17.8	9.98	5.74	18.3	10.0	7.53	15.7	11.3
Salinity	psu	30.5	32.0	31.3	30.4	31.4	31.1	30.5	31.4	30.9
Sigma_T		22.0	25.3	24.0	22.2	24.8	23.8	22.4	24.5	23.5
Beam Attenuation	m-1	0.56	3.28	1.33	1.01	5.29	2.16	0.88	2.45	1.45
DO Concentration	mg/L	9.51	12.3	10.50	7.08	12.20	10.50	9.04	12.00	10.20
DO Saturation	%	91.8	137.3	113.8	69.5	139.8	112.4	94.6	133.4	113.5
Fluorescence	ug/L	0.01	15.1	3.35	0.55	9.96	4.07	0.83	10.4	5.61
Chloropyll a	ug/L	0.06	4.46	2.20	1.59	9.57	5.42	1.73	8.96	4.57
Phaeopigment	ug/L	0.03	0.08	0.05						
Nutrients										
NH4	uM	0.22	7.23	1.11	0.21	3.03	1.12	0.22	5.61	1.51
NO2	uM	0.01	0.25	0.08	0.02	0.14	0.06	0.03	0.22	0.11
NO2+NO3	uM	0.02	11.66	4.67	0.1	7.98	2.10	0.04	4.54	1.57
PO4	uM	0.1	1.1	0.59	0.23	1.09	0.54	0.24	0.90	0.59
SIO4	uM	0.16	12.0	5.24	0.54	17.0	5.91	0.48	8.55	3.92
BIOSI	uM	1.6	1.8	1.7	2.5	5.4	3.25	1.2	3.6	2.64
DOC	uM	122.2	215.8	171.5	145.8	349.6	252.1	166.2	301.7	209.8
PART P	uM	0.12	0.28	0.23	0.24	0.47	0.35	0.16	0.48	0.36
POC	uM	11	47.5	30.0	26.2	49.4	38.35	16.3	51.1	32.9
PON	uM	1.49	4.3	3.34	3.33	5.5	4.80	2.56	8.71	5.19
TDN	uM	13.1	30.5	21.4	12.7	26.5	17.8	17.5	31.9	22.2
TDP	uM	0.41	1.33	0.86	0.65	1.34	0.96	0.71	1.08	0.95
TSS	mg/L	2.1	8.6	4.34	1.77	5.79	3.36	2.06	7.45	4.05
Urea	uM	0.4	0.4	0.4	0.5	0.7	0.58	0.4	0.8	0.58
Productivity										
Alpha	ALPHA									
Pmax	mgCm-3h-1									
Areal Production	mgCm-2d-1									
Chlorophyll Specific Areal Production	mgC(mg Chla)-1m-2d-1									
Respiration	uM/hr									
Plankton										
Total Phytoplankton	E6CELLS/L	0.823	2.135		2.136	5.044		2.060	4.865	
Centric diatoms	E6CELLS/L	0.350	1.514		0.775	3.197		0.834	3.117	
Alexandrium tamarense	CELLS/L	ND	ND		ND	ND		2.7	2.7	
Phaeocystis pouchettii	CELLS/L	ND	ND		ND	ND		ND	ND	
Pseudo-nitzschia pungens	CELLS/L	5282.98	38037.43		13086.69	74464.81		8313.90	404534.77	
Total Zooplankton	#/m3	48254.25	48254.25		42217.54	62186.67		30105.60	44701.54	

ND - Not detected in the sample

Table 3-2. Combined Farfield/Nearfield Survey WF98B (Aug 98) Data Summary. (Continued)

Region		Farfield						Nearfield		
		Harbor			Offshore					
Parameter	Unit	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg
In Situ										
Temperature	C	13.3	15.6	14.3	4.95	16.3	9.54	5.60	17.8	10.8
Salinity	psu	29.1	30.7	30.4	30.5	31.9	31.3	30.40	31.7	31.1
Sigma_T		21.4	22.9	22.6	22.3	25.2	24.0	22.1	25.0	23.7
Beam Attenuation	m-1	1.68	2.78	2.04	0.55	1.75	0.99	0.53	2.23	1.04
DO Concentration	mg/L	9.03	10.40	9.76	8.81	12.10	10.20	7.89	11.80	9.48
DO Saturation	%	108.9	120.7	115.0	86.9	135.5	110.2	78.4	139.9	104.8
Fluorescence	ug/L	3.81	7.54	5.34	0.04	11.0	3.09	0.03	15.5	3.10
Chloropyll a	ug/L	2.32	8.50	4.98	1.02	3.41	2.71	0.22	10.67	2.66
Phaeopigment	ug/L	0.09	3.71	1.30	0.15	0.19	0.17	0.03	0.96	0.18
Nutrients										
NH4	uM	2.92	8.04	5.56	0.20	1.89	0.65	0.01	6.23	1.20
NO2	uM	0.14	0.37	0.22	0.01	0.3	0.10	0.02	0.42	0.20
NO2+NO3	uM	1.83	4.30	2.73	0.07	11.43	4.43	0.08	11.0	4.02
PO4	uM	0.62	1.03	0.84	0.11	1.14	0.62	0.07	1.05	0.62
SIO4	uM	4.32	9.03	5.95	0.30	12	5.32	0.01	10.8	5.03
BIOSI	uM	1.9	4.8	3.6	1.4	2.2	1.7	0.2	3.1	1.41
DOC	uM	172.7	418.1	253.2	158.1	204.6	185.8	137.3	413.7	206.8
PART P	uM	0.45	0.70	0.54	0.097	0.35	0.21	0.071	0.57	0.26
POC	uM	29.9	48.6	40.0	14	48.9	29.1	11.1	52.3	27.9
PON	uM	4.96	8.86	6.85	2	5.45	3.66	1.64	7.93	4.09
TDN	uM	20.4	34.9	27.2	20.8	23.3	21.9	15.8	33.5	22.7
TDP	uM	0.97	1.5	1.24	0.64	1.29	1.00	0.46	1.37	0.94
TSS	mg/L	2.63	6.83	4.14	1.24	4.94	2.62	0.37	11.3	3.58
Urea	uM	0.30	0.60	0.53	0.60	0.6	0.6	0.5	1.3	0.78
Productivity										
Alpha	ALPHA	0.06	0.09	0.08				0.0008	0.03	0.01
Pmax	mgCm-3h-1	8.37	12.9	10.5				0.68	3.8	1.7
Areal Production	mgCm-2d-1	751.9	751.9	751.9				187.7	311.8	249.8
Chlorophyll Specific Areal Production	mgC(mg Chla)-1m-2d-1	195.3	195.3	195.3				157.2	161.9	159.6
Respiration	uM/hr	0.15	0.27	0.20	0.07	0.27	0.16	0.01	0.21	0.10
Plankton										
Total Phytoplankton	E6CELLS/L	3.170	5.257		1.155	3.077		0.307	4.035	
Centric diatoms	E6CELLS/L	0.800	1.447		0.642	2.114		0.056	1.973	
Alexandrium tamarense	CELLS/L	ND	ND		ND	ND		ND	ND	
Phaeocystis pouchettii	CELLS/L	ND	ND		ND	ND		ND	ND	
Pseudo-nitzschia pungens	CELLS/L	126794.48	655104.82		8754.65	12624.80		3521.98	123896.32	
Total Zooplankton	#/m3	42086.40	72797.09		27251.61	27251.61		30460.76	64663.70	

ND - Not detected in the sample

Table 3-3. Nearfield Survey WN98C (Sep 98) Data Summary.

Region		Nearfield		
Parameter	Unit	Min	Max	Avg
In Situ				
Temperature	C	5.60	19.0	12.6
Salinity	psu	25.6	31.8	31.1
Sigma_T		20.1	25.1	23.4
Beam Attenuation	m-1	0.50	2.67	0.94
DO Concentration	mg/L	7.14	11.0	9.01
DO Saturation	%	72.7	130.1	103.5
Fluorescence	ug/L	0.10	8.09	1.56
Chlorophyll a	ug/L	0.23	4.90	1.46
Phaeopigment	ug/L	0.00	1.32	0.22
Nutrients				
NH4	uM	0.01	4.25	0.96
NO2	uM	0.005	0.32	0.12
NO2+NO3	uM	0.05	10.8	2.70
PO4	uM	0.005	1	0.39
SIO4	uM	0.55	10.1	4.72
BIOSI	uM	0.3	2.9	1.01
DOC	uM	135.5	348.4	222.3
PART P	uM	0.08	0.53	0.24
POC	uM	7.44	59	22.5
PON	uM	1.28	7.71	3.26
TDN	uM	10.3	27.9	16.4
TDP	uM	0.58	1.17	0.825
TSS	mg/L	0.42	8.32	2.60
Urea	uM	0.3	0.6	0.43
Productivity				
Alpha	ALPHA	0.01	0.04	0.03
Pmax	mgCm-3h-1	0.40	6.36	2.71
Areal Production	mgCm-2d-1	404.3	473.6	439.0
Chlorophyll Specific Areal Production	mgC(mg Chla)-1m-2d-1	355.1	359.1	357.1
Respiration	uM/hr	0.05	0.23	0.13
Plankton				
Total Phytoplankton	E6CELLS/L	0.544	2.203	
Centric diatoms	E6CELLS/L	0.032	0.799	
Alexandrium tamarense	CELLS/L	ND	ND	
Phaeocystis pouchettii	CELLS/L	ND	ND	
Pseudo-nitzschia pungens	CELLS/L	754.84	7694.35	
Total Zooplankton	#/m3	11894.59	13870.72	

ND - Not detected in the sample

Table 3-4. Nearfield Survey WN98D (Sep 98) Data Summary.

Region		Nearfield		
Parameter	Unit	Min	Max	Avg
In Situ				
Temperature	C	6.93	16.3	12.3
Salinity	psu	30.9	31.9	31.3
Sigma_T		22.7	25.0	23.6
Beam Attenuation	m-1	0.54	2.43	1.03
DO Concentration	mg/L	6.75	10.9	8.48
DO Saturation	%	71.2	131.8	96.9
Fluorescence	ug/L	0.002	15.2	4.70
Chlorophyll a	ug/L	0.07	13.72	3.68
Phaeopigment	ug/L	0.02	7.35	1.07
Nutrients				
NH4	uM	0.01	4.66	1.30
NO2	uM	0.005	0.29	0.14
NO2+NO3	uM	0.08	10	3.72
PO4	uM	0.36	1.59	0.86
SIO4	uM	0.3	12.4	5.62
BIOSI	uM	0	5.2	2.15
DOC	uM	137.9	295	195.1
PART P	uM	0.08	0.70	0.25
POC	uM	8.67	60.3	28.0
PON	uM	1.34	7.93	3.89
TDN	uM	14.1	30.8	21.6
TDP	uM	0.67	1.42	1.05
TSS	mg/L	0.35	6.3	3.22
Urea	uM	0.3	0.4	0.325
Productivity				
Alpha	ALPHA	0.003	0.10	0.04
Pmax	mgCm-3h-1	0.29	12.0	3.70
Areal Production	mgCm-2d-1	171.1	985.3	578.2
Chlorophyll Specific Areal Production	mgC(mg Chla)-1m-2d-1	337.7	458.7	398.2
Respiration	uM/hr	0.10	0.33	0.20
Plankton				
Total Phytoplankton	E6CELLS/L	0.547	2.333	
Centric diatoms	E6CELLS/L	0.024	1.111	
Alexandrium tamarense	CELLS/L	1.5	1.5	
Phaeocystis pouchettii	CELLS/L	ND	ND	
Pseudo-nitzschia pugens	CELLS/L	1358.38	6047.41	
Total Zooplankton	#/m3	24939.61	45539.07	

ND - Not detected in the sample

Table 3-5. Combined Farfield/Nearfield Survey WF98E (Oct 98) Data Summary.

		Farfield								
Region		Boundary			Cape Cod Bay			Coastal		
Parameter	Unit	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg
In Situ										
Temperature	C	6.08	13.6	10.7	9.06	15.3	13.1	8.85	13.8	11.8
Salinity	psu	30.8	32.2	31.4	31.0	31.5	31.2	30.6	31.6	31.1
Sigma_T		23.3	25.4	24.0	22.8	24.4	23.4	23.1	24.5	23.6
Beam Attenuation	m-1	0.51	0.93	0.70	0.54	1.31	0.76	0.60	1.85	1.05
DO Concentration	mg/L	7.67	10.0	8.95	6.09	9.15	8.32	7.63	9.70	8.60
DO Saturation	%	76.9	112.2	98.7	64.6	104.9	96.4	84.0	111.9	96.7
Fluorescence	ug/L	0.01	5.76	3.16	0.48	4.61	2.40	0.60	5.90	2.74
Chlorophyll a	ug/L	0.11	1.49	0.91	0.82	2.45	1.57	0.44	5.63	2.60
Phaeopigment	ug/L	0.21	0.99	0.64	0.59	1.63	0.85	0.20	1.78	1.08
Nutrients										
NH4	uM	0.2	2.33	0.66	0.07	4.98	1.27	0.01	17.26	4.73
NO2	uM	0.01	0.21	0.07	0.005	0.21	0.05	0.005	0.46	0.20
NO2+NO3	uM	0.14	13.4	3.41	0.03	6.29	1.53	0.07	8.2	2.97
PO4	uM	0.36	1.32	0.68	0.47	1.19	0.66	0.47	1.57	0.97
SIO4	uM	0.29	14.6	4.13	1.44	19.4	5.04	1.03	9.78	4.13
BIOSI	uM	0.6	1.6	1.17	1.3	6.6	3.1	3	4.5	3.68
DOC	uM	155.9	184.2	171.8	157.1	186	175.1	163.6	285.4	208.5
PART P	uM	0.06	0.14	0.11	0.14	0.27	0.20	0.16	0.39	0.28
POC	uM	8.16	18.2	14.3	17.8	31.3	22.0	11.9	43.1	28.8
PON	uM	1.34	2.85	2.33	2.58	3.89	3.16	1.99	5.62	4.20
TDN	uM	10.7	23.9	15.4	7.6	31.4	19.3	10	28.8	19.0
TDP	uM	0.58	1.23	0.83	0.53	1.79	1.02	0.59	1.53	1.13
TSS1	mg/L	-0.08	1.75	1.03	1.9	7.21	3.64	1	5.68	3.33
Urea	uM	0.23	0.37	0.3	0.1	0.85	0.39	0.3	0.85	0.50
Productivity										
Alpha	ALPHA									
Pmax	mgCm-3h-1									
Areal Production	mgCm-2d-1									
Chlorophyll Specific Areal Production	mgC(mg Chla)-1m-2d-1									
Respiration	uM/hr									
Plankton										
Total Phytoplankton	E6CELLS/L	0.332	0.512		0.313	1.021		0.208	1.314	
Centric diatoms	E6CELLS/L	0.138	0.138		0.045	0.320		0.105	0.574	
Alexandrium tamarense	CELLS/L	ND	ND		ND	ND		ND	ND	
Phaeocystis pouchettii	CELLS/L	ND	ND		ND	ND		ND	ND	
Pseudo-nitzschia pungens	CELLS/L	1761.29	1847.84		27497.66	63406.37		1660.64	73219.26	
Total Zooplankton	#/m3	26350.73	26350.73		15978.52	17340.46		27700.00	55210.30	

ND - Not detected in the sample

Table 3-5. Combined Farfield/Nearfield Survey WF98E (Oct 98) Data Summary. (Continued)

		Farfield						Nearfield		
Region		Harbor			Offshore					
Parameter	Unit	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg
In Situ										
Temperature	C	10.0	12.2	11.2	6.00	13.7	10.6	6.41	13.2	10.1
Salinity	psu	30.1	31.3	30.9	31.1	32.0	31.4	31.2	31.9	31.5
Sigma_T		22.8	24.1	23.6	23.3	25.2	24.0	23.5	25.1	24.2
Beam Attenuation	m-1	1.23	3.09	2.02	0.53	1.34	0.73	0.57	1.63	0.98
DO Concentration	mg/L	7.93	8.20	8.11	7.24	9.88	8.65	7.25	11.5	8.80
DO Saturation	%	88.6	92.2	89.7	74.7	112.2	95.4	73.7	129.9	95.9
Fluorescence	ug/L	0.52	3.01	2.22	0.02	5.34	2.90	0.02	14.8	4.95
Chlorophyll a	ug/L	1.10	3.76	2.52	1.15	3.47	2.41	0.28	14.34	5.51
Phaeopigment	ug/L	0.22	2.07	1.48	0.62	1.64	1.34	0.26	4.98	1.59
Nutrients										
NH4	uM	12.7	17.0	14.9	0	2.38	0.42	0.03	4.57	0.81
NO2	uM	0.07	0.64	0.48	0.005	0.24	0.10	0.005	0.61	0.17
NO2+NO3	uM	5.32	9.8	8.09	0.06	12.93	4.18	0.06	13	5.03
PO4	uM	1.43	1.84	1.68	0.29	1.47	0.78	0.44	1.45	0.91
SIO4	uM	6.32	11.9	10.2	0.24	14.77	5.30	0.34	14.41	5.87
BIOSI	uM	3.5	9.1	5.6	2.3	2.5	2.37	0.5	6.4	4.02
DOC	uM	147.5	246	195.6	146.6	175.3	158.8	127.7	277.7	196.9
PART P	uM	0.25	0.49	0.39	0.16	0.23	0.19	0.08	0.81	0.34
POC	uM	5.27	36.1	27.2	18.8	33.8	27.7	5.28	69.4	36.2
PON	uM	3.56	6.04	5.03	2.84	3.86	3.48	0.75	8.79	5.10
TDN	uM	17.3	44.9	30.1	7.6	20.6	15.2	7.1	22.5	14.4
TDP	uM	1.11	1.83	1.60	0.57	0.83	0.68	0.46	1.35	0.88
TSS1	mg/L	3.87	8.33	5.43	1.95	5.58	3.79	1.03	6.87	4.04
Urea	uM	0.03	1.12	0.62	0.3	0.64	0.47	0.03	0.85	0.29
Productivity										
Alpha	ALPHA	0.06	0.07	0.07				0.015	0.34	0.12
Pmax	mgCm-3h-1	6.76	8.63	7.614				1.29	58.0	20.3
Areal Production	mgCm-2d-1	557.6	557.6	557.6				1664.6	1988.5	1826.6
Chlorophyll Specific Areal Production	mgC(mg Chla)-1m-2d-1	185.9	185.9	185.9				492.3	1059.3	775.8
Respiration	uM/hr	0.11	0.13	0.12	0.03	0.25	0.17	0.02	0.19	0.12
Plankton										
Total Phytoplankton	E6CELLS/L	0.517	1.445		0.661	0.855		0.950	2.802	
Centric diatoms	E6CELLS/L	0.089	0.313		0.189	0.281		0.519	1.872	
Alexandrium tamarense	CELLS/L	ND	ND		ND	ND		ND	ND	
Phaeocystis pouchettii	CELLS/L	ND	ND		ND	ND		ND	ND	
Pseudo-nitzschia pungens	CELLS/L	1509.68	4076.12		48762.52	62802.50		20999.59	54348.32	
Total Zooplankton	#/m3	26070.59	83151.88		36184.62	36184.62		35756.75	59200.00	

ND - Not detected in the sample

Table 3-6. Nearfield Survey WN98F (Oct 98) Data Summary.

Region		Nearfield		
Parameter	Unit	Min	Max	Avg
In Situ				
Temperature	C	6.90	10.4	9.51
Salinity	psu	31.1	32.0	31.5
Sigma_T		24.0	25.1	24.3
Beam Attenuation	m-1	0.51	1.59	0.78
DO Concentration	mg/L	6.43	9.27	8.65
DO Saturation	%	66.3	100.8	92.8
Fluorescence	ug/L	-0.69	3.09	1.37
Chlorophyll a	ug/L	0.39	2.64	1.46
Phaeopigment	ug/L	0.04	2.03	0.68
Nutrients				
NH4	uM	0.07	7.77	1.40
NO2	uM	0.005	0.32	0.11
NO2+NO3	uM	0.27	13.3	2.91
PO4	uM	0.005	1.49	0.70
SIO4	uM	0.93	16.1	4.44
BIOSI	uM	1.3	4.6	2.20
DOC	uM	122.9	186.3	141.7
PART P	uM	0.13	0.41	0.24
POC	uM	13.9	33.3	23.1
PON	uM	2.25	5.37	3.57
TDN	uM	8.92	21.2	13.1
TDP	uM	0.74	1.48	0.90
TSS	mg/L	1.05	7.6	3.45
Urea	uM	0.03	0.37	0.20
Productivity				
Alpha	ALPHA	0.02	0.08	0.05
Pmax	mgCm-3h-1	0.91	7.60	5.02
Areal Production	mgCm-2d-1	687.2	775.0	731.1
Chlorophyll Specific Areal Production	mgC(mg Chla)-1m-2d-1	472.3	746.4	609.4
Respiration	uM/hr	0.05	0.13	0.09
Plankton				
Total Phytoplankton	E6CELLS/L	0.665	0.904	
Centric diatoms	E6CELLS/L	0.145	0.193	
Alexandrium tamarense	CELLS/L	ND	ND	
Phaeocystis pouchettii	CELLS/L	ND	ND	
Pseudo-nitzschia pungens	CELLS/L	1154.62	4844.90	
Total Zooplankton	#/m3	39049.09	77615.94	

ND - Not detected in the sample

Table 3-7. Nearfield Survey WN98G (Nov 98) Data Summary.

		Farfield			Nearfield		
Region		Boundary					
Parameter	Unit	Min	Max	Avg	Min	Max	Avg
In Situ							
Temperature	C	7.16	8.89	8.22	7.18	8.71	8.10
Salinity	psu	31.7	32.1	31.8	31.3	32.2	31.6
Sigma_T		24.5	25.1	24.8	24.4	25.2	24.6
Beam Attenuation	m-1	0.53	0.80	0.63	0.55	0.91	0.65
DO Concentration	mg/L	7.07	9.42	8.40	7.02	9.44	8.77
DO Saturation	%	72.1	99.6	87.8	71.9	98.7	91.1
Fluorescence	ug/L	1.60	2.45	2.15	0.01	3.19	1.57
Chlorophyll a	ug/L	0.13	2.15	1.12	0.11	2.70	1.45
Phaeopigment	ug/L	0.15	0.23	0.19	0.02	0.45	0.20
Nutrients							
NH4	uM	1	2.66	1.77	0.74	8.66	3.50
NO2	uM	0.18	0.27	0.21	0.17	0.43	0.27
NO2+NO3	uM	2.96	13.3	7.28	2.91	12.9	6.81
PO4	uM	0.83	1.48	1.10	0.87	1.66	1.19
SIO4	uM	4.82	15.9	9.40	2.5	16.46	9.98
BIOSI	uM	0.4	1	0.63	0	1.3	0.47
DOC	uM	112.3	248.5	164.5	106.8	199	144.3
PART P	uM	0.07	0.12	0.09	0.06	0.18	0.12
POC	uM	0.07	0.20	0.13	0.08	0.23	0.16
PON	uM	0.01	0.03	0.03	0.01	0.05	0.03
TDN	uM	16.6	25.1	19.8	13.7	29.5	20.9
TDP	uM	0.93	1.51	1.16	0.91	1.55	1.25
TSS	mg/L	1.14	3.92	2.15	0.98	4.58	2.29
Urea	uM				0.6	0.9	0.73
Productivity							
Alpha	ALPHA				0.01	0.11	0.05
Pmax	mgCm-3h-1				0.94	8.34	5.22
Areal Production	mgCm-2d-1				643.9	828.4	736.2
Chlorophyll Specific Areal Production	mgC(mg Chla)-1m-2d-1				417.6	506.1	461.9
Respiration [1]	uM/hr 1				-0.02	0.13	0.08
Plankton							
Total Phytoplankton	E6CELLS/L				0.346	0.703	
Centric diatoms	E6CELLS/L				0.065	0.098	
Alexandrium tamarense	CELLS/L				ND	ND	
Phaeocystis pouchettii	CELLS/L				ND	ND	
Pseudo-nitzschia pungens	CELLS/L				815.22	2667.09	
Total Zooplankton	#/m3				61944.20	66980.83	

ND - Not detected in the sample

1 - Respiration values reported as negative numbers were determined to be correct

Table 3-8. Nearfield Survey WN98H (Dec 98) Data Summary.

Region		Farfield												Nearfield		
		Boundary			Cape Cod Bay			Harbor			Offshore					
Parameter	Unit	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg
In Situ																
Temperature	C	7.30	7.40	7.36	7.52	7.80	7.65	6.25	6.68	6.44				6.90	7.65	7.33
Salinity	psu	32.0	32.2	32.1	31.5	31.8	31.7	31.2	31.5	31.4				31.8	32.3	31.9
Sigma_T		25.0	25.1	25.1	24.6	24.8	24.7	24.5	24.7	24.6				24.9	25.2	25.0
Beam Attenuation	m-1	0.66	0.70	0.68	0.68	0.72	0.70	1.12	1.17	1.14				0.60	0.87	0.70
DO Concentration	mg/L	9.27	10.3	9.78	9.39	9.98	9.75	8.18	9.28	8.80				4.54	10.3	8.97
DO Saturation	%	95.0	105.1	100.1	96.8	102.7	100.2	82.1	92.1	87.7				46.9	104.2	91.6
Fluorescence	ug/L	2.15	15.5	8.24	1.01	8.60	3.50	3.42	6.57	5.47				0.33	13.2	7.65
Chlorophyll a	ug/L	3.56	11.91	8.46	1.35	5.49	4.08	1.69	2.21	1.96	1.77	5.86	4.54	1.31	9.24	5.36
Phaeopigment	ug/L	0.38	1.79	1.17	0.23	1.30	0.81	1.03	1.32	1.20	0.51	1.13	0.73	0.34	1.58	0.91
Nutrients																
NH4	uM	0.37	4.35	1.47	0.38	1.43	0.97	0.12	1.35	0.65	15.4	22.1	17.8	0.19	5.48	1.58
NO2	uM	0.21	0.22	0.21	0.21	0.25	0.24	0.2	0.28	0.26	0.67	0.78	0.72	0.25	0.49	0.33
NO2+NO3	uM	4.37	5.75	4.77	1.28	2.78	2.18	3.14	11.5	6.69	11.7	12.7	12.2	4.67	10.4	6.98
PO4	uM	0.86	0.90	0.88	0.78	0.84	0.82	0.7	1.37	1.01	1.91	2.24	2.07	0.88	1.41	1.08
SIO4	uM	2.96	3.90	3.52	4.11	8.53	6.13	3.03	13.9	7.37	15.4	16.7	16.0	4.65	13.3	8.25
BIOSI	uM	2.40	3.30	2.93	0.80	2.20	1.55	1.7	2.4	2.1	1.4	2.4	1.83	1.1	2.6	1.98
DOC	uM	123.8	147.5	135.0	126.1	261	168.1	140.7	154.4	146.1	145.4	161.5	150.8	123.7	186.3	149.1
PART P	uM	0.16	0.20	0.18	0.11	0.16	0.14	0.08	0.15	0.12	0.2	0.25	0.22	0.09	0.23	0.16
POC	uM	18.2	22.1	20.5	11.6	19.2	15.0	16.3	20	18.2	7.6	16.7	13.0	7.9	21.8	15.5
PON	uM	3.14	3.43	3.24	2.29	3.11	2.56	2.45	2.81	2.64	1.36	2.86	2.15	1.24	3.61	2.55
TDN	uM	14.3	19.5	16.6	8.48	15.5	11.2	33.3	39.2	36.4	19.2	31.0	24.4	12.0	27.7	16.7
TDP	uM	0.84	0.98	0.93	0.8	1.06	0.91	1.88	2.09	1.96	1	1.44	1.15	0.92	1.7	1.14
TSS	mg/L	1.85	6.43	4.01	1.17	4.28	2.18	2.62	4.87	3.52	1.93	6.23	3.48	1.17	4.58	2.40
Urea	uM													0.3	0.5	0.45
Productivity																
Alpha	ALPHA													0.02	0.09	0.07
Pmax	mgCm-3h-1													3.35	12.2	8.1
Areal Production	mgCm-2d-1													643.6	677.1	660.4
Chlorophyll Specific Areal Production	mgC(mg Chla)-1m-2d-1													89.8	96.8	93.3
Respiration	uM/hr													0.02	0.06	0.04
Plankton																
Total Phytoplankton	E6CELLS/L													0.605	0.936	
Centric diatoms	E6CELLS/L													0.091	0.257	
Alexandrium tamarense	CELLS/L													ND	ND	
Phaeocystis pouchettii	CELLS/L													ND	ND	
Pseudo-nitzschia pungens	CELLS/L													40000.64	81510.74	
Total Zooplankton	#/m3													47407.41	59662.10	

ND - Not detected in the sample

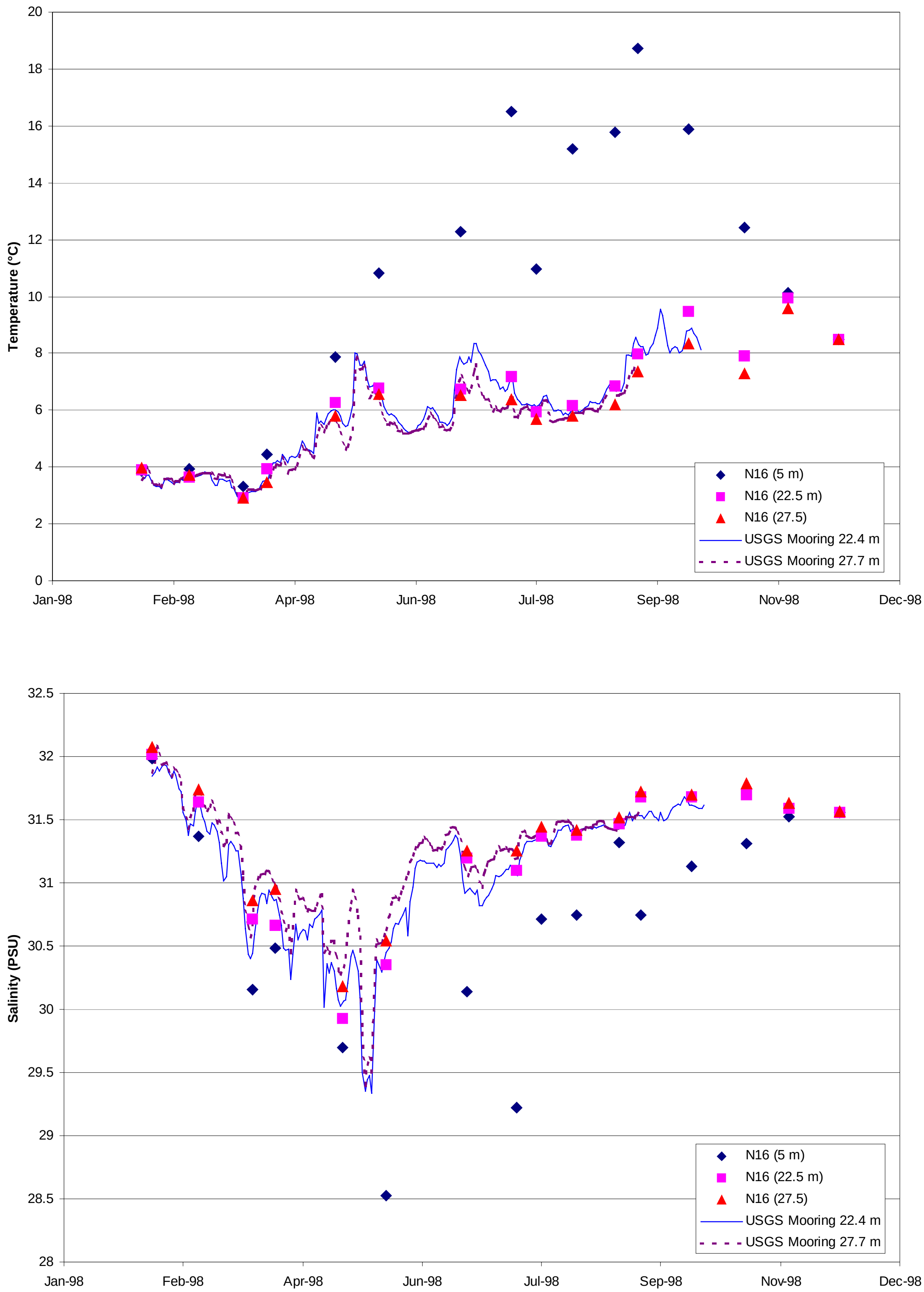


Figure 3-1. USGS Temperature and Salinity Mooring Data.

Mooring data are daily average for comparative purposes.

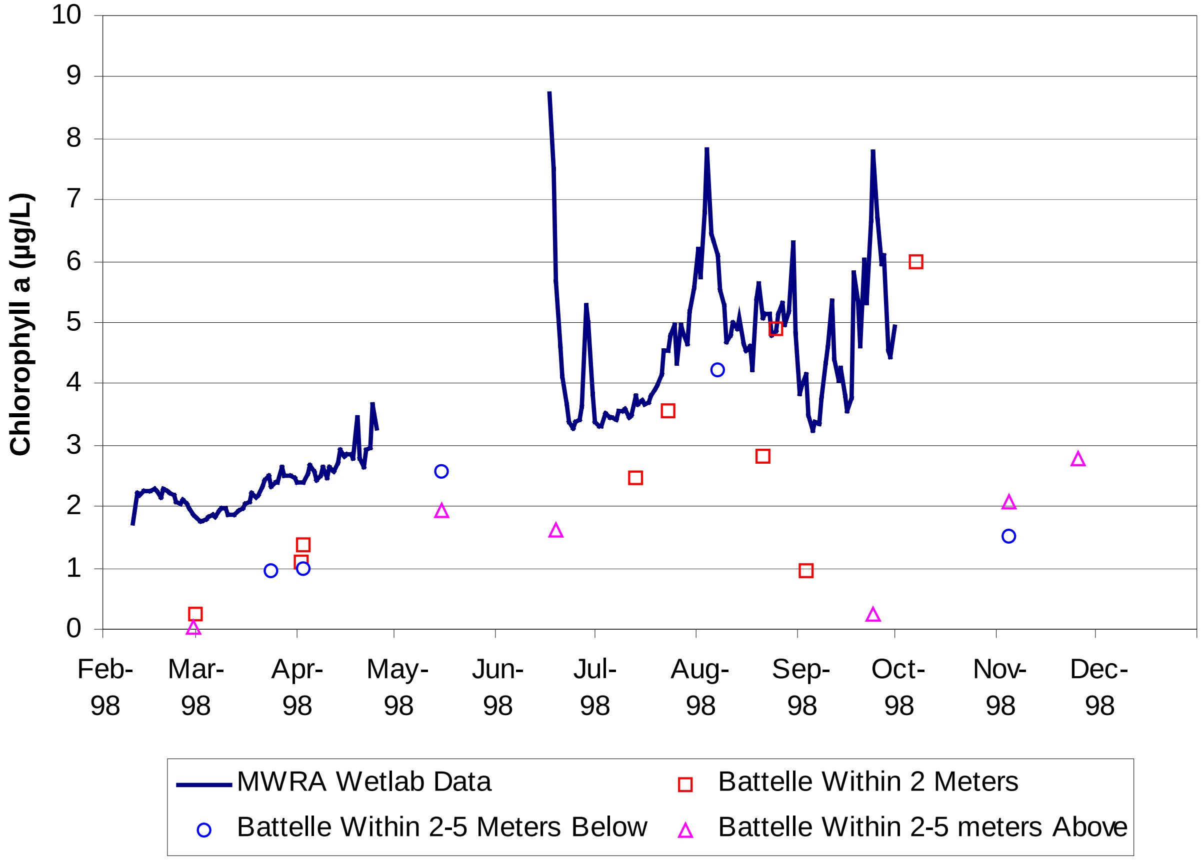


Figure 3-2. MWRA and Battelle Wetlab Chlorophyll a Data.

4.0 RESULTS OF WATER COLUMN MEASUREMENTS

Data presented in this section are organized by type of data and survey. Physical data, including temperature, salinity, density, and beam attenuation are presented in Section 4.1. Nutrients, chlorophyll a, and dissolved oxygen are discussed in Section 4.2. Finally, a summary of the major results of water column measurements (excepting biological measurements) is provided in Section 4.3.

Two of the eight surveys conducted during this semi-annual period were combined farfield/nearfield surveys. In August during the first combined survey of this period (WF98B), seasonal stratification conditions existed throughout the Bays. By mid-October (WF98E), the density gradient was negligible at the nearshore-nearfield, coastal, and harbor stations while offshore stations maintained a clearly defined pycnocline. The change from stratified to well-mixed conditions in the nearfield is illustrated in Figure 4-1. The inner nearfield stations had become well mixed with respect to density by the mid-October survey while a density gradient of >1.0 still existed at the outer nearfield stations. A density gradient of 0.5 to 1.0 persisted between the surface and bottom waters at these outer nearfield stations through the November surveys.

Data collected during the farfield surveys were evaluated for trends in regional water masses throughout the Boston Harbor, Massachusetts Bay, and Cape Cod Bay. The variation of regional surface water properties is presented using contour plots of surface water parameters, derived from the surface (A) water sample. Classifying data by regions allows comparison of the horizontal distribution of water mass properties over the farfield area.

The vertical distribution of water column parameters is presented in the following sections along three farfield transects (Boston-Nearfield, Cohassett, and Marshfield) in the survey area, and one transect across the Nearfield (Figure 1-3). Examining data trends along transects provides a three-dimensional perspective of water column conditions during each survey. Nearfield surveys were conducted more frequently than farfield surveys, allowing better temporal resolution of the changes in water column parameters. In addition to the nearfield vertical transect (Figure 1-3), vertical variability in nearfield data is examined and presented by comparing surface and bottom water concentrations (A and E depths) and by plotting individual parameters with depth in the water column. A complete set of the surface contour maps, vertical transect plots, and parameter scatter plots is provided in Appendices B, C, and D, respectively.

4.1 Physical Characteristics

4.1.1 Temperature\Salinity\Density

The breakdown of vertical stratification in the fall indicates the change from summer to winter conditions. This destabilization of the water column significantly affects a number of water quality parameters during this time period. In September to October, the water column begins to become less stratified and nutrients from the bottom waters become available to phytoplankton in the surface and/or mid-water depths. This leads to the development of the fall bloom. The phytoplankton production and further mixing of the water column serve to increase bottom water dissolved oxygen concentrations, which tend to decrease from early June through October.

The pycnocline weakens as surface water temperature declines, surface salinity increases, and late fall/early winter storms increase wind-forced mixing. As mentioned above, the surface and bottom water density data collected during the combined surveys indicated that seasonal stratification had deteriorated at the coastal stations and weakened throughout the region by the October survey. Nearfield survey activities provide a more detailed evaluation of the fall/winter overturn of the water column. For the purposes of this report, the water column is stratified when the density gradient between surface and bottom waters is greater than 1.0 sigma-T. Using this definition, the water column stratification had broken down in the inner nearfield region by October (WF98E), but the water column at the outer nearfield stations was not well mixed until late November (Figure 4-2).

4.1.1.1 Horizontal Distribution

In late August (WF98B), surface water temperatures ranged from 11.2 °C at coastal station F05 to 18.3 °C at Cape Cod Bay station F02. In general, cooler surface water temperatures (11-15 °C) were observed in the coastal waters and at the western nearfield stations (Figure 4-3). Warmer surface water temperatures were found at the offshore and eastern nearfield stations (16-18 °C). An incursion of cooler Gulf of Maine water was detected along the northeastern corner of Massachusetts Bay. Diurnal heating of the surface water may have accounted for the variations in temperature that were observed at the nearfield stations. Surface water salinity was fairly uniform throughout the Bays ranging from 29.1 PSU at Boston Harbor station F23 to 31.1 PSU at station F02 in Cape Cod Bay (Figure 4-4). There was a slight increase in surface water salinity across the nearfield from 30.5 inshore to 30.7 offshore. Lower salinity surface water was observed off Cape Ann at station F26. Higher salinity surface water was found at station F05 and was coincident with cooler surface water temperature. This area is relatively shallow and is often the site of strong summer upwelling of bottom waters.

During the nearfield surveys conducted in September (WN98C and WN98D), there was little variation in surface temperature or salinity across the nearfield area. The surface waters at inshore stations continued to be slightly cooler and less saline than at the offshore stations.

By October (WF98E), surface water temperatures were more uniform in Massachusetts Bay ranging from a low of 10.5 °C in the harbor at station F23 to ~13 °C offshore (Figure 4-5). The inshore-offshore gradient in surface water temperature in Massachusetts Bay was equal in magnitude to the north-south gradient between the two Bays. Surface water temperatures were highest (>15 °C) at the southern Cape Cod Bay stations F01 and F02. Surface salinity measurements ranged from 30.1 at station F31 in Boston Harbor to 31.4 at boundary station F27 (Figure 4-6). At station F26 off of Cape Ann, cooler and less saline surface waters were observed on October 16th. This may have been due to increased output from the Merrimack River resulting from an intense rain event October 8-10 (Figure 4-7).

In general during the October survey, lower surface water salinity was observed in the harbor, coastal, and Cape Cod waters and increased with distance from the shoreline. The trend of slightly lower temperatures and lower salinity along the western nearfield was observed in October and continued during the November and December surveys.

4.1.1.2 Vertical Distribution

Farfield. The water column was stratified throughout the region during the summer and early fall of 1998. By late October, the stratified water column conditions had begun to deteriorate and at the shallow, nearshore stations had already become well mixed. As suggested previously, the density gradient ($\Delta\sigma_t$), representing the difference between the bottom and surface water σ_t, can be used as a relative indicator of a mixed or vertically stratified water column. During the August farfield survey

(WF98B), the $\Delta\sigma_t$ between surface and bottom waters was >1 throughout the region except at the Boston Harbor stations (Figure 4-8). These stations are shallow and subject to strong tidal mixing. Surface water densities had increased by the late October survey across the region and the water column was well mixed at the harbor and coastal stations. Though stratification had weakened at the Offshore, Boundary, and Cape Cod Bay stations, the $\Delta\sigma_t$ between surface and bottom waters was still >1 and was driven primarily by the continued gradient in temperature over the water column. Temperatures had decreased in the surface waters, but there was still a 4-6°C gradient at these deeper offshore stations (Figure 4-9). A number of farfield stations were visited during the November and December surveys (WN99G and WN99H) and by December the water column at each of these stations had become well mixed.

The temporal and spatial variability during the seasonal return to well-mixed winter conditions was also illustrated in the vertical contour plots of temperature, salinity, and sigma-T for the Boston-Nearfield, Cohassett, and Marshfield transects (Appendix C). In August, the water column was strongly stratified along each of the transects ($\Delta\sigma_t$ >2; Figure 4-10). A sharp pycnocline was observed at 10-15 m along each of these transects. The pycnocline was shallower at the harbor, coastal, and nearfield stations along the Boston-Nearfield transect and also appeared to shoal at station F05 along the Marshfield transect. The shoaling of the pycnocline may be due to both the Harbor influence (nearfield stations) and upwelling (nearfield and coastal station F05). The upwelling signal was also observed in the vertical contour plots of temperature along these transects (Figure 4-11). Generally, the vertical temperature gradient was >8°C between the surface and bottom layers with a thermocline at 10-15 m. Lower water temperatures were observed in the upper water column at the nearshore nearfield, coastal and harbor stations. Though the cooler harbor temperatures were also associated with lower salinity, the cooler surface layer temperatures at station F05 and to some extent in the nearfield were concomitant with higher salinity (Figure 4-12). This suggests that the cooler, more saline water observed at these stations had been upwelled and may have also served as a source of nutrients to these areas.

By October, stratification had weakened throughout the region. As mentioned above, $\Delta\sigma_t$ was <1 at the nearshore stations and it appeared that there was an inshore-offshore destabilization and deepening of the pycnocline (Figure 4-13). The decrease in the $\Delta\sigma_t$ was driven by changes in surface and bottom water temperatures. While decreasing air temperatures were cooling surface waters, the bottom waters continued to be warmed due to mixing with mid-depth waters. The return to winter conditions can be more clearly seen by examining the temperature-salinity (T-S) relationship for the region. In Figure 4-14, the T-S plots for the August and October surveys are presented. In August (WF98B), the T-S pattern reflects the normal vertical stratification that exists in the Bays during the summer season. Surface water temperatures were generally in the 14-18°C range and throughout the Bays there was a strong thermal gradient (8-10°C) between the surface and bottom water temperatures. Salinity varied over a narrower range (30-32 PSU), but there was a systematic increase in salinity with depth coincident with the decrease in temperature. At the Harbor stations, which were relatively well mixed, the range in both temperature and salinity (except for the low surface salinity at station F23) was narrower compared to the other areas. By the late October survey (WF98E), the range in temperatures had decreased throughout the Bays while the range in salinity remained about the same. The T-S pattern at the deeper stations in the Cape Cod Bay, offshore, boundary, and nearfield areas continued to exhibit the summer signature of increasing salinity corresponding to decreasing temperature from the surface to the bottom waters. In the harbor and coastal areas, the T-S pattern was shifting towards the characteristics of a well-mixed winter water column.

Nearfield. The breakdown of seasonal stratification and the return to winter conditions can be observed more clearly from the data collected in the nearfield area. The nearfield surveys are conducted on a more frequent basis and thus provide a more detailed picture of the physical characteristics of the water column. In Figure 4-1, it was evident that the breakdown of stratification proceeded from the shallow inshore stations to the deeper offshore stations. In October, the inner nearfield stations N10 and N11 had become well mixed with σ_t = 24 for both the surface and bottom waters. At the outer nearfield stations, however, a relatively strong gradient in σ_t existed until December. Figure 4-15 presents σ_t along the nearfield transect (see Figure 1-3) and clearly shows the inshore to offshore progression in the destabilization of the water column during the fall of 1998. In early August (WN98A), stratified conditions were present along the entire nearfield transect and a strong pycnocline was observed at 5-10 m at all stations except station N10. At this harbor-influenced station, tidal forces led to a less defined pycnocline. By the late September survey (WN98D), the pycnocline had deepened to about 15 m, but there was still a sharp gradient in σ_t between the surface and bottom layers. In October, as mentioned previously, the water column had become relatively well mixed in the inner nearfield which includes station N10, but a pycnocline was still present at 15-20 m depth along the rest of the transect. By late November (WN98G), winter physical characteristics were present along the entire nearfield transect, though there was still a small gradient in density between the surface and deep waters at the offshore stations.

The vertical gradient in temperature was very strong (6-10°C) throughout the nearfield from early August to late September (Figure 4-16). The surface temperatures observed at the inner nearfield stations in August were lower than the temperatures observed earlier in the summer and in September. The data suggest that upwelling events may have brought lower temperature (and nutrient replete) bottom water into the surface layer. This is more clearly shown in time series contours of temperature at stations N01 and N10 (Figure 4-17). In Massachusetts Bay, upwelling events occur regularly during the summer due to prevailing winds that blow from the south and southwest.

The inner nearfield was well mixed with respect to both temperature and salinity by October. The gradient in temperature between surface and bottom waters continued to decline at the outer nearfield stations until December when the water column throughout the region was isothermal. A salinity gradient of ~0.5 PSU was observed at the Broad Sound and outer nearfield stations through December (Figure 4-18). The persistence of this high salinity, deep-water layer apparently led to the annual dissolved oxygen minima for the nearfield region occurring in December. In previous baseline monitoring years, the nearfield DO minima occurred in September or October and DO concentrations increased with the deterioration of stratified conditions. This topic is discussed in more detail in Section 4.2.3.

4.1.2 Transmissometer Results

Water column beam attenuation was measured along with the other *in situ* measurements at all nearfield and farfield stations. The transmissometer determines beam attenuation by measuring the percent transmission of light over a given path length in the water. The beam attenuation coefficient (m^{-1}) is indicative of particulate concentration in the water column. The two primary sources of particles in coastal waters are biogenic material (plankton or detritus) and suspended sediments. Beam attenuation data is often evaluated in conjunction with fluorescence data to ascertain the source of the particulate materials (phytoplankton versus detritus or suspended sediments).

In August (WF98B), surface water beam attenuation ranged from 1.01 m^{-1} at station N05 to 5.29 m^{-1} at station F02 (Figure 4-19). The high observation at the Cape Cod Bay station was coincident with elevated phytoplankton counts of ~5 million cells L^{-1} primarily composed of centric diatoms and microflagellates. The fluorescence measurements were not elevated, however, suggesting that the cells had low chlorophyll/cell ratios due to photo bleaching. In Massachusetts Bay, beam attenuation and fluorescence were more closely correlated and elevated levels were observed in the western nearfield and coastal stations in areas of suspected upwelling. As usual, elevated beam attenuation measurements were found at the Harbor stations. Generally, there was an inshore to offshore decrease in beam attenuation that was due to elevated harbor and coastal observations. A similar inshore to offshore decrease in surface water beam attenuation was observed during the October survey (WF98E). The highest value was seen at station F30 (2.71 m^{-1}) in Boston Harbor and the lowest value was observed at station F02 (0.54 m^{-1}) in Cape Cod Bay. In October, the correlation between beam attenuation and chlorophyll fluorescence was stronger with higher values for each being observed at the western nearfield stations and lower values found further offshore and to the south including Cape Cod Bay.

In general, the vertical and horizontal trends in beam attenuation are dependent upon the input of particulate material from terrestrial sources (inshore stations) and the distribution of phytoplankton (offshore stations). Figure 4-20 presents beam attenuation data along the Boston-Nearfield transect in August (WF98B) and October (WF98E). These contour plots clearly show the harbor signature of high beam attenuation and the harbor influence in the surface water of the western nearfield stations. This figure also illustrates the interaction of harbor and coastal waters in the tidal mixing region between stations F23 and N20.

4.2 Biological Characteristics

4.2.1 Nutrients

Nutrient data were preliminarily analyzed using x/y plots of nutrient depth distribution, nutrient/ nutrient relationships, and nutrient/salinity relationships (Appendix D). As with the physical characteristics, surface water contour maps (Appendix B) and vertical contours from select transects (Appendix C) were also produced from the nutrient data to illustrate the spatial variability of these parameters.

The general trend in nutrient concentrations during the 1998 August to December period was similar to previous baseline monitoring years. Nutrients were depleted in the surface waters during the summer and increased in concentration with the change from a stratified to a well-mixed water column. There were, however, two observations that were noteworthy for this time period. In August, upwelling events supplied nutrients to the surface waters, which supported the maximum phytoplankton populations that were observed in August (Section 5.3). In November and December, elevated concentrations of ammonium and phosphate were observed in the western nearfield that correlated with high concentrations observed in Boston Harbor. The source of these nutrients could not be determined, but may have been due to the transfer of south system sewage flows from Nut Island to the Deer Island facility, or other factors.

4.2.1.1 Horizontal Distribution

During this semi-annual period, the highest nutrient concentrations were consistently measured at the harbor and harbor influenced coastal and nearfield stations. In August (WF98B), dissolved inorganic nutrients were generally depleted in the surface waters at the offshore stations in Massachusetts and Cape Cod Bays. The highest concentrations were observed at the harbor stations and elevated concentrations were seen at the coastal and western nearfield stations due to Harbor discharge and periods of coastal upwelling. By October (WF98E), surface water nutrient concentrations had increased at the harbor and inshore stations while remaining relatively depleted offshore. During the

November and December surveys, extraordinarily high ammonium and phosphate concentrations were observed at the harbor stations and along the western nearfield area.

In August (WF98B), the highest nutrient values were found in Boston Harbor (Ammonia (NH_4) = 7.63 µM, Nitrate (NO_3) = 3.93 µM, and Silicate (SIO_4) = 9.03 µM at station F30; Phosphate (PO_4) = 1.03 µM at station F23). Nutrient concentrations generally decreased outside of the harbor and away from the coast (Figure 4-21). Nitrate and silicate concentrations were depleted at many of the offshore stations (Figures 4-21 and 4-22). The low nutrient concentrations coincided with elevated chlorophyll concentrations and phytoplankton abundance (centric diatoms dominant). The higher nutrient concentrations observed at some of the coastal and western nearfield stations may have been due to input of nutrients into the upper water column by upwelling. This is discussed in more detail in the following section.

By October (WF98E), the nutrient concentrations at the Boston Harbor stations had increased while biological uptake had further depleted the nutrient concentrations in offshore surface waters leading to a strong inshore-offshore gradient (Figure 4-23). The highest nutrient concentrations were observed at the harbor stations F23 (NH_4 = 17.04 µM and PO_4 = 1.84 µM) and F30 (NO_3 = 9.16 µM and SIO_4 = 11.90 µM). Nitrate concentrations were depleted (<0.2 µM) at the offshore stations. The highest productivity rates of the year were measured in the nearfield in October and the increase in production led to a decrease in nutrients in the surface waters. Throughout most of Massachusetts and Cape Cod Bays, NO_3 concentrations had become limiting (>0.2 µM) in the surface waters. Nitrogen limitation may have contributed to the relative increase in surface PO_4 concentrations in October compared to August. Though nutrients were depleted throughout much of the nearfield, nutrient replete conditions were found at the eastern nearfield stations and were coincident with the highest surface fluorescence values of the survey.

The NH_4 and PO_4 concentrations observed in the harbor, coastal and western nearfield waters during the October survey (WF98E) were anomalously high (Figure 4-24). During the November survey (WN98G), high NH_4 and PO_4 concentrations were again observed in the nearfield with highest values on the western side of the nearfield and decreasing concentrations away from the Harbor (Figure 4-25). Nutrient data collected by MWRA for the Boston Harbor monitoring program were also anomalous with NH_4 concentrations 5-10 µM higher than any measurement from 1993-1997 (D. Taylor, personal communication, April 1999). The reason for these high concentrations has not been determined, but it is expected that anthropogenic activities or ecological processes within Boston Harbor led to these atypical conditions.

4.2.1.2 Vertical Distribution

Farfield. The vertical distribution of nutrients was evaluated using vertical contours of nutrient data collected along three transects in the farfield: Boston-Nearfield, Cohassett, and Marshfield (Figure 1-3; Appendix C). During the August combined farfield/nearfield survey (WF98B), nutrient concentrations were generally low in the surface waters and increased with depth. Low concentrations of NO_3 (Figure 4-26) were found throughout the surface layer and increased near the pycnocline. The elevated nutrient concentrations at the pycnocline were coincident with the subsurface chlorophyll maximum that was observed at the offshore stations during this survey. The typical inshore/offshore gradient of decreasing concentration was observed for each of the dissolved inorganic nutrients along the Boston-Nearfield transect. As mentioned previously, the August survey was conducted during a period of intermittent upwelling conditions. The vertical transect plots for NO_3 suggest that the upwelled bottom waters carried nutrients into the upper water column at the shallow, nearshore stations along the Marshfield transect. Upwelling also brought nutrients into the surface waters of the nearfield area. Due to biological utilization of NO_3, this is not clearly illustrated in Figure 4-26, but transect contours of coincident SiO_4 concentrations suggest that there is an input of nutrients into the nearfield surface layer (Figure 4-27). Time series contour plots of NO_3, PO_4, and SiO_4 at station N01 show the effect of the upwelling events in the nearfield from a temporal perspective (Figure 4-28). It seems that the Harbor and upwelling were significant sources of nutrients to the nearfield surface waters in August.

In October (WF98E), nutrient concentrations were again low and generally depleted in the surface waters at the offshore stations and increased with depth. The harbor signal of higher nutrient concentrations was very strong especially for NH_4, which was high along both the Boston-Nearfield and Cohassett transects (Figure 4-29). Phosphate concentrations were generally higher in October than August and exhibited a strong inshore/offshore gradient of decreasing concentrations across all depths. Silicate and nitrate concentrations in the bottom waters had also increased since the August survey (Figure 4-30). The degradation of summer phytoplankton assemblages and remineralization of the nutrients at depth may have contributed to the increase in bottom water nutrient concentrations.

Nutrient-salinity plots are useful in distinguishing water mass characteristics and in examining regional linkages between water masses (Appendix D). Dissolved inorganic nitrogen (DIN) plotted as a function of salinity exhibits a pattern that is often observed (Figure 4-31): a decrease in DIN concentration with increasing salinity over the lower salinity range, low or depleted DIN at intermediate salinity, and increasing DIN concentration with increasing salinity at higher salinities. The decreasing trend in DIN concentration at lower salinity is indicative of the dilution of Harbor DIN with low-nutrient water at coastal and western nearfield stations. The depleted DIN at intermediate salinity and the increase in DIN concentrations with increasing salinity is common during stratified conditions. It results from biological utilization of nutrients in the surface waters and the combination of biological decomposition and nutrient regeneration processes at depth. During both surveys, the Harbor was a source of DIN (primarily NH_4 – see Appendix D) to the coastal and western nearfield and summer conditions existed throughout the rest of the Bays.

Nearfield. The nearfield surveys are conducted more frequently and provide a higher resolution look at temporal variation in nutrient concentrations over the semi-annual period. In previous sections, the delay in transition from summer to winter physical and nutrient characteristics has been discussed. For most of the nearfield, summer conditions of depleted nutrient concentrations in the surface waters existed until late November (WN98G). The progression from summer to winter conditions is illustrated in the series of nearfield transect plots presented in Figure 4-32. In August (WN98A), NO_3 concentrations were depleted in the surface waters across the nearfield area and low concentrations continued to be present through early November except at the harbor-influenced station N10. By the end of November (WN98G), the water column had become relatively well mixed and relatively high NO_3 concentrations were observed throughout the nearfield. A similar trend was observed for silicate. Phosphate concentrations, however, had begun to increase in surface waters by late September. This apparent increase may have been due to nitrogen limitation of phytoplankton in the nearfield and inability of phytoplankton to utilize the available PO_4. Ammonium concentrations were very low along the nearfield transect during the first three surveys of this period. By late September (WN98D), elevated NH_4 concentrations (>2 μM) were observed in the surface at station N10 and at depth along the nearfield transect (Figure 4-33). In October (WF98E), productivity achieved its maximum rates in the nearfield and NH_4 was once again depleted across most of the region. The elevated concentrations found at depth during this survey were the result of a combination of biological decomposition and nutrient regeneration processes. A strong harbor signal was seen in early November (WN98F) and by late November (WN98G) the anomalously high NH_4 concentrations were observed across the nearfield region. Ammonium concentrations in December had returned to a typical range for winter conditions, but the availability of NH_4 and PO_4 in late

November may have contributed to the anomalously high chlorophyll concentrations that were observed in December.

An examination of the nutrient-nutrient plots showed that surface waters were generally depleted in DIN relative to PO_4 and SiO_4 in the nearfield during this semi-annual period (Appendix D). The DIN:PO_4 ratio was less than the Redfield value of 16 during each of the surveys. Nitrogen limiting conditions existed in the surface waters of the nearfield and throughout the Bays during WN98D and WF98E (Figure 4-34).

4.2.2 Chlorophyll A

Chlorophyll concentrations (based on *in situ* fluorescence measurements) were relatively high during this time period. Maximum chlorophyll values were measured across the region during the August survey WF98B coinciding with the highest phytoplankton abundance. High chlorophyll concentrations were also observed in the nearfield area (14.8 $\mu g\ L^{-1}$) during the fall bloom (WF98E). The typical trend of decreasing chlorophyll concentrations after the fall bloom was observed in the nearfield in November, but during the December survey (WN98N) anomalous chlorophyll concentrations were found at stations throughout the Bays. The mean chlorophyll concentrations in December ranged from 3.5$\mu g\ L^{-1}$ in Cape Cod Bay to 8.2 $\mu g\ L^{-1}$ at boundary station F29 and a mean concentration of 7.5 $\mu g\ L^{-1}$ was measured for the nearfield area.

4.2.2.1 Horizontal Distribution

There was a strong inshore/offshore gradient in chlorophyll concentrations during the August survey (Figure 4-35). High chlorophyll concentrations were observed along the western half of the nearfield with the survey maximum recorded at station N11 (13.03 $\mu g\ L^{-1}$). There was a very sharp gradient between the high nearshore concentrations and the surface chlorophyll concentrations observed in the eastern nearfield where the survey minimum was found at station N04 (0.03 $\mu g\ L^{-1}$). Low surface chlorophyll values (<0.5 $\mu g\ L^{-1}$) were seen throughout the northeastern portion of Massachusetts Bay. Surface chlorophyll concentrations were high in Boston Harbor (3.8-7.5 $\mu g\ L^{-1}$) and at the near-harbor coastal stations (6.0 to 9.0 $\mu g\ L^{-1}$). In southern Massachusetts Bay, a band of elevated surface chlorophyll concentrations extended from coastal station F05 to station F29 off Provincetown. Lower chlorophyll concentrations were observed at the Cape Cod Bay stations (0.5 to 1.5 $\mu g\ L^{-1}$). The pattern of surface chlorophyll generally corresponded to spatial variations observed in phytoplankton abundance in Massachusetts Bay, but the low chlorophyll concentration found in Cape Cod Bay were coincident with high phytoplankton abundance (4-5 million cells L^{-1}).

In October (WF98E), surface chlorophyll concentrations ranged from 0.48 $\mu g\ L^{-1}$ at station F02 to 11.91 $\mu g\ L^{-1}$ at station N20. The range was similar to that seen in August, but elevated chlorophyll concentrations were found throughout Massachusetts Bay during the fall survey (Figure 4-36). The highest concentrations were located in the western nearfield where a sharp gradient had been observed in nitrate concentrations (see Figure 4-23). In the eastern nearfield and offshore Massachusetts Bay, surface chlorophyll concentrations generally decreased with distance from shore though the pattern was irregular with values ranging from 0.5 to 5 $\mu g\ L^{-1}$. The decrease in nutrient availability may have limited phytoplankton production at these offshore stations. Lower chlorophyll concentrations were also observed at the harbor stations, along the south shore and in Cape Cod Bay.

4.2.2.2 Vertical Distribution

Farfield. The chlorophyll concentrations over the water column were examined along the three east/west farfield transects (Figure 1-3) to compare the vertical distribution of chlorophyll across the region. In August, elevated chlorophyll concentrations (6-9 μg L^{-1}) were found in the surface waters at harbor, coastal and western nearfield stations (Figure 4-37). The high chlorophyll concentrations found in the inshore waters were concomitant with very high phytoplankton abundance (4-5 million cells L^{-1}). The main difference between inshore and offshore phytoplankton assemblages was the high number of pennate diatoms at the nearshore stations (1-2.5 million cells L^{-1}). At the offshore stations along each transect, a sharp subsurface chlorophyll maximum was observed at or just below the pycnocline. This depth was coincident with increasing nutrient concentrations. Though the subsurface chlorophyll maximum extended throughout most of Massachusetts Bay, the eastern nearfield exhibited relatively low chlorophyll concentrations in both surface and deep waters.

By October (WF98E), a fall bloom was occurring in the nearfield area while chlorophyll concentrations had generally decreased across the rest of Massachusetts Bay (Figure 4-38). Along the Boston-Nearfield transect, chlorophyll concentrations were >12 μg L^{-1} in the subsurface chlorophyll maximum at stations N20 and N21. These high nearfield concentrations were coincident with the highest phytoplankton counts observed during this farfield survey (2-3 million cells L^{-1}) and the highest productivity observed at stations N04 and N18 for the 1998 monitoring year (1500-2000 mg C m^{-3} d^{-1}). In October, Boston Harbor chlorophyll concentrations were <3 μg L^{-1} as were surface chlorophyll concentrations along both the Cohassett and Marshfield transects. A broad band of elevated chlorophyll concentrations (3-6 μg L^{-1}) was observed along these transects situated above the weakening pycnocline over a depth of 5 to 25 m.

Five farfield stations were sampled during the December nearfield survey WN98G. During each of the previous baseline monitoring years, chlorophyll concentrations decreased rapidly following the fall bloom and the overturn of the water column. In December 1998, chlorophyll concentrations were high at each of the farfield stations. The highest concentration was observed at station F29 off Provincetown (15.5 μg L^{-1}). In Cape Cod Bay, chlorophyll concentrations ranged from 1.0 to 8.6 μg L^{-1} and at harbor station F23, chlorophyll values of 3.4 to 6.6 μg L^{-1} were observed. SeaWiFS images indicated that elevated chlorophyll concentrations were present not only in Massachusetts and Cape Cod Bays but also throughout much of the western Gulf of Maine in early December (Figure 4-39 or see Appendix I).

Nearfield. The mean chlorophyll concentration and range of values observed during each of the surveys conducted during this time period are presented in Figure 4-39. The data are presented for the surface, mid-depth and bottom sampling depths. When a subsurface chlorophyll maximum was present, the mid-depth data was collected within the maximum. In August, the mean chlorophyll concentrations in the surface and mid-depth waters was about 5 μg L^{-1} during WN98A and WF98B and decreased to 2-3 μg L^{-1} by early September (WN98C). Chlorophyll concentrations at these depths had increased by late September and into October. During the October survey, the mean chlorophyll concentration at the subsurface chlorophyll maximum was 10 μg L^{-1} which was the highest survey mean observed during this time period. Chlorophyll concentrations were low (<2 μg L^{-1}) during the two November surveys, but in December an unprecedented winter bloom was observed in the nearfield area with surface chlorophyll concentrations ranging from 3 to 13 μg L^{-1}. The wide range in chlorophyll concentrations that were observed during August, October, and December chlorophyll events is indicative of the inshore/offshore variability that was observed in the nearfield area during this time period.

The vertical distribution of chlorophyll was examined in more detail along a transect from the southwest corner to the northeast corner of the nearfield area (see Figure 1-3). The southwest corner, station N10, often exhibits a harbor chlorophyll signal while an offshore chlorophyll signal is more often observed at the northeast corner, station N04. In early August (WN98A), chlorophyll concentrations were at a maximum in the surface waters at harbor-influenced station N10 (6-9 $\mu g\ L^{-1}$) while a subsurface chlorophyll maximum was observed at each of the other stations along the transect (Figure 4-40). The highest chlorophyll concentrations (>12 $\mu g\ L^{-1}$) were seen at station N19 in a subsurface layer between 5 and 10 m. At the end of August (WF98B), elevated chlorophyll concentrations were only found at stations N10 and N19 and were associated with the nearshore pennate diatom bloom mentioned above. In the eastern nearfield, chlorophyll concentrations were low (<3 $\mu g\ L^{-1}$) throughout the water column and this area seemed to be a transitional zone between the nearshore and offshore water masses. By early September (WN98C), chlorophyll concentrations had decreased at stations N10 and N19 with a subsurface maximum of 6-9 $\mu g\ L^{-1}$ at 5 m

The fall bloom in the nearfield started by late September (WN98D) and continued through October (WF98E). The bloom appears to have been initiated in the shallow western portion of the nearfield and progressed offshore. This is suggested by the chlorophyll data for late September presented in Figure 4-41, which shows elevated concentrations at the nearshore stations N10 (surface) and N19 (subsurface). The highest concentrations (9-12 $\mu g\ L^{-1}$) were observed at station N19 in the subsurface chlorophyll maximum at 10 to 15 m. A subsurface chlorophyll maximum of 6-9 $\mu g\ L^{-1}$ was also observed at stations N21 and N15. In October (WF98E), the fall bloom extended over the entire nearfield area. High surface chlorophyll concentrations were observed inshore, while subsurface maxima were seen at the offshore stations. Chlorophyll concentrations >12 $\mu g\ L^{-1}$ were measured at stations N21 and N04.

The inshore to offshore progression of the fall bloom in the nearfield area was corroborated by the productivity and phytoplankton data. During the late September survey (WN98D), production at station N18 (vicinity of N19 and N21 on the Nearfield transect) was about 1000 mg C $m^{-2}\ d^{-1}$ while at station N04 it was only 200 mg C $m^{-2}\ d^{-1}$. Phytoplankton abundance at station N18 was about four times higher than the abundance at station N04 and the phytoplankton assemblage at N18 was dominated by centric diatoms, which were present in very low numbers at N04. In October, annual peaks in production were measured at both station N18 and station N04. Phytoplankton abundance was high (2-3 million cells L^{-1}) in the mid-depth samples at stations N04, N18 and N16. Centric diatoms (1-2 million cells L^{-1}) dominated the phytoplankton assemblage at these stations. It appears that survey WN98D was conducted during the initiation of the fall bloom and survey WF98E was conducted at or near the peak of the bloom.

By early November (WN98F), the fall bloom had ended and chlorophyll concentrations were <3 $\mu g\ L^{-1}$ throughout the nearfield area (Figure 4-41). During previous baseline monitoring years, low chlorophyll conditions persisted after the collapse of the fall bloom, but in December of 1998, chlorophyll concentrations of 0.3 to 13.2 $\mu g\ L^{-1}$ were observed in the nearfield. The highest concentrations were observed in the surface water of the western nearfield. The anomalously high NH_4 and PO_4 concentrations that were observed in this area during the late November survey (WN98G) might have triggered a localized (Harbor-Nearfield) increase in phytoplankton. There was a 50% to 100% increase in phytoplankton abundance at stations N04 and N18 from late November to December and most of the increase was due to an increase in the abundance of diatoms. The pennate diatom *Pseudo-nitzschia pungens* was dominant at both N04 and N18. This "species" is a grouping of two *Pseudo-nitzschia* species that cannot be distinguished using light microscopy – true *P. pungens* and the domoic acid producing *P. multiseries*.

As mentioned above, high chlorophyll concentrations were also observed in and near Cape Cod Bay (stations F02, F03 and F29) and satellite imagery indicated elevated chlorophyll concentrations in most of the western Gulf of Maine waters. This suggests that the increase in chlorophyll and phytoplankton in the nearfield may have been part of a regional rather than a localized event. The input of NH_4 and PO_4 from Boston Harbor may have contributed to the high chlorophyll concentrations that were observed in the nearfield, but based on the chlorophyll data and SeaWiFS images it appears that the nearfield bloom may have been part of a regional chlorophyll bloom.

4.2.3 Dissolved Oxygen

Spatial and temporal trends in the concentration of dissolved oxygen (DO) were evaluated for the entire region (Section 4.2.3.1) and for the nearfield area (Section 4.2.3.2). Due to the importance of identifying low DO conditions, bottom water DO minima were examined for the water sampling events. The minimum DO concentration for this semi-annual period was measured in the nearfield during the December survey (4.54 mg L^{-1}). The mean bottom water concentration in December (~7 mg^{-1}) was the lowest survey mean in 1998. Regionally, a DO concentration minimum of 6.09 mg L^{-1} was observed in Cape Cod Bay in October (WF98E). Due to the persistence of stratified conditions, survey mean DO concentrations decreased from August to December in the nearfield bottom waters. The relatively high initial bottom water DO concentrations that were observed in June (nearfield mean = 11.2 mg L^{-1}) kept the survey mean values from reaching the extremely low levels that had been observed during previous years.

4.2.3.1 Regional Trends of Dissolved Oxygen

The DO of bottom waters was compared between areas over the course of the two combined surveys and the last two nearfield surveys. A time series of the average bottom water DO concentration for each area is presented in Figure 4-42a. Average bottom water DO concentrations ranged from 7.0 to 10.0 mg L^{-1}. From August to October, bottom water DO concentrations decreased 1.5-2 mg L^{-1} in each of the areas. In the boundary area, DO concentrations continued to decrease into late November (WN98G) when the lowest average bottom water DO concentration was observed. No other farfield stations were sampled during survey WN98G and it is unclear if DO concentrations continued to decline throughout the region. By December (WN98H), DO concentrations in the boundary area, Boston Harbor and Cape Cod Bay had increased.

The summer/fall decline in bottom water DO concentrations was also observed in the DO %saturation data (Figure 4-42b). In August (WG98B), harbor and coastal bottom waters were supersaturated due to relatively high production rates at these shallow inshore stations. In the other areas, DO %saturation ranged from 90-95%. By October, DO %saturation had decreased to 79-92% regionally. The decreasing trend continued into November in the boundary area where DO %saturation reached a regional annual minimum value of 72%. Boundary and Cape Cod bottom waters were near 100% saturation by December, but Boston Harbor bottom water had decreased since October to 82% saturation.

In August, the spatial distribution of DO was governed by biological and physical processes and a vertical gradient of decreasing DO with depth was observed (Figure 4-43). The stratification of the water column had separated the surface and bottom water layers and disassociated the biological processes of production and respiration. While respiration occurs over the entire water column, it is offset by primary production and aeration in the surface waters and exacerbated by sediment respiration resulting in decreasing DO concentrations. The layers of high DO concentrations (>11 mg L^{-1}) along each of the transects was concomitant with the subsurface chlorophyll maximum.

By October, DO concentrations decreased over the entire water column (Figure 4-44). Surface water DO concentrations exhibited an inshore to offshore increase of ~1 mg L^{-1}. The nearshore stations were generally well mixed with respect to DO. At the offshore stations, DO concentrations decreased with increasing depth and DO concentrations of 7-8 mg L^{-1} were observed in the bottom waters along each of the transects. Station F28, which is on Stellwagen Bank, was well mixed and DO concentrations of 9-10 mg L^{-1} were measured. It is expected that DO concentrations at boundary station F28 remained high during the remainder of the year. The low bottom water DO concentration observed in the boundary area in November was at station F12, which is a deep station (~90 m deep) situated in Stellwagen Basin.

4.2.3.2 Nearfield Trends of Dissolved Oxygen

Dissolved oxygen concentrations and percent saturation values for both the surface and bottom waters at the nearfield stations were averaged and plotted for each of the nearfield surveys (Figure 4-45). The gradient in DO concentration between the surface and bottom waters ranged from 1 to 3 mg L^{-1} over this time period (Figure 4-45a). The trends in surface DO concentration followed changes in biological parameters. The highest DO concentrations were observed in early August when chlorophyll concentrations and phytoplankton abundance were also high. After declining in September, surface DO concentrations increased in October coinciding with the fall bloom. Elevated surface DO concentrations were also seen in December when abnormally high chlorophyll concentrations were observed.

DO concentrations in the nearfield bottom waters decreased from early August to December. The initial decrease from 9.6 mg L^{-1} in early August (WN98A) to 7.8 mg L^{-1} in late September (WN98D) constituted the majority of the seasonal decline. Bottom water DO concentrations remained relatively constant from late September to late November (WN98G). By December (WN98H), bottom water DO had decreased to 7 mg L^{-1}, which was the minimum value for the nearfield during this time period. The persistence of stratified conditions at the eastern nearfield stations resulted in the continual decline in bottom water DO concentrations. Normally, the water column would become well mixed in November and bottom water DO concentration would increase. In 1998, the delay in mixing combined with the atypical winter phytoplankton bloom led to an annual minimum in bottom water DO concentration during the December survey. Although physical and biological conditions in 1998 led to an extended period of DO decline in the nearfield bottom waters, the 1998 nearfield minimum was not the lowest in comparison to previous baseline monitoring years.

DO % saturation followed the same trend as DO concentration in the nearfield surface and bottom waters (Figure 4-45b). The surface waters were supersaturated from August to October and remained near saturation in November and December. Bottom water DO decreased from 94% saturation in August to 80% saturation in late September. DO %saturation remained at 80% until December when it decreased to ~70%.

4.3 Summary of Water Column Results

- The breakdown of stratified conditions was delayed in 1998 relative to other years. In the farfield, seasonal stratification deteriorated at the coastal stations and began to weaken at the offshore stations by the October survey (WF98E).
- In the nearfield area, the data indicate that the pycnocline broke down in the western nearfield by October (WF98E), but the water column at the outer nearfield stations was not well mixed until late November (WN98G).

- Upwelling events in August brought cooler, more saline and nutrient replete waters into the surface layer at coastal and western nearfield stations supporting the high phytoplankton abundance that was observed.
- The highest nutrient concentrations were consistently measured at the harbor and harbor-influenced coastal and nearfield stations.
- In November and December, anomalously high concentrations of ammonium and phosphate were observed in the western nearfield that correlated with high concentrations observed by MWRA in Boston Harbor. The source of these nutrients was not determined, but may have been due to the transfer of south system sewage flows from Nut Island to the Deer Island facility or other factors.
- Maximum chlorophyll values were measured across the region during the August survey (WF98B) coinciding with the highest phytoplankton abundance.
- Chlorophyll, productivity and phytoplankton data suggest that the fall nearfield bloom occurred from September to October. The bloom initiated in the shallow western portion of the nearfield and progressed offshore.
  - September (WN98D): high chlorophyll nearshore decreasing to the east, production and phytoplankton abundance was high at N18 and low at N04;
  - October (WF98E): high chlorophyll throughout nearfield area, peak annual production at N18 and N04, high phytoplankton abundance across nearfield at N18, N04, and N16.
- An unprecedented winter bloom was observed in December in Cape Cod Bay and the nearfield. The nearfield bloom coincided with anomalously high NH_4 and PO_4 concentrations that might have triggered the localized increase in phytoplankton.
- Due to the persistence of stratified conditions, bottom water DO concentrations decreased from August to December in the nearfield.
  - The delay in mixing and the atypical winter phytoplankton bloom led to the annual minimum in bottom water DO concentration (7 mg L^{-1}) observed in December.
  - The relatively high initial bottom water DO concentration (11.2 mg L^{-1}) that was observed in June lessened the effect of the delay in returning to well-mixed winter conditions.

5.0 PRODUCTIVITY, RESPIRATION, AND PLANKTON RESULTS

5.1 Productivity

Production measurements were taken at two nearfield stations (N04, N18) and one farfield station (F23) near the entrance of Boston Harbor during the second half of 1998. All three stations were sampled on August 24, 1998 (WF98B) and October 7, 1998 (WF98E). Stations N04 and N18 were additionally sampled on August 7, (WN98A), September 3, (WN98C), September 24, 1998 (WN98D), November 4, 1998 (WN98F), November 25, 1998 (WN98G), and December 16, 1998 (WN98H). Production was determined by measuring ^{14}C uptake at varying light intensities as summarized below and in Appendix A.

In addition to samples collected from the water column, productivity calculations also utilized light attenuation data from a CTD-mounted 4π sensor, and incident light time-series data from a 2π irradiance sensor located on Deer Island, MA. After collection of the productivity samples, they were returned to the Marine Ecosystems Research Laboratory (MERL) in Rhode Island and incubated in temperature controlled incubators. The resulting photosynthesis versus light intensity (P-I) curves (Figure 5-1 and comprehensively in Appendix E) were used, in combination with light attenuation and incident light information, to determine hourly production at 15-min intervals throughout the day for each sampling depth.

For this semi-annual report, areal production (mg C m^{-2} d^{-1}) and chlorophyll-specific areal production (mg C mg Chl^{-1} d^{-1}) are presented (Figures 5-2 and 5-3). Areal productions are determined by integrating measured productivity (and chlorophyll-specific productivity) over the depth interval. Chlorophyll-specific productivity for each depth was first determined by normalizing productivity by measured chlorophyll *a*. Productivity and chlorophyll-specific productivity for each depth are also presented as contour plots (Figures 5-4 and 5-5).

5.1.1 Areal Production

Areal production at one of the nearfield stations, N04, fluctuated between 200-500 mg C m^{-2} d^{-1} from August 7, 1998 through September 24, 1998 (Figure 5-2). The peak annual production for 1998 (1665-mg C m^{-3} d^{-1}) was reached on October 7, 1998 (WF98E). Values remained somewhat elevated (~700-800 mg C m^{-3} d^{-1}) compared to August and September throughout the remainder of the annual cycle (WN98F-WN98H) at station N04. A similar pattern was observed at station N18, the second nearfield station (Figure 5-2). Areal production varied around 300-450 mg C m^{-3} d^{-1} during August (WN98A and WN98B) and early September (WN98C) then increased to ~1000 mg C m^{-3} d^{-1} on September 24, 1998 (WN98D) and reached the annual maximum of 1988 mg C m^{-3} d^{-1} on October 7, 1998 (WF98E). Values remained at ~650-700 mg C m^{-3} d^{-1} for the remainder of the year.

At the Boston Harbor productivity/respiration station (F23), areal production was measured only twice from August through December 1998. In August (WF98B) production here was measured as 751.7 mg C m^{-3} d^{-1} and was higher than the nearshore stations. In October (WF98E) production was lower than August and did not display the peak annual levels that were observed at the two nearfield sites (Figure 5-2). The production data are in agreement with the chlorophyll data, which indicated that a phytoplankton bloom occurred during the fall period at stations N04 and N18 (see below) but not at F23.

A well-established fall bloom was observed at station N18 (Figure 5-2). The bloom was initiated in late August, reached its peak on October 7, 1998 and declined by November 4, 1998. The bloom lasted about 10 weeks at this station. A less well-developed fall bloom was observed at station N04. The bloom at this site was established later (late September), reached a lower peak production level and was a shorter duration. Bloom duration at station N04 appeared to be about 3-4 weeks.

Relative to other years, areal production at all three survey stations was low throughout the late summer and fall periods. In general, nearfield stations are characterized by the occurrence of a winter/spring phytoplankton bloom, relatively high production during the summer and a fall bloom. A gradual pattern of increasing areal production from winter through summer is more typical of the harbor (station F23). The fall phytoplankton blooms observed at nearfield stations in 1995-1997 generally reached values of 2000 to 4000 mg C m^{-3} d^{-1}, with blooms typically lasting 1-2 months. The fall phytoplankton bloom during 1998 was generally a lower magnitude bloom than those observed in prior years at station N04 (peak ~1665 mg C m^{-3} d^{-1}). Areal production at station N18 has only been measured during 1997 and 1998. The 1998 peak was about half the value observed in 1997 and the duration was somewhat less. Relative to station N16, a nearby site monitored from 1995-1996, the fall bloom at N18 in 1998 was very similar to prior years.

The productivity cycle at station F23 was also aberrant in August and October 1998. Production values were considerably lower than earlier years and did not display any tendency to increase over the year. During 1995-1997, peak areal productions at station F23 ranged from 2000 to 8000 mg C m^{-2} d^{-1} in the fall. The peak areal production observed at station F23 in August 1998 was 3-10 times lower than peak fall values observed in previous years.

The production values at stations F23, N04 and N18 are consistent with the chlorophyll values observed during the survey period with the exception of the December values. During December, chlorophyll values at station N04 and N18 were elevated while production was not.

Chlorophyll-specific areal production (Figure 5-3) showed a gradual-increasing trend over time at stations N04 and N18 during the fall–winter period. Chlorophyll-specific areal production was relatively low and constant at station F23 throughout the sampling cycle. Chlorophyll-specific production is an approximate measure for the efficiency of production and frequently reflects nutrient conditions at the sampling sites. The distribution of chlorophyll-specific production indicates that the efficiency of production was moderately high in relation to the amount of biomass present at the nearfield stations during the fall bloom. At station N18, chlorophyll-specific production was greater than 700 mg C mg Chl a^{-1} d^{-1} during the early November survey (WN98F). This period of high productivity per unit chlorophyll coincided with the end of the fall bloom. At station N04, the chlorophyll-specific production reached a maximum value of 1059 mg C mg Chl a^{-1} d^{-1} at the same time that production was maximized (October 7, 1998).

5.1.2 Volumetric Production

The spatial and temporal distribution of production and chlorophyll-specific production on a volumetric basis were summarized by contouring production over the sampling period (Figures 5-4 to 5-7). Chlorophyll-specific productions (daily production normalized to chlorophyll concentration at each depth) were calculated to compare production with chlorophyll concentrations. Chlorophyll-specific production can be used as an indicator of the optimal conditions necessary for photosynthesis.

Daily production was concentrated in the upper 5 m of the water column at station N04 during the fall-winter sampling cycle. A subsurface (5-10 m) productivity maximum was measured at station N18 on October 7, 1998 (WF98E). No subsurface production peaks were observed at station N04 during this sampling cycle. At the two nearfield stations, productions tended to increase during the fall with peak values occurring in October for both stations. For station N04, the highest production value observed (177 mg C m^{-3} d^{-1}) occurred at the surface on October 7, 1998. Peak production values tended to be correlated with the occurrence of the highest chlorophyll *a* measurements. The fall productivity pattern observed in 1998 was similar to that observed in prior years, although peak values continued to be somewhat depressed. Peak fall productions typically occurred in the surface waters at station N04 from 1995-1997. A subsurface production maximum was observed in the fall at station N16 in 1995, but not in 1996 or at station N18 in 1997.

Chlorophyll-specific production at stations N04 and N18 was concentrated in the upper portions of the water column (Figures 5-6 and 5-7). Peak chlorophyll-specific productions occurred during October at station N18 and in early November at station N04. The observed pattern suggests that the efficiency of photosynthesis increased slightly with time up to (or just following) the fall production peak then declined again. When the efficiency of photosynthesis is high but not reflected in higher phytoplankton biomass (measured as total chlorophyll *a*) it suggests that other processes (such as predation by zooplankton) are important in controlling the patterns observed.

5.2 Respiration

Respiration measurements were made at the same nearfield (N04, N18) and farfield (F23) stations as productivity and at an additional station in Stellwagen Basin (F19). All four stations were sampled during each of the combined farfield/nearfield surveys and stations N04 and N18 were also sampled during the six nearfield surveys. Respiration samples were collected from three depths (surface, mid-depth, and bottom) and were incubated in the dark at *in situ* temperatures for 8±1 days.

Both respiration (in units of $\mu MO_2\ hr^{-1}$) and carbon-specific respiration ($\mu MO_2\ \mu MC^{-1}\ hr^{-1}$) rates are presented in the following sections. Carbon-specific respiration was calculated by normalizing respiration rates to the coincident particulate organic carbon (POC) concentrations. Carbon-specific respiration rates provide a relative indication of the biological availability (labile) of the particulate organic material for microbial degradation.

5.2.1 Water Column Respiration

Due to the timing of the surveys, the farfield stations were only sampled twice (August – WF98B and October – WF98E). Evaluations of the temporal trends are therefore focused on the nearfield area where data are available over the whole August to December time period.

High respiration rates had been observed at the end of the previous reporting period ranging from 0.07-0.32 $\mu MO_2\ hr^{-1}$ at the nearfield stations. By early August (WN98A), respiration rates had decreased to 0.05-0.21 $\mu MO_2\ hr^{-1}$ at N18 and <0.15 at N04 (Figure 5-8). At station N18, respiration continued to decline through late August (WF98B) with rates of 0.14 $\mu MO_2\ hr^{-1}$ in the surface waters and <0.02 at the mid and bottom depths. Respiration rates at station N04 had increased to ~ 0.2 $\mu MO_2\ hr^{-1}$ in the surface and mid depth waters by late August, which coincided with an increase in chlorophyll concentrations at this outer nearfield station.

Nearfield respiration rates reached a maximum for this time period during the late September survey (WN98D) with values ranging from 0.16-0.23 $\mu MO_2\ hr^{-1}$ and 0.1-0.33 $\mu MO_2\ hr^{-1}$ at stations N04 and N18, respectively. There was an obvious gradient in rates decreasing from maximum values in surface waters to minimum values in bottom waters.

During the October survey WF98E, high chlorophyll concentrations and production rates were observed at mid depth (subsurface chlorophyll maximum) suggesting the presence of a fall bloom. Respiration rates, however, had decreased from September values. At station N04, rates ranged from ~0.17 $\mu MO_2\ hr^{-1}$ at the surface and mid depths to 0.02 $\mu MO_2\ hr^{-1}$ in the bottom waters and at station N18 respiration rates were 0.15-0.20 $\mu MO_2\ hr^{-1}$ at the surface and mid depths and 0.06 $\mu MO_2\ hr^{-1}$ in the bottom waters. Though rates had decreased, mid depth respiration values had remained relatively high in comparison and were coincident with the elevated levels of production.

Respiration rates continued to decrease with the decreasing water temperatures through November (WN98F and WN98G) and December (WN98H). By December, respiration rates were <0.05 $\mu MO_2\ hr^{-1}$ at each of the depths at stations N04 and N18. The patterns and magnitude of the rates observed in the respiration data for the nearfield stations were similar to previous years for this time period. This is due to the relative consistency of the fall bloom from year to year (Sept-Oct peak in respiration rates) and the decrease in water temperature and increased mixing associated with the fall/winter turnover of the water column (post-bloom decrease in rates).

Given the paucity of data at the farfield stations for this period, it is difficult to clearly characterize the seasonal trends in respiration. At station F23, respiration rates were at a maximum at each of the depths (0.15-0.27 $\mu MO_2\ hr^{-1}$) during the August survey (WF98B). Unlike the trends observed at the nearfield stations, respiration was highest in the bottom waters at this shallow harbor. By the October survey (WF98E) respiration rates at F23 had decreased to 0.1-0.14 $\mu MO_2\ hr^{-1}$, which coincided with a decrease in chlorophyll concentrations from August to October. Respiration rates at the Stellwagen Basin station F19 were relatively high in August at the surface (0.28$\mu MO_2\ hr^{-1}$) and ranged from 0.07-0.14 $\mu MO_2\ hr^{-1}$ at the bottom and mid depths. Respiration rates had decreased slightly in the surface and bottom waters by the October survey, but had increased to 0.25$\mu MO_2\ hr^{-1}$ at mid depth which coincided with a subsurface chlorophyll maximum at station F19.

5.2.2 Carbon-Specific Respiration

Carbon-specific respiration accounts for the effect that variations in the size of the particulate organic carbon (POC) pool have on respiration. Differences in carbon-specific respiration result from variations in the quality of the available particulate organic material or from environmental conditions such as temperature. Particulate organic material that is more easily degraded (more labile) will result in higher carbon-specific respiration. In general, newly produced organic material is the most labile. Water temperature is the main physical characteristic that controls the rate of microbial oxidation of organic material – the lower the temperature the lower the rate of oxidation. When stratified conditions exist, the productive, warmer surface and/or mid-depth waters usually exhibit higher carbon-specific respiration rates and bottom waters have lower carbon-specific respiration rates due to both lower water temperature and lower substrate quality due to the degradation of particulate organic material during sinking.

There was a general decrease in POC concentrations from early August to early September (station N18) and late September (station N04). POC concentrations then increased reaching maximum values at both stations in October (Figure 5-9). This pattern was consistent with the trends observed in chlorophyll over this time period. POC concentrations were similar in the surface and mid depth waters at station N04 from August to December decreasing from ~35 µM in early August to 15-20 µM in September then reaching a maximum of 45-50 µM in October. The bottom water POC concentration at station N04 remained relatively constant (10 µM) from August to October and then increase to 25 µM in early November (WN98F). This increase was probably due to the settling out of the fall bloom. At station 18, the POC concentrations in the surface and mid depth waters were not comparable until late September when subsurface chlorophyll concentrations had begun to increase and POC concentrations were at a maximum in both the surface (45 µM) and mid depth (42 µM) waters. POC concentrations had decreased slightly at the surface and mid depths by the October survey, but had reached the maximum value in the bottom waters (29 µM). This pattern was similar to that seen at station N04 except it suggests the fall bloom may have senesced and begun sinking from the water column earlier at N18. At station F23, POC concentrations decreased from 40-50µM in August to 15-20µM in December.

At station N04, the decrease in POC concentrations from August to late September was coincident with increasing respiration rates. This resulted in a substantial increase in the carbon-specific respiration rate indicating that even though the total POC was decreasing that the POC that was present was labile or that another pool of labile organic carbon was present (Figure 5-10). The DOC concentrations at station N04 were higher in September than during previous or subsequent months. The increase in carbon-specific respiration may have resulted from a combination of increased phytoplankton productivity (which increased in September reaching a maximum in October) and increased grazing pressure on the phytoplankton. In October, production and chlorophyll concentrations reach maximum levels and high POC concentrations were measured. Carbon-specific respiration rates, however, were low at stations N04 and N18 ranging from 0.002-0.005 $\mu MO_2/\mu MPOC^{-1}hr^{-1}$ suggesting that the October survey was conducted near the conclusion of the fall bloom. At station N18, carbon-specific respiration rates remained relatively low and constant at station N18 throughout this time period.

5.3 Plankton Results

Plankton samples were collected on each of the eight surveys conducted during this reporting period. Phytoplankton and zooplankton samples were collected at two stations (N04 and N18) during each nearfield survey and at 11 farfield plus the two nearfield stations (total = 13) during the farfield surveys. Phytoplankton samples included both whole-water and 20 µm-mesh screened samples, from the surface and mid-depth. Zooplankton samples were collected by vertical/oblique tows with 102 µm-mesh nets. Methods of sample collection and analyses are detailed in Albro *et al*. (1998).

In this section, the seasonal trends in plankton abundance and regional characteristics of the plankton assemblages are evaluated. Total abundance and relative abundance of major taxonomic group are presented for each phytoplankton and zooplankton community. Tables in the appendices provide data on cell densities and relative abundance for all dominant plankton species (>5% abundance): Appendix F – whole water phytoplankton, Appendix G – 20-µm screened phytoplankton, and Appendix H – zooplankton.

5.3.1 Phytoplankton

5.3.1.1 Seasonal Trends in Total Phytoplankton Abundance

Total phytoplankton abundances in nearfield whole water samples (surface and mid-depth) remained high (> $0.5X10^6$ cells L^1) from August through early October (Table 5-1; Figures 5-11 and 5-12). These continued a phytoplankton bloom, which had shown a sustained increase from February through July. In late October, however, phytoplankton abundance declined to levels generally half or less of the summer levels, remaining low through December.

Total phytoplankton abundance in farfield whole water samples (surface and mid-depth) showed similar high abundances in August, with lower levels in October (Table 5-1).

Total abundances of dinoflagellates and silicoflagellates in 20 µm-mesh-screened water samples were considerably lower than those recorded for total phytoplankton in whole-water samples, due to the screening technique which selects for larger, albeit rarer cells. Nonetheless, similar seasonal trends, though of different taxa, were recorded. Screened phytoplankton abundance fluctuated, but overall decreased from August through December (Table 5-2). These decreases in screened phytoplankton abundance largely reflected a decline in the sustained bloom of the dinoflagellates *Ceratium fusus*, *Ceratium tripos*, and other species of this genus which had increased from February through July.

Table 5-1. Nearfield and Farfield Averages and Ranges of Abundance (10^6 Cells L^{-1}) of Whole-Water Phytoplankton.

Survey	Dates (1998)	Nearfield Mean	Nearfield Range	Farfield Mean	Farfield Range
WN98A	8/7	2.266	1.501-3.432	NA	NA
WF98B	8/18-25	1.938	0.307-4.035	3.533	0.823-5.257
WN98C	9/3	1.312	0.544-2.203	NA	NA
WN98D	9/24	1.376	0.547-2.333	NA	NA
WF98E	10/5-16	1.904	0.950-2.802	0.843	0.208-1.445
WN98F	11/4	0.781	0.665-0.904	NA	NA
WN98G	11/25	0.446	0.346-0.702	NA	NA
WN98H	12/16	0.724	0.605-0.936	NA	NA

NA- Data not available because the farfield stations were not sampled during this survey.

Table 5-2. Nearfield and Farfield Average and Ranges of Abundance (Cells L^{-1}) for >20 µM-Screened Dinoflagellates.

Survey	Dates (1998)	Nearfield Mean	Nearfield Range	Farfield Mean	Farfield Range
WN98A	8/7	4200	2183-6733	NA	NA
WF98B	8/18-25	1516	566-2735	2452	283-8992
WN98C	9/3	809	369-1682	NA	NA
WN98D	9/24	488	135-852	NA	NA
WF98E	10/5-16	744	452-1086	633	62-1940
WN98F	11/4	1670	1366-2075	NA	NA
WN98G	11/25	1556	621-2939	NA	NA
WN98H	12/16	3533	2469-4813	NA	NA

NA- Data not available because the farfield stations were not sampled during this survey.

5.3.1.2 Nearfield Phytoplankton Community Structure

Whole-Water Phytoplankton - During August (WN98A and WF98B), nearfield whole-water phytoplankton assemblages from both depths were dominated by unidentified microflagellates and the diatom *Leptocylindrus danicus* (Figures 5-13 and 5-14). Other diatoms, including *Leptocylindrus minimus*, *Skeletonema costatum* and *Pseudo-nitzschia delicatissima* made lesser contributions.

During early September (WN98C), the dominance of < 10 µm microflagellates and cryptomonads continued in the nearfield, with *L. minimus* and the dinoflagellate *Gymnodinium* sp. as subdominants (Figure 5-15). By late September (WN98D) microflagellate dominance was overwhelming at station N04, but was shared at station N18 with various diatoms, including *Chaetoceros didymus, L. danicus, L. minimus, S. costatum*, and a small centric < 10 µm in longest dimension (Figure 5-16).

During early October (WF98E) microflagellate dominance was shared with chain-forming diatoms such as *Chaetoceros compressus, Eucampia zodiacus*, and *Skeletonema costatum* (Figure 5-17). Diatoms characterized as *Pseudo-nitzschia "pungens*" (which could include the non-toxic *P. pungens* or the domoic-acid-producing *P. multiseries*, because these cannot be reliably distinguished using light microscopy) was present, comprising 5.7% of cells counted.

In late October (WN98F) microflagellate dominance was shared with cryptomonads, *E. zodiacus*, and an unidentified species of the dinoflagellate genus *Gymnodinium* (Figure 5-18).

By late November (WN98G) microflagellate and cryptomonad abundance was shared only with the diatom *Rhizosolenia delicatula* (Figure 5-19).

The December (WN98H) assemblage was dominated by microflagellates (Figure 5-20), with lesser contributions by *Chaetoceros compressus*, another unidentified species of this genus, a centric diatom < 10 µm in longest dimension and (nominally) two species of *Pseudo-nitzschia* (*delicatissima* and "*pungens*"). These can be distinguished by criteria visible with standard light microscopy, so effectively the designation of "*delicatissima*" means "not *pungens* or *multiseries*." The latter comprised 5-13% of total cells counted in nearfield samples, with abundances of up to 82,000 cells L^{-1}

Screened Phytoplankton – In August during WN98A and WF98B nearfield screened samples were dominated by the thecate dinoflagellates *Ceratium tripos* and *C. fusus*, and secondarily by the dinoflagellates *Dinophysis norvegica*, *Protoperidinium* spp., and the silicoflagellate *Distephanus speculum*.

By September (WN98C and WN98D), various species of the dinoflagellate genus *Ceratium* (*C. fusus, C. longipes* and *C. tripos*) were dominant with several other species of dinoflagellates present.

From October through December (WF98E, WN98F, WN98G, WN98H) *C. fusus* and *C. tripos* were dominant in the nearfield, with lesser contributions by *Protoperidinium* spp., *Prorocentrum micans*, and *C. macroceros.*

5.3.1.3 Farfield Phytoplankton Assemblages

Whole-Water Phytoplankton - During WF98B in late August, most farfield station assemblages were dominated at both depths by unidentified microflagellates and cryptomonads < 10 µm in cell size, and the diatoms *Leptocylindrus danicus* and *L. minimus* (Figure 5-14). The diatoms *Pseudo-nitzschia delicatissima* and *P. pungens* were subdominants at most stations.

During WF98E in early October, most farfield stations were dominated by unidentified microflagellates and cryptomonads < 10 µm in size, but chain-forming diatoms were also present in subdominant abundance (Figure 5-17). Particularly, these included *Leptocylindrus danicus, Eucampia zodiacus, Skeletonema costatum, Chaetoceros compressus* and *Pseudo-nitzschia pungens*.

There were also unidentified centric diatoms of the genus *Thalassiosira* < 20 μm in individual cell diameter at several other stations.

Screened Phytoplankton – During both WF98B and WF98E, 20-μm screened surface phytoplankton samples were dominated by the dinoflagellates *Ceratium fusus*, and *C. tripos*, and to a lesser extent several other dinoflagellates. These included *Ceratium lineatus, Protoperidinium* spp., *Scrippsiella trochoidea*, *Prorocentrum micans* and several other taxa.

5.3.1.4 Nuisance Algae

There were no confirmed blooms of harmful or nuisance phytoplankton species in Massachusetts and Cape Cod Bays during August – December, 1998. Some species that have caused harmful blooms in different seasons in previous years, such as *Phaeocystis pouchetii* (early spring), or *Alexandrium tamarense* (late spring and summer), were unrecorded during this period. Other non-toxic species whose blooms have caused anoxic events elsewhere, such as *Distephanus speculum* (Fanuko, 1989) and *Ceratium tripos*(/*longipes*) (Malone, 1978; Falkowski *et al*. 1980) were routinely present, but not at abundances approaching those previously associated with anoxia. However, potentially-toxic species of the diatom genus *Pseudo-nitzschia* were present, in some cases, in moderately high numbers. A discussion of *Pseudo-nitzschia* spp. is presented below.

There are potentially four species of the genus *Pseudo-nitzschia* that could occur in the MWRA sampling area: *P. pungens, P. multiseries, P. delicatissima,* and *P. pseudodelicatissima*. Although there are reports of all four of these species producing domoic acid, either in field collections, or in culture (see Table 1 of Bates et al. 1998), the primary species that has been associated with domoic acid shellfish toxicity episodes in the North Atlantic is *P. multi-series*. The reports of domoic acid toxicity in the field for *P. pseudodelicatissima* and *P. delicatissima* are based upon only single occurrences, in either the Bay of Fundy or at Prince Edward Island, Canada, respectively. The only published report of domoic acid toxicity in the field attributed to *P. pungens* was from New Zealand, although there have apparently been recent unpublished reports (summarized by Bates et al., 1998) from California and Washington (state). Several other species of the genus, which may or may not produce domoic acid all occur in the Pacific. Based upon criteria given in the Hasle and Syvertsen (1997) chapter of a manual edited by Tomas (1997) entitled “Identifying Marine Phytoplankton,” it is possible to distinguish these four species using microscopy, but in some cases only scanning electron microscopy (SEM) can reliably distinguish between species. Criteria are given below.

Members of the genus *Pseudo-nitzschia* form end-to-end chains, with adjacent cells overlapping. Individual cells vary in both length (“apical axis”) and width (“transapical axis”). *P. pungens* and *P. multiseries* are not reliably distinguished by light microscopy because they are both of approximately the same length (74-142 μm for *P. pungens* and 68-140 μm for *P. multiseries*), the same width (3.0-4.5 μm for *P. pungens* and 4-5 μm for *P. multiseries*), with adjacent cells overlapping by one-third or more of cell length. The primary accepted way for distinguishing *P. pungens* from *P. multiseries* is to count intercostal poroids, which are small holes that occur in rows between the ribs (“costae”) on the inner surfaces of diatom thecae (“valves”) that have been separated by treatment with acid or bleach. Since the diameters of these poroids are considerably less than 1 μm, the only reliable method of observation to count them is with SEM. If poroids occur in pairs in rows, then the species is *P. pungens*. If, however, there are multiple poroids (3-4) in a row, then the species is *P. multiseries*. Effectively the designation of “*Pseudo-nitzschia pungens*” in our data (obtained thus far with light microscopy only) means either *P. pungens* or *multiseries* (but we do not know which), but not *P. delicatissima* or *P. pseudodelicatissima*. The reason is that the latter two species are distinguished from *P. pungens/multiseries* by their more narrow cells (1.5-2.5 μm), compared to widths of 3-5 μm for *P. pungens/multiseries*, and by overlapping of adjacent cells in chains in *P. delicatissima* or *P. pseudodelicatissima* by only about one-ninth of cell length, compared to by one-third or more of cell length with *P. pungens/multiseries*. The differentiation of *P. delicatissima* from *P. pseudodelicatissima* is facilitated by differences in length, in that *P. delicatissima* cells are much shorter (40-76 μm length) than those of *P. pseudodelicatissima* (59-140 μm length).

5.3.2 Zooplankton

5.3.2.1 Seasonal Trends in Total Zooplankton Abundance

Total zooplankton abundance at nearfield stations fluctuated, but generally remained at similar levels from August through December (Table 5-3).

Total zooplankton abundance at farfield stations was somewhat lower at most stations in October than in August, but there were no consistent trends of higher values in either survey for all stations in a given area compared to others (Figures 5-21 and 5-22). Maximum abundances in both periods occurred in Boston Harbor, but these were nearly matched by levels at other stations in the nearfield or in Cape Cod Bay in August.

Table 5-3. Nearfield and Farfield Average and Ranges of Abundance (10^3 Animals M^{-3}) for Zooplankton.

Survey	Dates (1998)	Nearfield Mean	Nearfield Range	Farfield Mean	Farfield Range
WN98A	8/7	45.9	33.5-58.3	NA	NA
WF98B	8/18-25	45.0	30.5-64.7	45.8	27.3-72.8
WN98C	9/3	12.9	11.9-13.9	NA	NA
WF98D	9/24	35.2	24.9-45.5	NA	NA
WF98E	10/5-16	44.9	35.8-59.2	35.0	15.9-83.2
WN98F	11/4	58.3	39.0-77.6	NA	NA
WF98G	11/25	64.5	61.9-66.9	NA	NA
WN98H	12/16	53.5	47.4-59.7	NA	NA

NA- Data not available because the farfield stations were not sampled during this survey.

5.3.2.2 Nearfield Zooplankton Community Structure

From early August through early October (WN98A, WF98B, WN98C, WN98D, WF98E) the nearfield zooplankton assemblages were dominated by copepod nauplii, and females and copepodites of *Oithona similis*. Subdominants included copepodites of *Pseudocalanus* sp., *Temora longicornis*, and to a lesser extent bivalve and gastropod veligers, the marine cladoceran *Evadne nordmani* and the tunicate *Oikopleura dioica*. The copepod *Microsetella norvegica* and copepodites of the genus *Centropages* were subdominants in late September (WN98D).

By late October (WN98F) and continuing through late November (WN98F), the dominance of copepod nauplii and *Oithona similis* was being supplanted by bivalve veligers, and to a lesser extent gastropod veligers. This was likely due to a combination of the seasonal decline in copepod abundance in the fall, along with a seasonal reproductive pulse by benthic bivalves and gastropods.

5.3.2.3 Farfield Zooplankton Assemblages

At farfield stations during survey WF98B, copepod nauplii were dominants, with subdominant contributions at various stations by adults and copepodites of copepods such as *Oithona similis*, *Pseudocalanus* sp., *Temora longicornis* and *Microsetella norvegica*. Non-copepod subdominants at most stations included *Evadne nordmani*, *Oikopleura dioica*, and meroplankters such as bivalve and gastropod veligers. At stations in Boston Harbor (F23 and F30), dominants were the adults and copepodites *of Acartia tonsa* and polychaete larvae. Interestingly, there were sporadic occurrences of adults of *Acartia hudsonica* at Boston Harbor stations (F23, F30, and F31). *A. hudsonica* is generally thought to be a cold-season species, but careful examination confirmed that it does co-occur in Boston Harbor during the summer with its warm-season congener *A. tonsa*, although in lower abundances.

During WF98E, copepod nauplii and *Oithona similis* copepodites were again dominant at farfield stations, but bivalve veligers, *O. dioica*, and copepodites of *Pseudocalanus* sp. and *Temora longicornis* were subdominants at most stations. *Acartia hudsonica* were again abundant at stations F23 and F30 in Boston Harbor. Salps were conspicuous subdominants at several stations in the southern portion of the farfield (F01, F02, and F06).

5.4 Summary of Water Column Biological Events

- The peak annual production values for the nearfield stations were observed during the October survey (WF98E) – 1665 and 1188 mg C m^{-3} d^{-1} for stations N04 and N18, respectively.
- The pattern in areal production for August to December 1998 was generally low production in August/September (200-500 mg C m^{-3} d^{-1}), peak production in October, and then somewhat elevated values for the remainder of the year (600-800 mg C m^{-3} d^{-1})
- Areal production at the Boston Harbor station was higher than the nearfield stations during the August survey (750 mg C m^{-3} d^{-1}), but did not have the peak annual levels that occurred at the nearfield stations.
- A well-established fall bloom was observed at N18 lasting about 10 weeks while a less developed bloom was observed at N04 lasting only 4 weeks.
- Relative to previous years of baseline monitoring, areal production was low at all three stations throughout the late summer and fall period. The difference was most notable at station F23 where during 1995 to 1997 peak areal production ranged from 2000-8000 mg C m^{-3} d^{-1} in the fall compared to the 750 mg C m^{-3} d^{-1} measured in August 1998.
- Although the peak production values were lower, the general pattern of production at the nearfield stations was similar to previous years.
- Production values were consistent with chlorophyll concentrations for each of the surveys except the December survey when elevated chlorophyll concentrations were observed.
- Chlorophyll-specific production indicated that the efficiency of production was moderately high in relation to the amount of biomass present at the nearfield stations during the fall bloom.
- Nearfield respiration rates reached a maximum for this time period in late September with values ranging from 0.16-0.23 μMO_2/hr and 0.1-0.33 μMO_2/hr at stations N04 and N18, respectively. At stations F23 and F19, respiration rates were at a maximum in August.

- During the fall bloom, chlorophyll concentrations and production rates reached their peak during the October survey, but respiration rates had decreased from September values. Though rates had decreased, mid depth respiration values had remained relatively high in comparison and were coincident with the elevated levels of production.
- At the nearfield stations, POC concentrations generally decreased from early August to September and increased reaching maximum values in October. This pattern was consistent with the trends observed in chlorophyll over this time period.
- There was a lag between peak POC concentrations in the surface and mid depth waters and peak concentrations in bottom waters at both nearfield stations that is indicative of the settling out of the fall bloom.
- Carbon-specific respiration rates were highest at station N04 in late September during the initiation of the fall bloom.
- In October, carbon-specific respiration rates were relatively low at stations N04 and N18 suggesting that the October survey was conducted near the conclusion of the fall bloom.
- Total phytoplankton abundances in the whole water samples remained high in the nearfield from August through October continuing the sustained increase observed from February to July. Farfield total phytoplankton abundance peaked in August and lower levels were observed in October.
- *Pseudo-nitzschia "pungens"* were present in noteworthy numbers in October (5.7% of cells counted) and December (5-13% of cells counted). This grouping includes both the non-toxic *P. pungens* and the domoic-acid-producing *P. multiseries* that cannot be distinguished using light microscopy.
- In August, the whole water phytoplankton assemblage was dominated by unidentified microlagellates and the diatom *Leptocylindrus danicus*. From September to December, the assemblage was dominated by microflagellates while various diatoms were present in significant numbers.
- The abundance of >20-µm screened dinoflagellates was high in August, low during September and October, and then increased again in November and December. The >20-µm screened samples were dominated by *Ceratium tripos* and *C. fusus* for the entire period.
- There were no confirmed blooms of harmful or nuisance phytoplankton species in Massachusetts and Cape Cod Bays during August – December 1998.

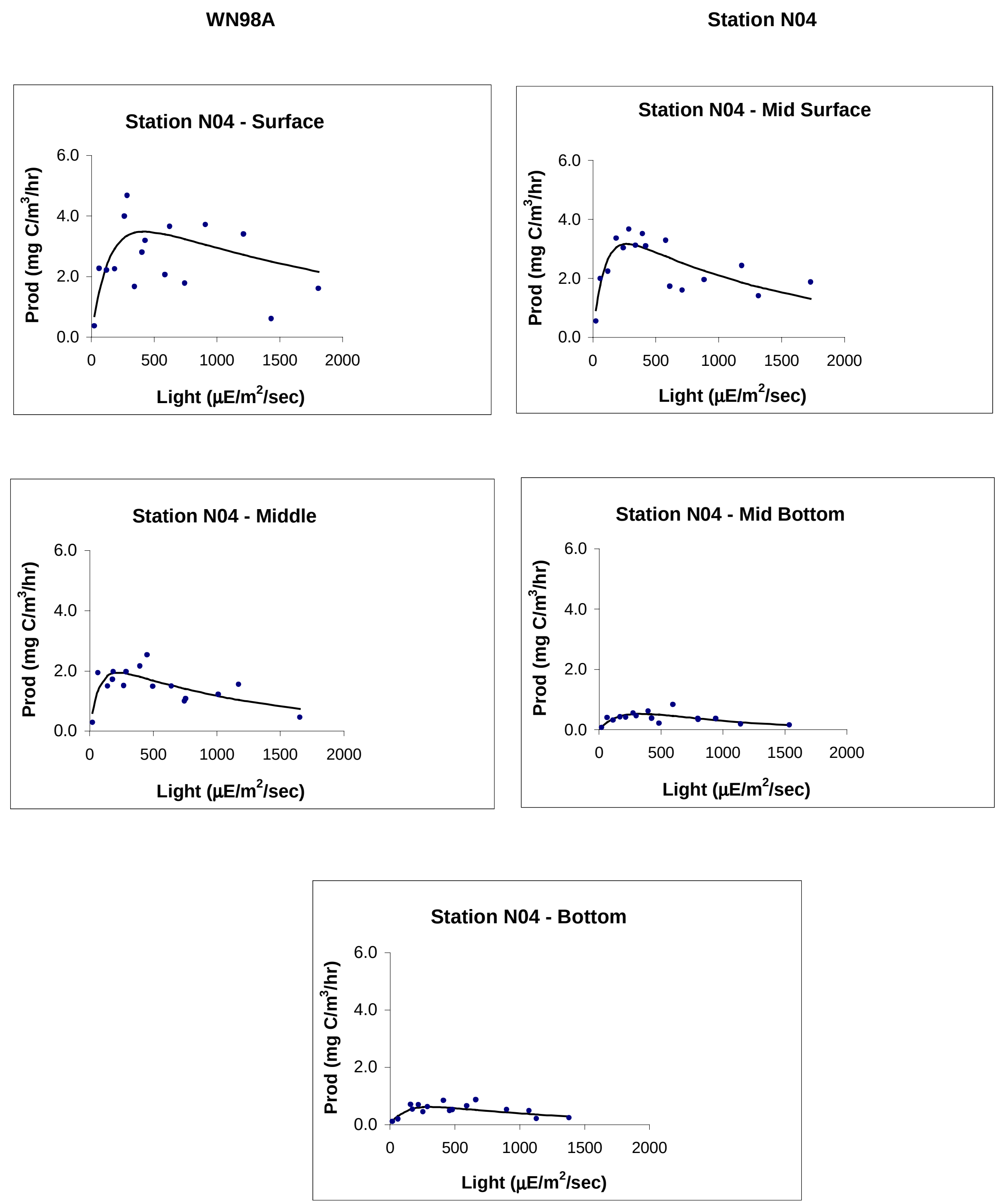


Figure 5-1. An Example Photosynthesis-Irradiance Curve From Station N04 Collected in August 1998.

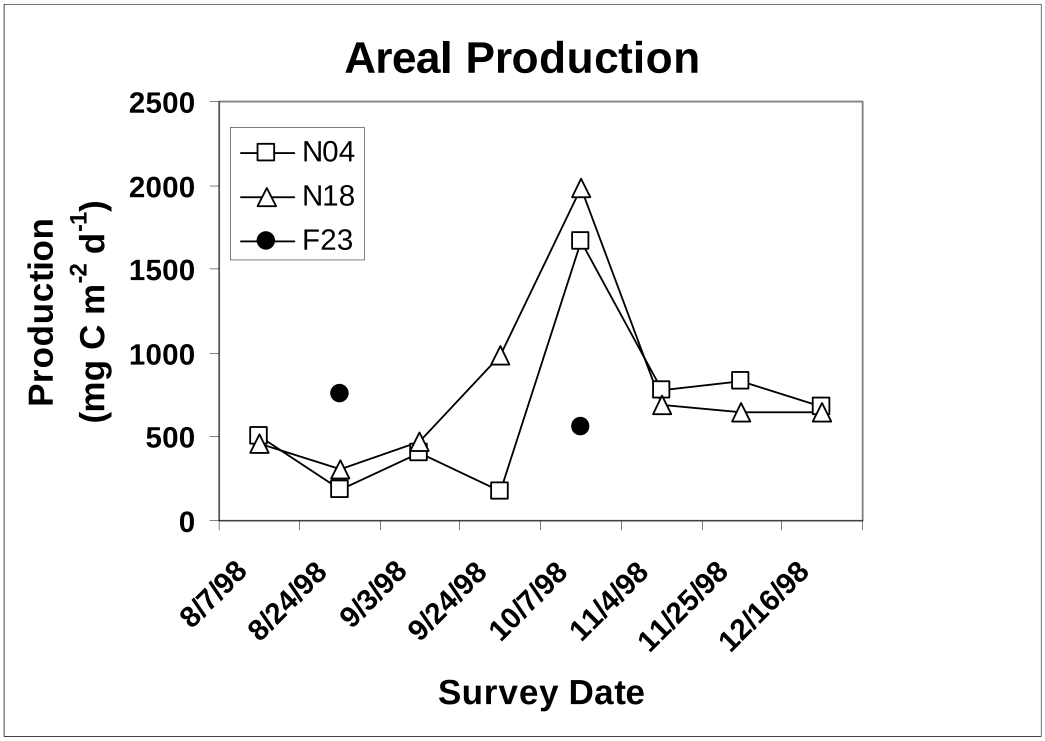


Figure 5-2. Time-Series of Areal Production (Mg C $M^{-2}d^{-1}$) for Productivity Stations.

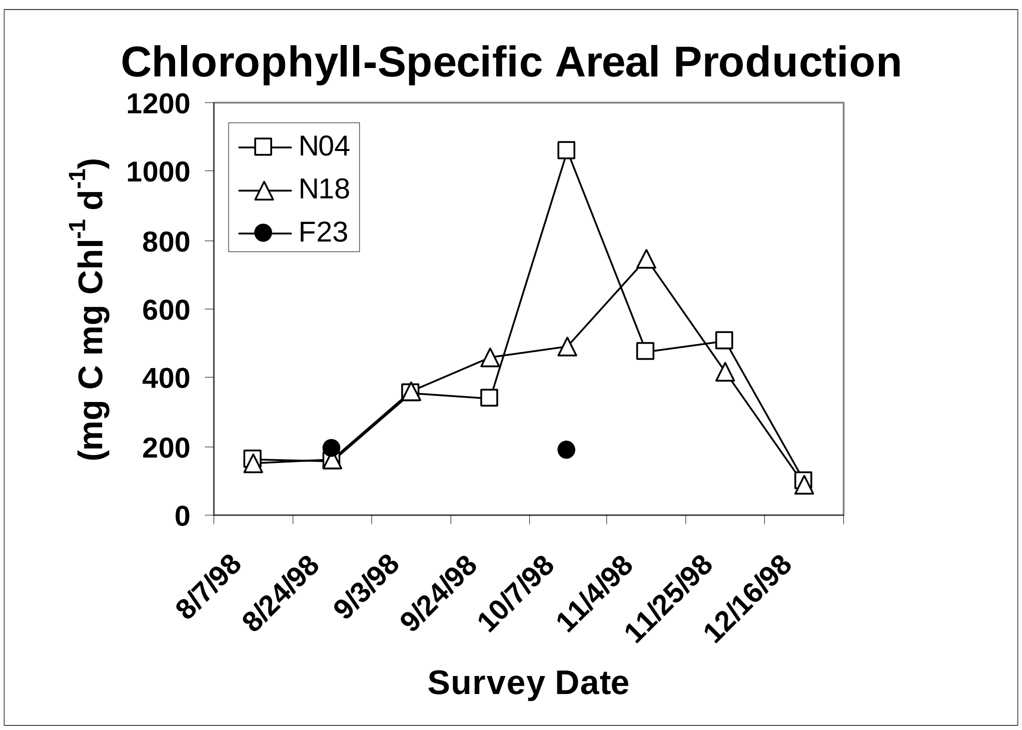


Figure 5-3. Time-Series of Chlorophyll-Specific Areal Production (mg C mg $Chl^{-1}d^{-1}$) for Productivity Stations.

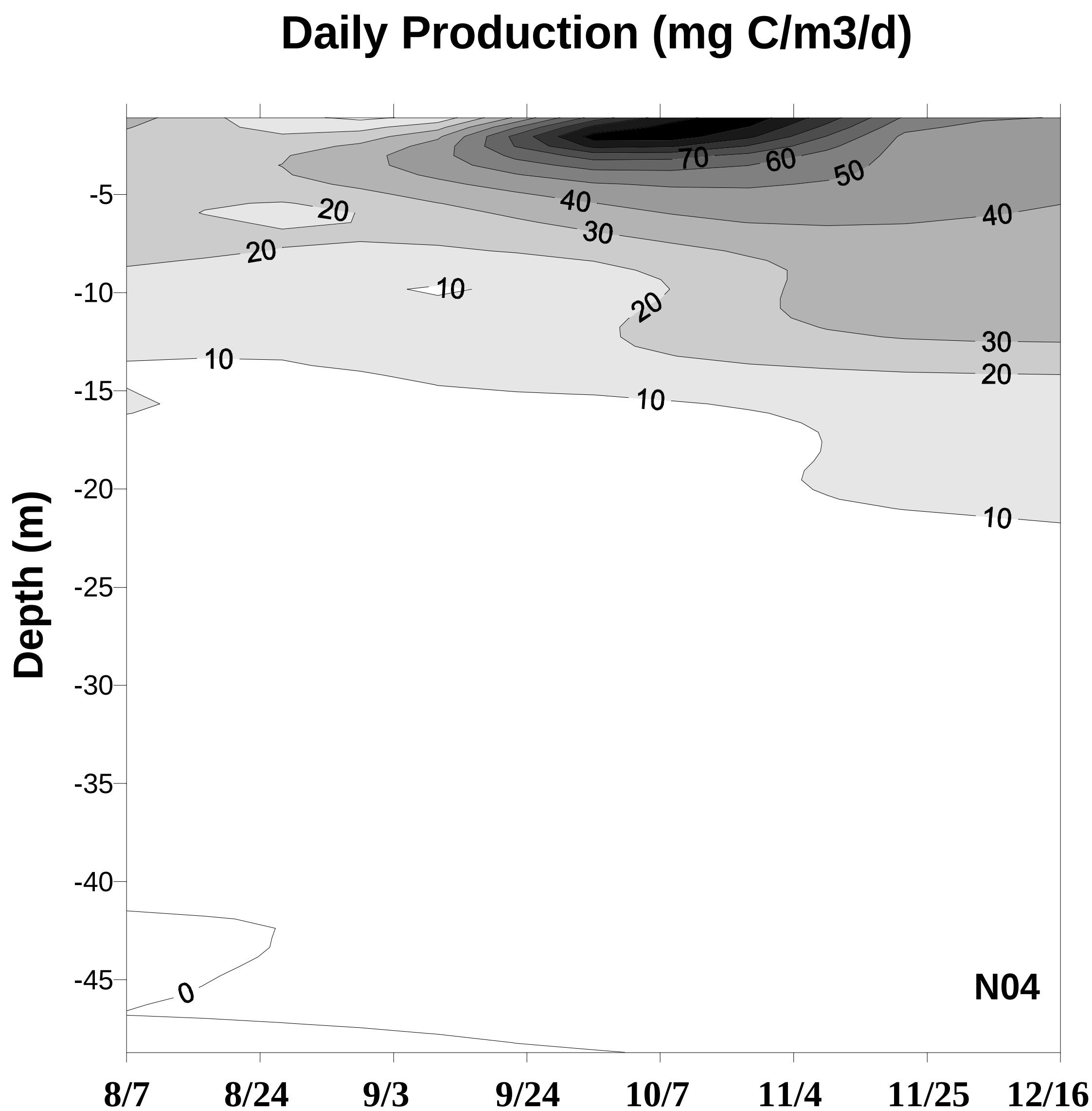


Figure 5-4. Time Series of Contoured Daily Production (mg $Cm^{-3}d^{-1}$) Over Depth at Station N04.

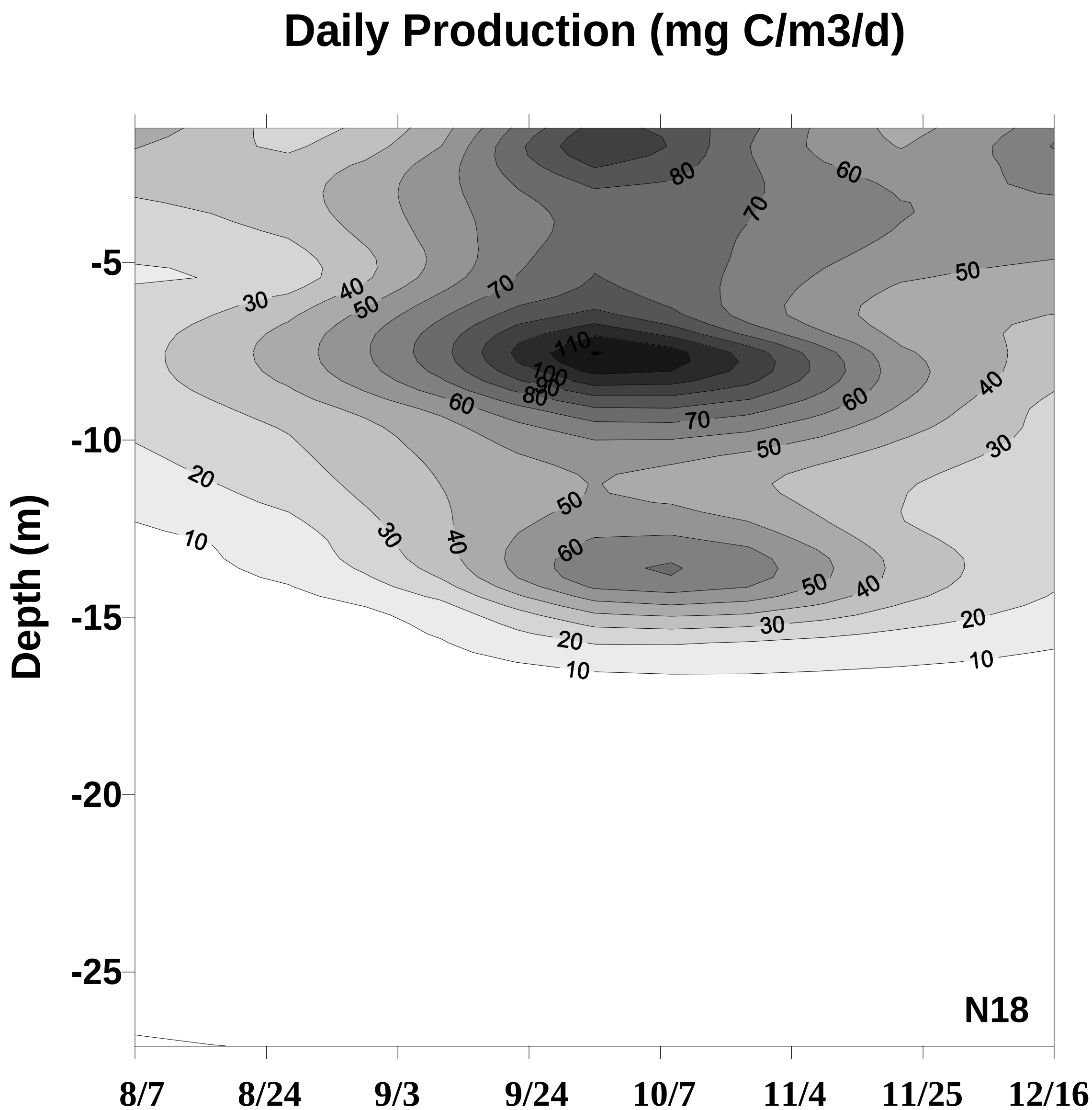


Figure 5-5. Time Series of Contoured Daily Production (mg $Cm^{-3}d^{-1}$) Over Depth at Station N18.

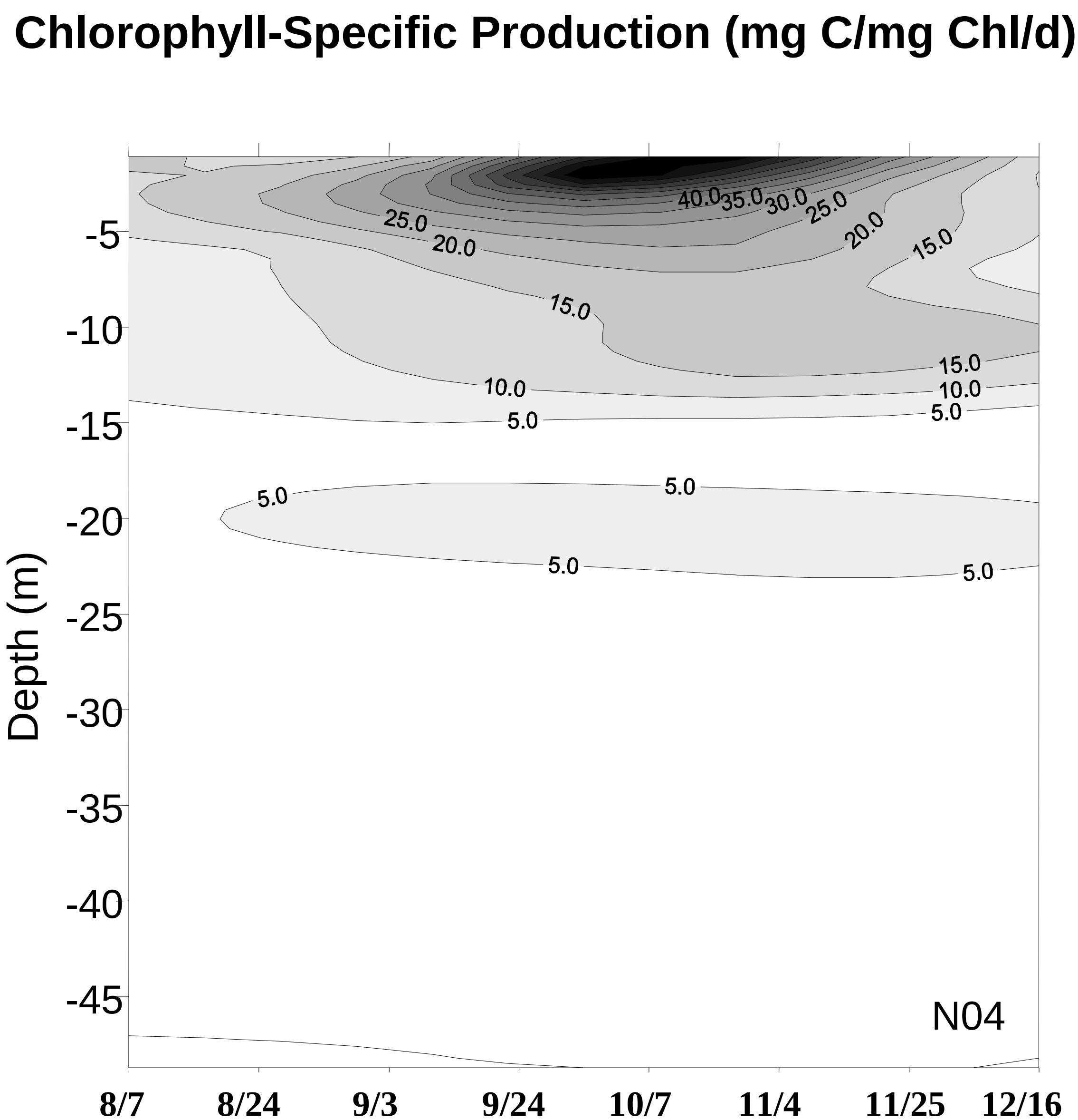


Figure 5-6. Time Series of Contoured Chlorophyll-Specific Production (mg Cmg $Chl^{-1}d^{-1}$) at Station N04.

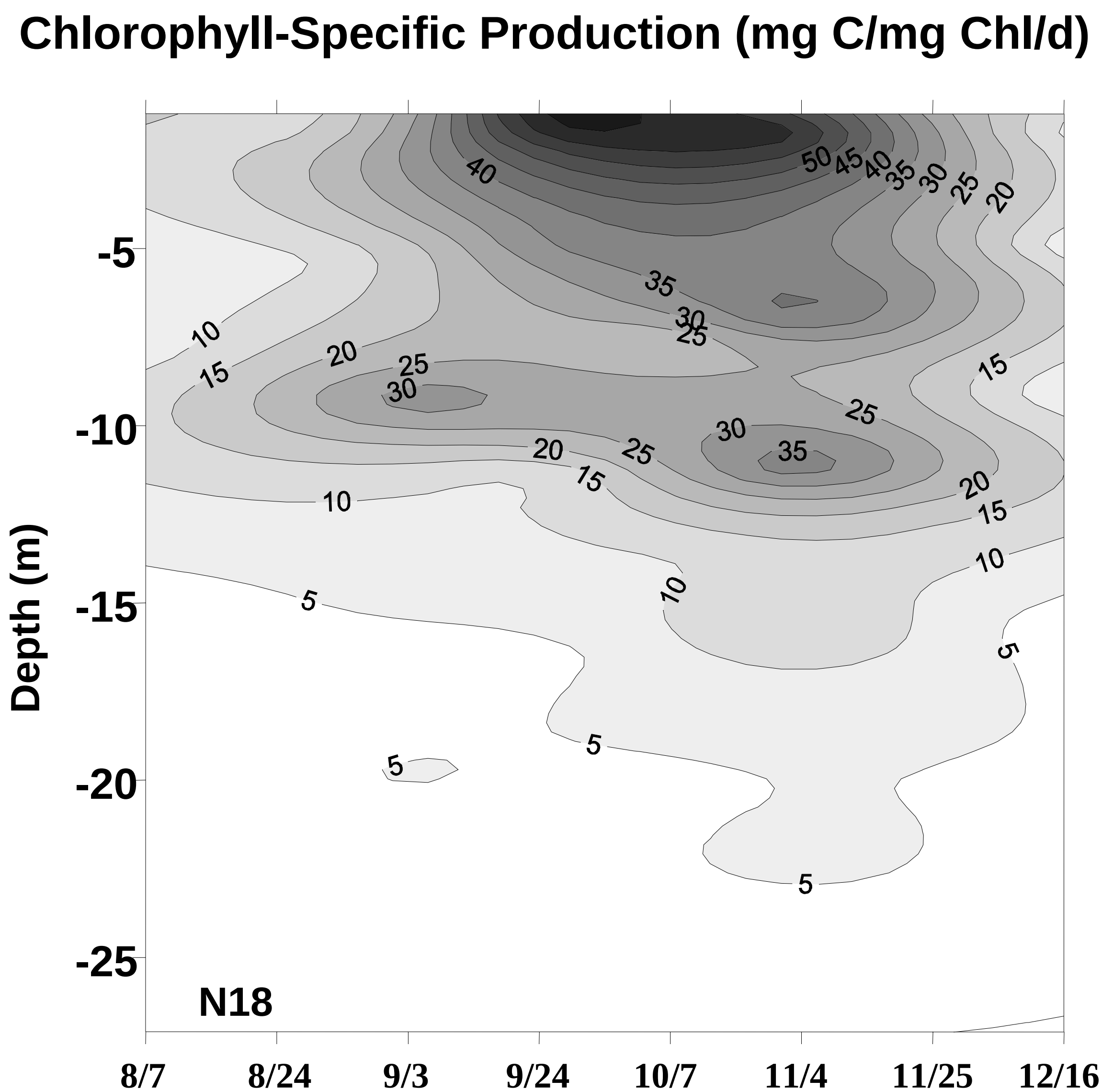


Figure 5-7. Time Series of Contoured Chlorophyll-Specific Production (mg Cmg Chl^{-1}d^{-1}) at Station N18.

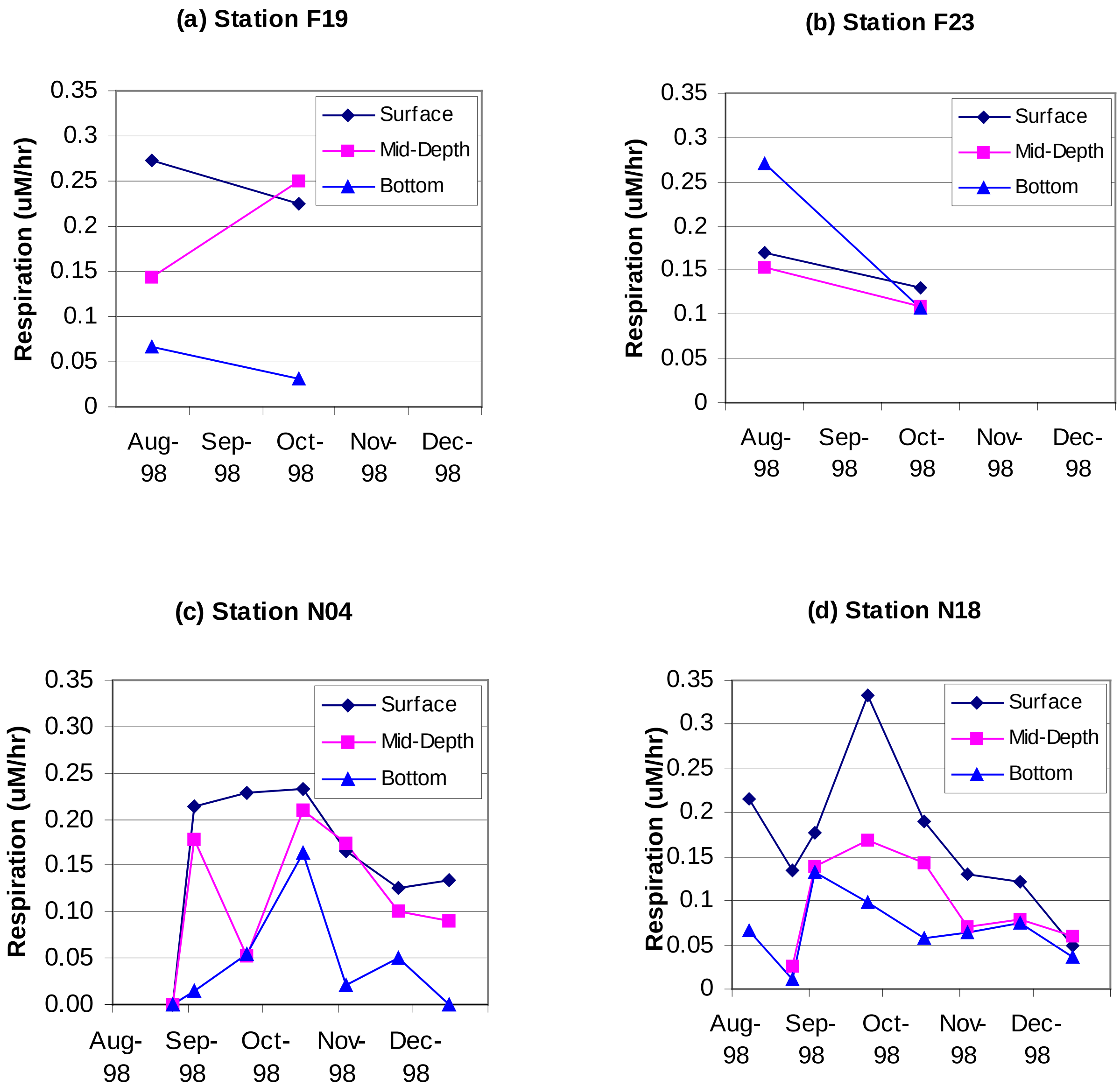


Figure 5-8. Time Series Plots of Respiration Stations F19, F23, N04, and N18.

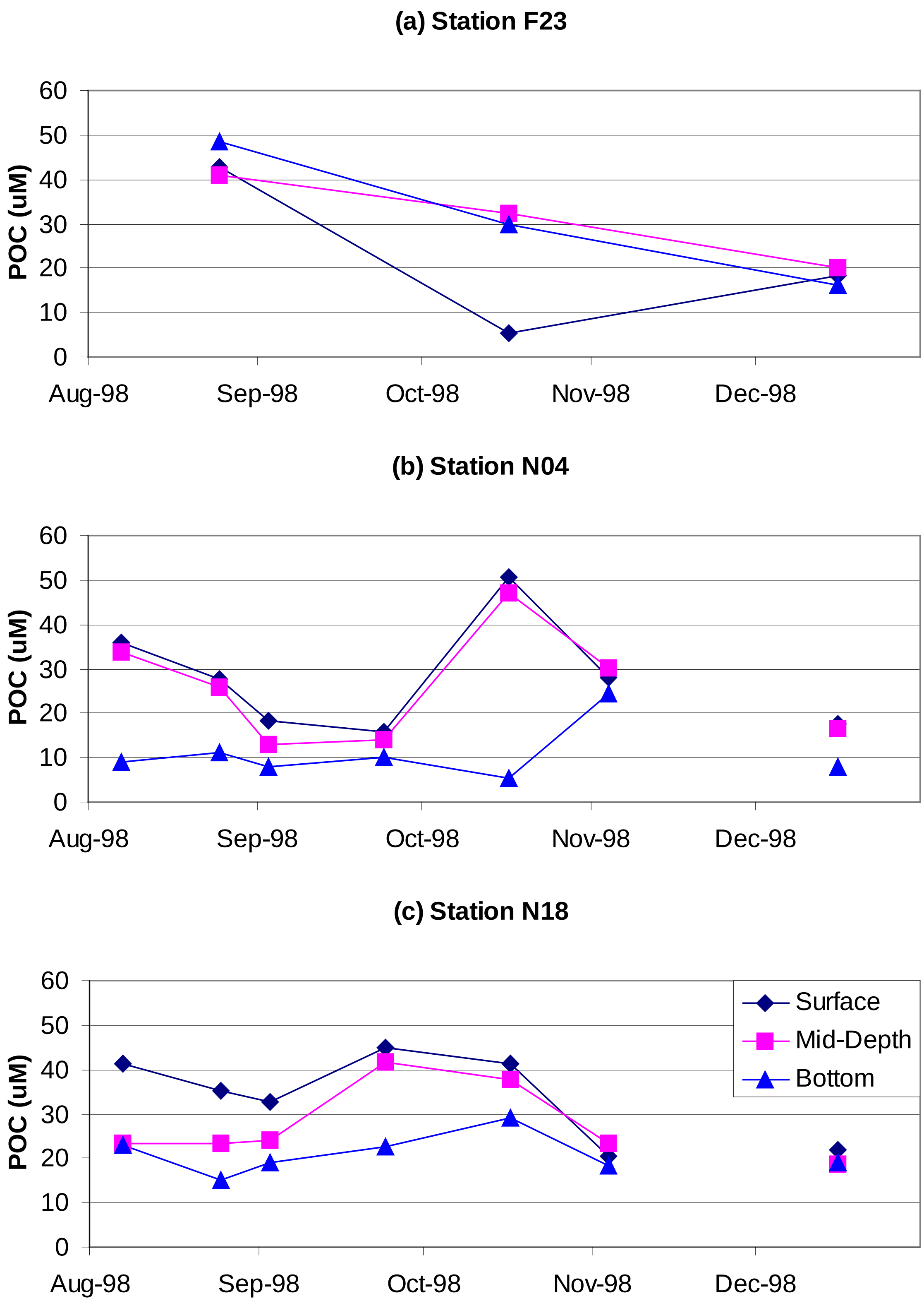


Figure 5-9. Time Series Plots of POC at Stations F23, N04, and N18.

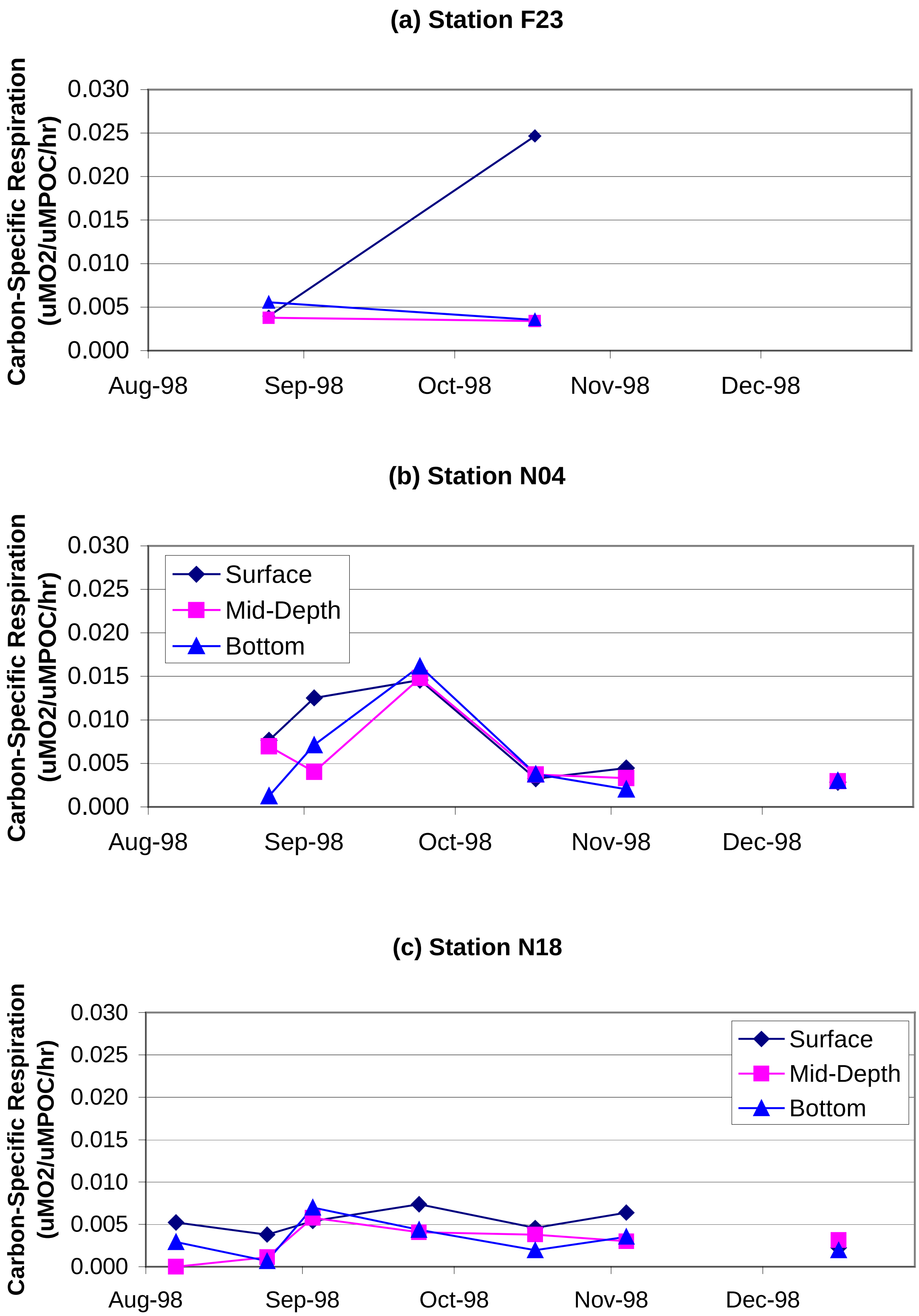


Figure 5-10. Time Series Plots of Carbon-Specific Respiration at Stations F23, N04, and N18.

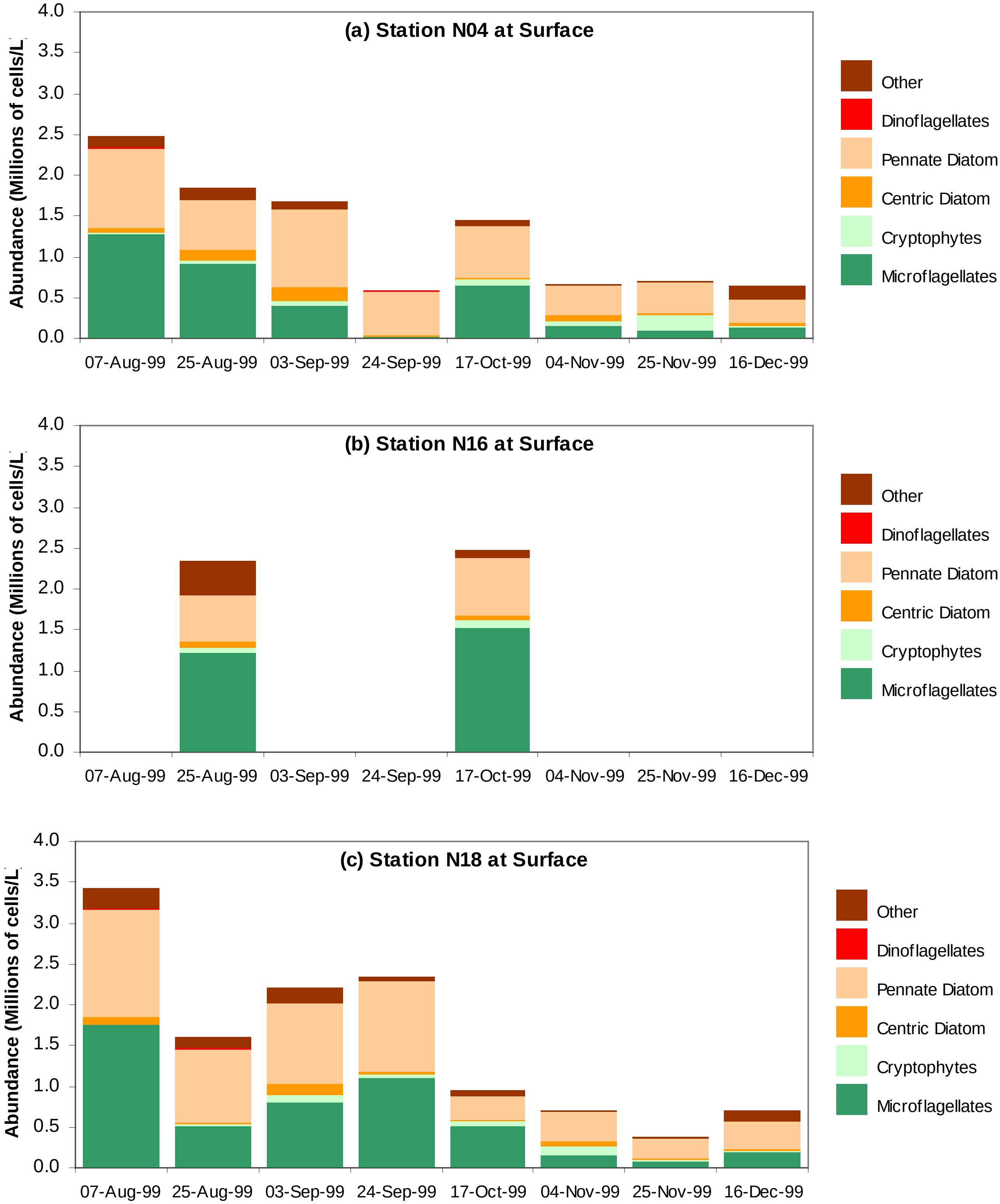


Figure 5-11. Phytoplankton Abundance by Major Taxonomic Group, Nearfield Surface Samples.

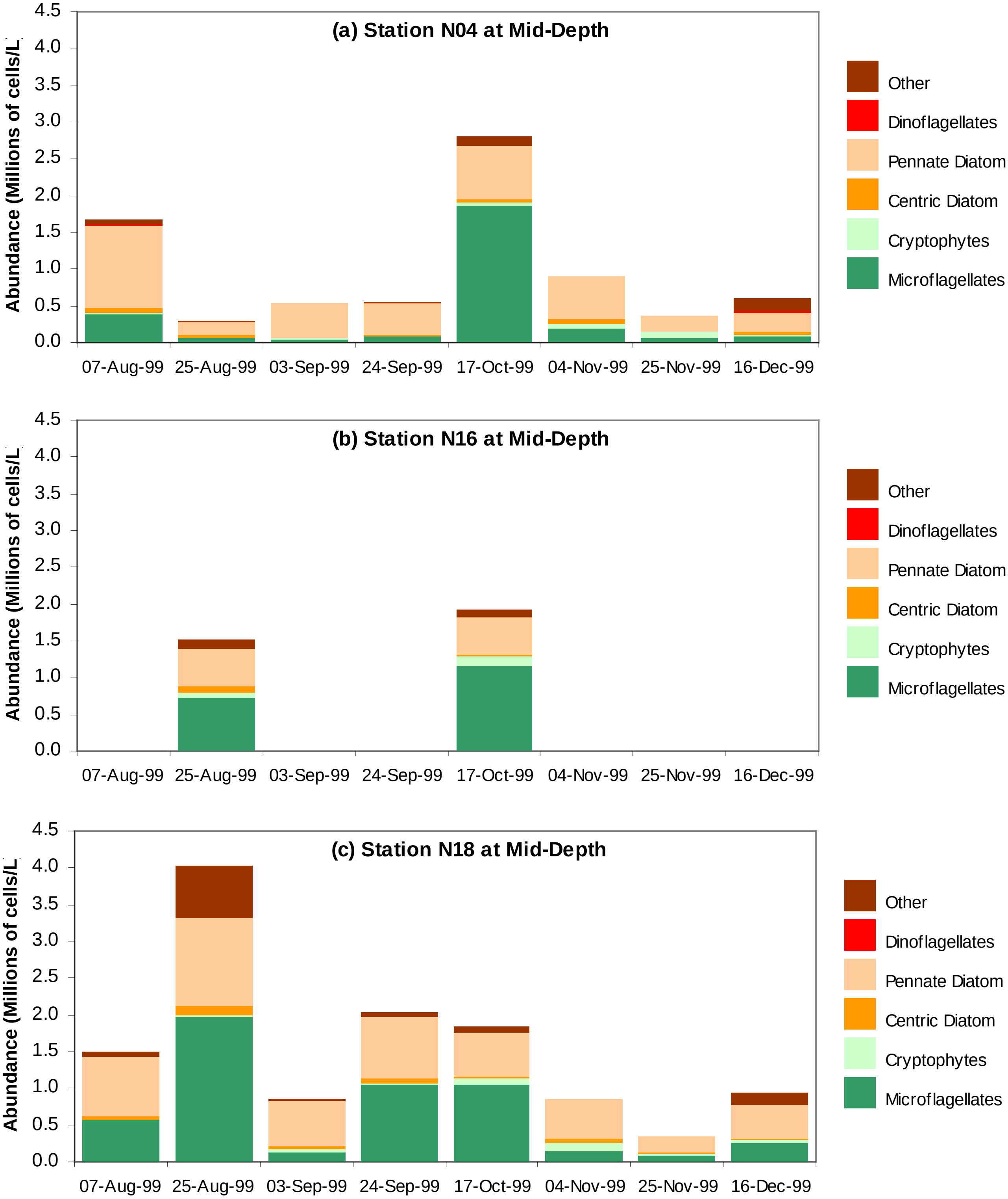
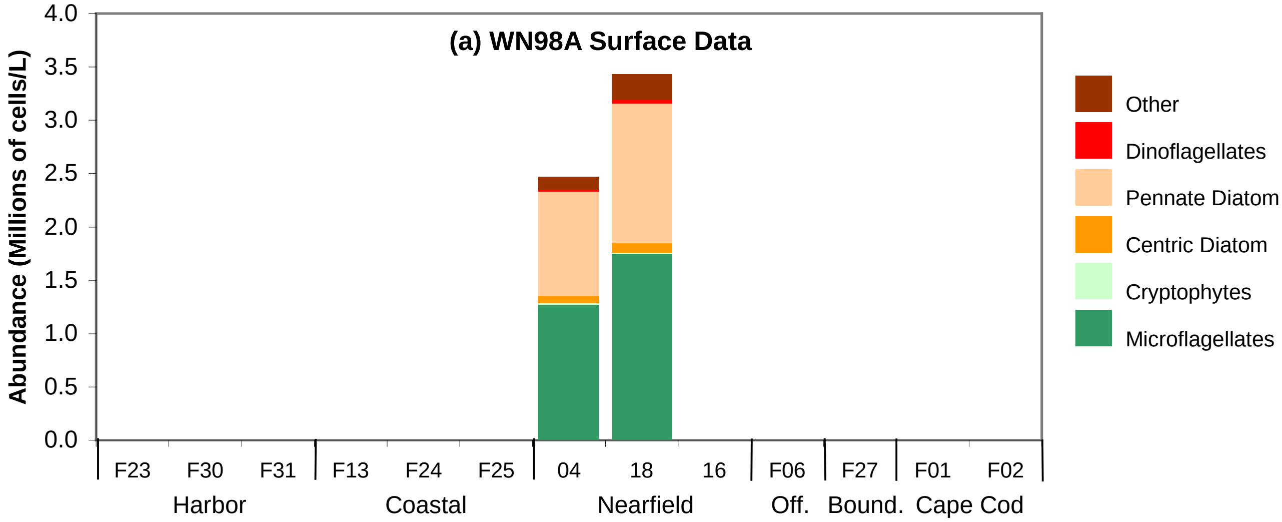


Figure 5-12. Phytoplankton Abundance by Major Taxonomic Group, Nearfield Mid-Depth Samples.



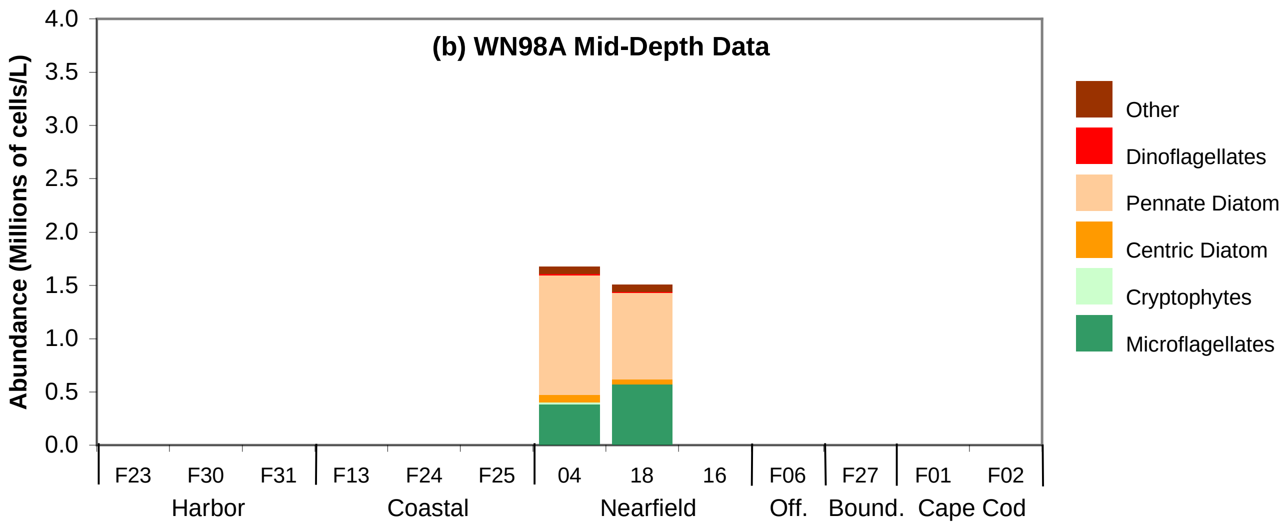


Figure 5-13. Phytoplankton Abundance by Major Taxonomic Group – WN98A Nearfield Survey Results August 7, 1998.

Note: Station N04 is shown as 04, Station N18 is shown as 18, and Station N16 is shown as 16 in the above figures.

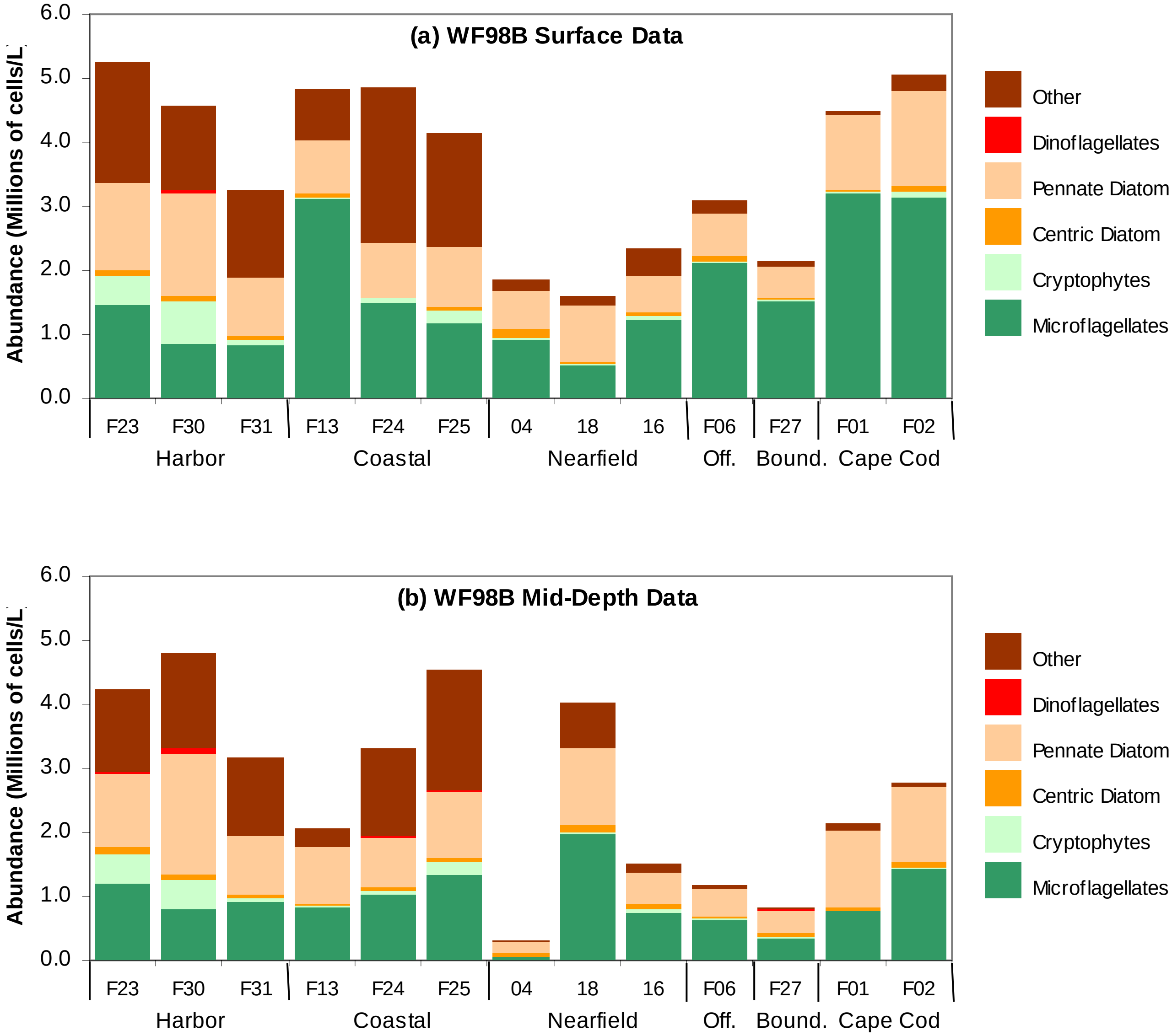


Figure 5-14. Phytoplankton Abundance by Major Taxonomic Group – WF98B Farfield Survey Results August 18 –25, 1998.

Note: Station N04 is shown as 04, Station N18 is shown as 18, and Station N16 is shown as 16 in the above figures.

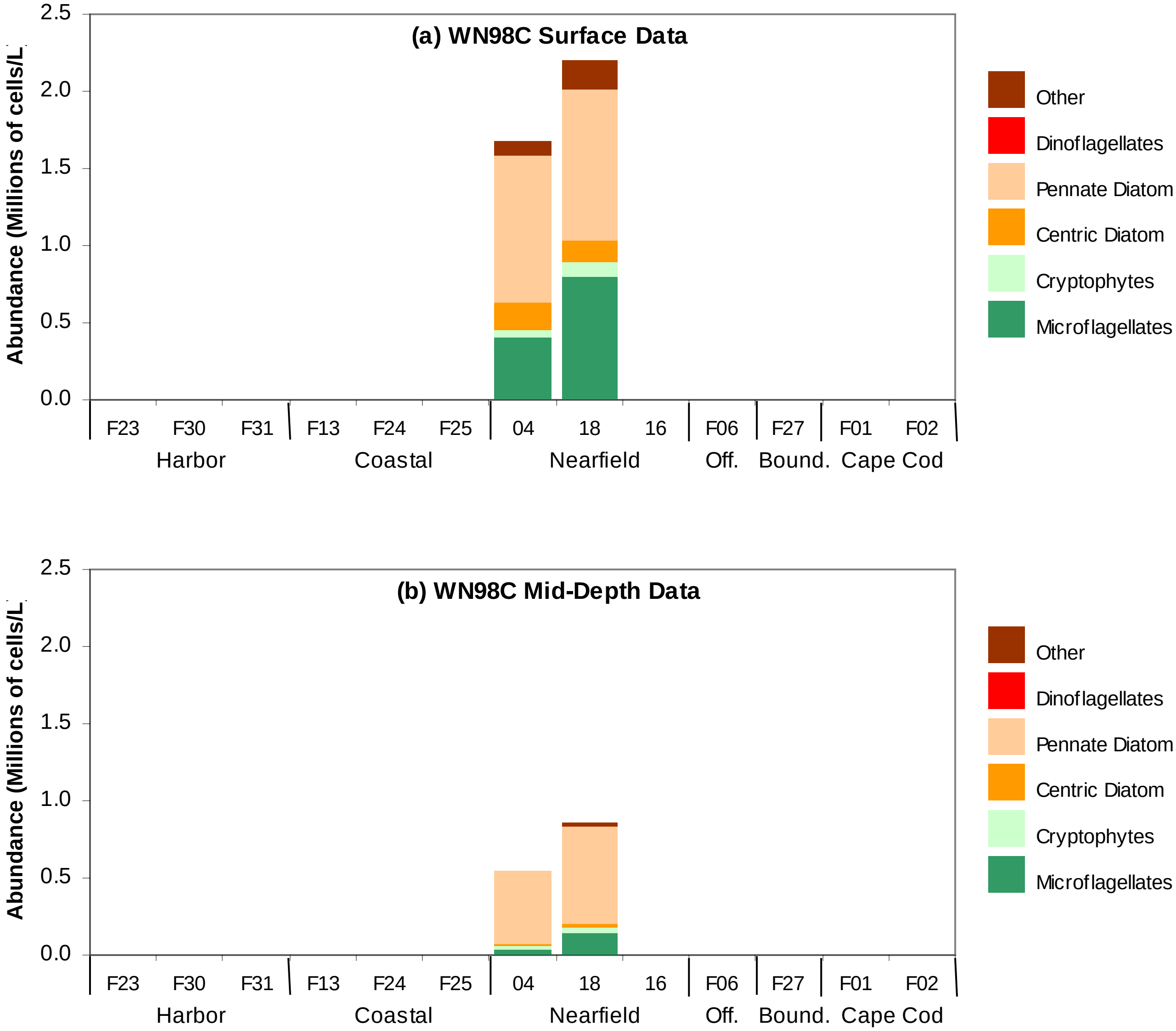


Figure 5-15. Phytoplankton Abundance by Major Taxonomic Group – WN98C Nearfield Survey Results September 3, 1998.

Note: Station N04 is shown as 04, Station N18 is shown as 18, and Station N16 is shown as 16 in the above figures.

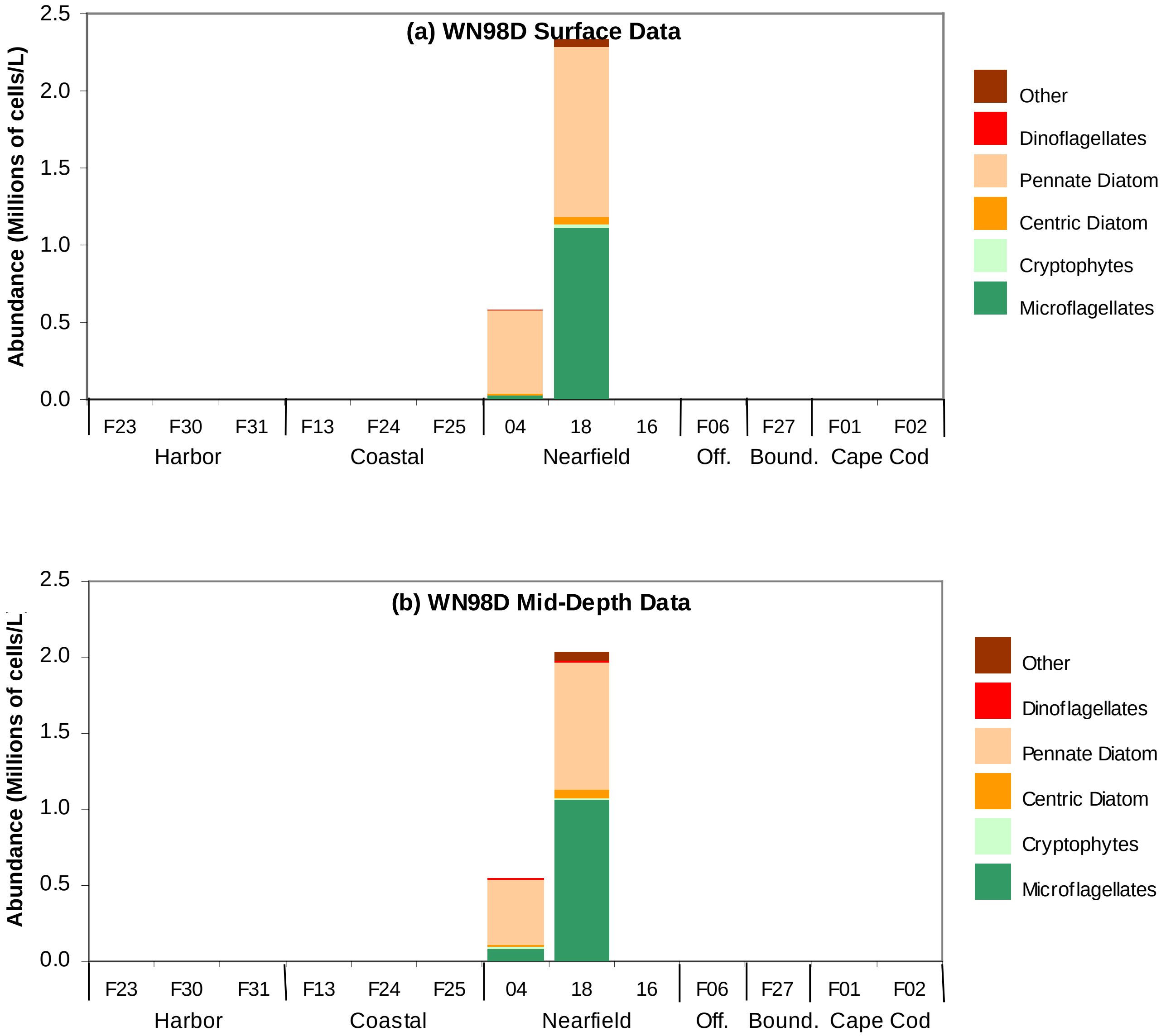
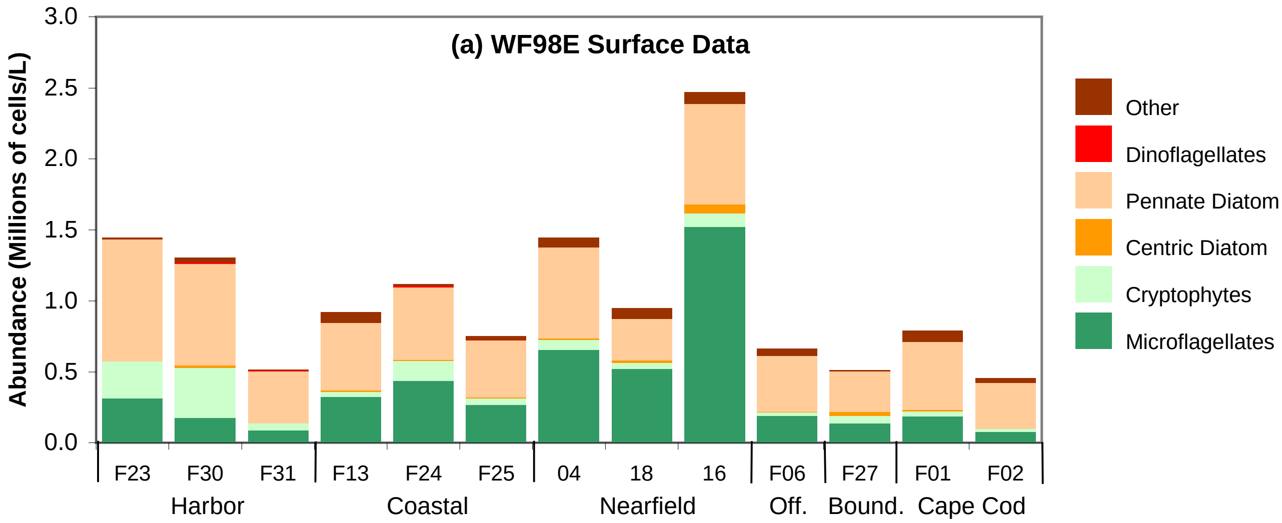


Figure 5-16. Phytoplankton Abundance by Major Taxonomic Group – WN98D Nearfield Survey Results September 24, 1998.

Note: Station N04 is shown as 04, Station N18 is shown as 18, and Station N16 is shown as 16 in the above figures.



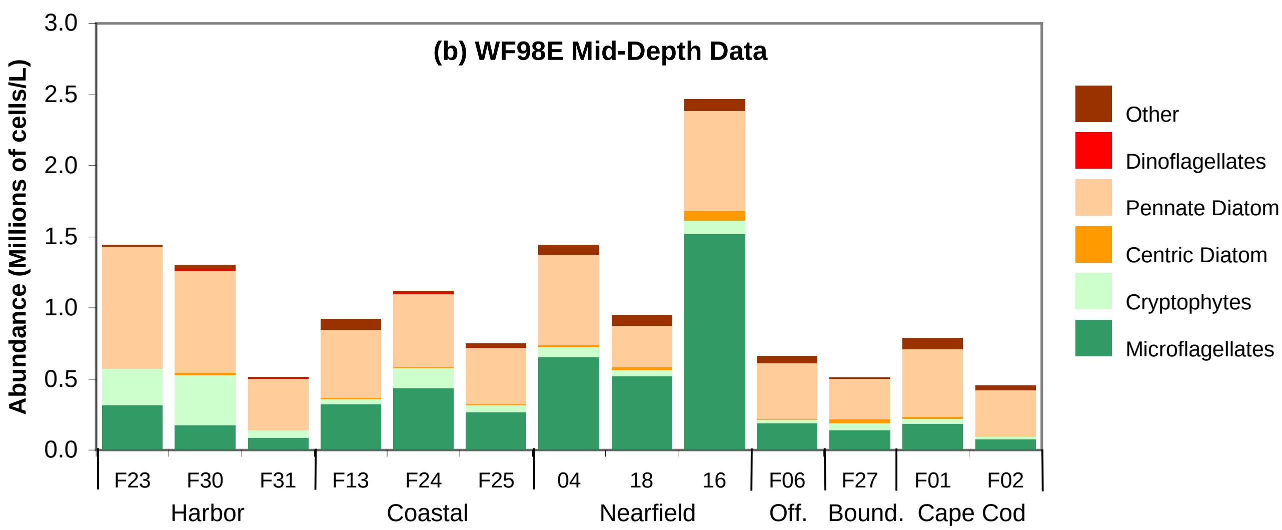
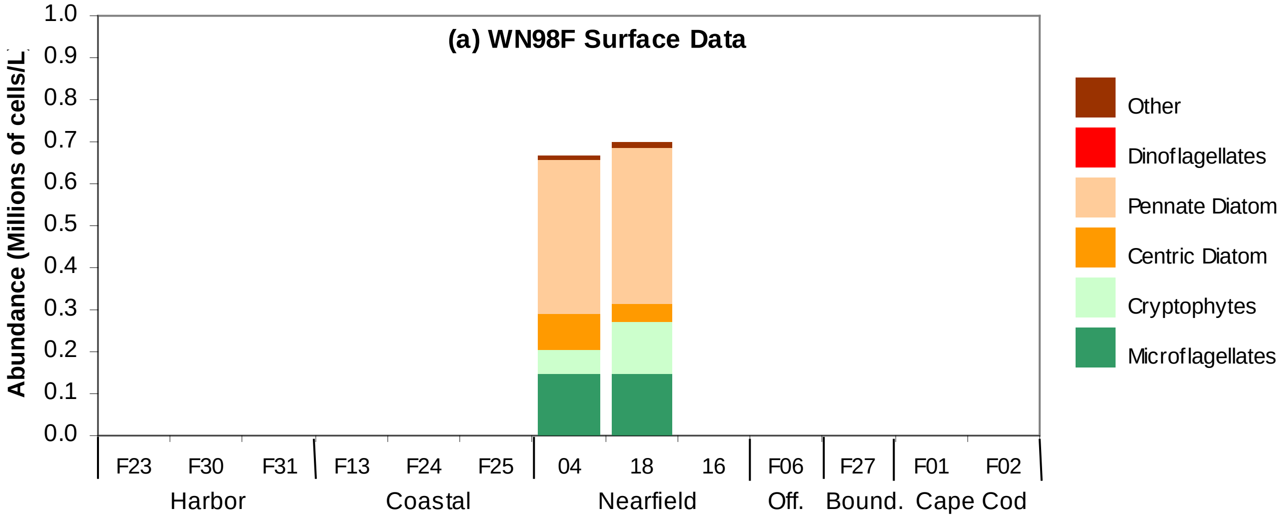


Figure 5-17. Phytoplankton Abundance by Major Taxonomic Group – WF98E Farfield Survey Results October 5 – 16, 1998.

Note: Station N04 is shown as 04, Station N18 is shown as 18, and Station N16 is shown as 16 in the above figures.



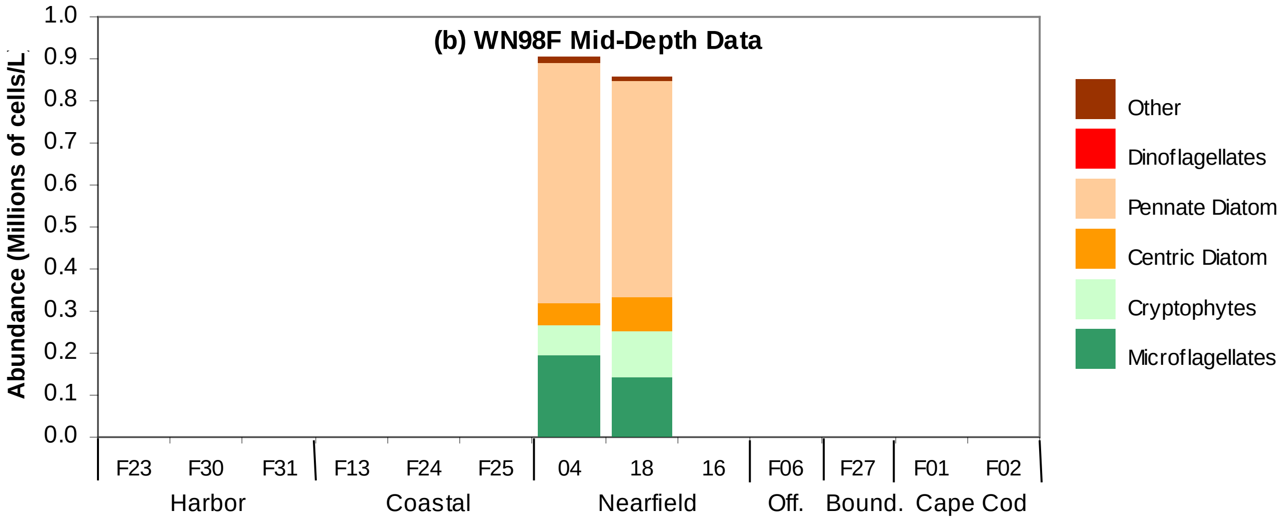


Figure 5-18. Phytoplankton Abundance by Major Taxonomic Group – WN98F Nearfield Survey Results November 4, 1998.

Note: Station N04 is shown as 04, Station N18 is shown as 18, and Station N16 is shown as 16 in the above figures.

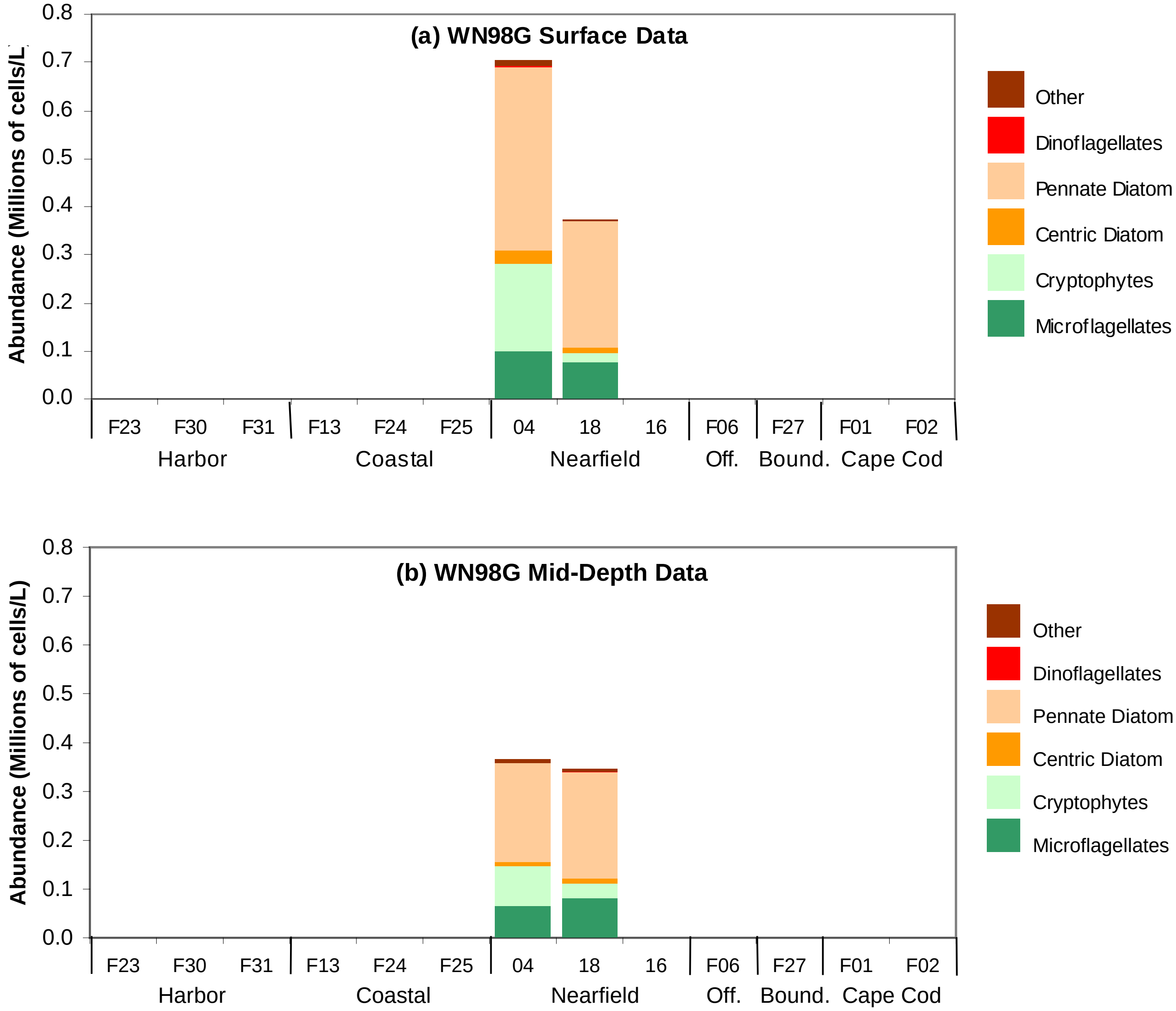


Figure 5-19. Phytoplankton Abundance by Major Taxonomic Group – WN98G Nearfield Survey Results November 25, 1998.

Note: Station N04 is shown as 04, Station N18 is shown as 18, and Station N16 is shown as 16 in the above figures.

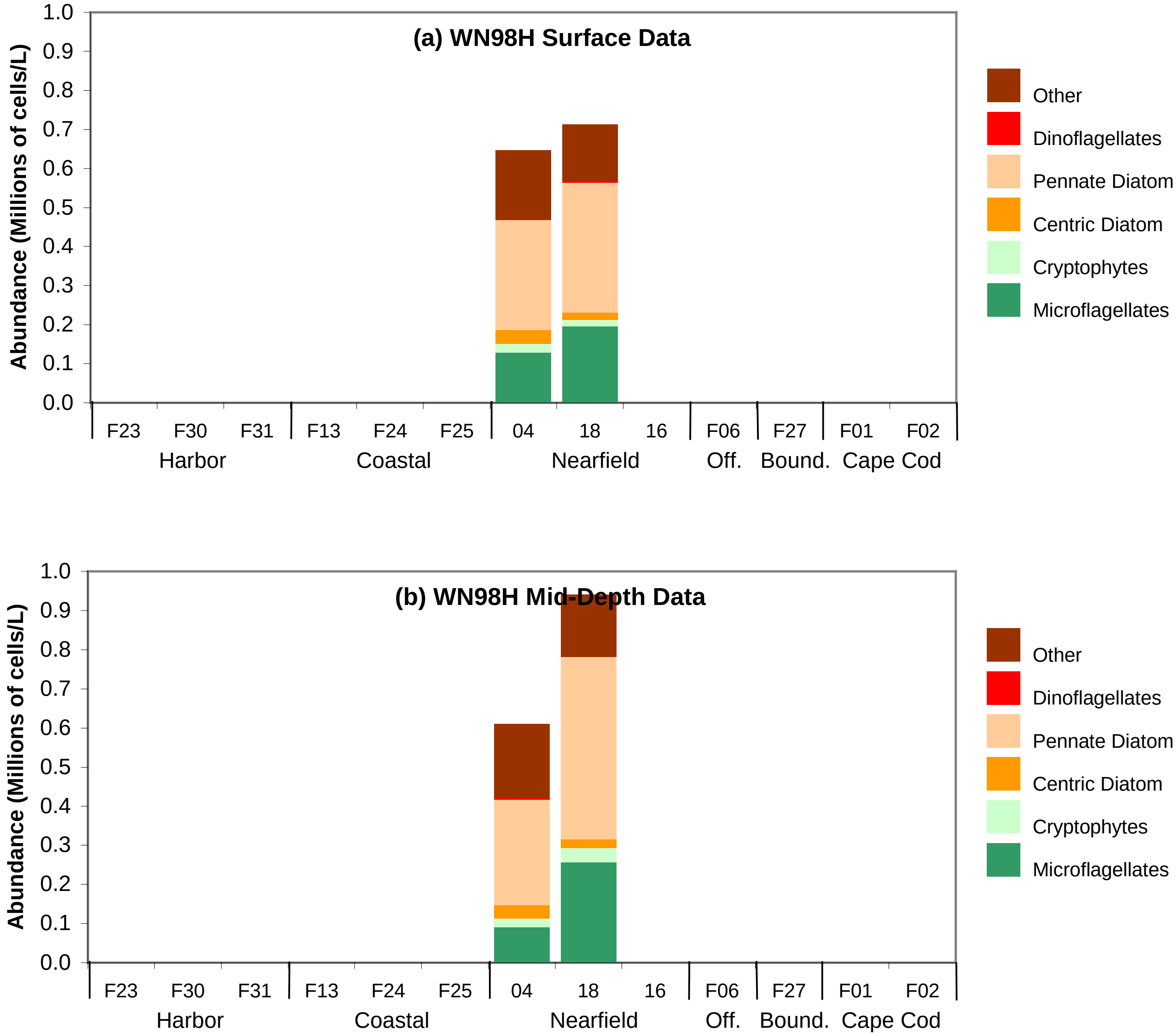


Figure 5-20. Phytoplankton Abundance by Major Taxonomic Group – WN98H Nearfield Survey Results December 16, 1998.

Note: Station N04 is shown as 04, Station N18 is shown as 18, and Station N16 is shown as 16 in the above figures.

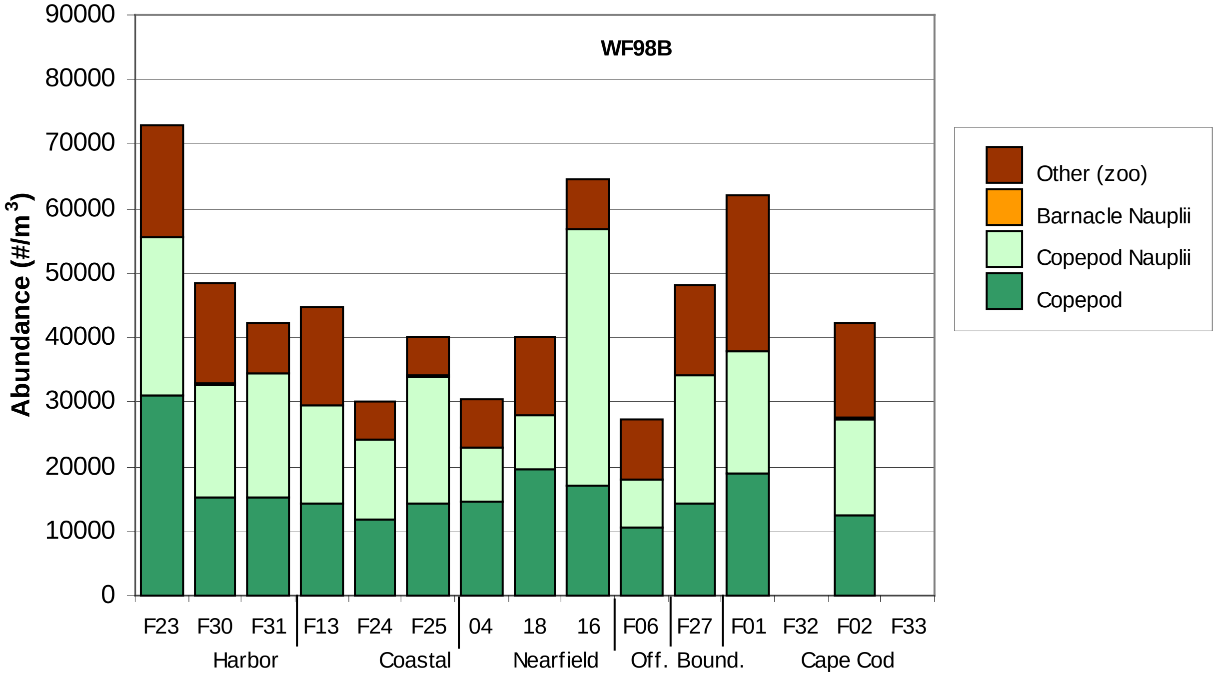


Figure 5-21. Zooplankton Abundance by Major Taxonomic Group – WF98B Farfield Survey Results August 18 – 25, 1998.

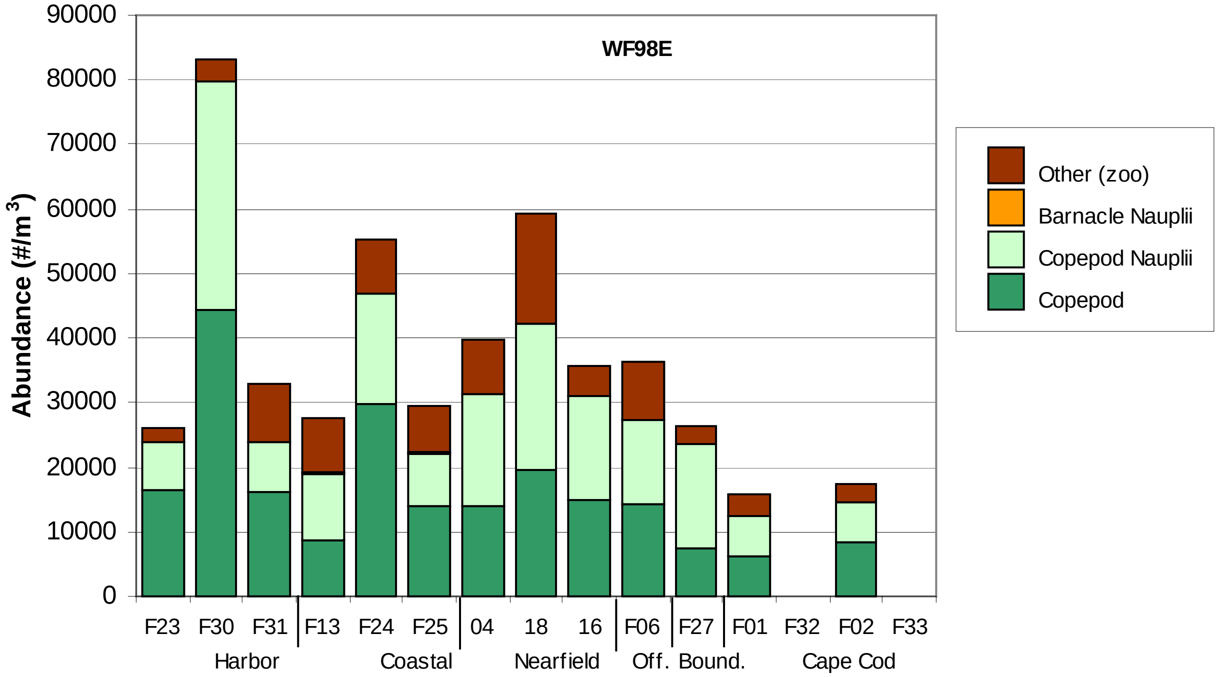


Figure 5-22. Zooplankton Abundance by Major Taxonomic Group – WF98E Farfield Survey Results October 5 – 16, 1998.

6.0 SUMMARY OF MAJOR WATER COLUMN EVENTS

The primary physical characteristic of this period was the delay in the overturn of the water column and the return to winter conditions 1998. Regionally, seasonal stratification had deteriorated at the coastal stations and had begun to weaken at the offshore stations by the October survey (WF98E). The nearfield survey data indicated the pycnocline broke down in the eastern nearfield by October (WF98E), but the water column at the outer nearfield stations was not mixed until late November (WN98G). In fact, a deep halocline persisted into December at the western nearfield and deep offshore stations. Due to the persistence of stratified conditions, survey mean bottom water DO concentrations decreased over the entire August to December time period in the nearfield area. The delay in mixing, combined with a pulse of organic material from the atypical winter phytoplankton bloom, led to the annual minimum in bottom water DO concentration (7 mg L^{-1}) observed in December. The high initial bottom water DO concentration that was observed in June (11.2 mg L^{-1}) lessened the effect of the delay in returning to well-mixed winter conditions.

Upwelling events in August brought cooler, more saline and nutrient replete waters into the surface layer at coastal and western nearfield stations. The upwelled and harbor supplied nutrients supported the abundant phytoplankton assemblage that was observed in the nearfield area during the August survey (WF98B). Areal production measured in August was generally low at nearfield stations N04 and N18 (200-500 mg C m^{-3} d^{-1}), but achieved an annual peak at harbor station F23 (750 mgC $m^{-3}d^{-1}$). High chlorophyll values, however, were measured across the region during the August survey (WF98B) and were coincident with the high phytoplankton abundance.

Chlorophyll, productivity and phytoplankton data suggest that the fall nearfield bloom occurred from September to October. The bloom initiated in the shallow western portion of the nearfield and progressed offshore. In late September (WN98D), high chlorophyll concentrations were observed nearshore and they decreased to the east. Concurrent production and phytoplankton abundance data also exhibited an inshore to offshore decrease across the nearfield. Carbon-specific respiration rates were highest at station N04 in late September during the initiation of the fall bloom at this station. Production was high at station N18 (1000 mg C m^{-3} d^{-1}) and low at N04 (200 mg C m^{-3} d^{-1}) and phytoplankton abundance was 4 times higher at N18 than N04. By the October survey (WF98E), high chlorophyll concentrations were observed throughout nearfield area and peaks in annual production were measured at stations N04 and N18 (1665 and 1988 mg C m^{-3} d^{-1}, respectively). Phytoplankton abundance was also high at each of the nearfield stations (N04, N18, and N16). Carbon-specific respiration rates, however, were relatively low at stations N04 and N18 suggesting that the October survey was conducted near the conclusion of the fall bloom.

Even though a fall bloom was observed in the nearfield, areal production in 1998 was low throughout the late summer and fall period relative to previous baseline monitoring years. This was a continuation of a trend in low production that was observed during the first half of 1998 (Libby et al., 1999).

In November and December, anomalously high concentrations of ammonium and phosphate were observed in the western nearfield that correlated with high concentrations observed by the MWRA in Boston Harbor. The source of these nutrients was not determined, but may have been due to the transfer of south system sewage flows from Nut Island to the Deer Island facility, an ecological change in biological utilization of nutrients in the Harbor, or other factors.

In December, an unprecedented winter bloom was observed in the nearfield area with chlorophyll concentrations of up to 13.2 $\mu g\ L^{-1}$. Phytoplankton abundance had also increased and was 50 to 100% higher at stations N04 and N18 in December in comparison to late November. It is suspected that the anomalously high NH_4 and PO_4 concentrations observed in late November and December contributed to the bloom in the nearfield. The bloom was dominated by microflagellates, but numerous centric and pennate diatoms were present including *Pseudo-nitzschia pungens* which made up 5 to 13% of all cells counted in December.

During the December survey (WN98H), high chlorophyll concentrations were also observed in and near Cape Cod Bay and satellite imagery indicated elevated chlorophyll concentrations in the western Gulf of Maine. This suggests that the elevated chlorophyll concentrations in the nearfield area were part of a regional rather than a localized event. Unfortunately, there were no samples collected for phytoplankton analyses in the farfield and a comparison of Cape Cod Bay and nearfield phytoplankton assemblages was not possible. Data may be available from outside sources and an attempt will be made to access this data in order to determine whether the nearfield phytoplankton bloom resulted from a pulse of NH_4 and PO_4 from Boston Harbor or was part of a regional phytoplankton event. Nevertheless, it appears that physical and/or chemical oceanographic conditions in the Bays were conducive for an atypical regional chlorophyll bloom in December.

7.0 REFERENCES

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APPENDIX A

Productivity Methods

METHODS

URI conducted a study of the reliability of using reduced sample volumes to measure primary productivity using ^{14}C. The study found that analyses using 5-mL samples could produce results that were comparable to analyses using larger sample volumes. A summary of the study is in Appendix E of the Combined work/quality assurance plan for baseline water quality monitoring: 1998-2000 (Albro *et. al.*, 1998).

URI also measured the effects of sample holding time and increased incubation time on measurements of primary productivity using the photosynthetrons at URI. The results, summarized below, show that sample analysis must begin within 6 h of sample collection and incubation between 0.5 h and 2 h produce comparable results.

Incubation Time	
Time (h)	Productivity ($g/C/m^2/h$)
0.5	0.195
1	0.207
1.5	0.182
2	0.212

Holding Time	
Time (h)	Productivity ($g/C/m^2/h$)
0	0.207
4	0.182
6	0.210
8	0.177

Based on the results of these tests the following method has been used to collect and analyze water samples for productivity.

Primary Analysis by ^{14}C – Field Procedures

From each of 5 depths at each productivity station, samples are obtained by filtration through 300-µm-mesh screen (to remove large zooplankton) from the Rosette sampling bottle into opaque 1-L polyethylene bottles. The bottles are rinsed twice prior to filling. The samples are then placed in a cooler and transferred to the URI laboratory within 5 hours of water sampling. Productivity samples are taken from the same bottles and depths as the other analyses.

Primary Analysis by ^{14}C – Laboratory Procedures

Under subdued green light, each depth is processed separately starting with the surface water sample. Each sample is mixed thoroughly and then poured into a repipette set to deliver 5 mL. The repipette is rinsed twice with sample prior to use. The delivery tip of the repipette is flushed three times and 5 mL of sample will be pipetted into 20 mL borosilicate vials. A total of 16 bottles (14-16 light bottles, 2 dark bottles) are filled for each depth. These vials are incubated in a light and temperature controlled incubator. Light bottles from each depth are incubated at 14 to 16 light intensities (250 w Tungsten-halogen lamps attenuated with neutral density filters, range 0 to 2000 $\mu E\ m^{-2}\ s^{-1}$) and all bottles are incubated within 2°C of the *in situ* temperature.

The 5 mL samples are incubated with 100 µL of 10 µCi/mL (1 µCi for 5 mL sample) Carbon-14 (^{14}C) stock solution. All vials are then placed in the incubator for two hours. Time and temperature are recorded at the start and end of the incubation period. The light intensity within the incubator is measured before and after the incubation period. Temperature is constantly monitored throughout the incubation period and the location of each vial in the incubator is recorded. Upon removal from the incubator, 100 µL of 0.05N HCl, is added to each vial. Vials will remain loosely capped while shaken overnight. The following morning 15 mL Ecolume is added to each vial, which is again loosely capped and shaken overnight. Two days following the cruise, vials are tightly capped and placed on the Beckman LS 3801 to be counted.

Calculation of Primary Production. Volume-specific primary production is calculated using equations similar to that of Strickland and Parsons (1972) as follows:

$$P(i) = \frac{1.05(DPM(i))DIC}{A_{sp}T}$$

$$P(d) = \frac{1.05(DPM(d))DIC}{A_{sp}T}$$

$$A_{sp} = DMP(sa) - DPM(back)$$

where:

$P(i)$ = primary production rate at light intensity i (µgC $L^{-1}h^{-1}$ or mgC $m^{-3}h^{-1}$)
$P(d)$ = dark production, (µgC $L^{-1}h^{-1}$ or mgC $m^{-3}h^{-1}$)
$DPM(i)$ = dpm in sample incubated at light intensity i
$DPM(d)$ = dpm in dark incubated sample
$DPM(back)$ = background dpm in vial containing only scintillation cocktail
$DPM(sa)$ = specific activity added to incubation samples (DPM)
T = incubation time (h)
DIC = concentration of dissolved inorganic carbon (µg/mL)

Table A-1 shows the frequency that primary productivity measurements and calculations are performed per vial, depth, station, and survey.

Table A-1. Measurement frequency for variables involved in calculation of primary production.

Measurement/ Calculation	Vial	Depth	Station	Survey
DPM(i)	✓			
P(i)	✓			
DIC		✓		
P(d)		✓		
DPM(d)		✓		
Asp			✓	
T			✓	
DPM(sa)			✓	
DPM(back)				✓

P–I curves. For each of the 5 depths for each photosynthesis station a P–I curve is obtained from the data P(I) = P(i)-P(d) vs. the irradiance (I, µE $m^{-2}s^{-1}$) to which the incubating sample is exposed. The P-I curves are fit via one of two possible models, depending upon whether or not significant photo-inhibition occurs. In cases where photoinhibition is evident the model of Platt *et al.* (1980) is fit (SAS 1985) to obtain the theoretical maximum production, and terms for light-dependent rise in production and degree of photoinhibition:

$$P(I) = P_{sb}(1 - e^{-a})e^{-b}$$

where:

$P(I)$ = primary production at irradiance I, corrected for dark fixation (P(i)-P(d))

P_{sb} = theoretical maximum production without photoinhibition

$a = {\alpha I}/{P_{sb}}$ and α is the initial slope, the light-dependent rise in production

$b = {\beta I}/{P_{sb}}$ and β is a term relaying the degree of photoinhibition

If ß is not significantly different from zero, an alternative model of Webb *et al.* (1974) is similarly fit to obtain the maximum production and the term for light-dependent rise in production:

$$P(I) = P_{max}(1 - e^{-a'})$$

where:

$P(I)$ = primary production at irradiance I corrected for dark fixation (P(i)-P(d))

P_{max} = light saturated maximum production

$a' = {\alpha I}/{P_{max}}$ and α is the initial slope the light-dependent rise in production

P_{max} and P_{sb} are not equivalent but they are mathematically related using the equation:

$$P_{max} = P_{sb}\,[\alpha/(\alpha+\beta)][\beta/(\alpha+\beta)]^{\beta/\alpha}$$

Light vs. Depth Profiles. To obtain a numerical representation of the light field throughout the water column averaged CTD light profiles (0.5 m intervals) are fit (SAS 1985) to an empirical sum of exponentials equation of the form:

$$I_Z = A_1 e^{-a_1 Z} + A_2 e^{-a_2 Z} + \ldots.$$

which is an expansion of the standard irradiance vs. depth equation:

$$I_Z = I_0 e^{-kZ}$$

where:

I_Z = light irradiance at depth Z

I_0 = incident irradiance ($Z = 0$)

k = extinction coefficient

$A_1, A_2 \ldots$ = factors relating to incident irradiance ($I_0 = A_1 + A_2 + \ldots$)

$a_1, a_2 \ldots$ = coefficients relating to the extinction coefficient ($k = a_1 + a_2 + \ldots$)

The expanded equation is used in most instances as spectral shifts, pigment layering and other factors result in deviation from the idealized standard irradiance vs. depth equation. The simplest form of the expanded equation is implemented to adequately model the light field, which in the large majority of cases is the sum of two exponentials.

Daily Incident Light Field. During normal CTD hydrocasts the incident light field is routinely measured via a deck light sensor at high temporal resolution. The average incident light intensity is determined for each of the CTD casts to provide, over the course of the photoperiod (12-hr period centered upon solar noon), a well resolved irradiance time series consisting of 12-17 data points. A 48-point time series (every 15 min) of incident is obtained from these data by linear interpolation. A similar time series of light data is collected at Deer Island, and is used as the photoperiod incident light (I_o) time series described below. The Deer Island data are collected using a 4 π sensor and the light intensity measured in the incubator is collected with a cosine sensor. The cosine values are converted to 4 π readings using an empirically determined equation:

$$4\pi = 17.58 + 1.0529 (\cos) - 0.00008 (\cos)^2$$

with both 4 π and cosine light intensity in units of $\mu E\ m^{-2}\ sec^{-1}$. The r^2 for the empirical equation is 0.99. The light data are converted prior to fitting the P-I curves.

Calculation of Daily Primary Production. Given the best fit parameters (P_{sb} or P_{max}, α, β) of the P-I curves obtained for each of the five sampling depths, the in situ light intensity (*i.e.*, I_z) at each depth determined from the sum of exponential fits on the in situ light field, and the photoperiod incident light (I_0) time series, it is possible to compute daily volumetric production for each depth. To do this at a given depth, hourly production is determined for the in situ light intensity computed for each 15 min interval of the photoperiod, using the appropriate P-I parameters and in situ irradiance. Daily production ($\mu g\ C\ L^{-1}\ d^{-1}$) is obtained by integration of the determined activity throughout the 12-hour photoperiod. An advantage of this approach is that seasonal changes in photoperiod length are automatically incorporated into the integral computation. For example, during winter months computed early morning and late afternoon production contributes minimally to whole day production, whereas during summer months the relative contribution during these hours is more significant. The investigator does not have to decide which factor to employ when converting hourly production to daily production. The primary assumption of the approach is that the P-I relationship obtained at the time of sample procurement (towards the middle of the photoperiod) is representative of the majority of production occurring during the photoperiod, which should be the case.

Calculation of Daily Areal Production. Areal production ($mg\ C\ m^{-2}\ d^{-1}$) is obtained by trapezoidal integration of daily volumetric production vs. depth down to the 1% light level.

Calculation of Chlorophyll-Specific Parameters. Chlorophyll-specific measures of the various parameters (including the P-I parameters) is determined by dividing by the appropriate chlorophyll term obtained from independent measurements.

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APPENDIX B

Surface Contour Plots – Farfield Surveys

Surface Contour Plots – Farfield Surveys

All contour plots were created using data from the surface bottle sample (A) Each plot is labeled with the survey number (WF98B and WF98E), and parameter. The minimum and maximum value, and the station where the value was measured are provided for each plot, as well as the contour interval and parameter units.

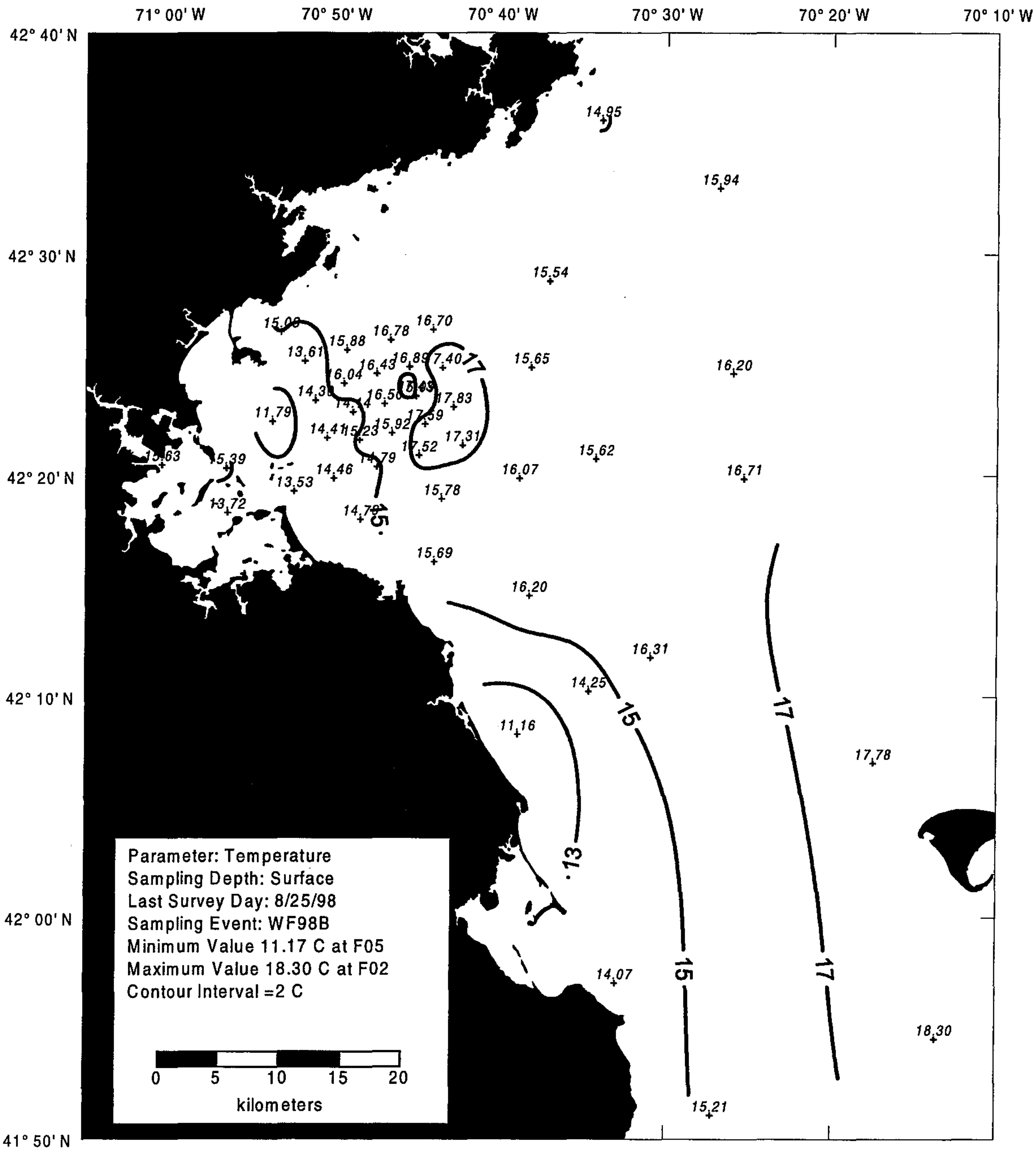


Figure B-1. Temperature Surface Contour Plot for Farfield Survey WF98B (Aug 98)

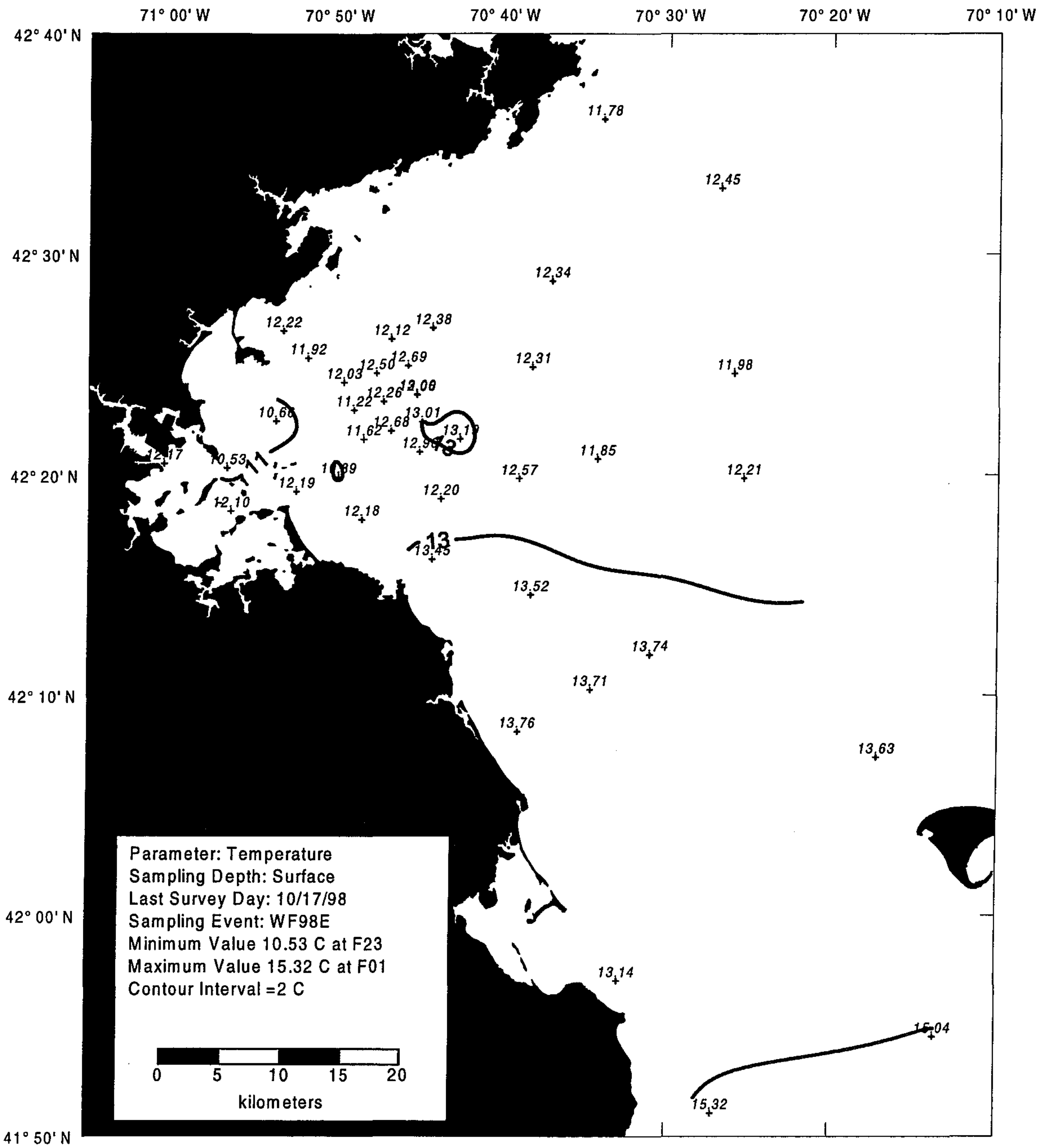


Figure B-2. Temperature Surface Contour Plot for Farfield Survey WF98E (Oct 98)

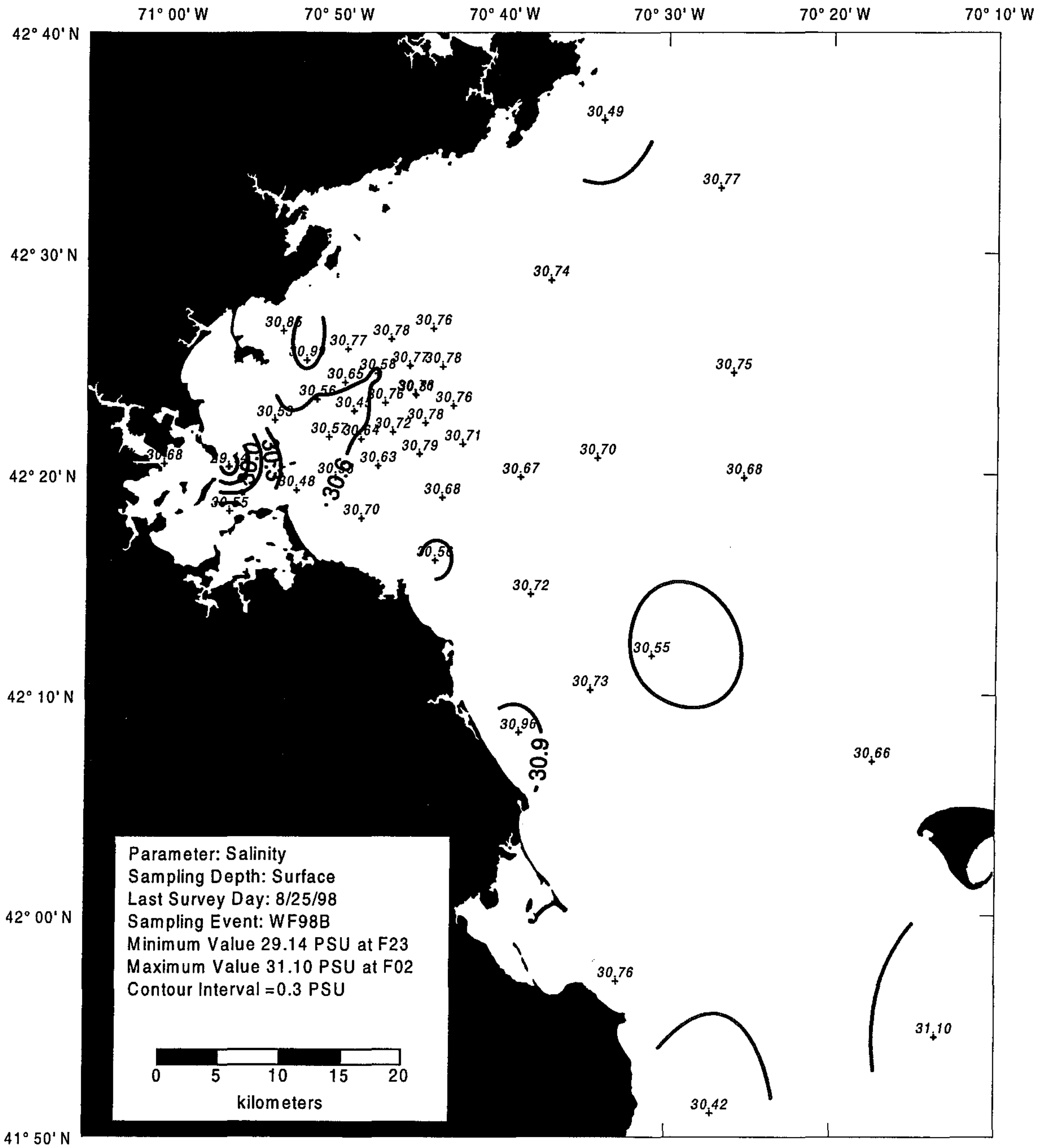


Figure B-3. Salinity Surface Contour Plot for Farfield Survey WF98B (Aug 98)

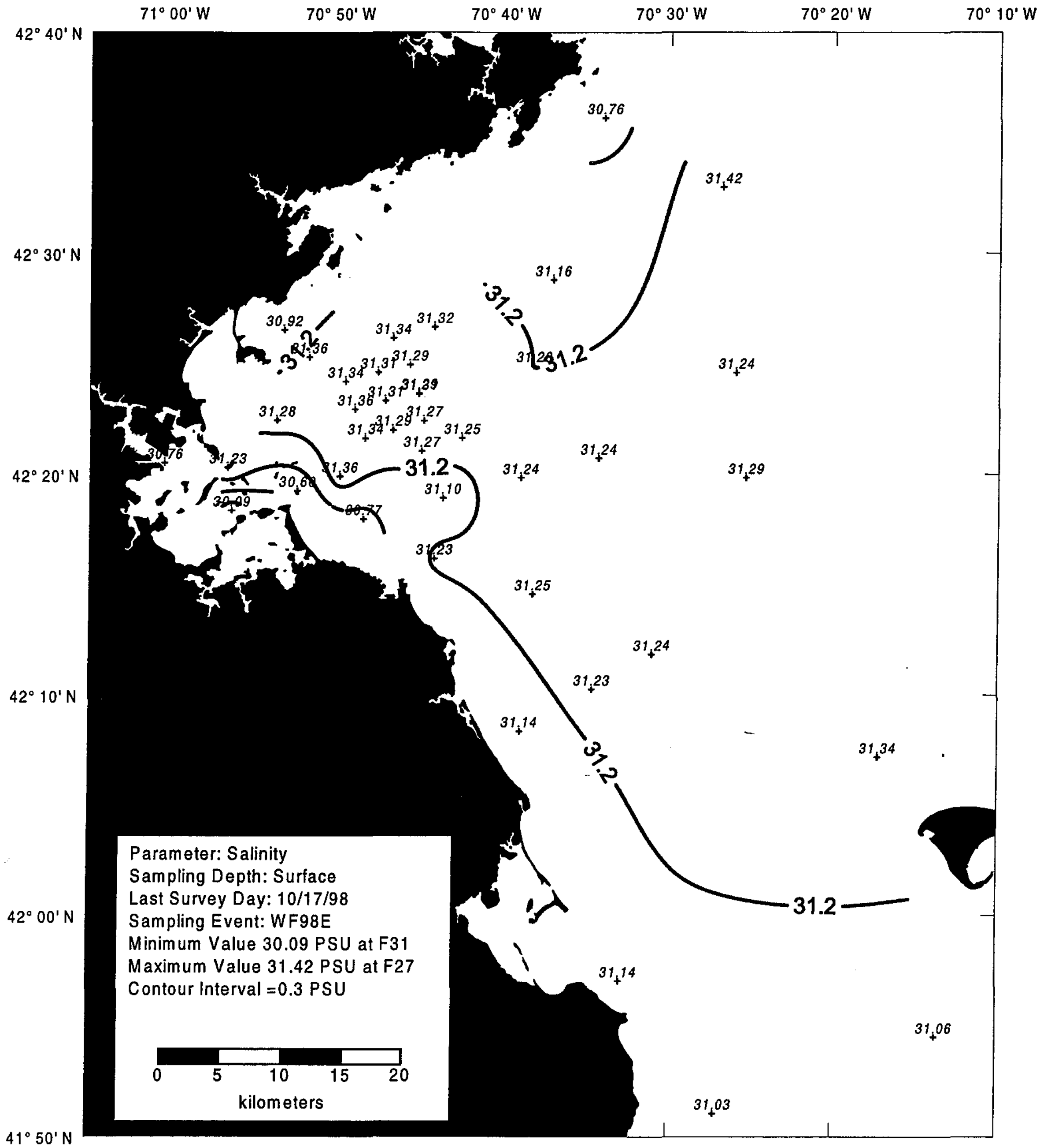


Figure B-4. Salinity Surface Contour Plot for Farfield Survey WF98E (Oct 98)

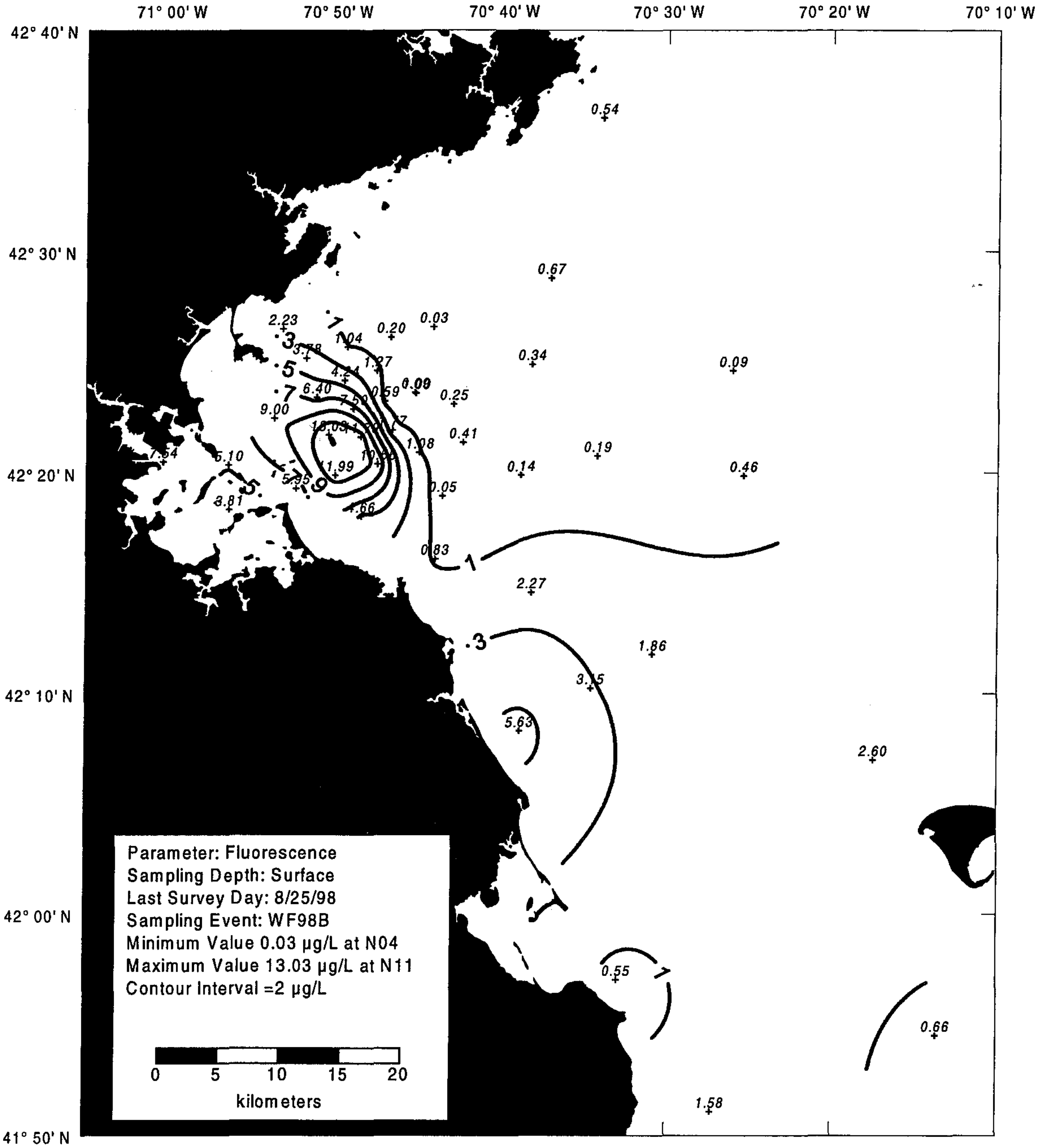


Figure B-5. Fluorescence Surface Contour Plot for Farfield Survey WF98B (Aug 98)

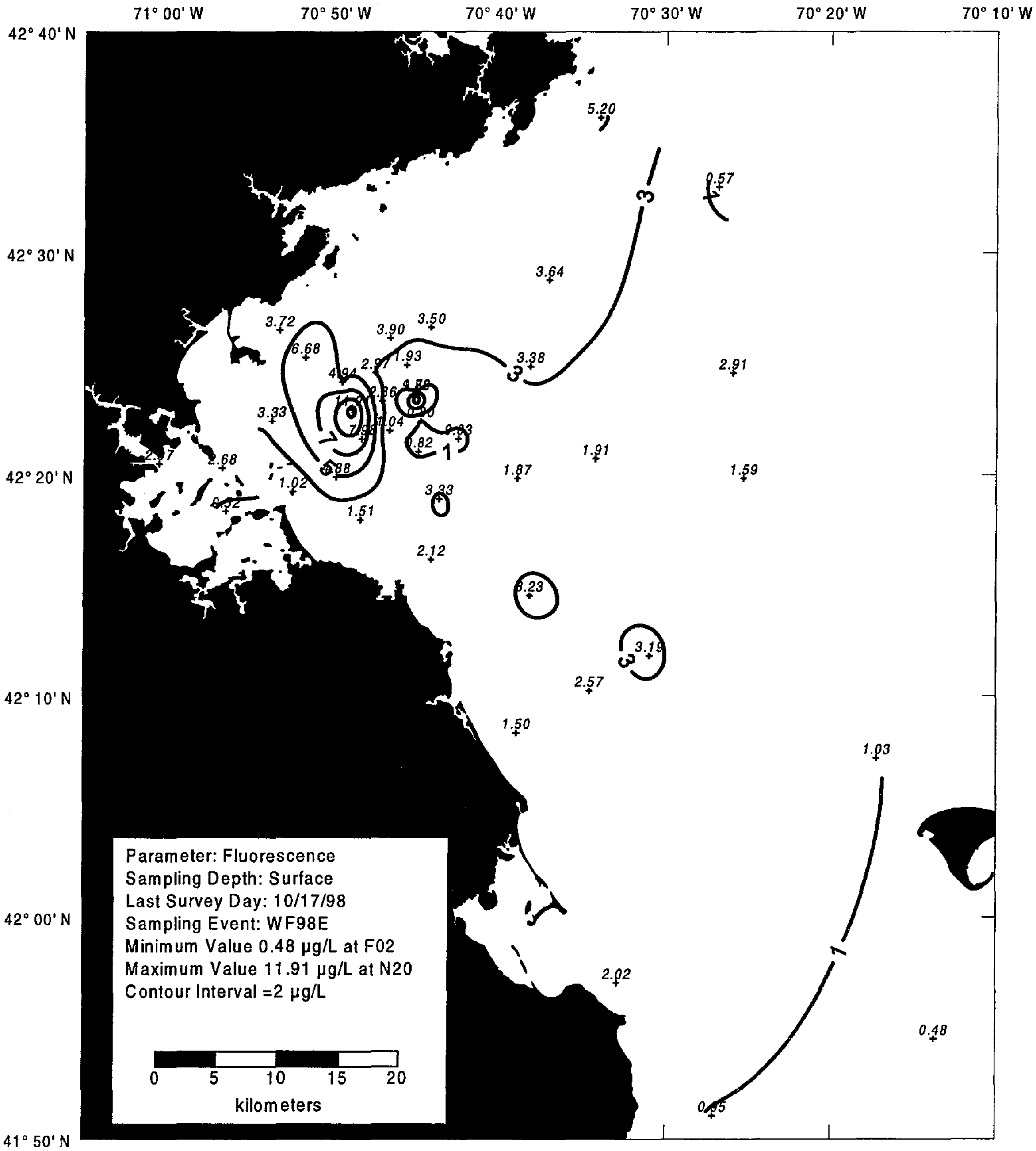


Figure B-6. Fluorescence Surface Contour Plot for Farfield Survey WF98E (Oct 98)

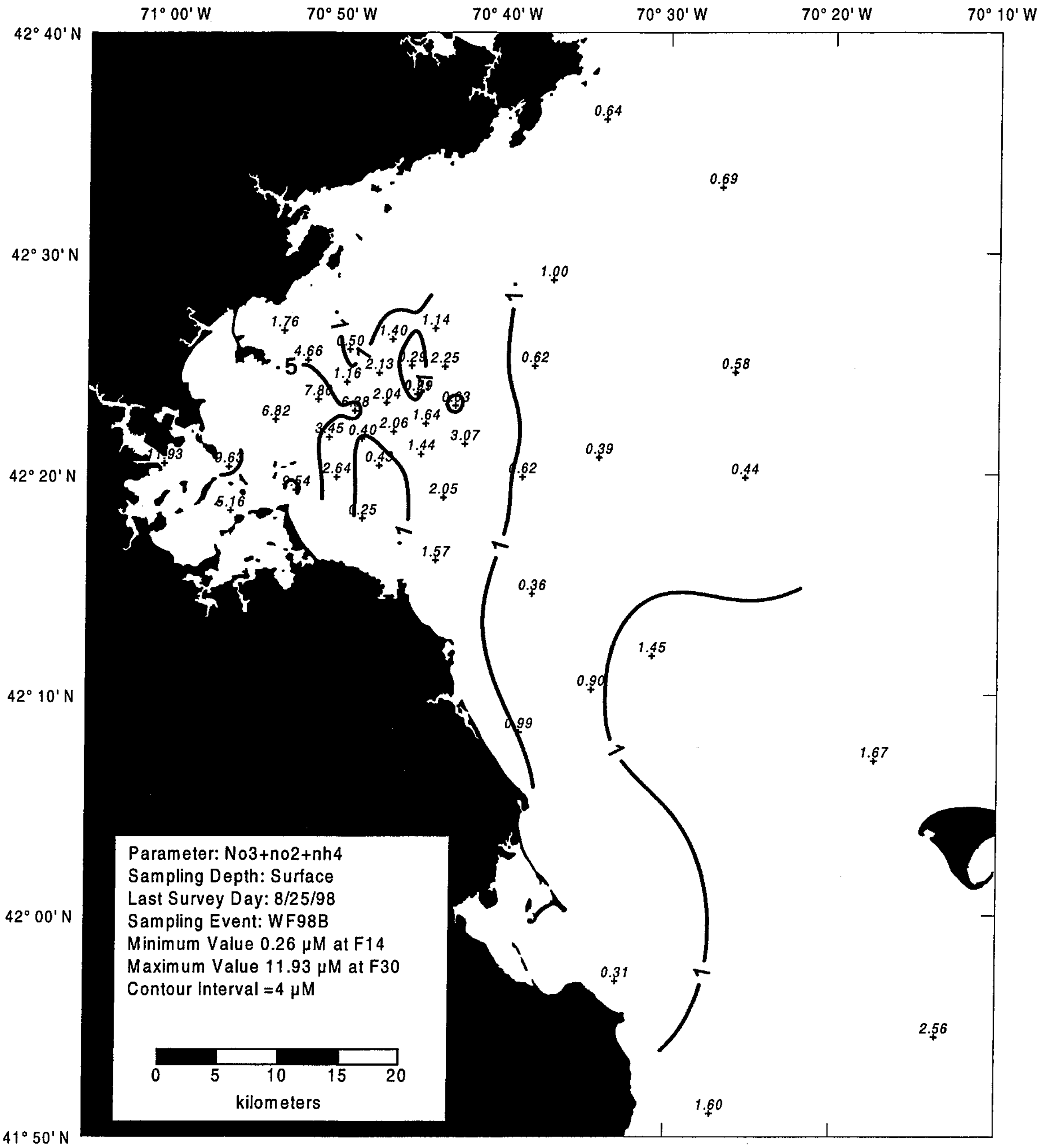


Figure B-7. DIN Surface Contour Plot for Farfield Survey WF98B (Aug 98)

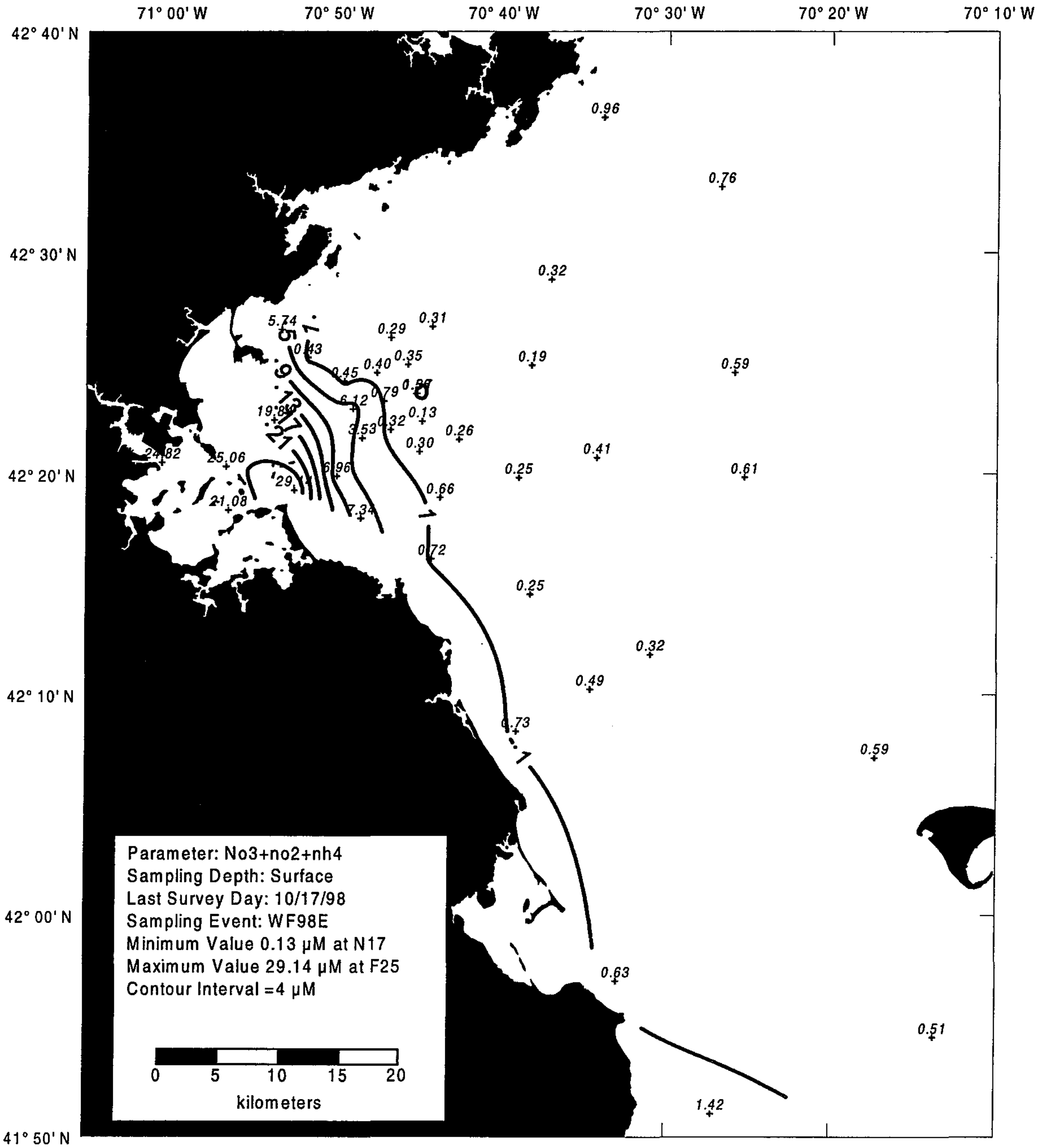


Figure B-8. DIN Surface Contour Plot for Farfield Survey WF98E (Oct 98)

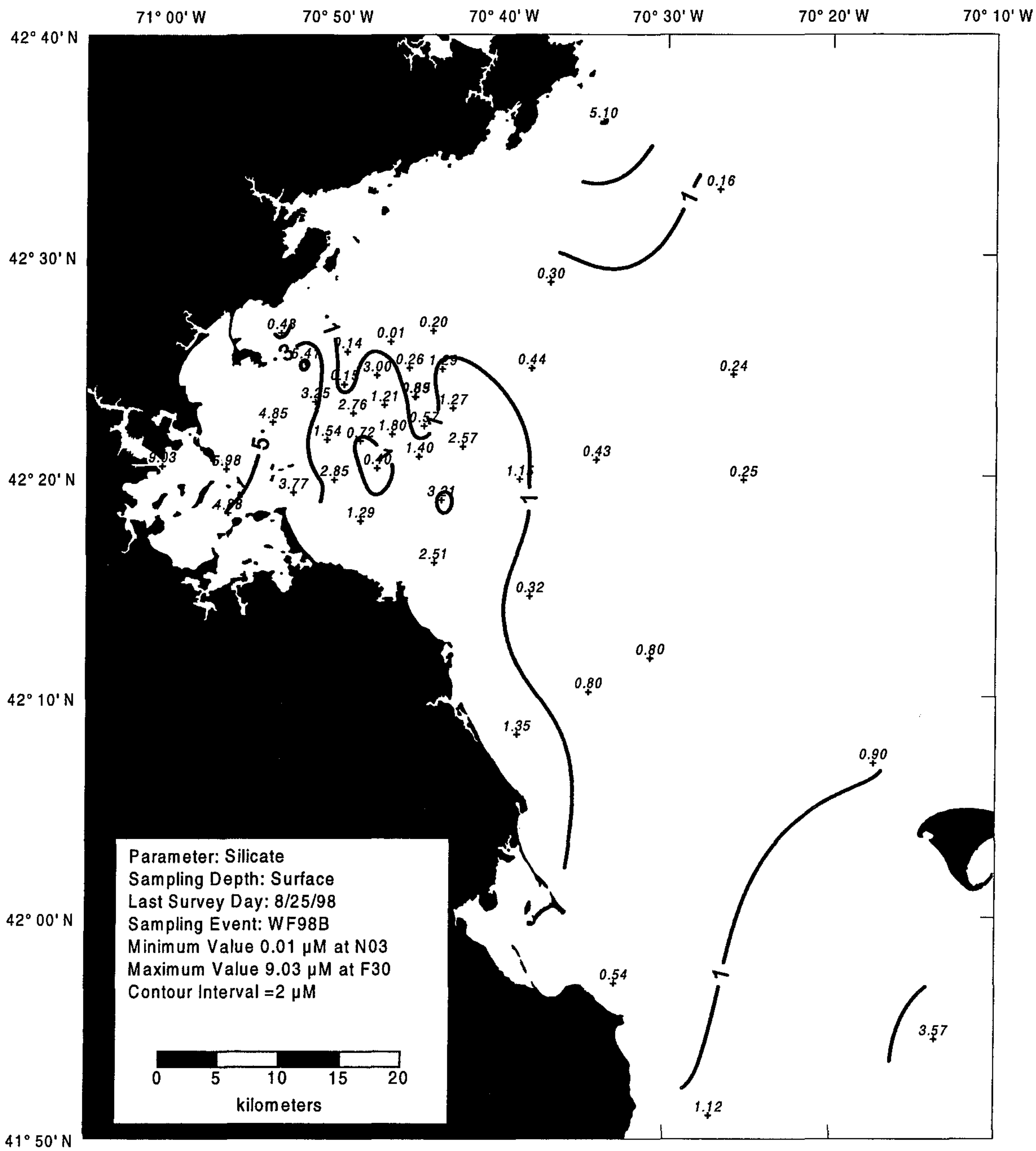


Figure B-9. Silicate Surface Contour Plot for Farfield Survey WF98B (Aug 98)

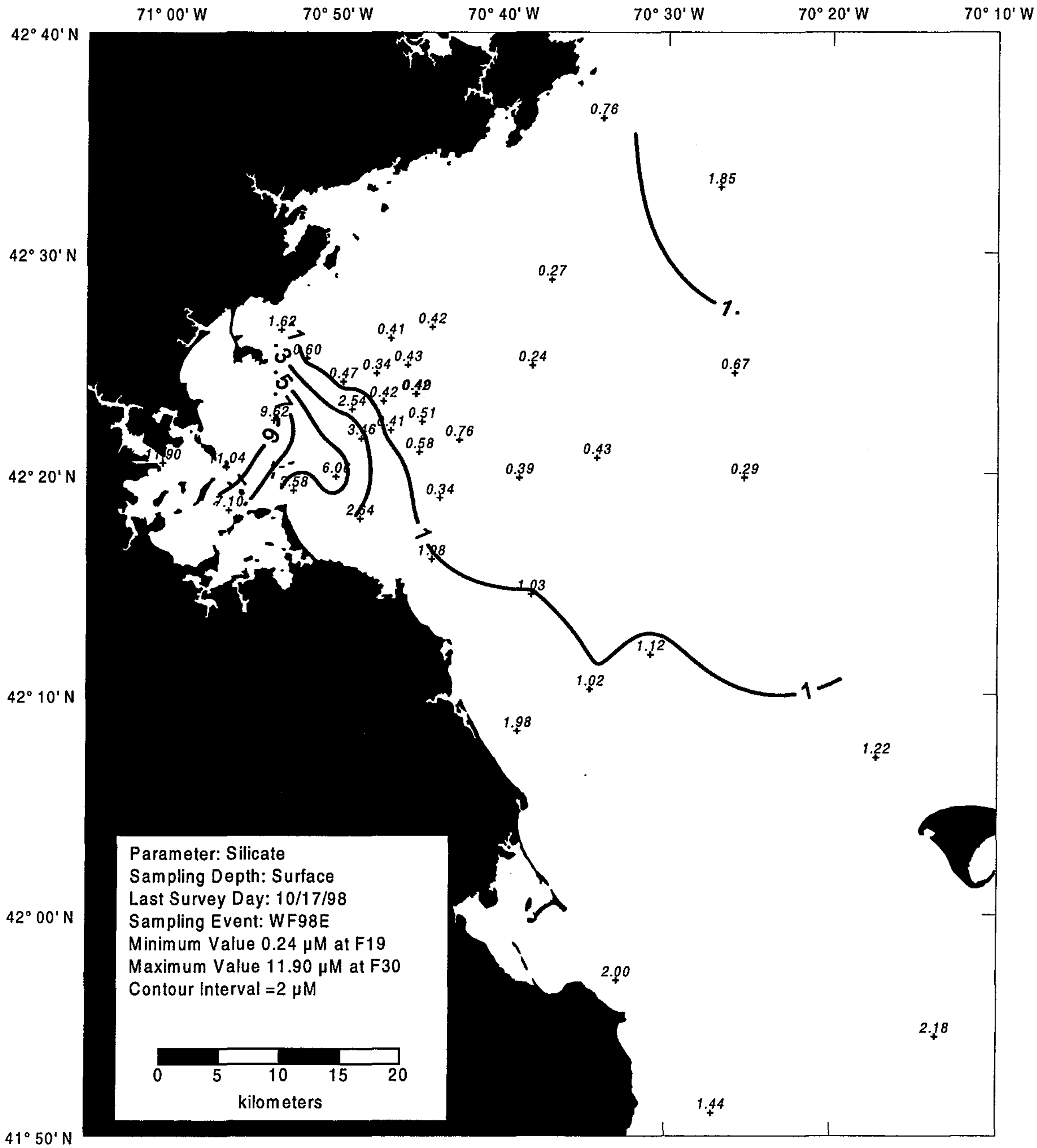


Figure B-10. Silicate Surface Contour Plot for Farfield Survey WF98E (Oct 98)

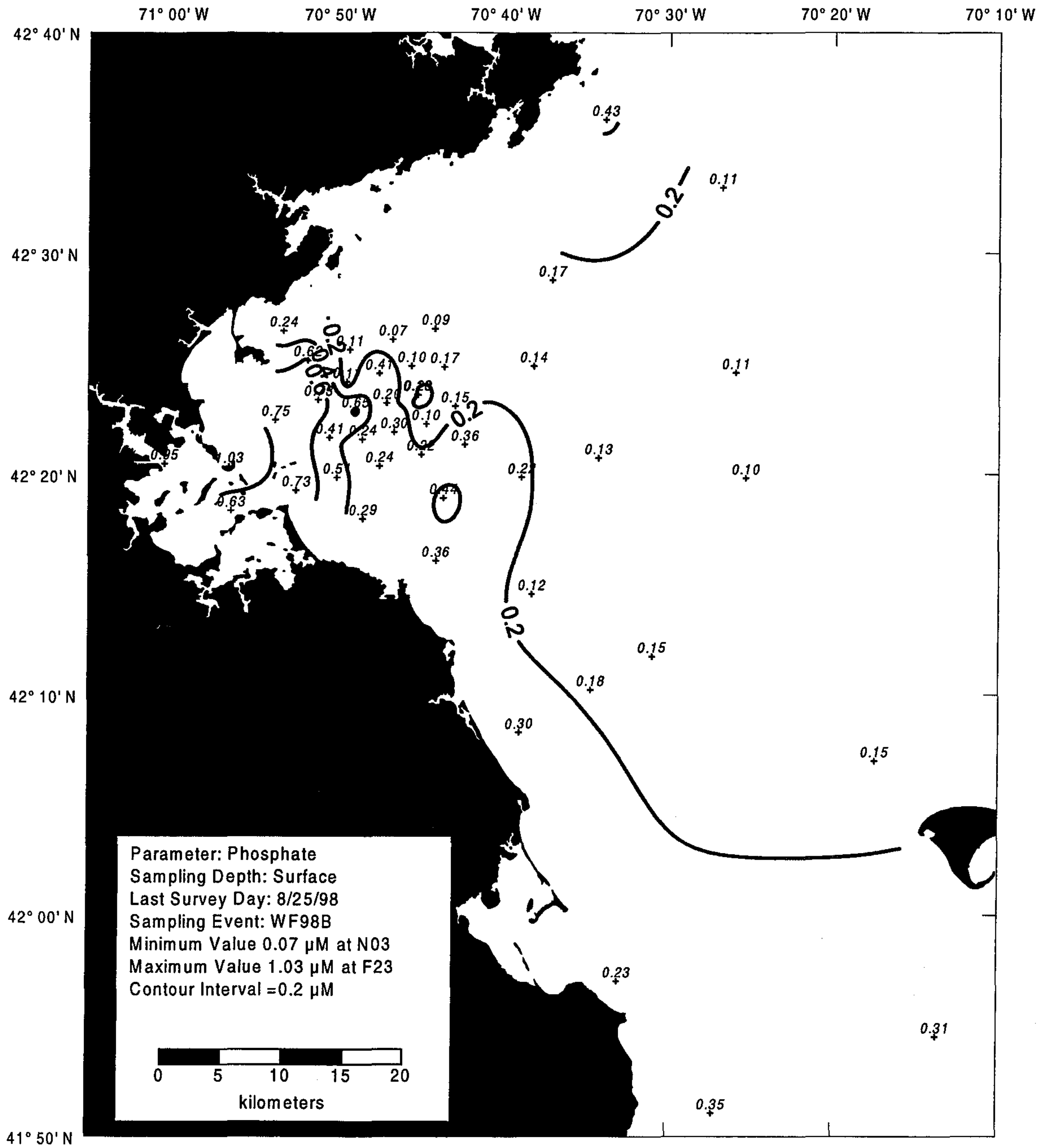


Figure B-11. Phosphate Surface Contour Plot for Farfield Survey WF98B (Aug 98)

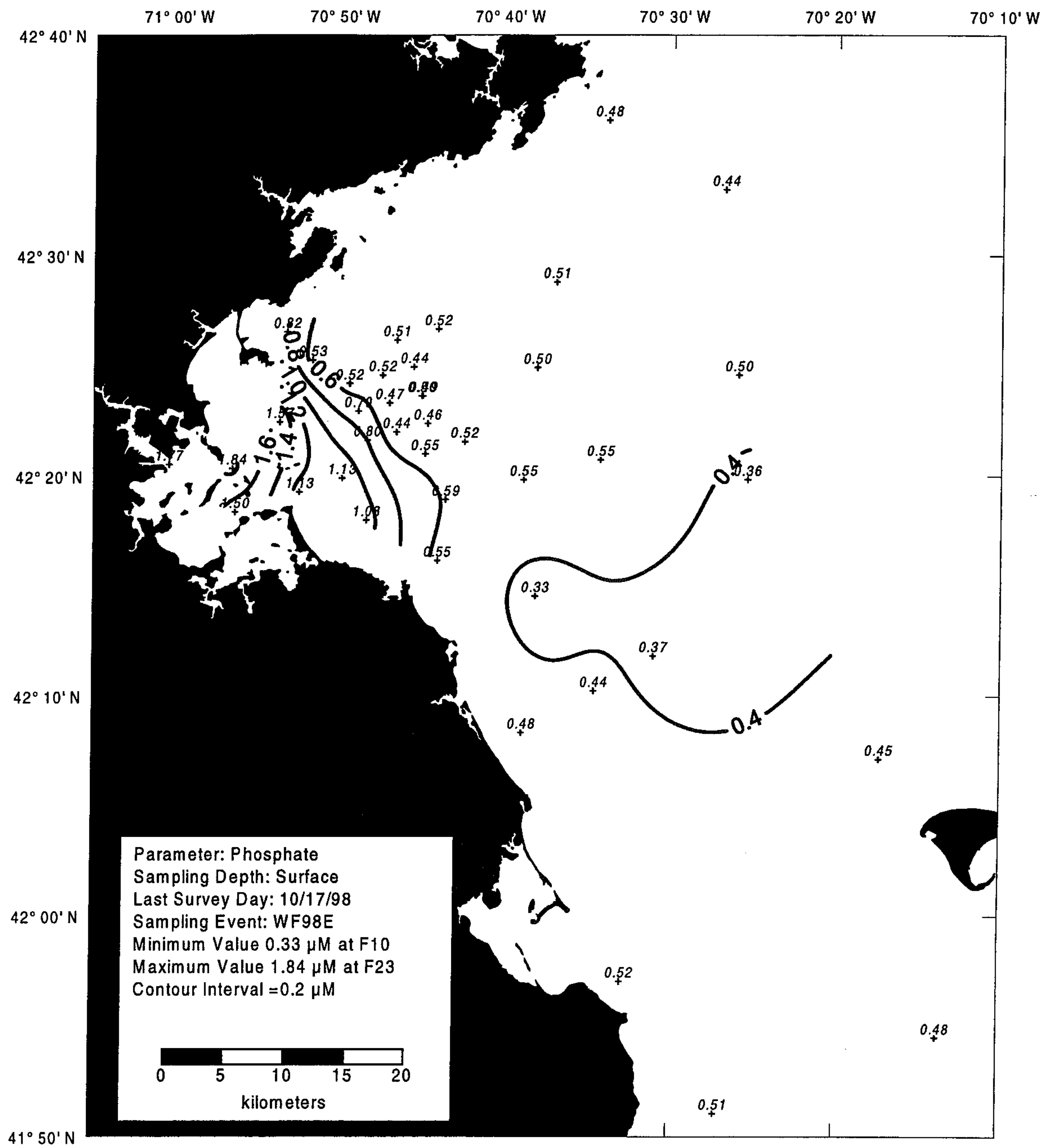


Figure B-12. Phosphate Surface Contour Plot for Farfield Survey WF98E (Oct 98)

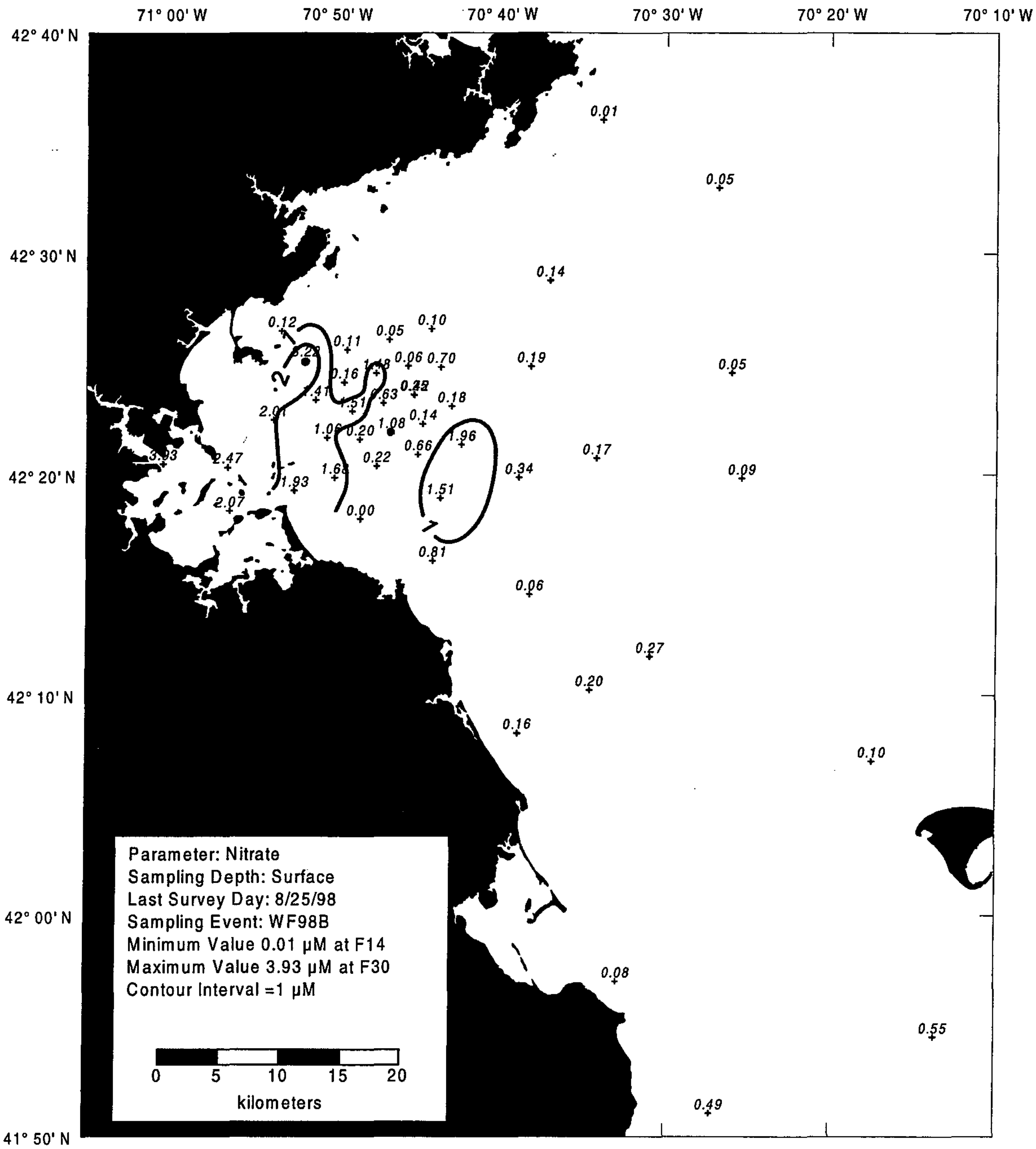


Figure B-13. Nitrate Surface Contour Plot for Farfield Survey WF98B (Aug 98)

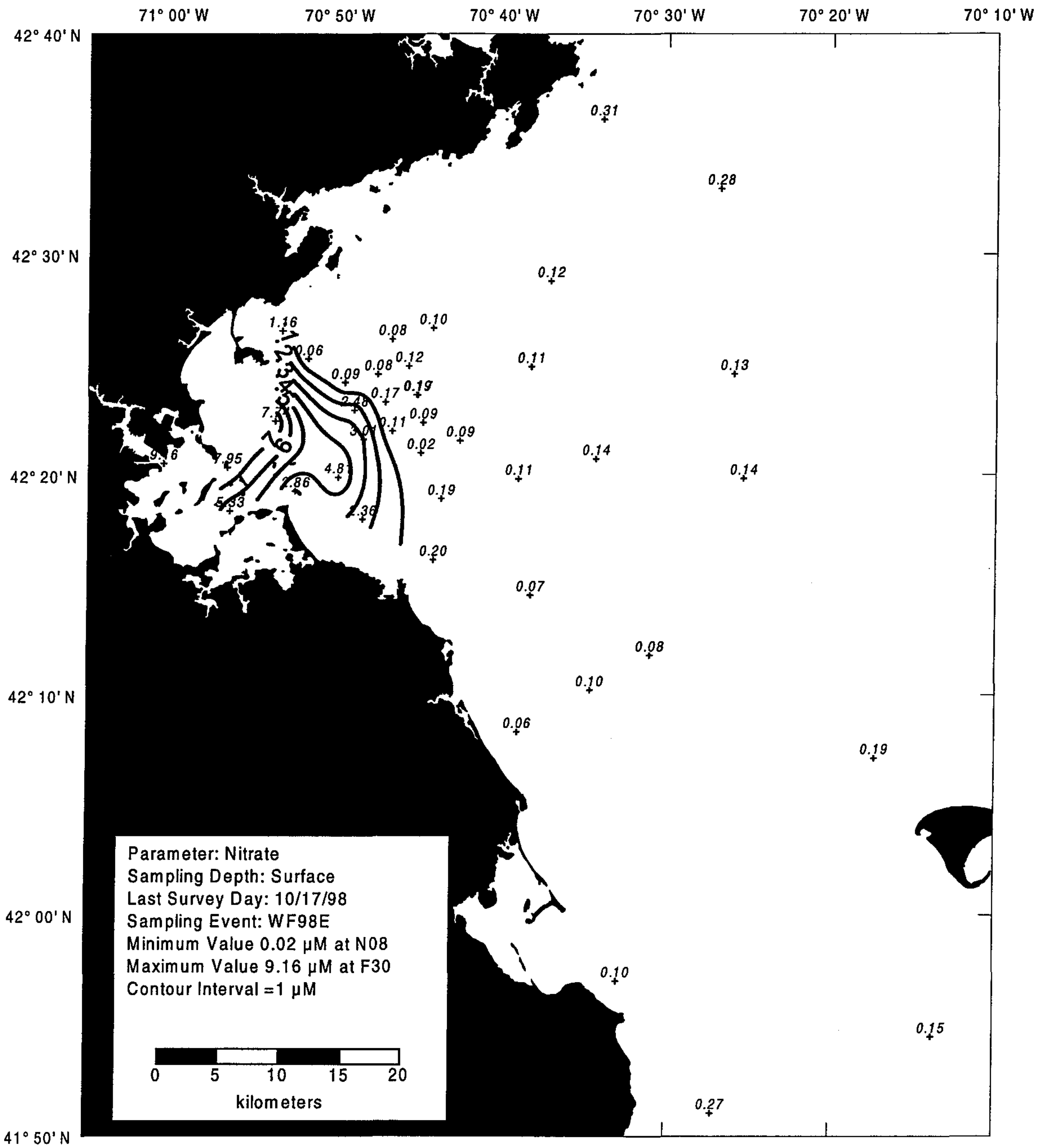


Figure B-14. Nitrate Surface Contour Plot for Farfield Survey WF98E (Oct 98)

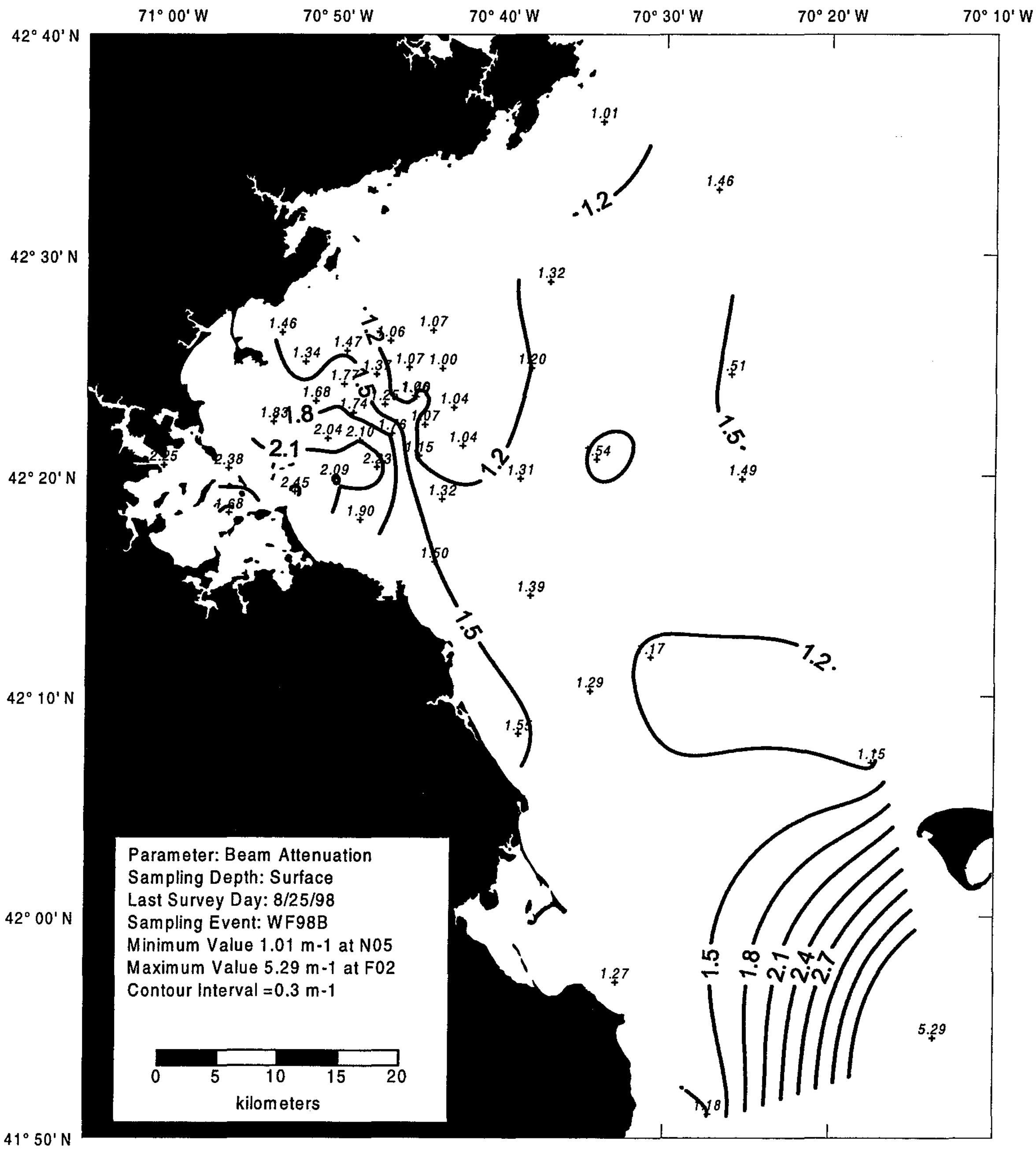


Figure B-15. Beam Attenuation Surface Contour Plot for Farfield Survey WF98B (Aug 98)

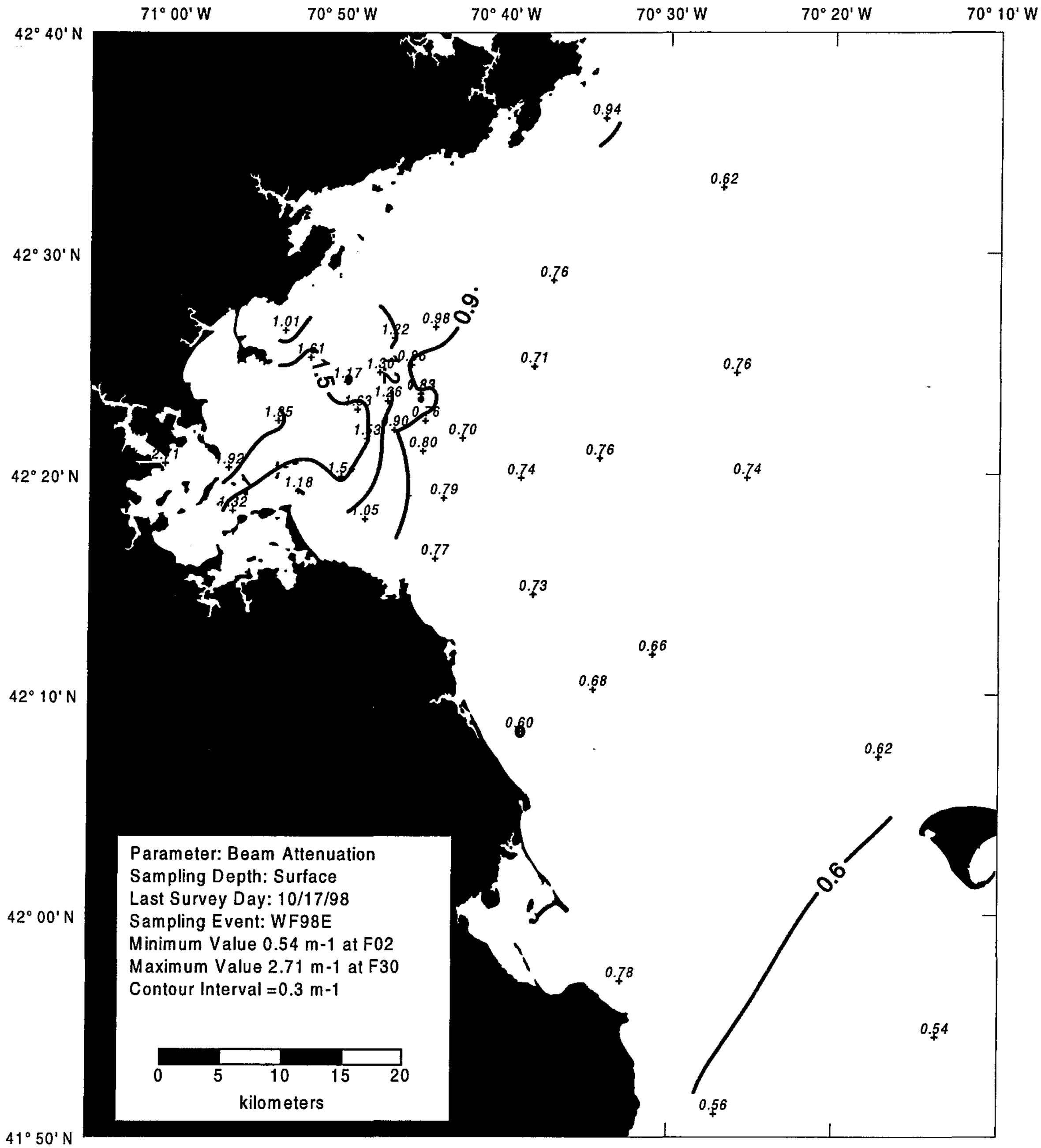


Figure B-16. Beam Attenuation Surface Contour Plot for Farfield Survey WF98E (Oct 98)

APPENDIX C

Transect Plots

Transect Plots – Farfield Surveys

Data were contoured relative to water depth and distance between stations as shown on the transects (Figure 1-3) Distances between stations and water depth at each station is shown on the transect. Water depth is labeled with negative values in meters, with zero depth at the sea surface. The depth to the seabed is shown by the solid shading at the bottom of each plot. Three West-East transects (Boston-Nearfield, Cohasset, and Marshfield) are provided on each plot, as well as shaded contour levels on the scale bar at the bottom of the plot. Additionally, 2 transects which run North-South through Massachusetts Bay have been included for the *in situ* parameters reported in this Appendix. Contour units are as noted on the plot. Each plot is labeled on the bottom left with the parameter, survey number, and last day of the survey date. The data used for the contours were based on high-resolution *in situ* hydrographic casts and individual data points as noted below.

Parameter	Data Used
Density (Sigma-T)	High-resolution *in situ* data
Temperature	High-resolution *in situ* data
Salinity	High-resolution *in situ* data
Beam Attenuation	High-resolution *in situ* data
Nitrate plus Nitrite	Individual data points based on discrete water column
Phosphate	Individual data points based on discrete water column
Silicate	Individual data points based on discrete water column
Ammonium	Individual data points based on discrete water column
Fluorescence	High-resolution *in situ* data
Dissolved Oxygen	High-resolution *in situ* data

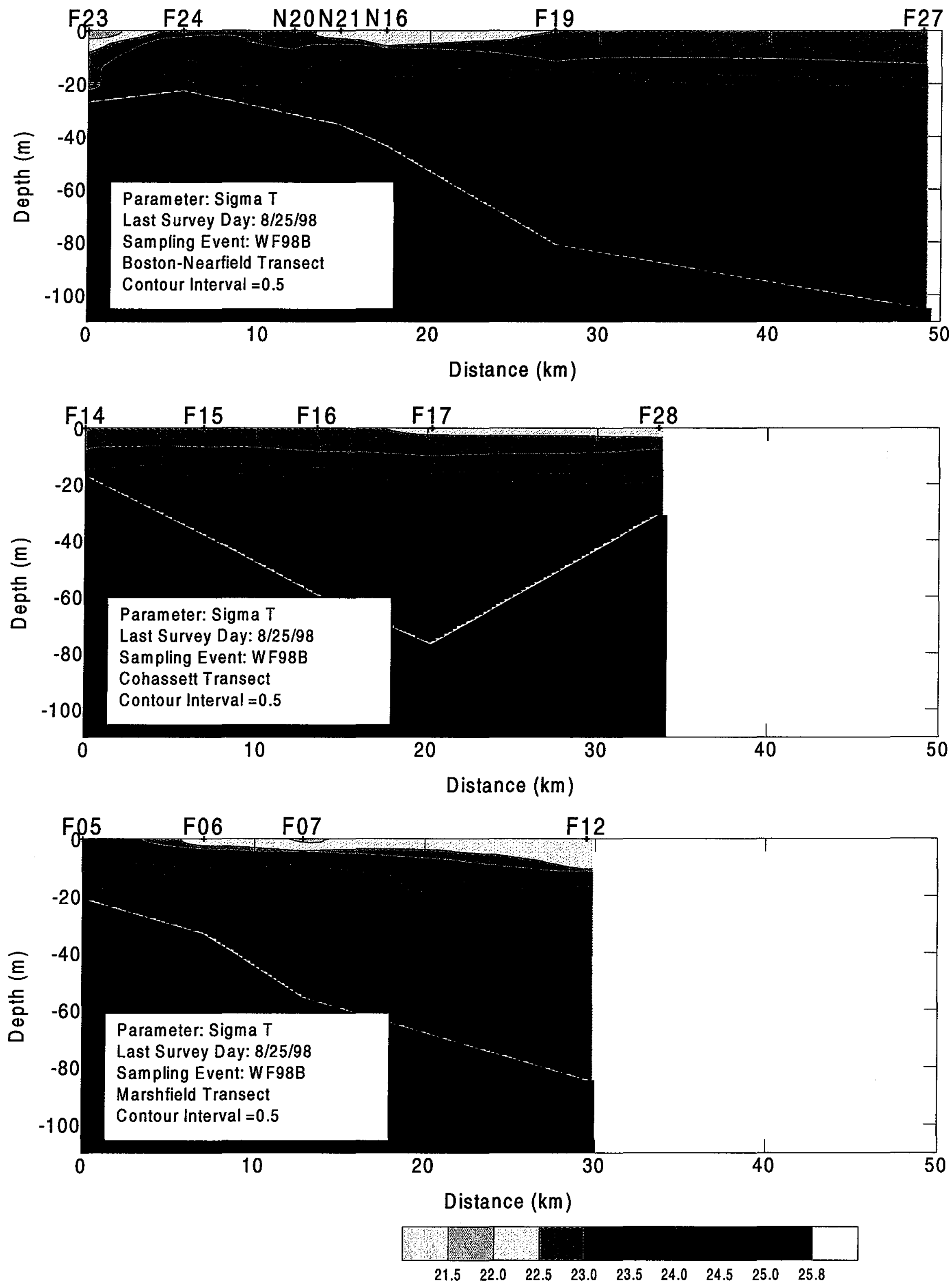
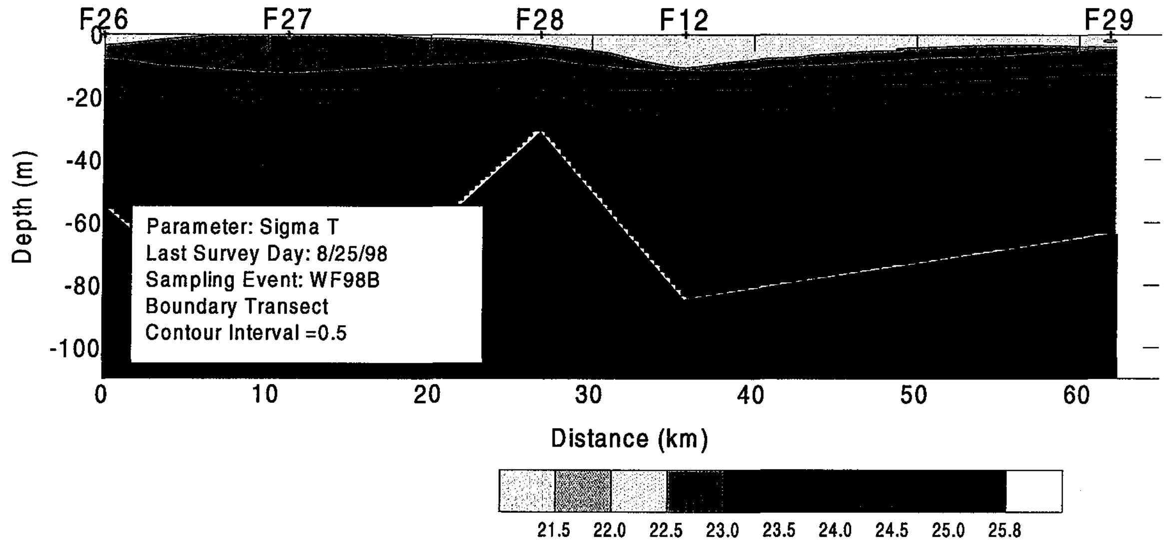


Figure C-1. Density Transect Plots (West - East) for Farfield Survey WF98B (Aug 98)



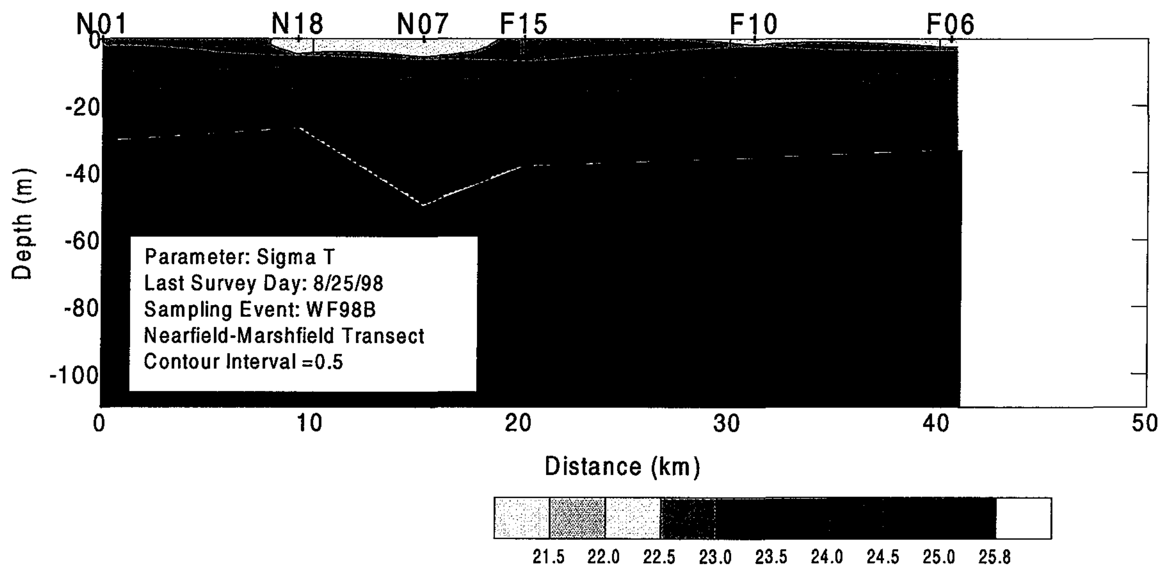


Figure C-2. Density Transect Plots (North - South) for Farfield Survey WF98B (Aug 98)

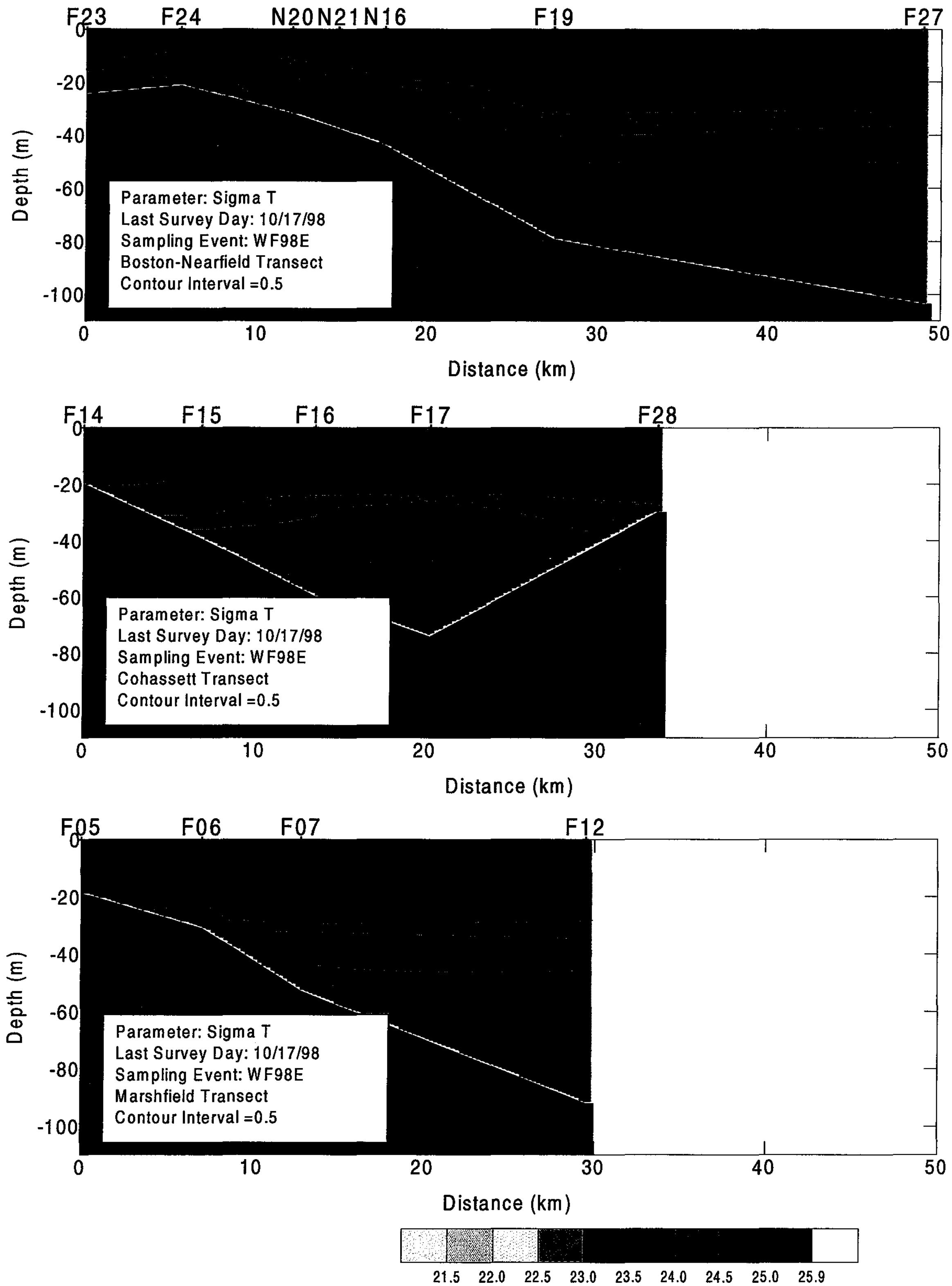
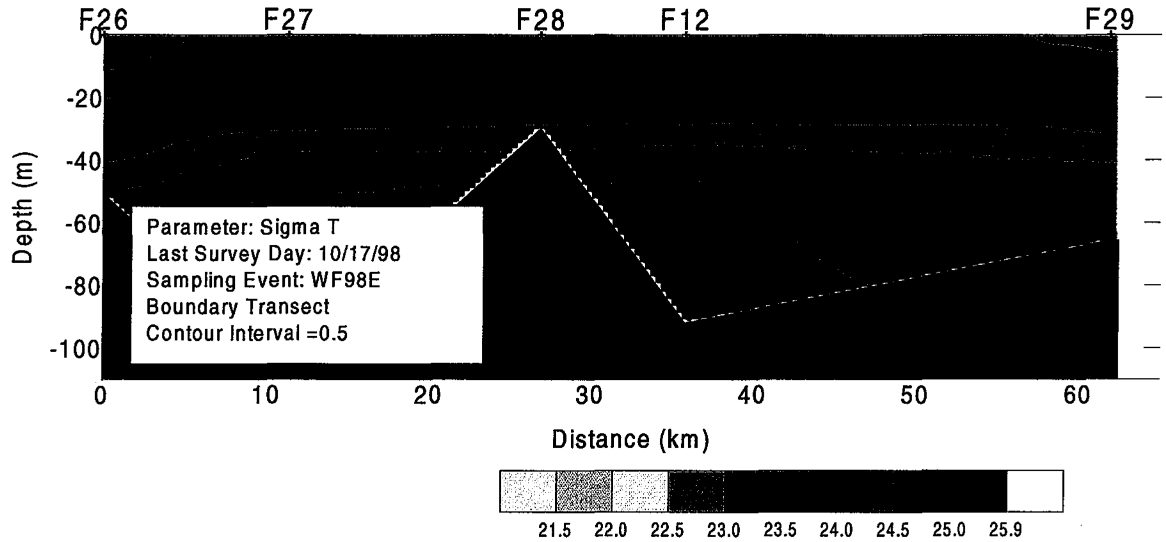


Figure C-3. Density Transect Plots (West - East) for Farfield Survey WF98E (Oct 98)



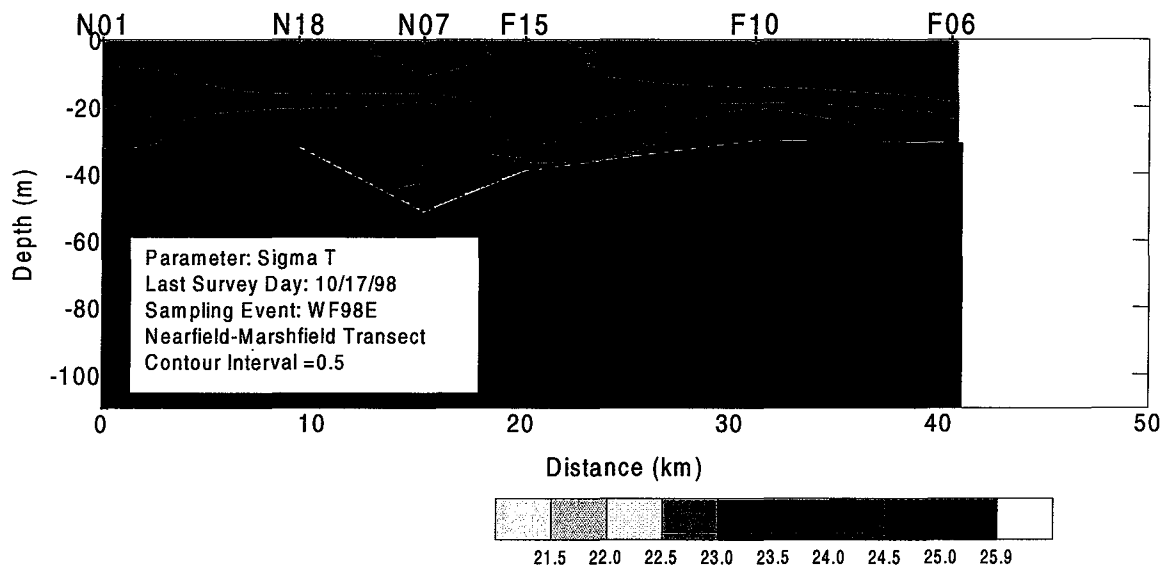


Figure C-4. Density Transect Plots (North - South) for Farfield Survey WF98E (Oct 98)

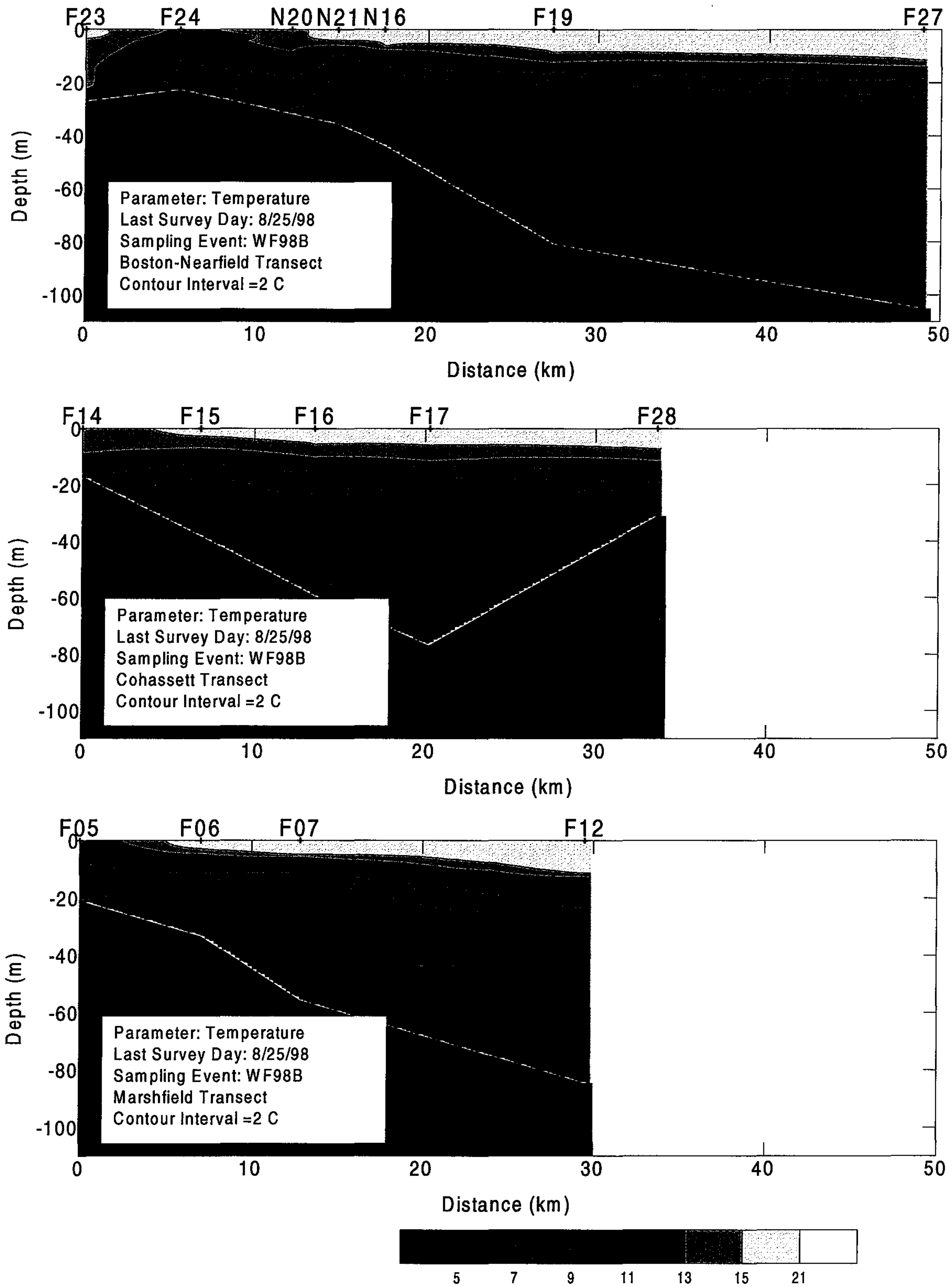
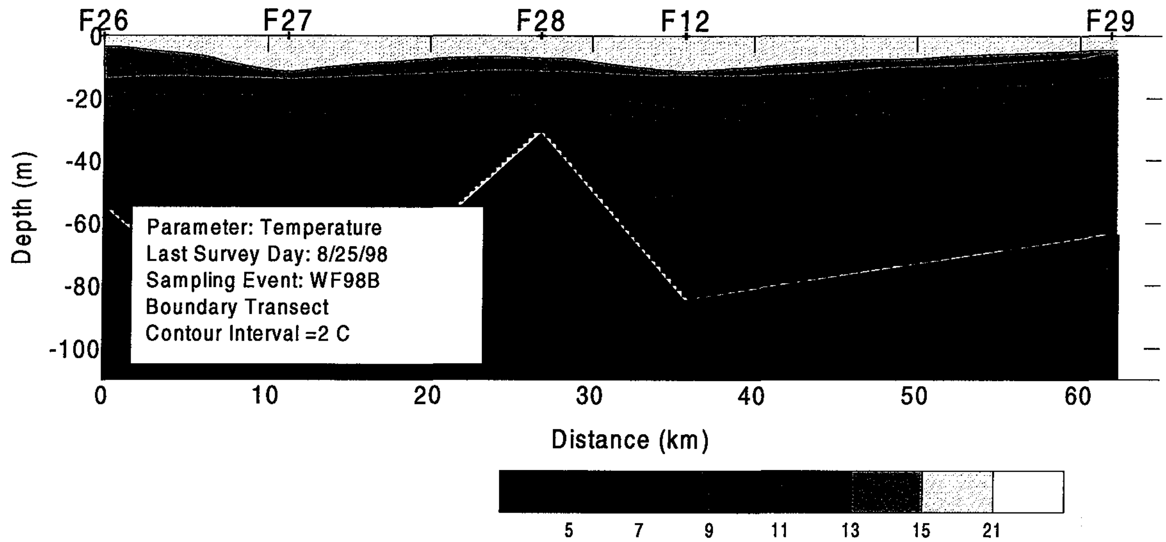


Figure C-5. Temperature Transect Plots (West - East) for Farfield Survey WF98B (Aug 98)



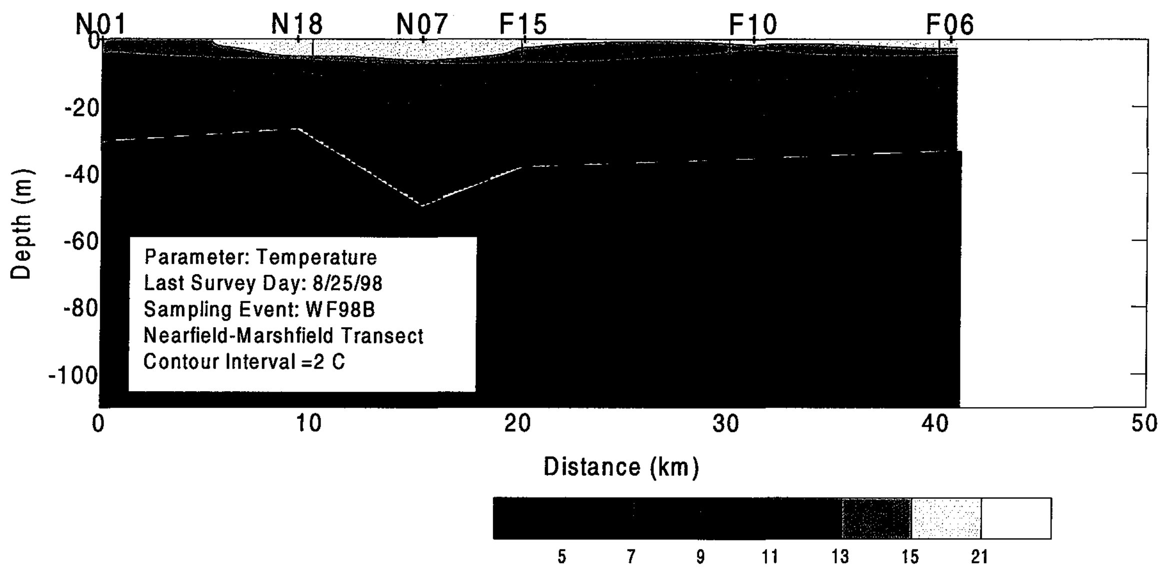


Figure C-6. Temperature Transect Plots (North - South) for Farfield Survey WF98B (Aug 98)

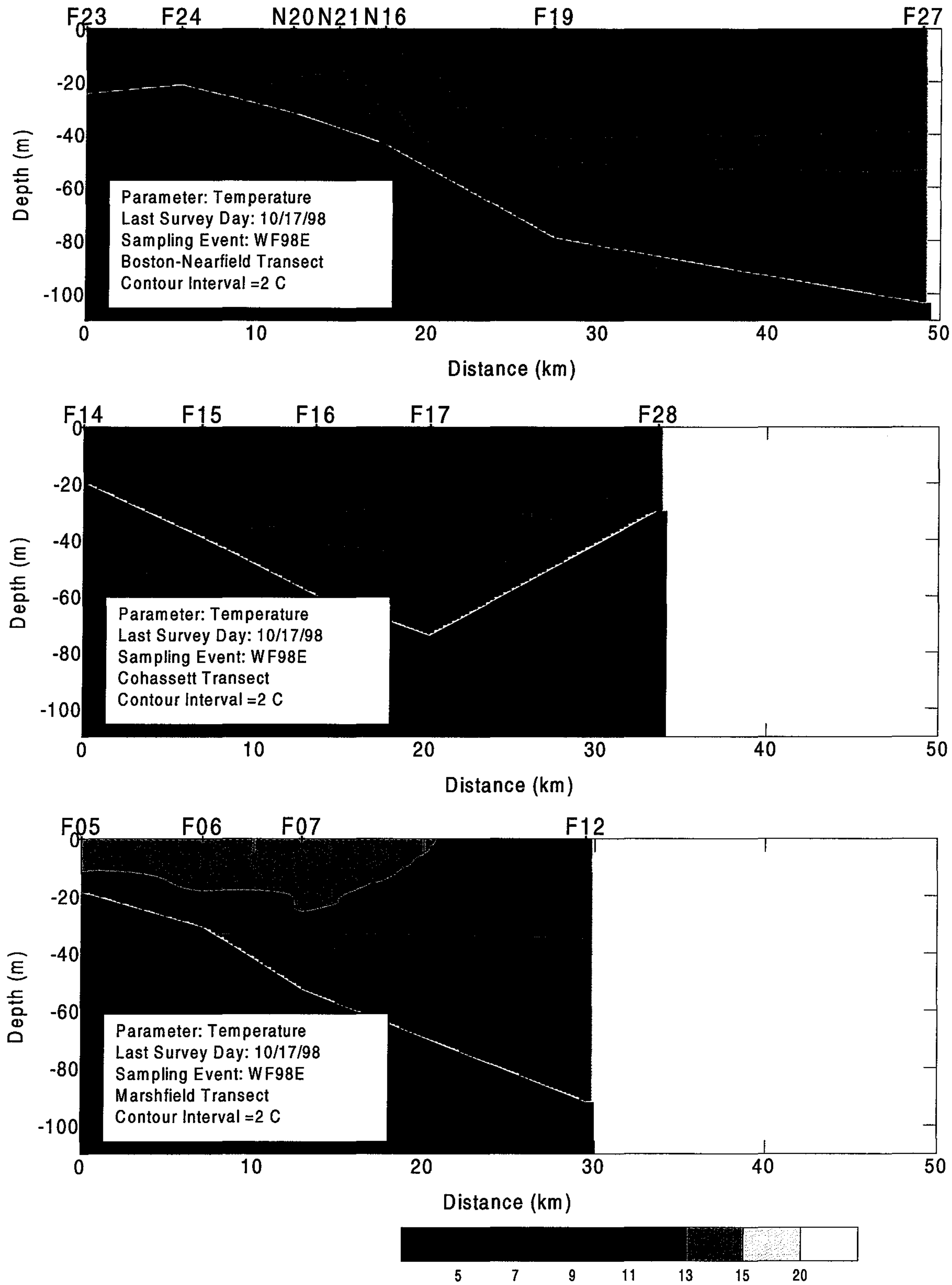


Figure C-7. Temperature Transect Plots (West – East) for Farfield Survey WF98E (Oct 98)

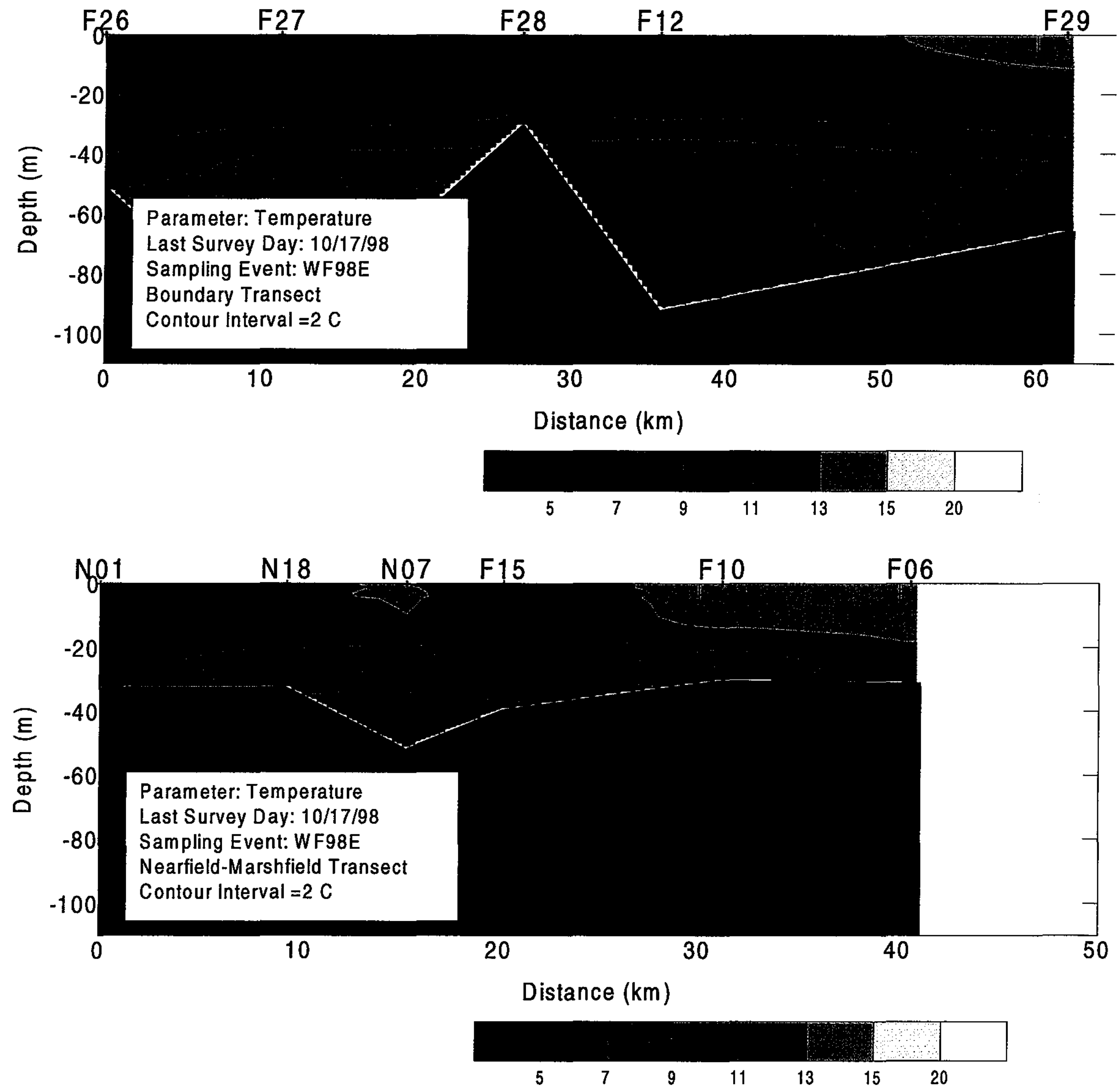


Figure C-8. Temperature Transect Plots (North - South) for Farfield Survey WF98E (Oct 98)

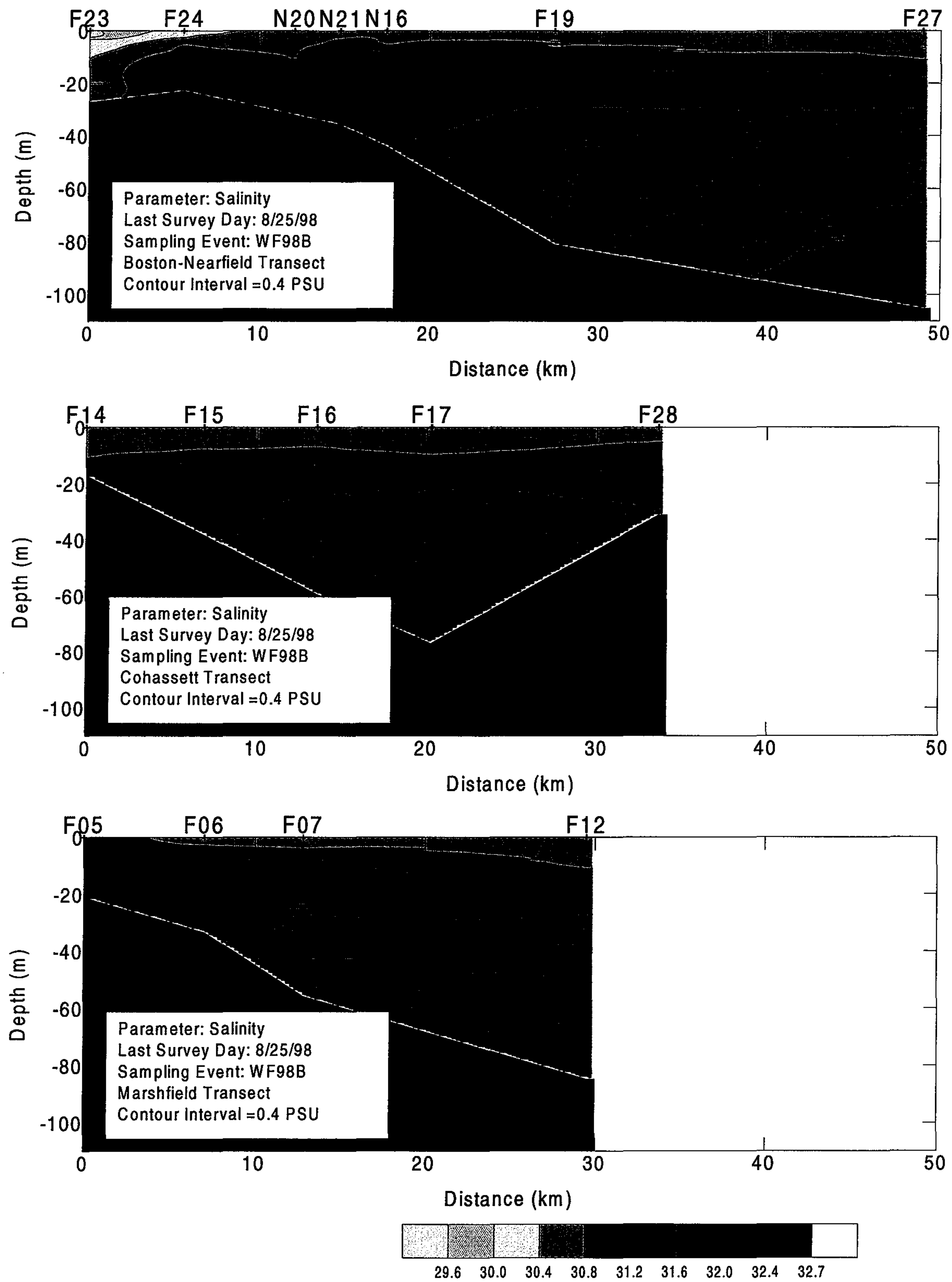


Figure C-9. Salinity Transect Plots (West - East) for Farfield Survey WF98B (Aug 98)

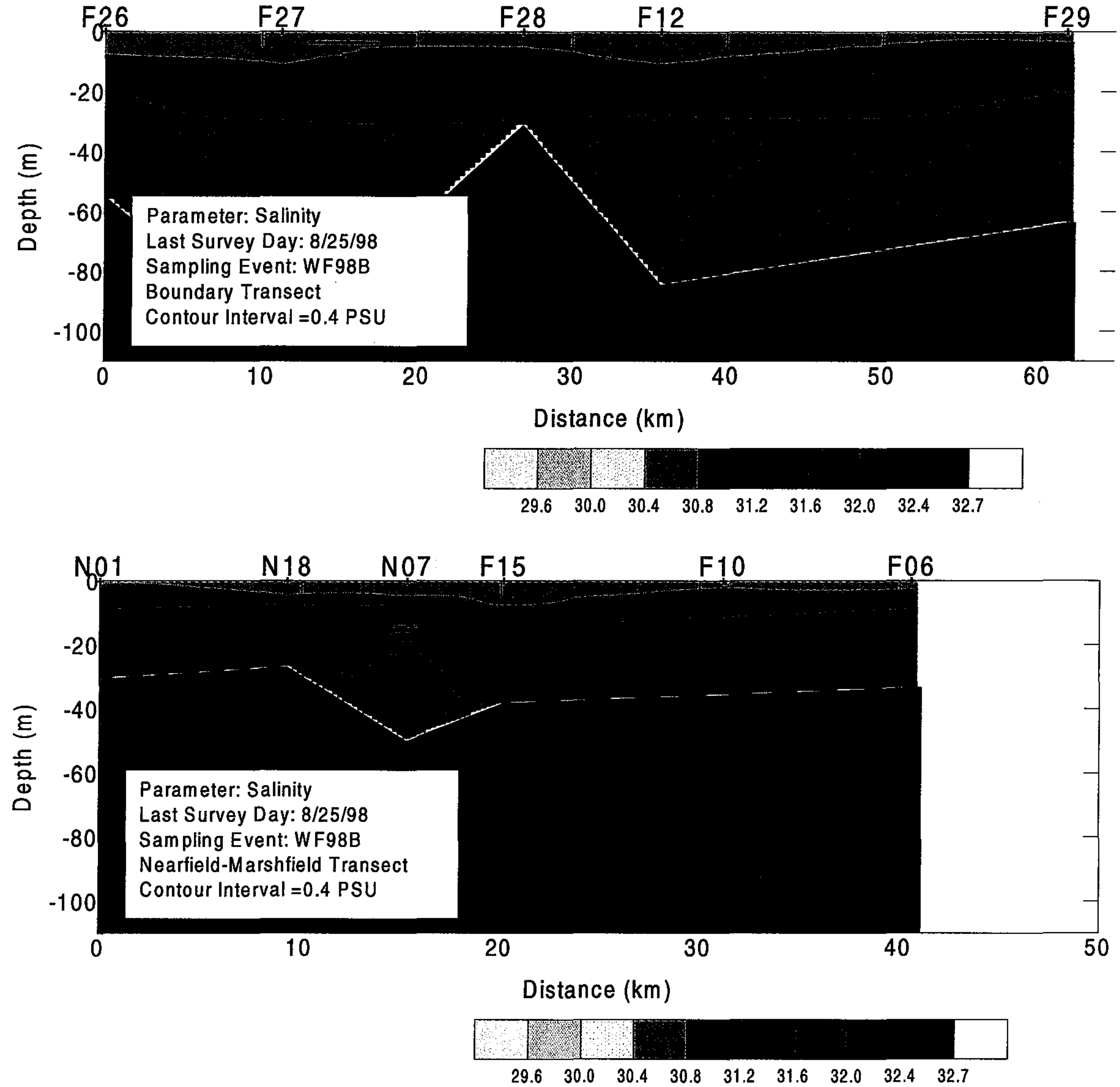


Figure C-10. Salinity Transect Plots (North - South) for Farfield Survey WF98B (Aug 98)

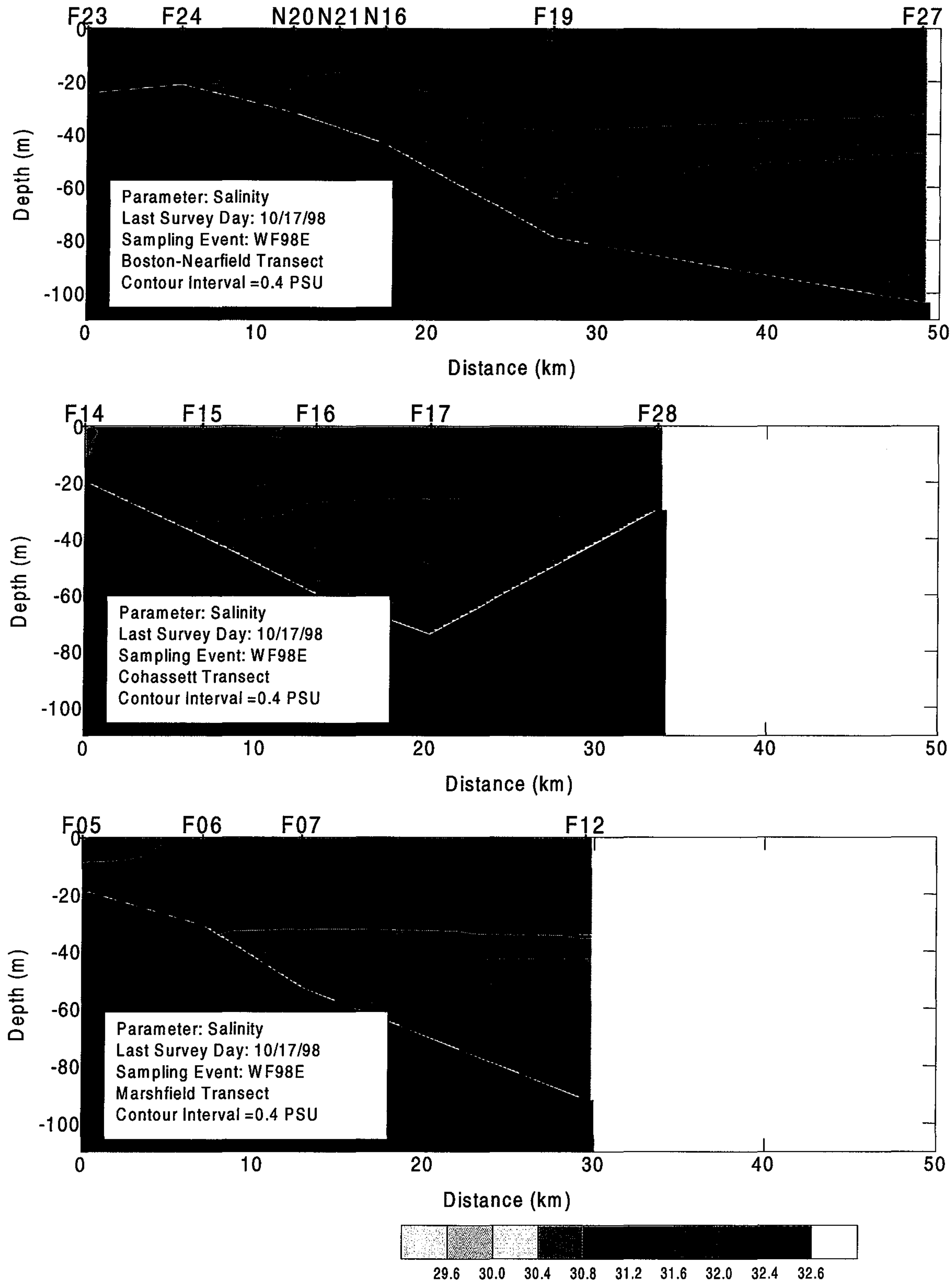


Figure C-11. Salinity Transect Plots (West - East) for Farfield Survey WF98E (Oct 98)

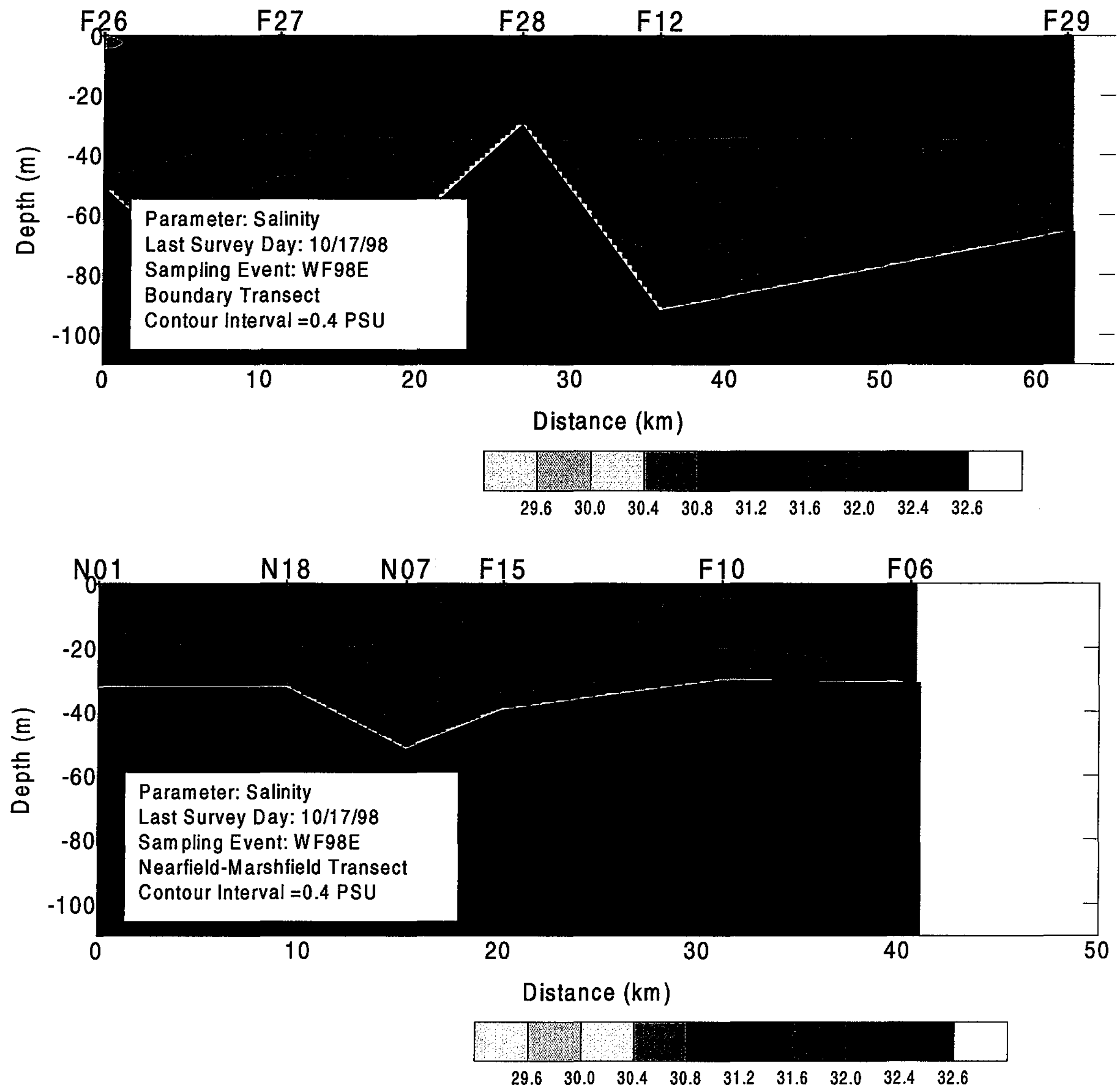


Figure C-12. Salinity Transect Plots (North - South) for Farfield Survey WF98E (Oct 98)

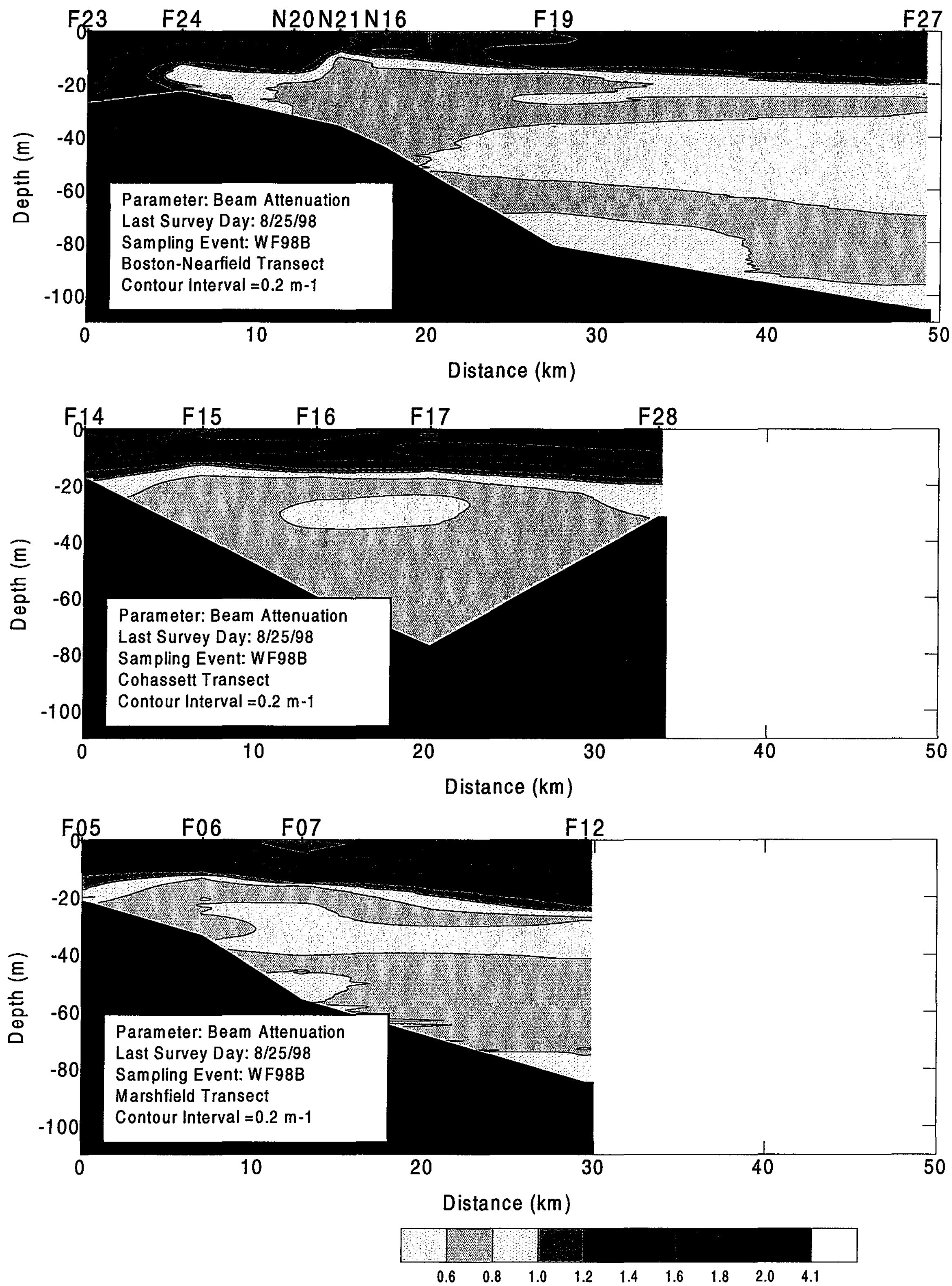
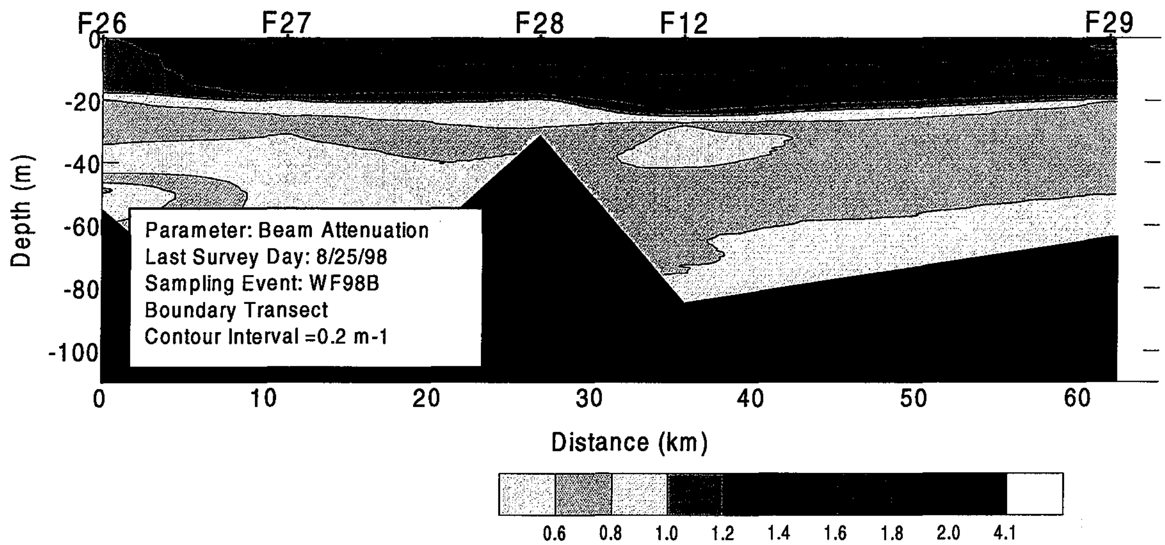


Figure C-13. Beam Attenuation Transect Plots (West - East) for Farfield Survey WF98B (Aug 98)



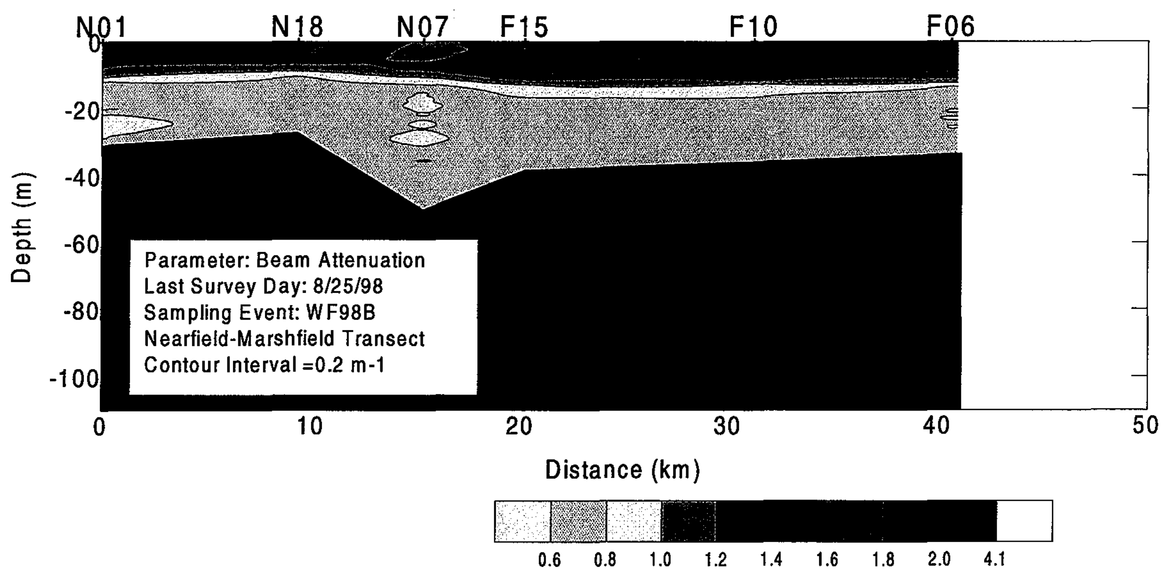


Figure C-14. Beam Attenuation Transect Plots (North - South) for Farfield Survey WF98B (Aug 98)

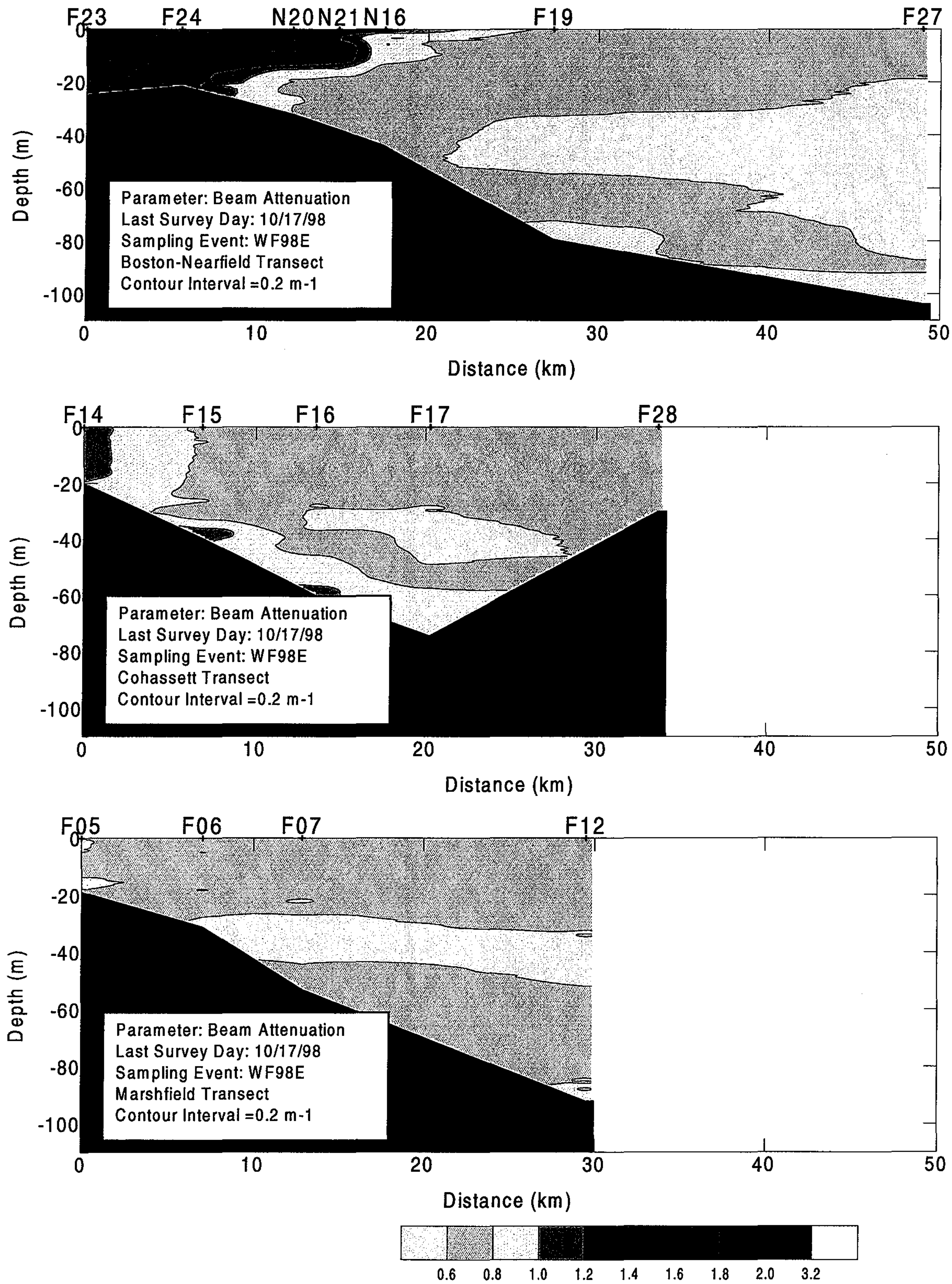


Figure C-15. Beam Attenuation Transect Plots (West - East) for Farfield Survey WF98E (Oct 98)

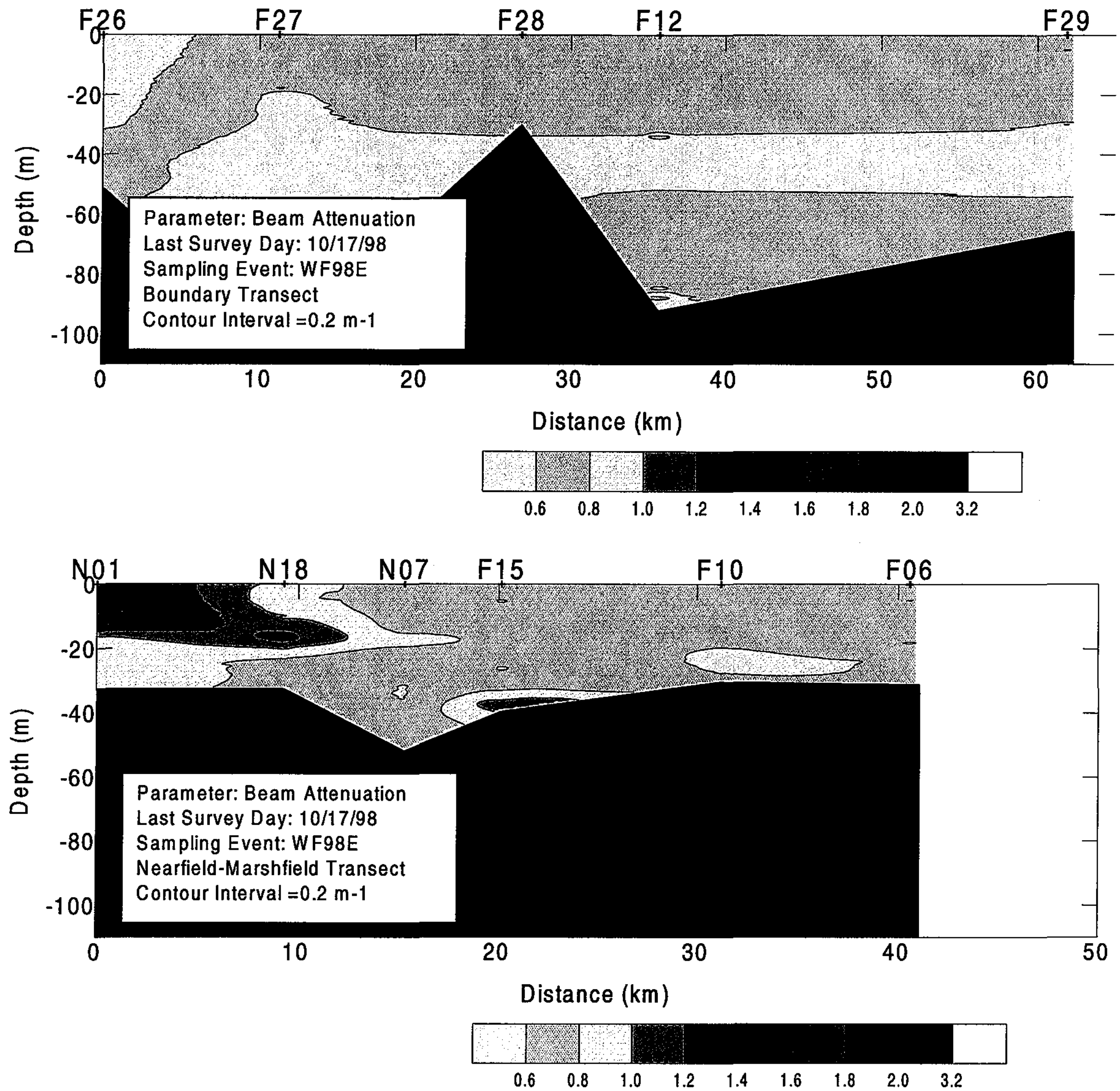


Figure C-16. Beam Attenuation Transect Plots (North - South) for Farfield Survey WF98E (Oct 98)

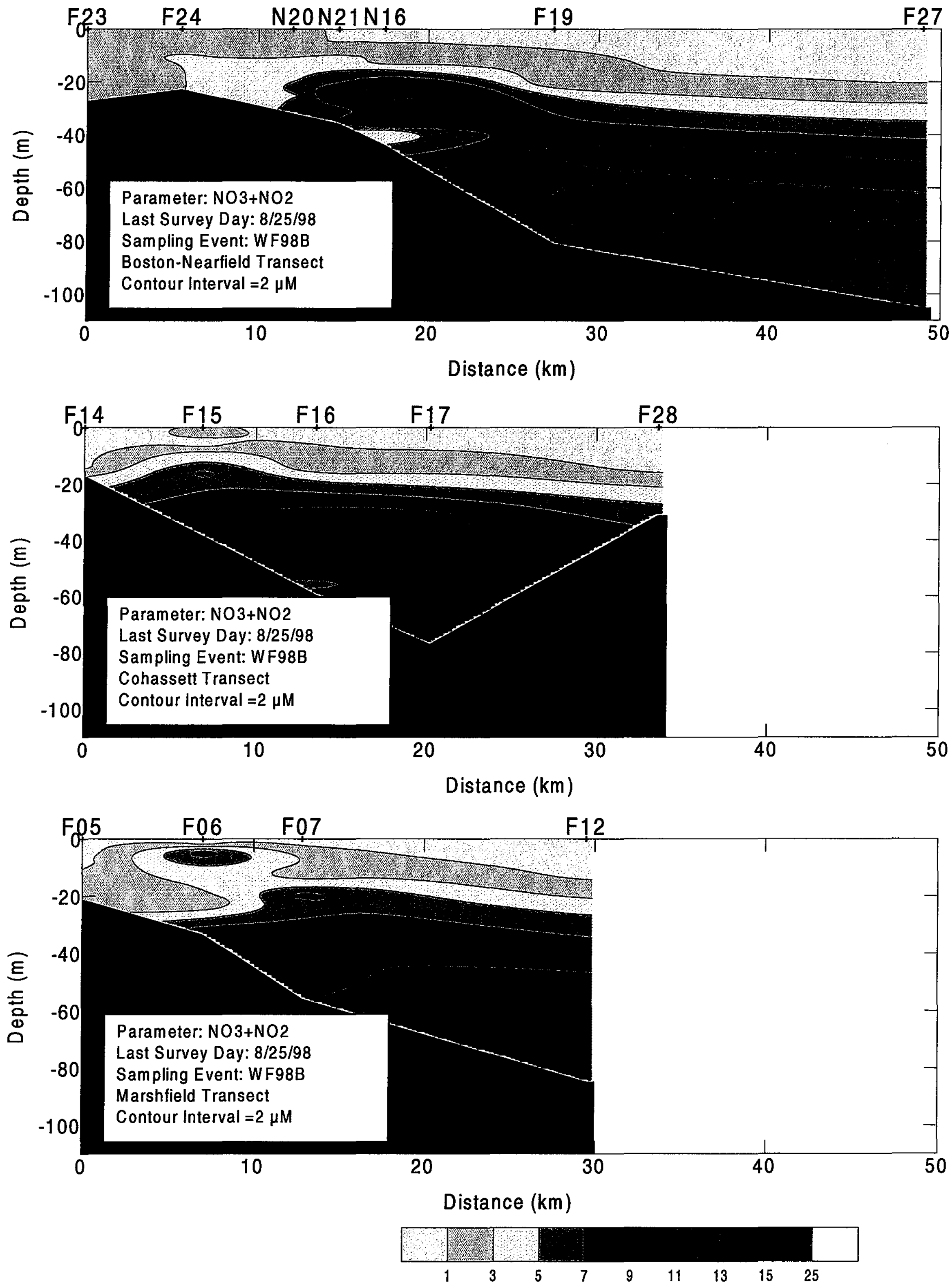


Figure C-17. Nitrate Plus Nitrite Transect Plots (West - East) for Farfield Survey WF98B (Aug 98)

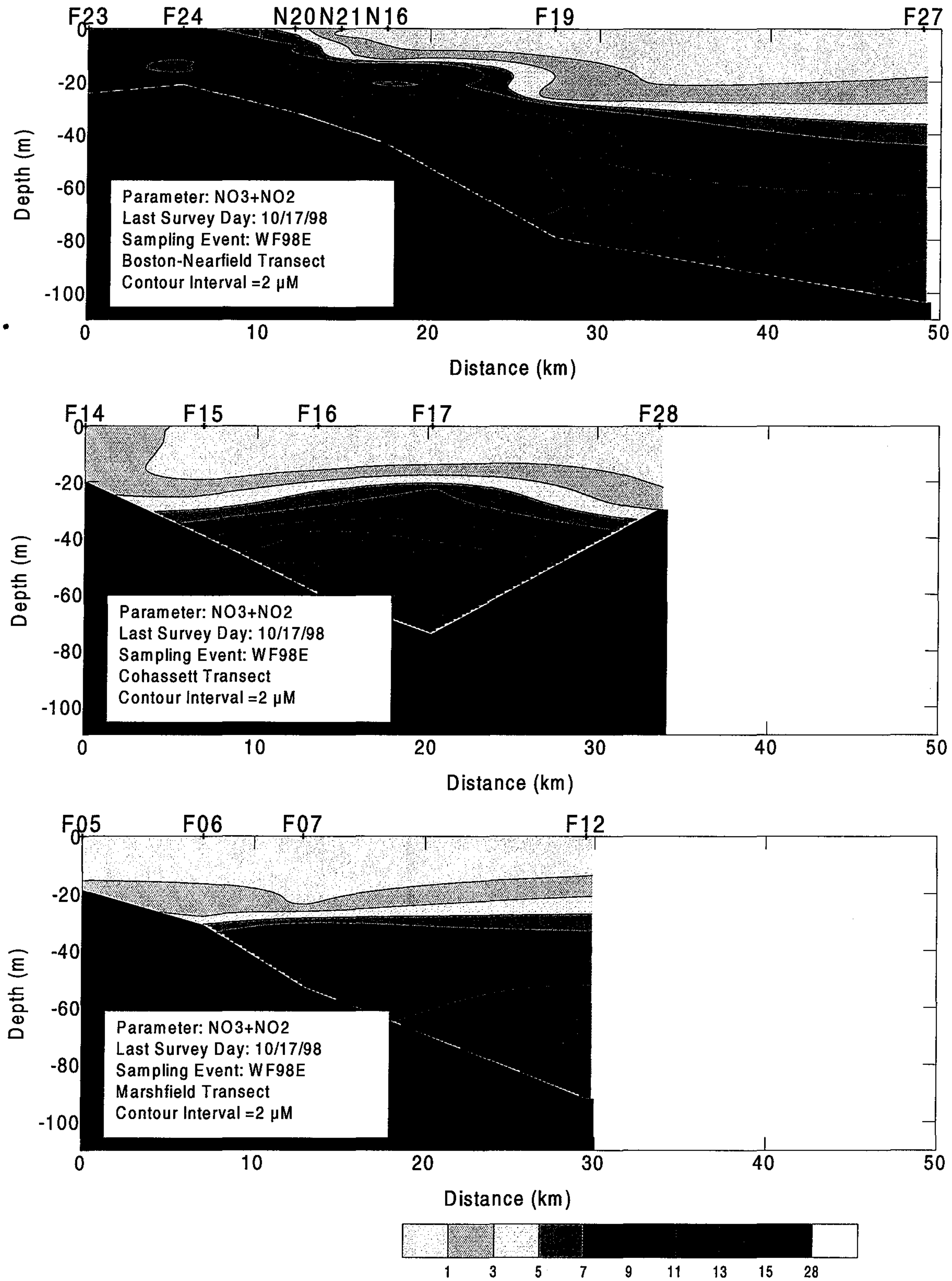


Figure C-18. Nitrate Plus Nitrite Transect Plots (West - East) for Farfield Survey WF98E (Oct 98)

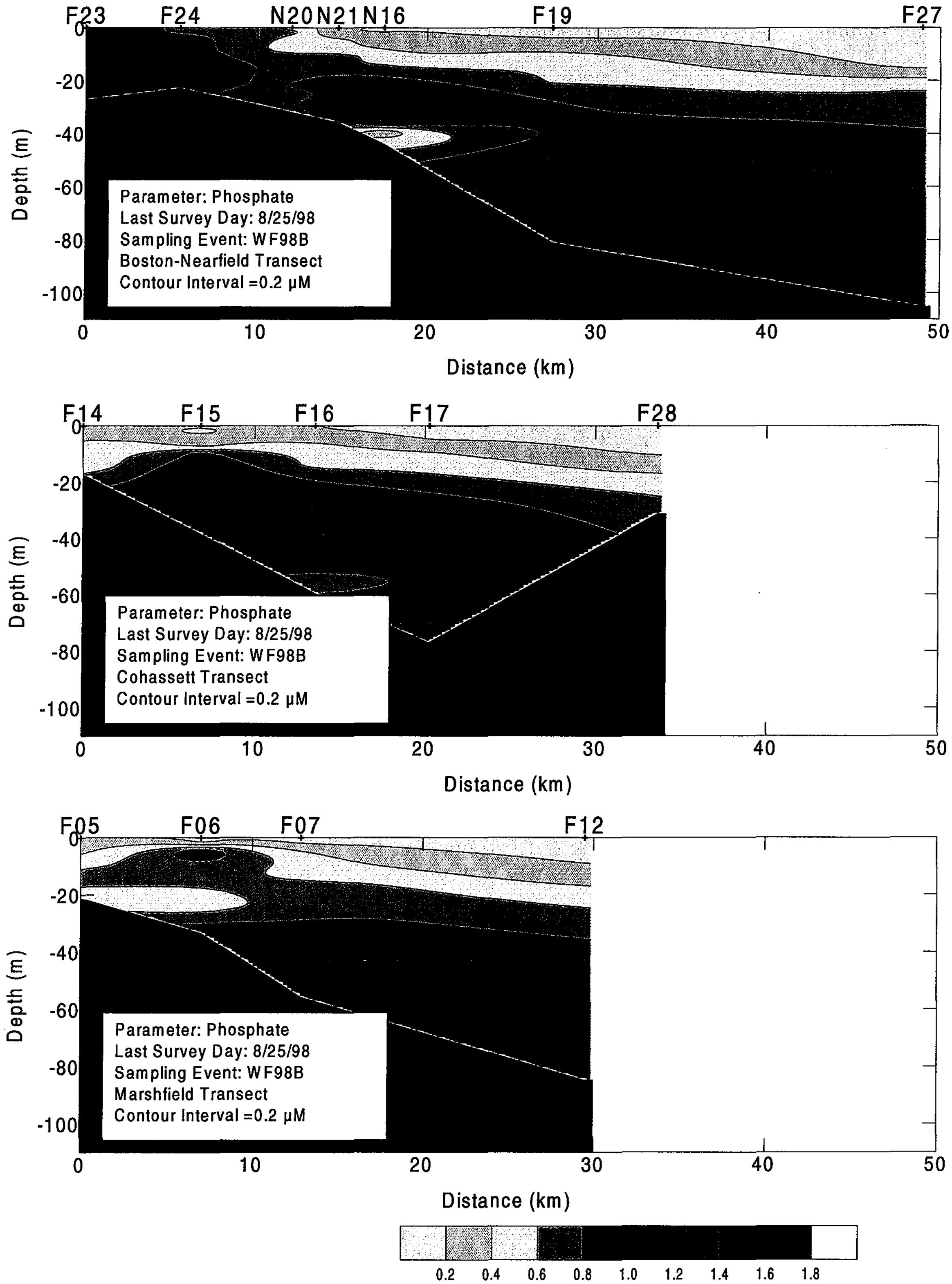


Figure C-19. Phosphate Transect Plots (West - East) for Farfield Survey WF98B (Aug 98)

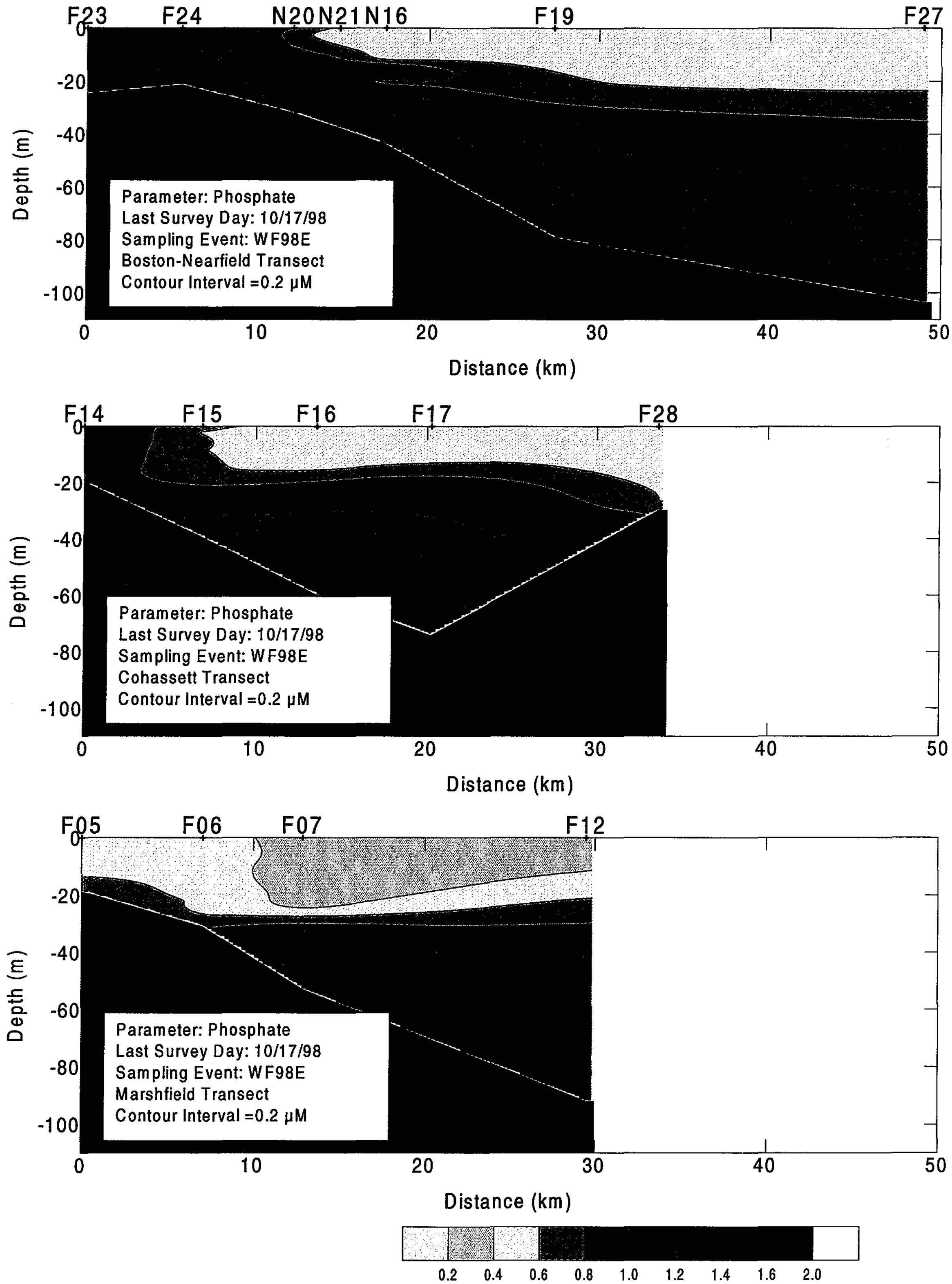


Figure C-20. Phosphate Transect Plots (West - East) for Farfield Survey WF98E (Oct 98)

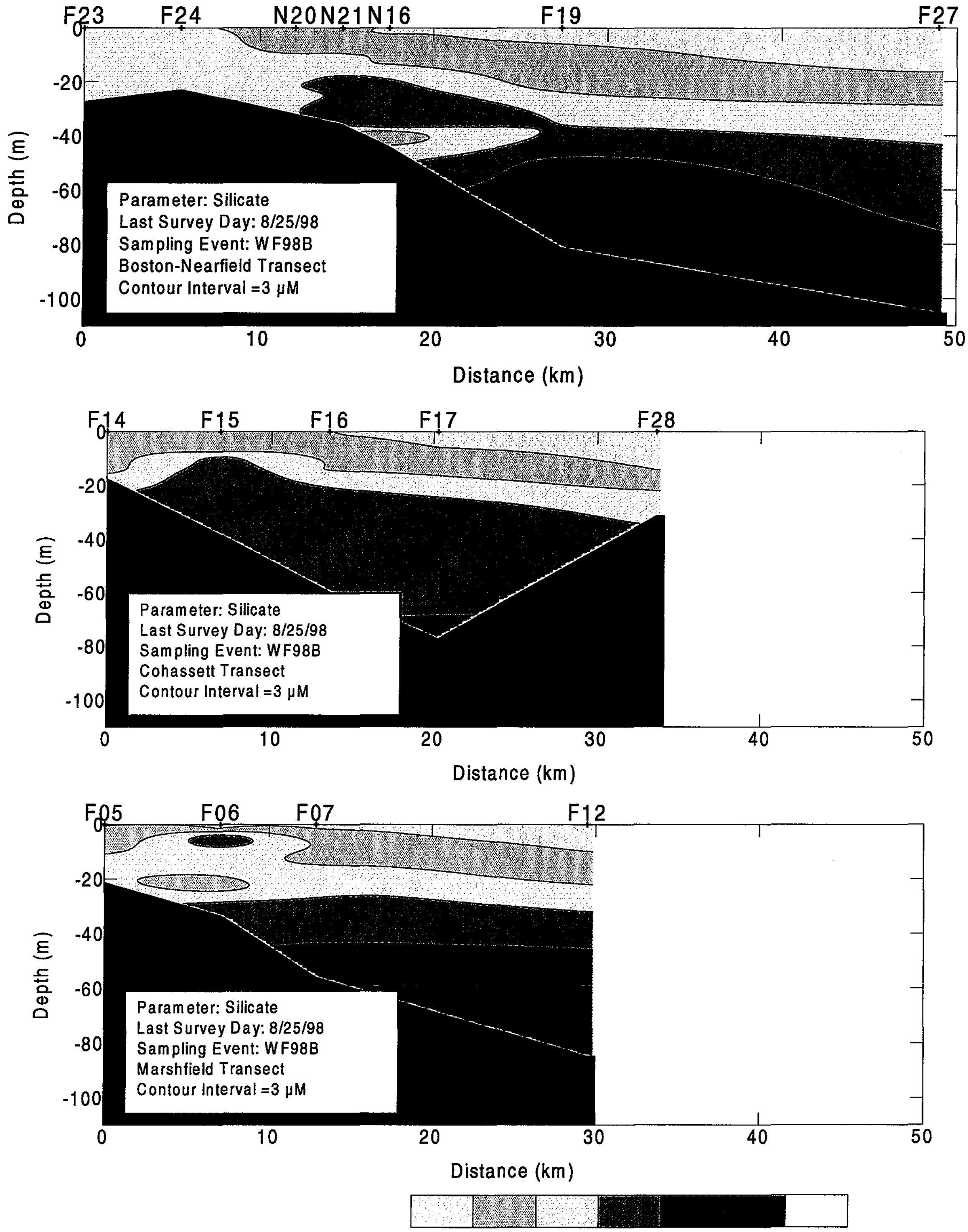


Figure C-21. Silicate Transect Plots (West - East) for Farfield Survey WF98B (Aug 98)

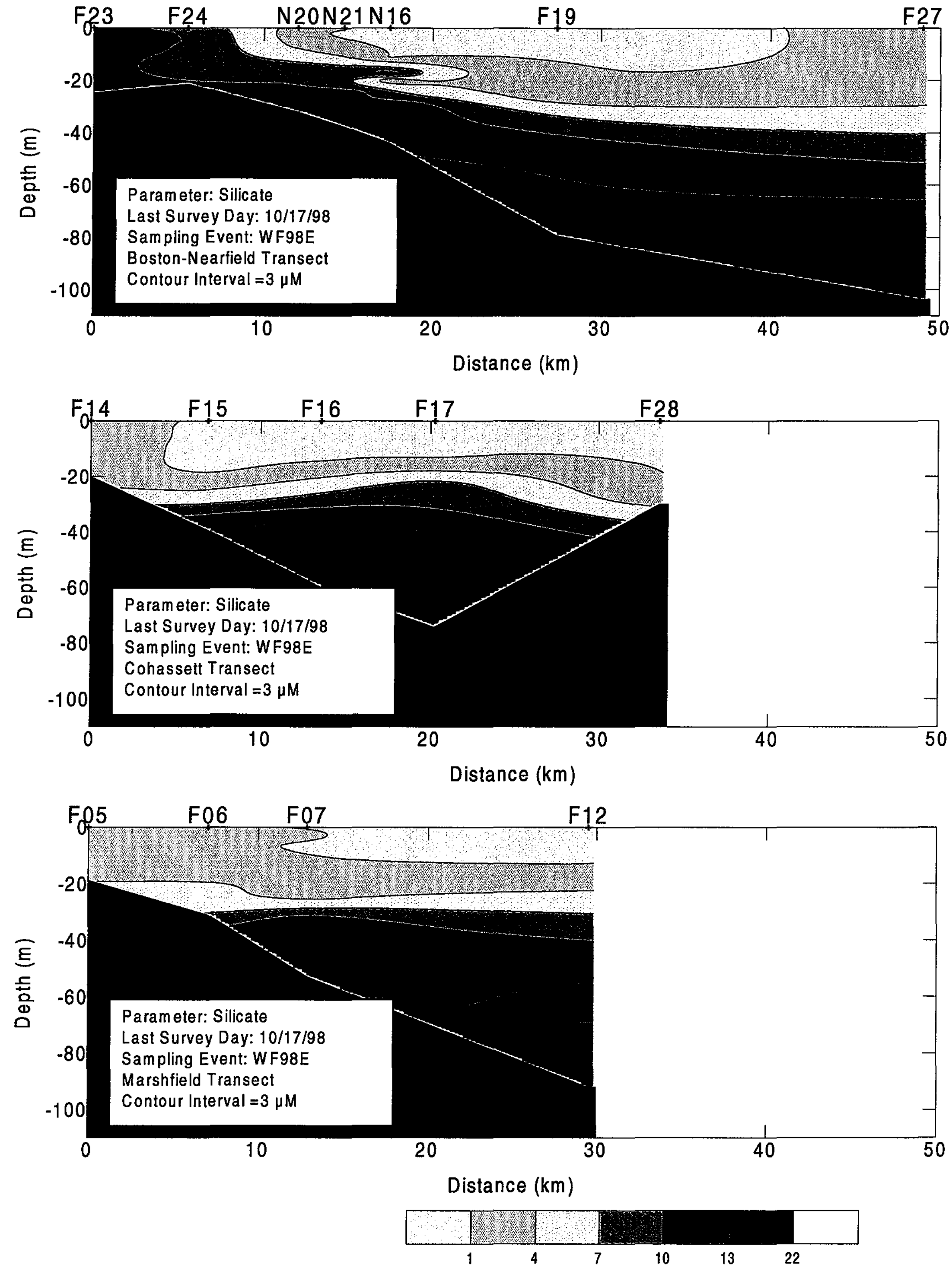


Figure C-22. Silicate Transect Plots (West - East) for Farfield Survey WF98E (Oct 98)

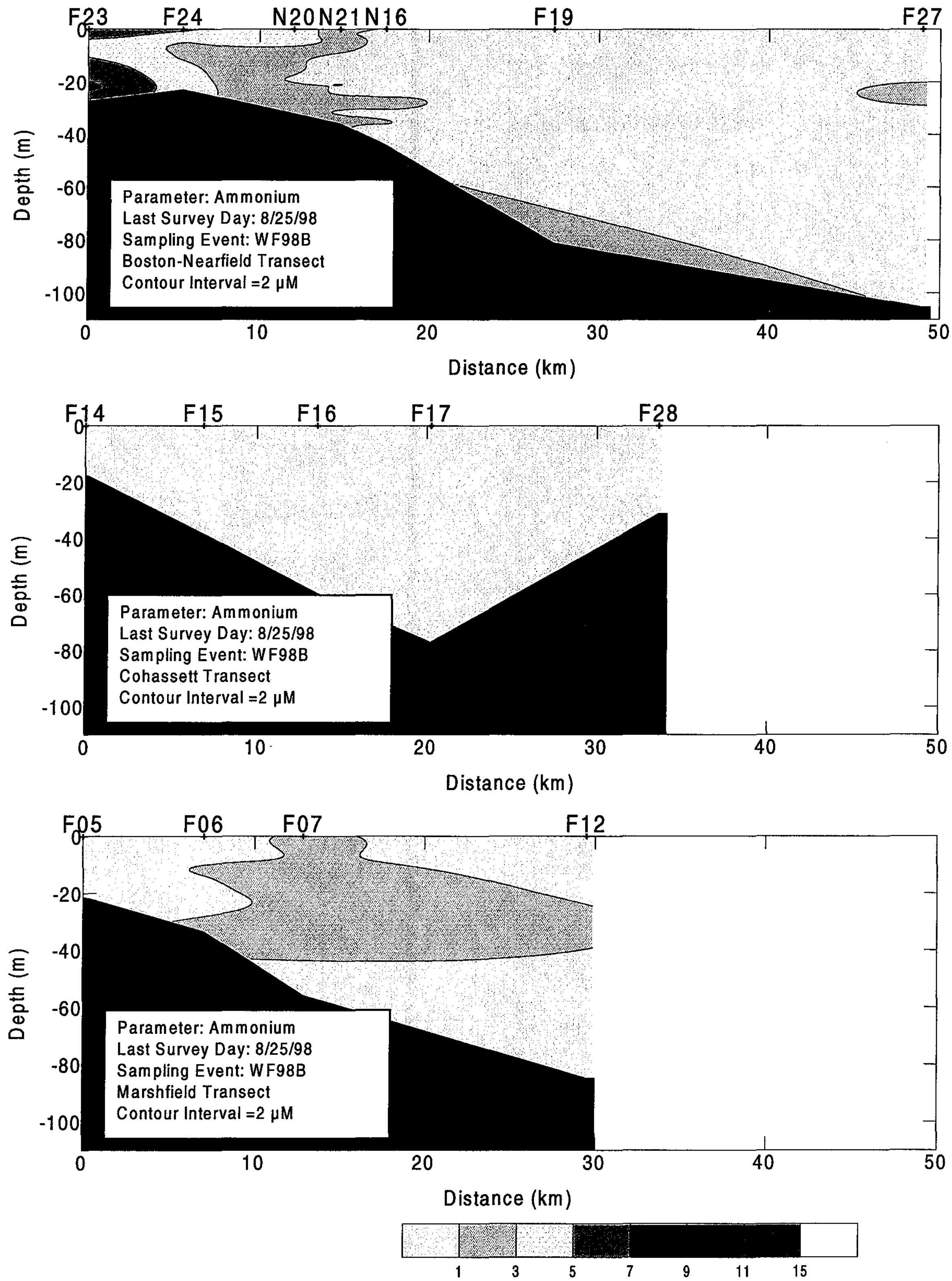


Figure C-23. Ammonium Transect Plots (West - East) for Farfield Survey WF98B (Aug 98)

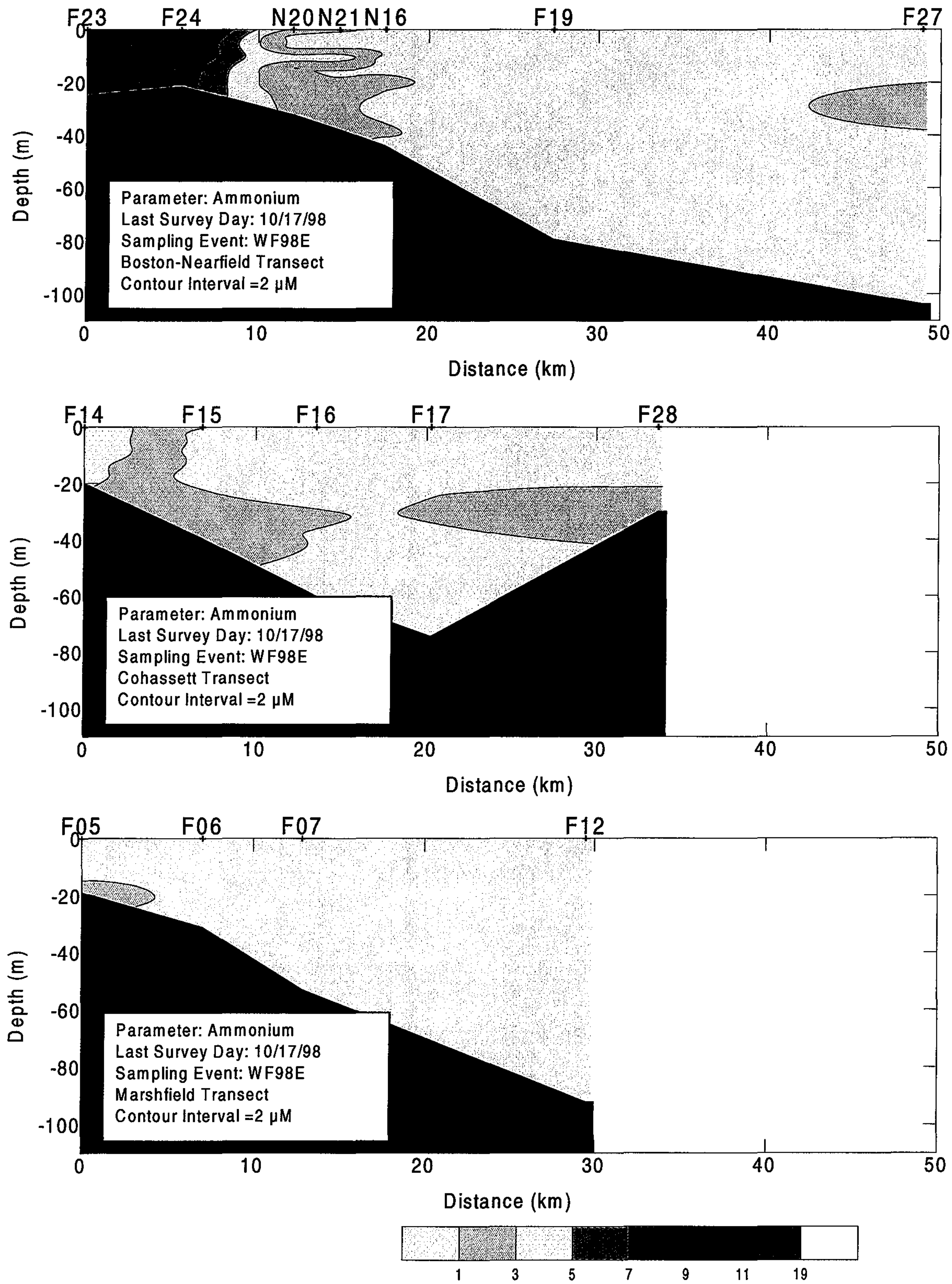


Figure C-24. Ammonium Transect Plots (West - East) for Farfield Survey WF98E (Oct 98)

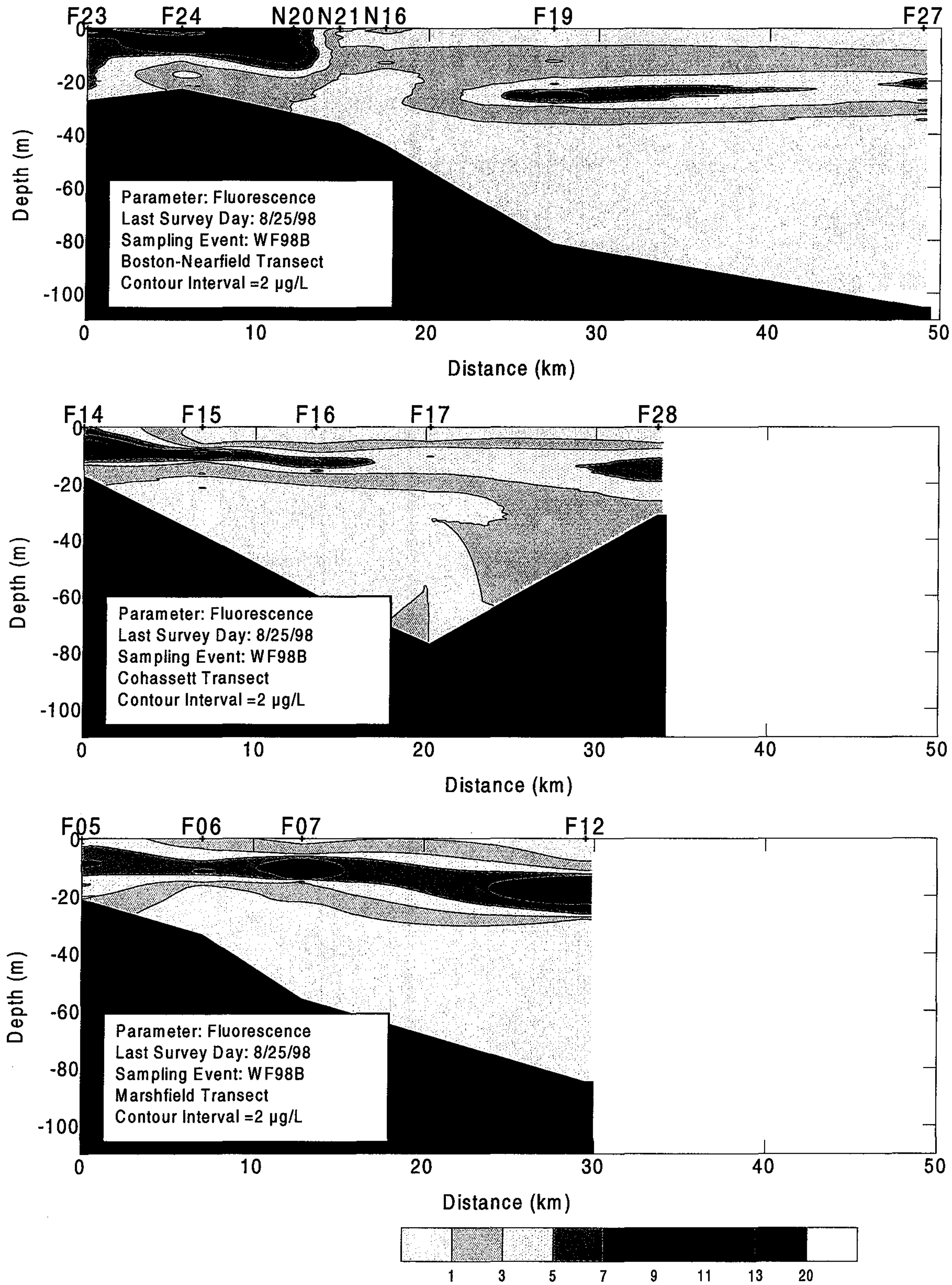
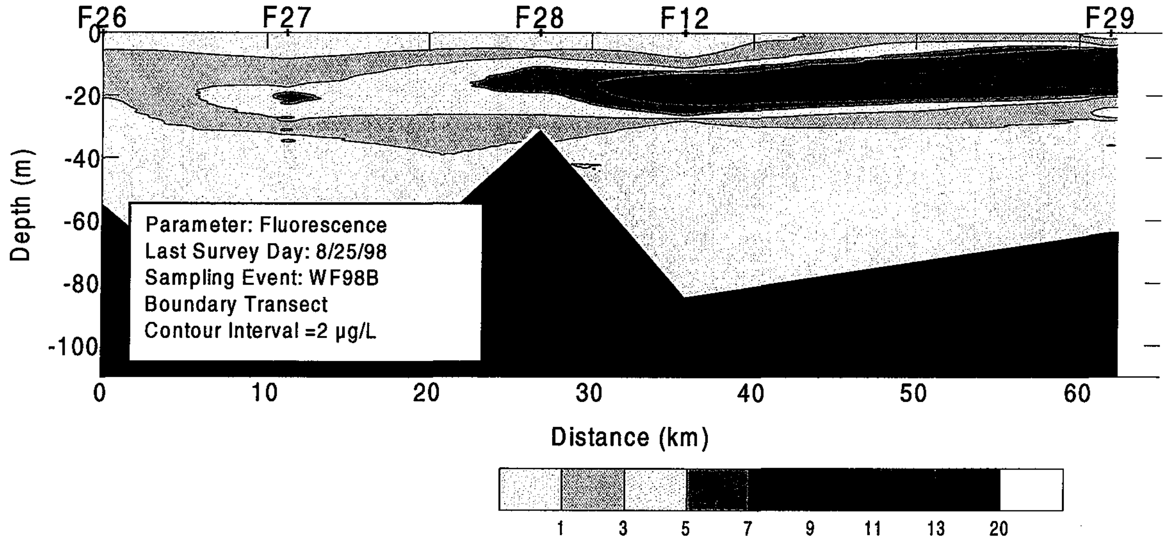


Figure C-25. Fluorescence Transect Plots (West - East) for Farfield Survey WF98B (Aug 98)



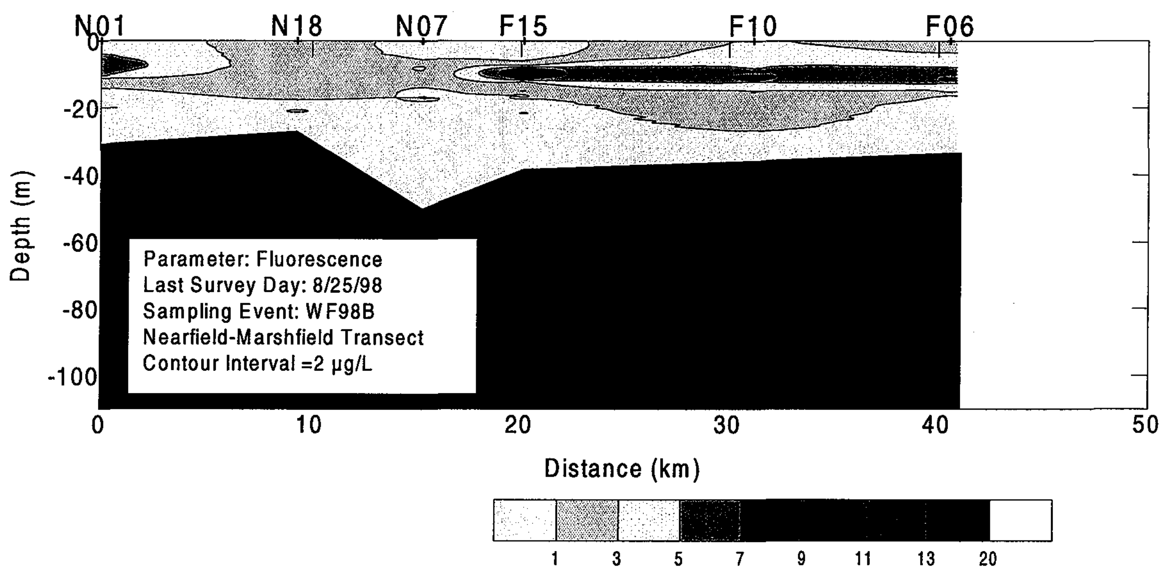


Figure C-26. Fluorescence Transect Plots (North - South) for Farfield Survey WF98B (Aug 98)

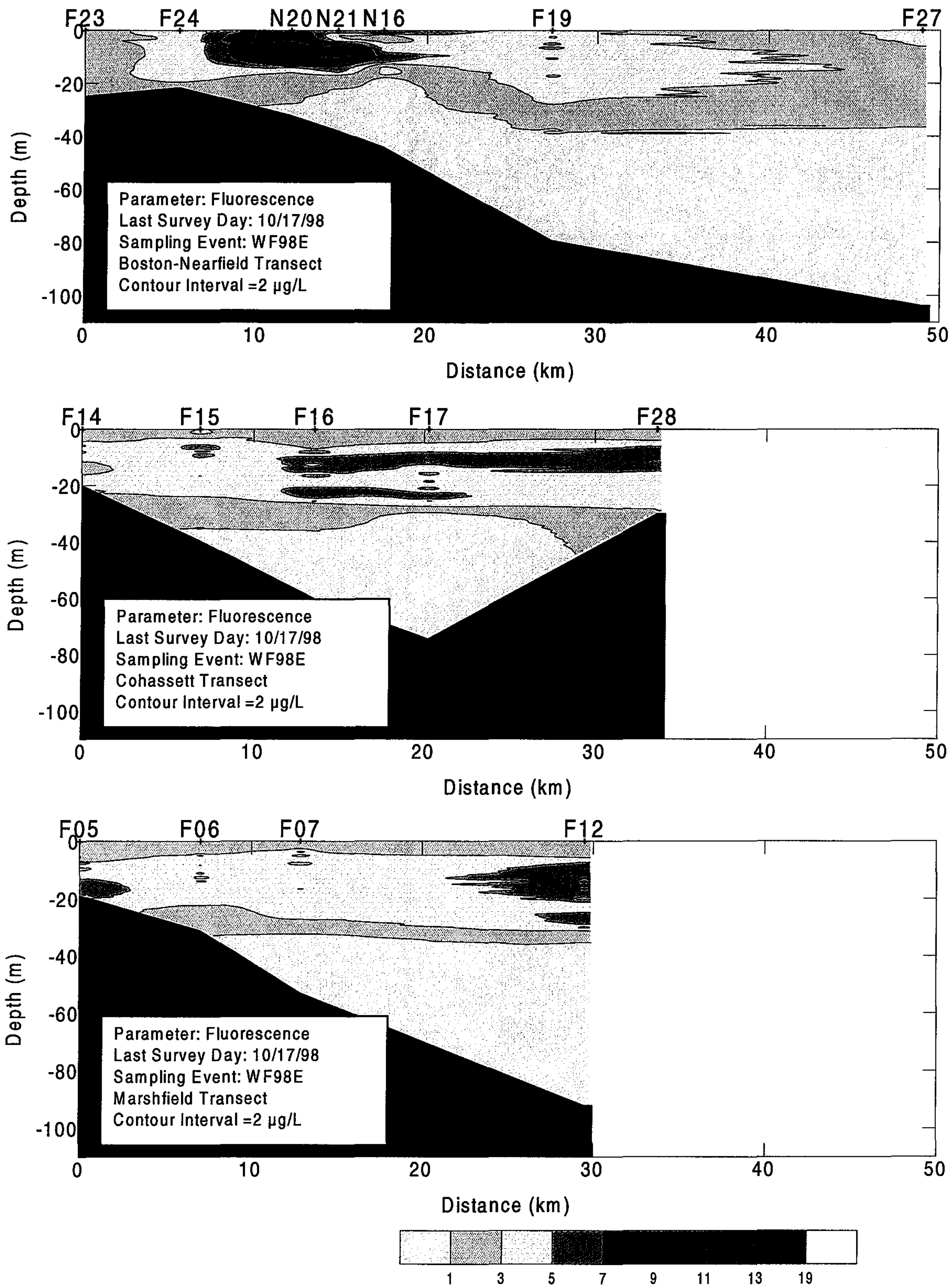
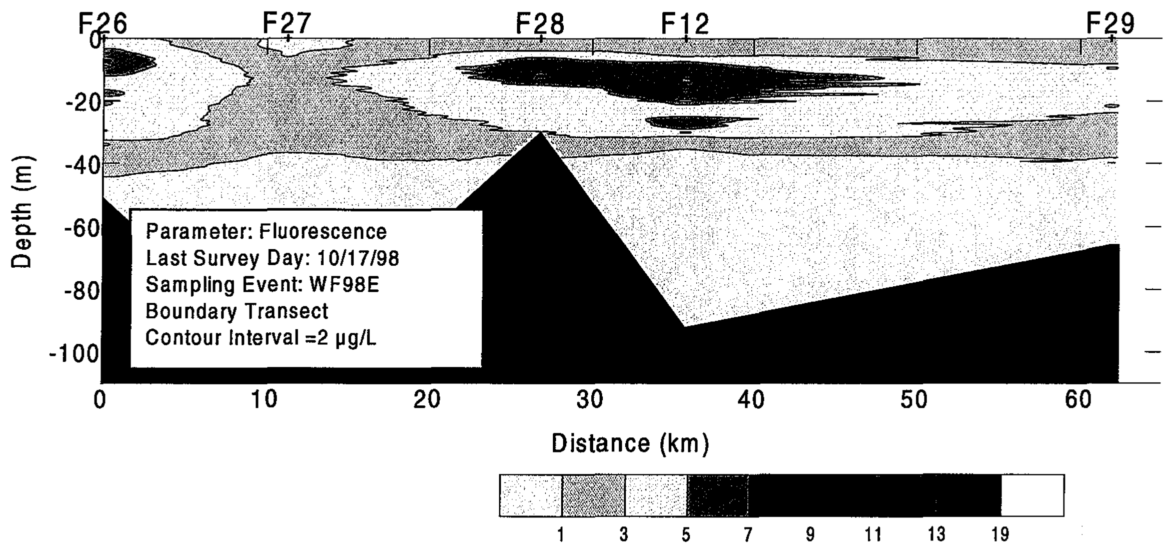


Figure C-27. Fluorescence Transect Plots (West - East) for Farfield Survey WF98E (Oct 98)



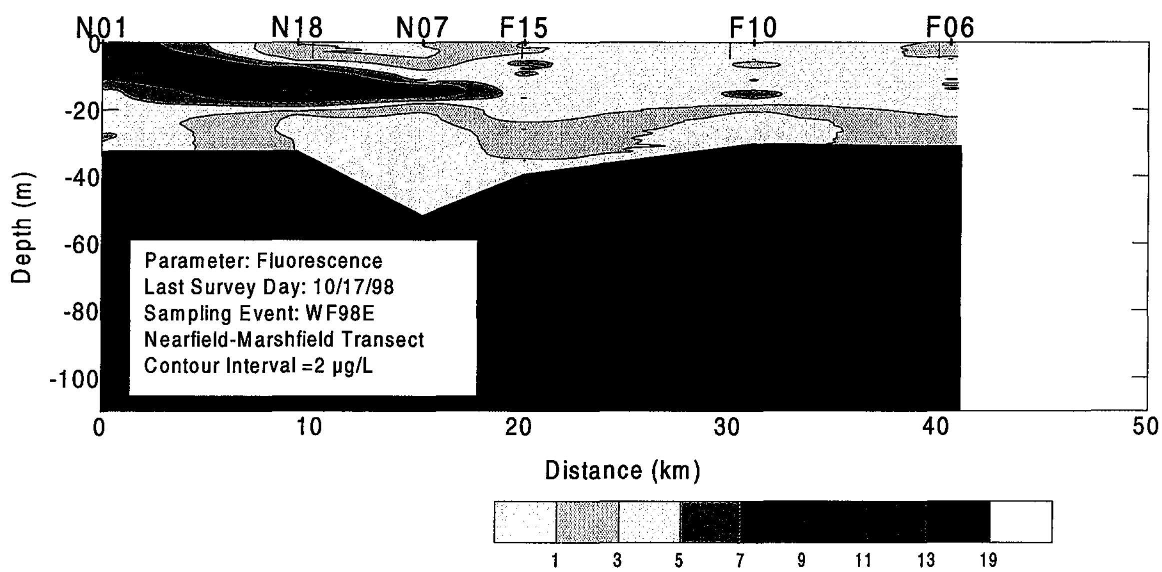


Figure C-28. Fluorescence Transect Plots (North - South) for Farfield Survey WF98E (Oct 98)

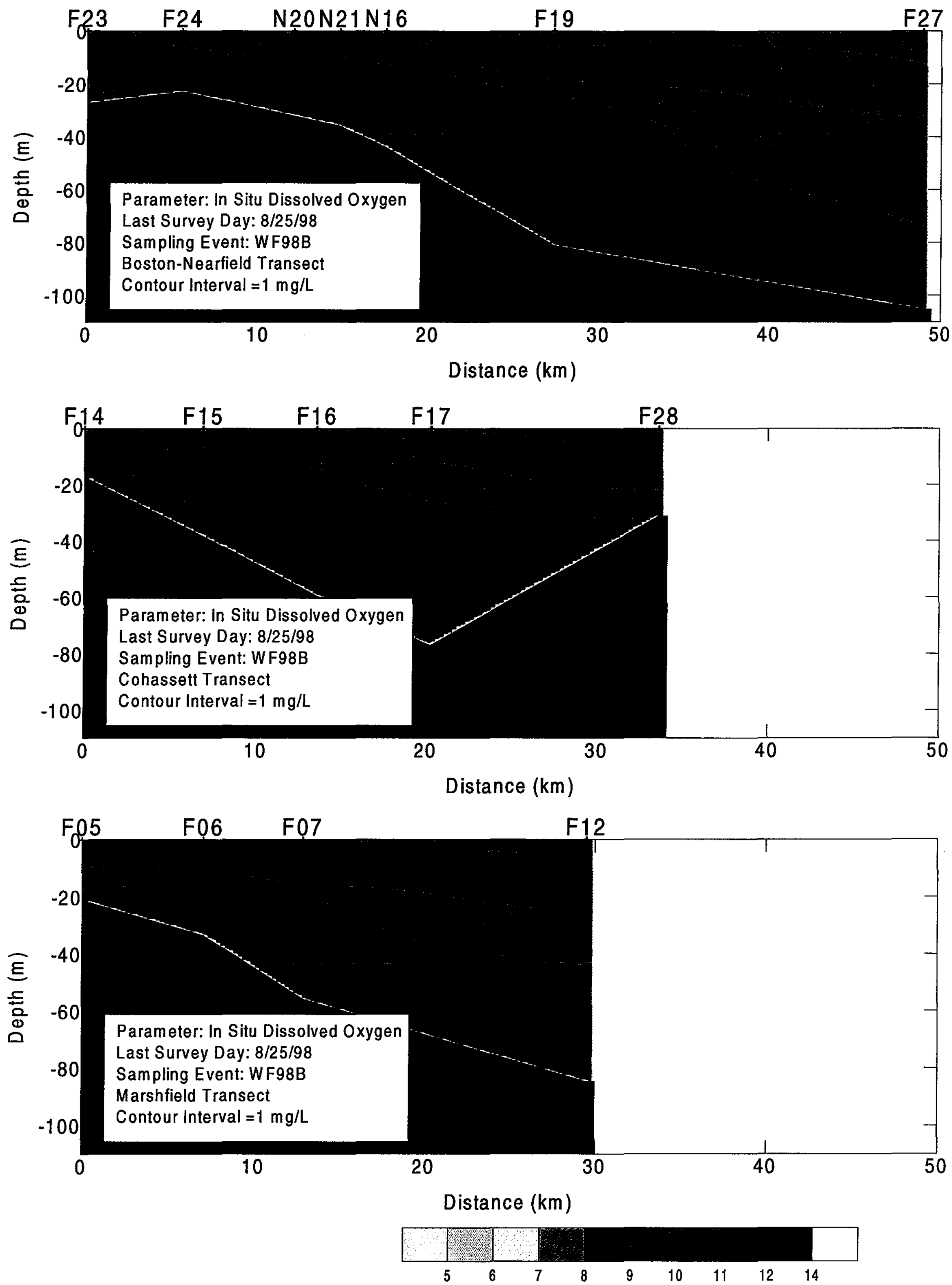
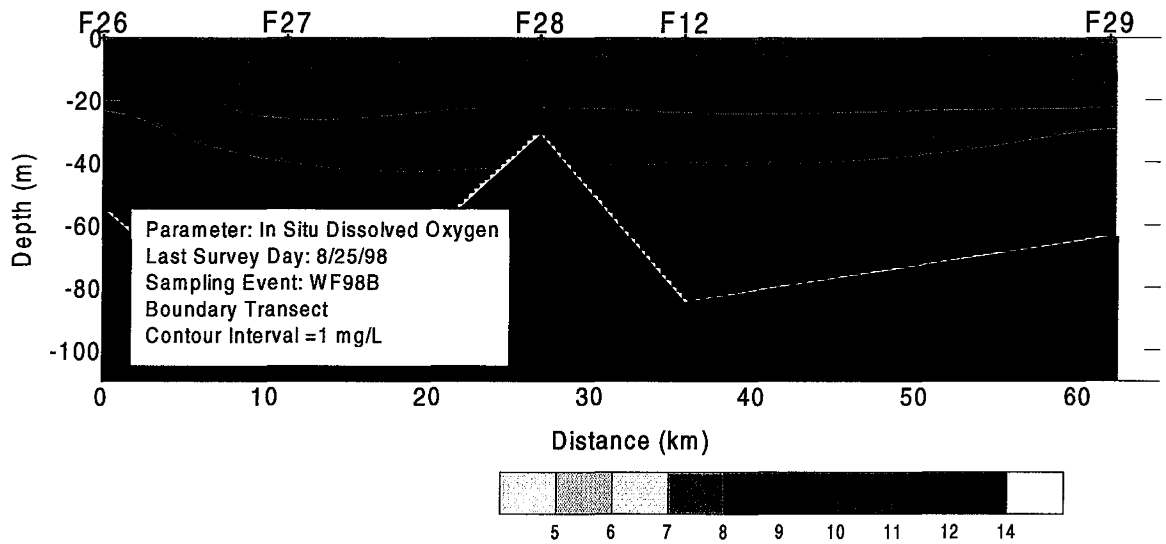


Figure C-29. Dissolved Oxygen Transect Plots (West - East) for Farfield Survey WF98B (Aug 98)



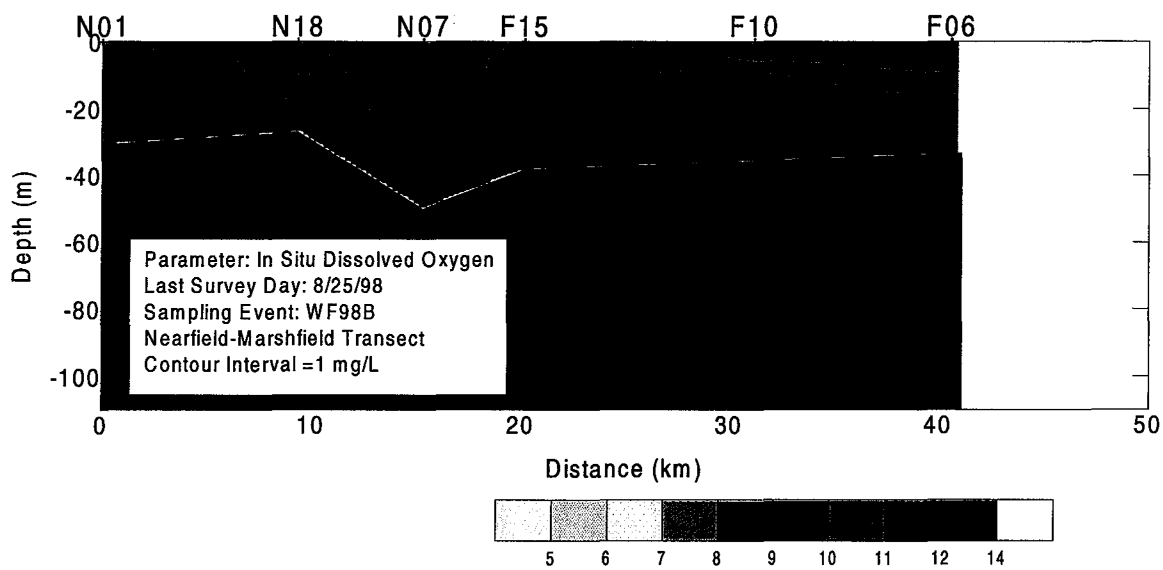


Figure C-30. Dissolved Oxygen Transect Plots (North - South) for Farfield Survey WF98B (Aug 98)

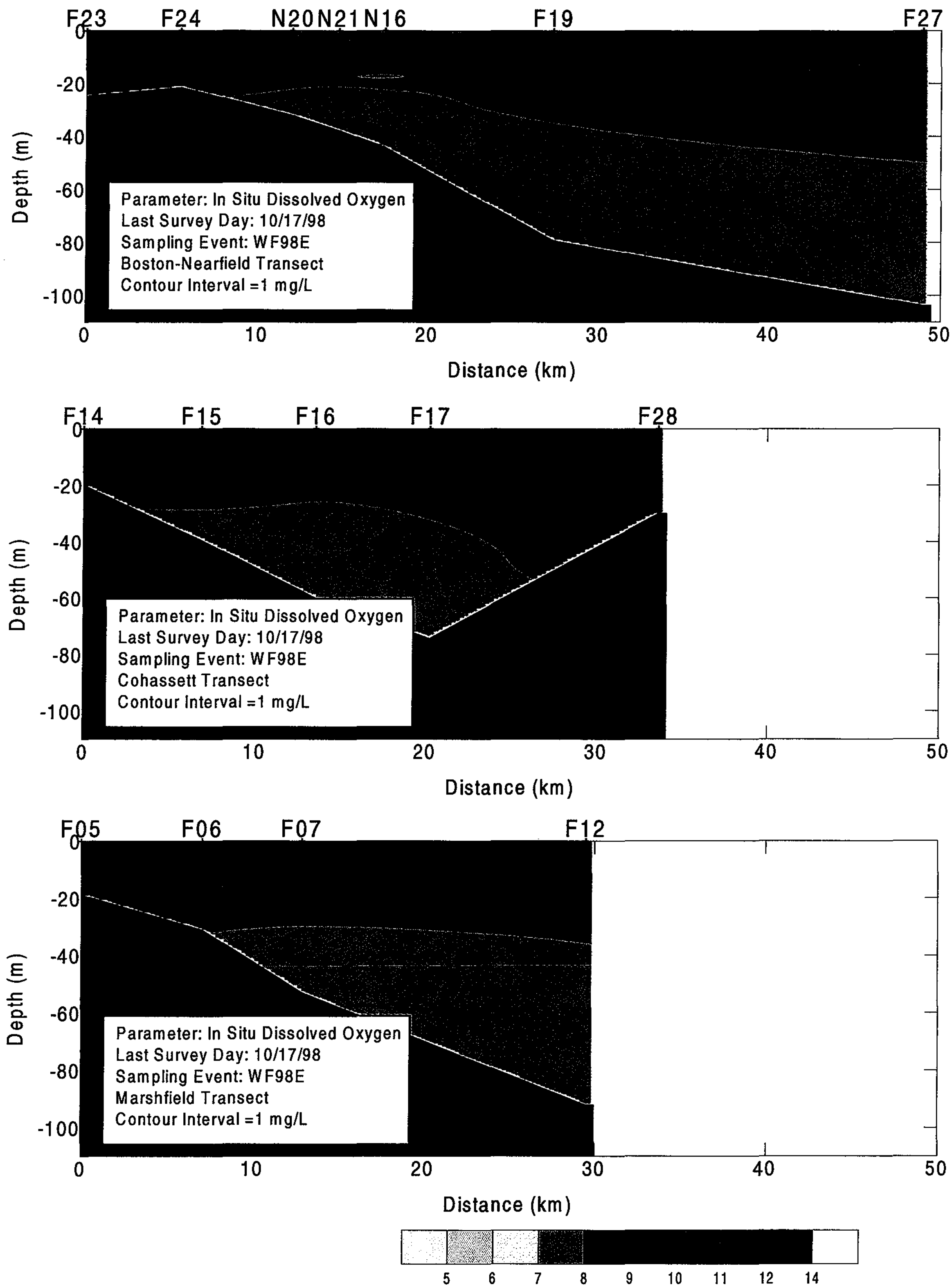
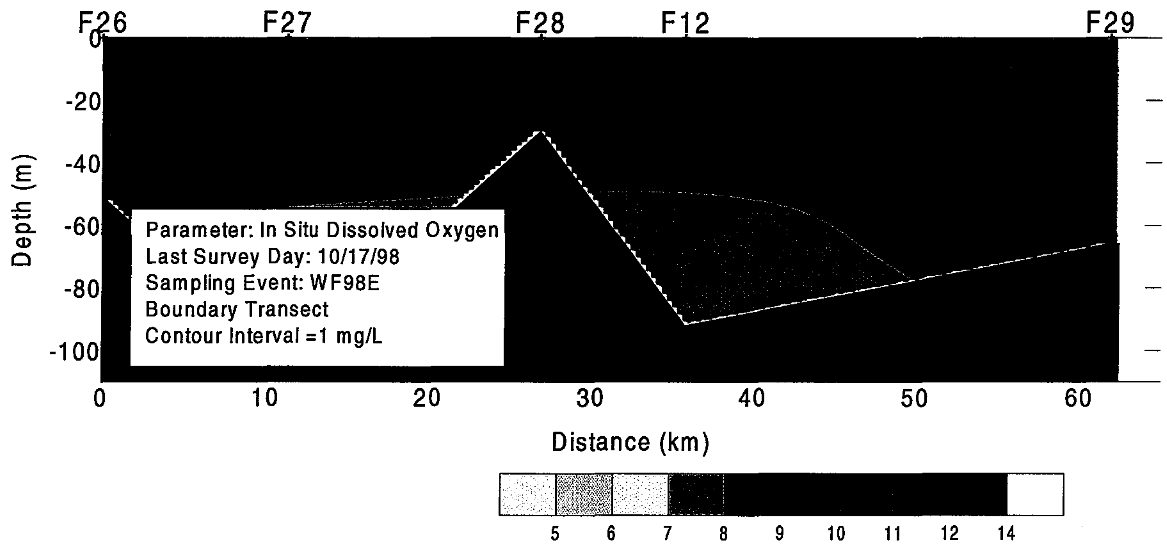


Figure C-31. Dissolved Oxygen Transect Plots (West - East) for Farfield Survey WF98E (Oct 98)



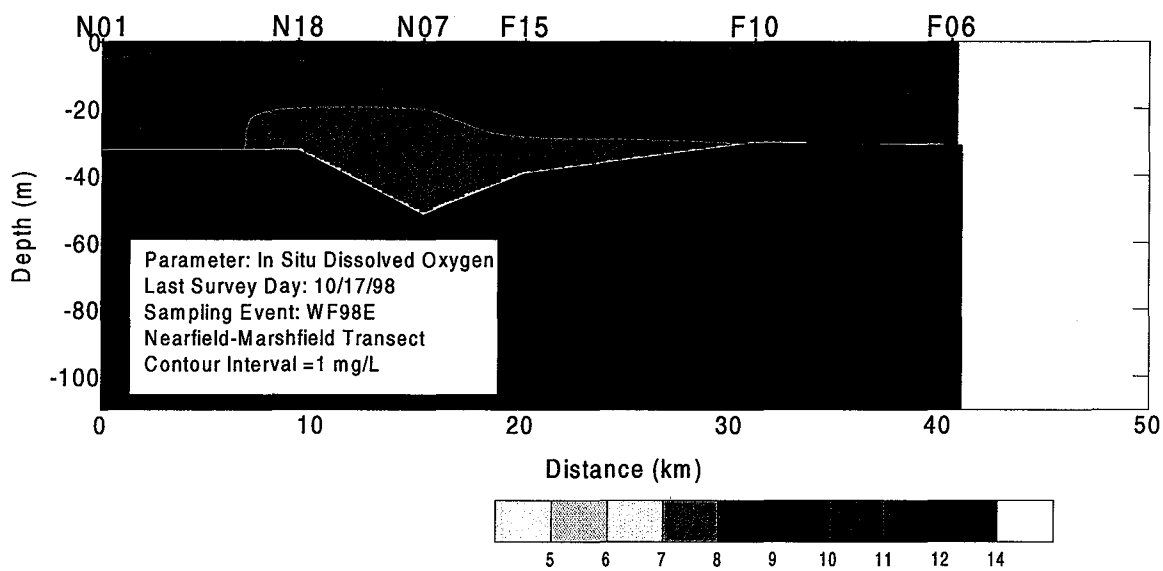


Figure C-32. Dissolved Oxygen Transect Plots (North - South) for Farfield Survey WF98E (Oct 98)

APPENDIX D

Nutrient Scatter Plots for each Survey

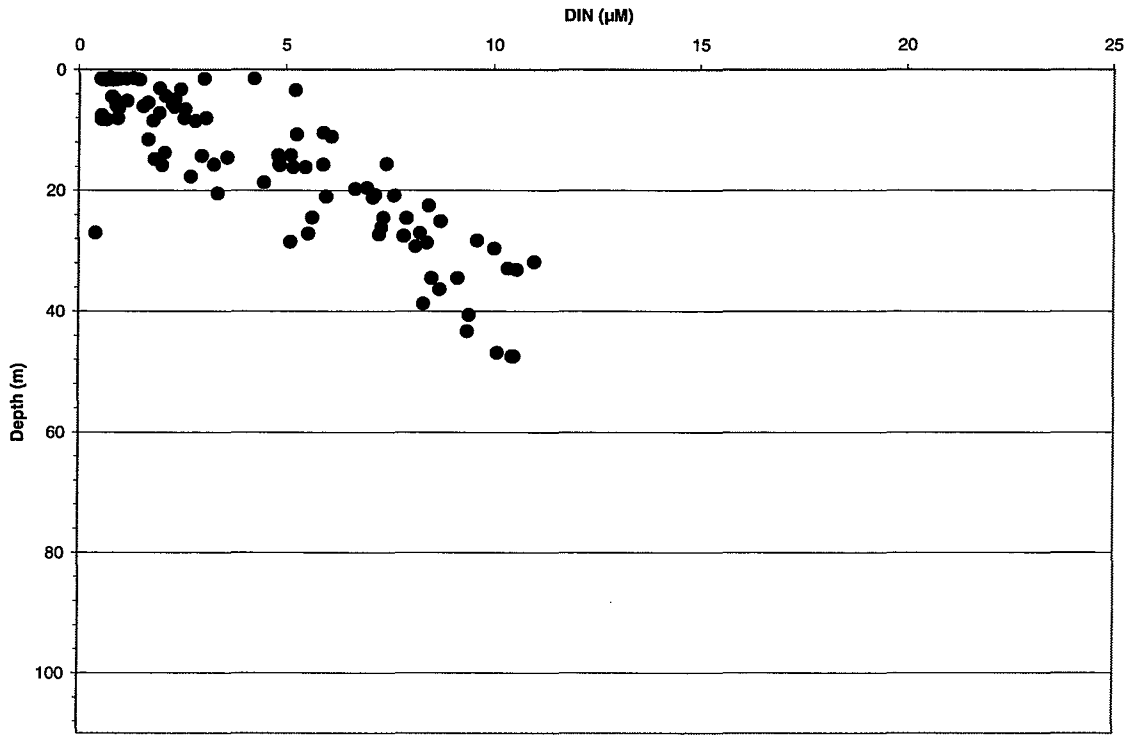
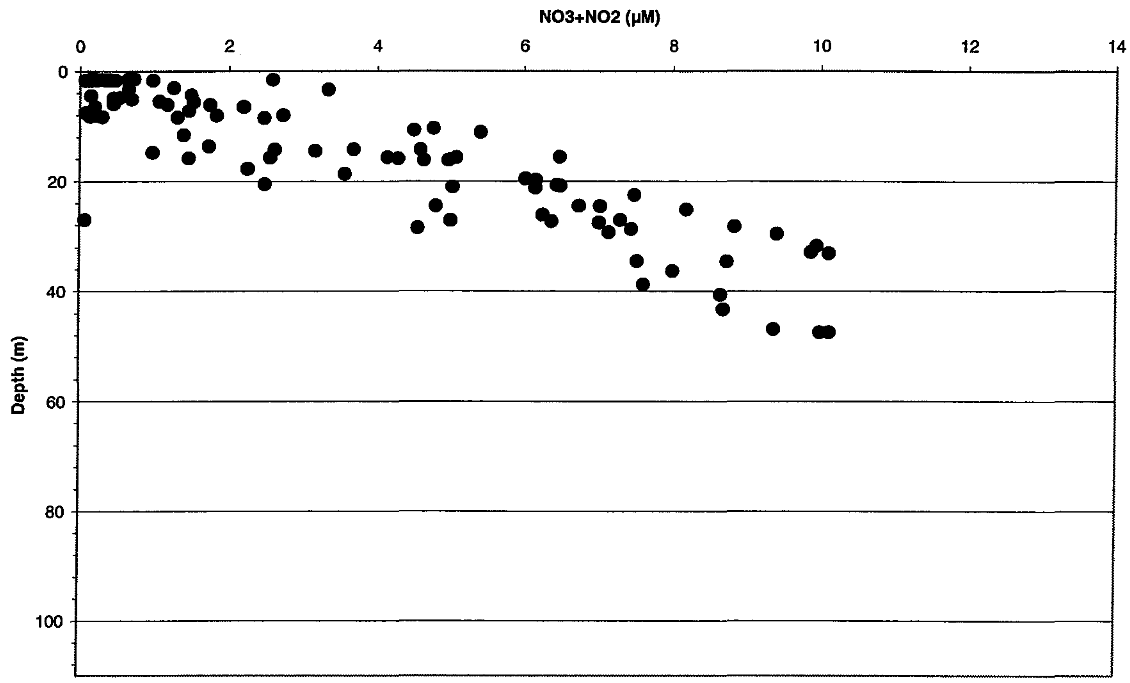


Figure D-1. Depth vs. Nutrient Plots for Nearfield Survey WN98A, (Aug 98)

(a)



(b)

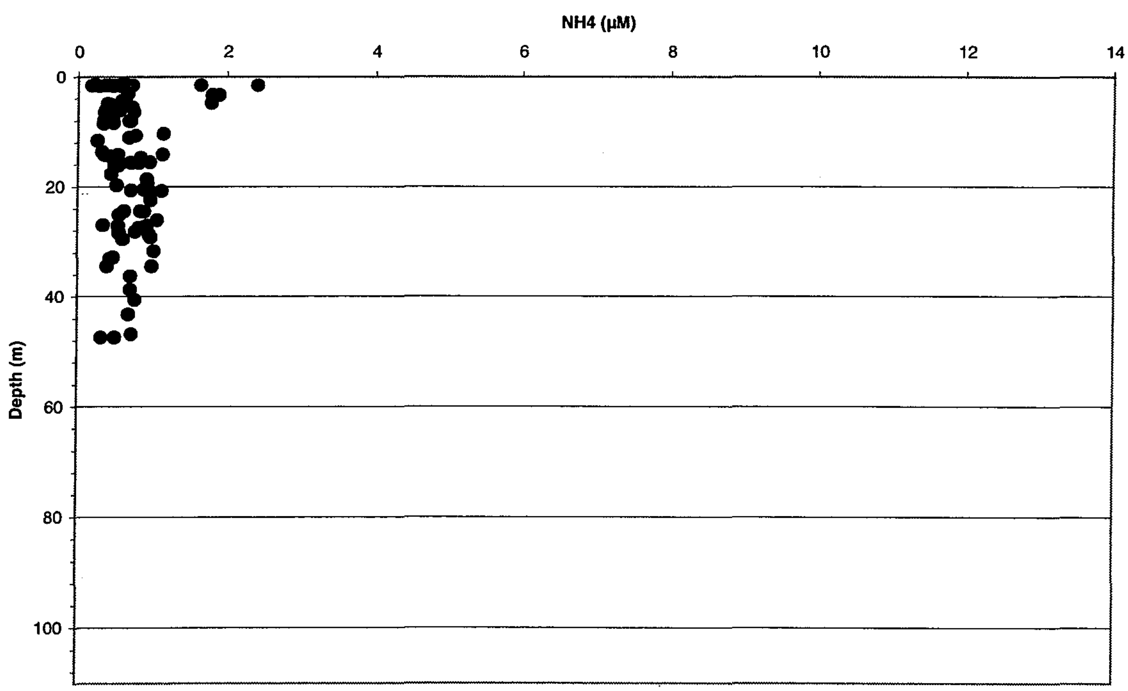
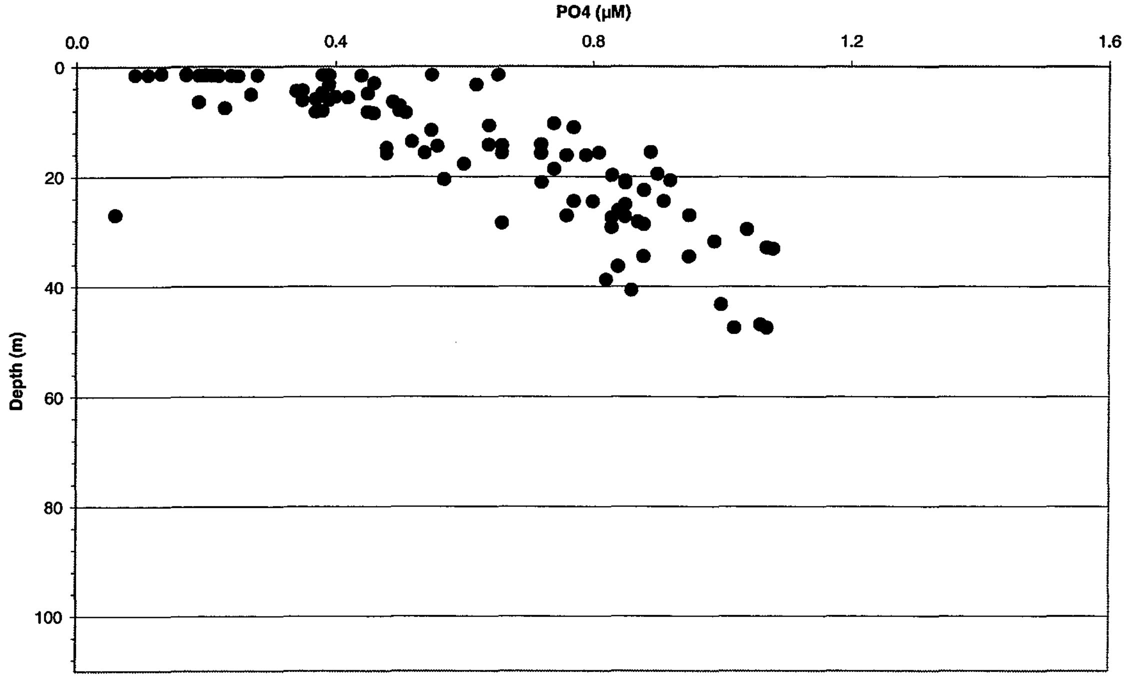


Figure D-2. Depth vs. Nutrient Plots for Nearfield Survey WN98A, (Aug 98)

(a)



(b)

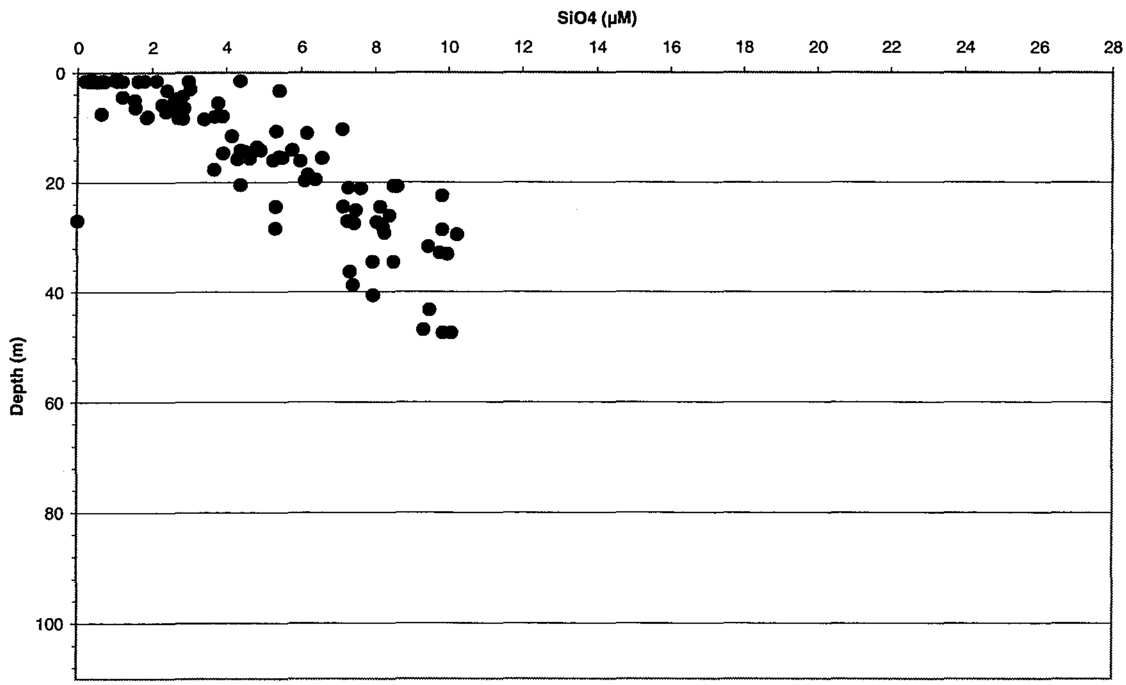


Figure D-3. Depth vs. Nutrient Plots for Nearfield Survey WN98A, (Aug 98)

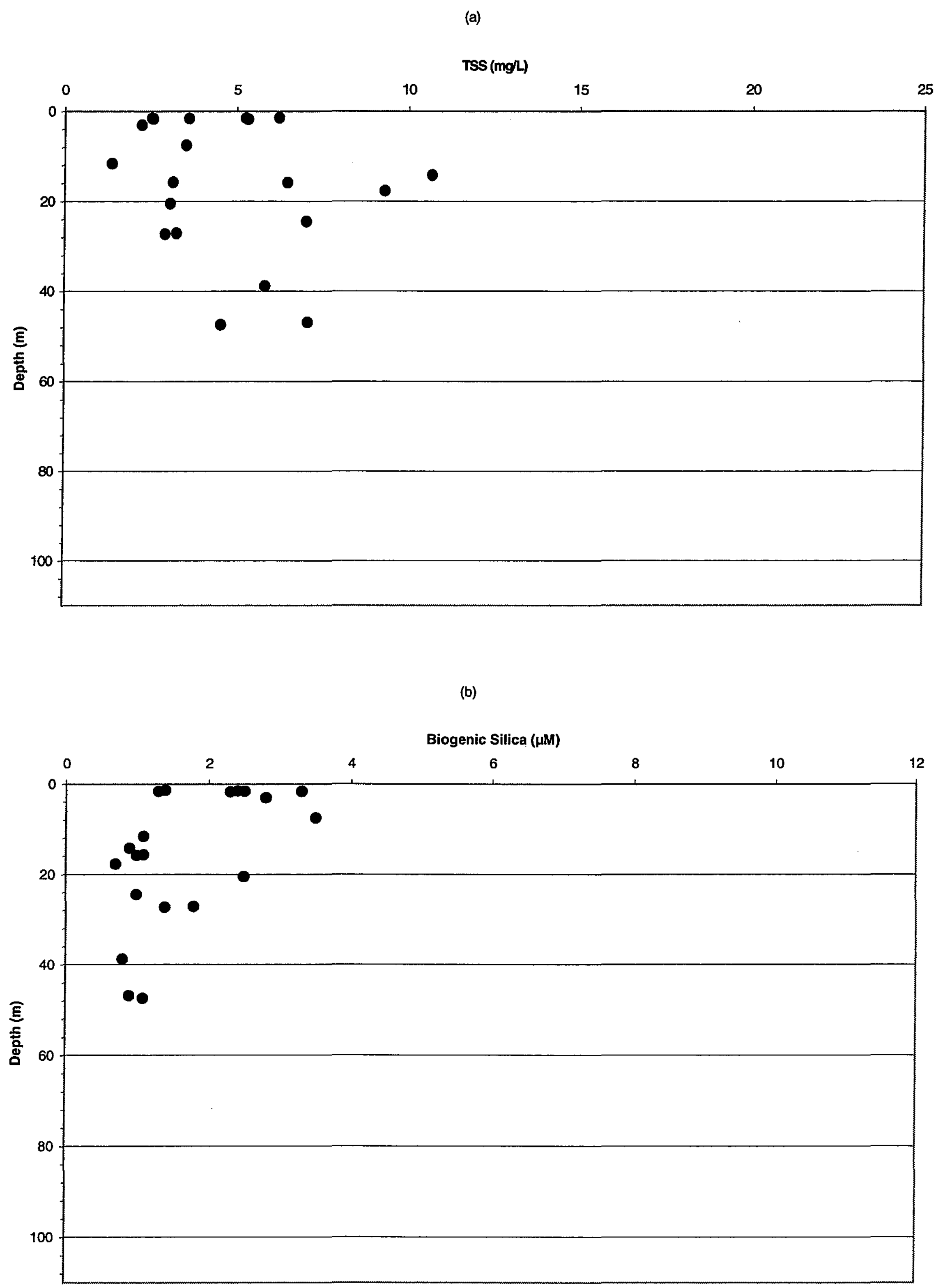
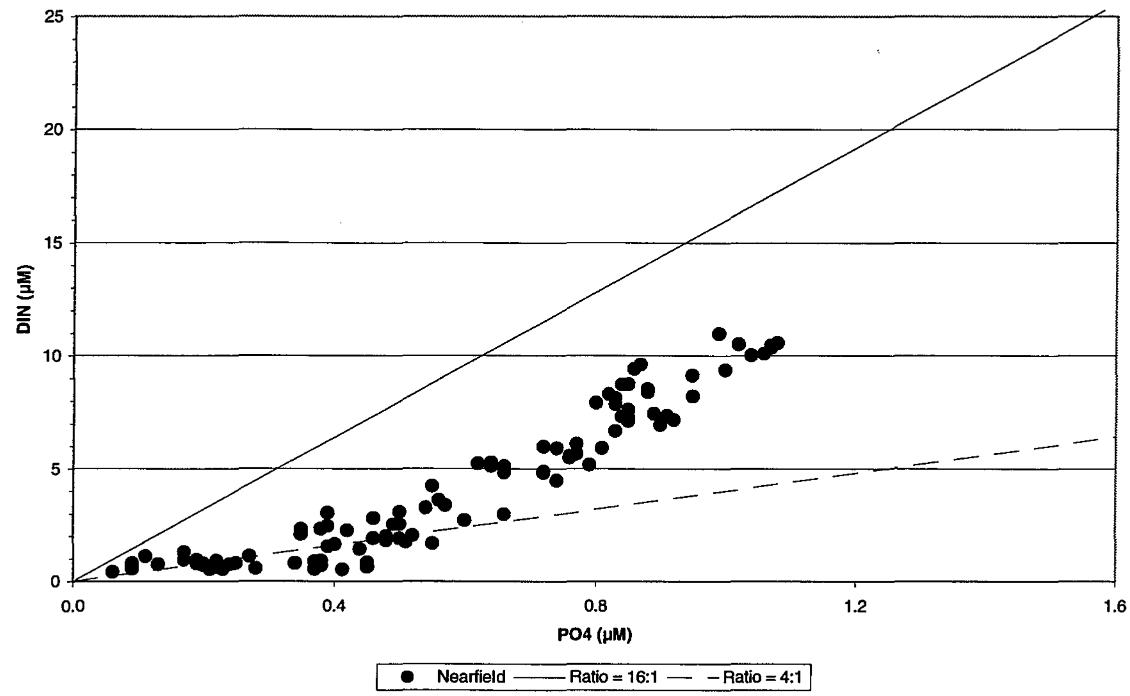


Figure D-4. Depth vs. Nutrient Plots for Nearfield Survey WN98A, (Aug 98)

(a)



(b)

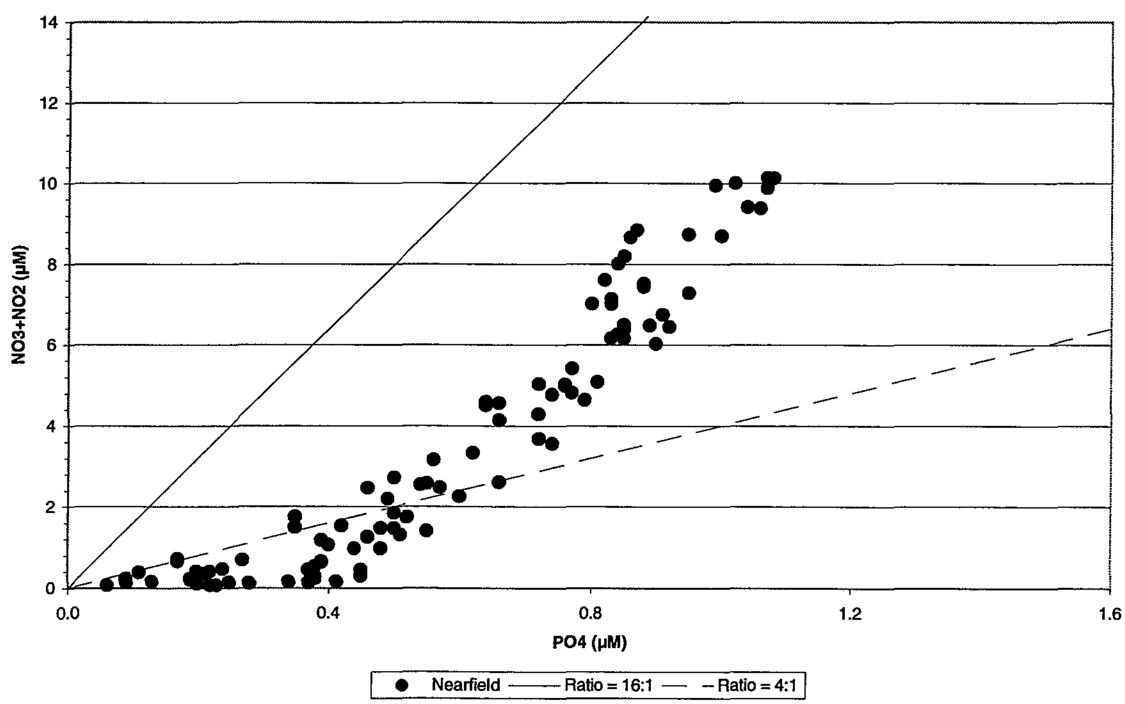
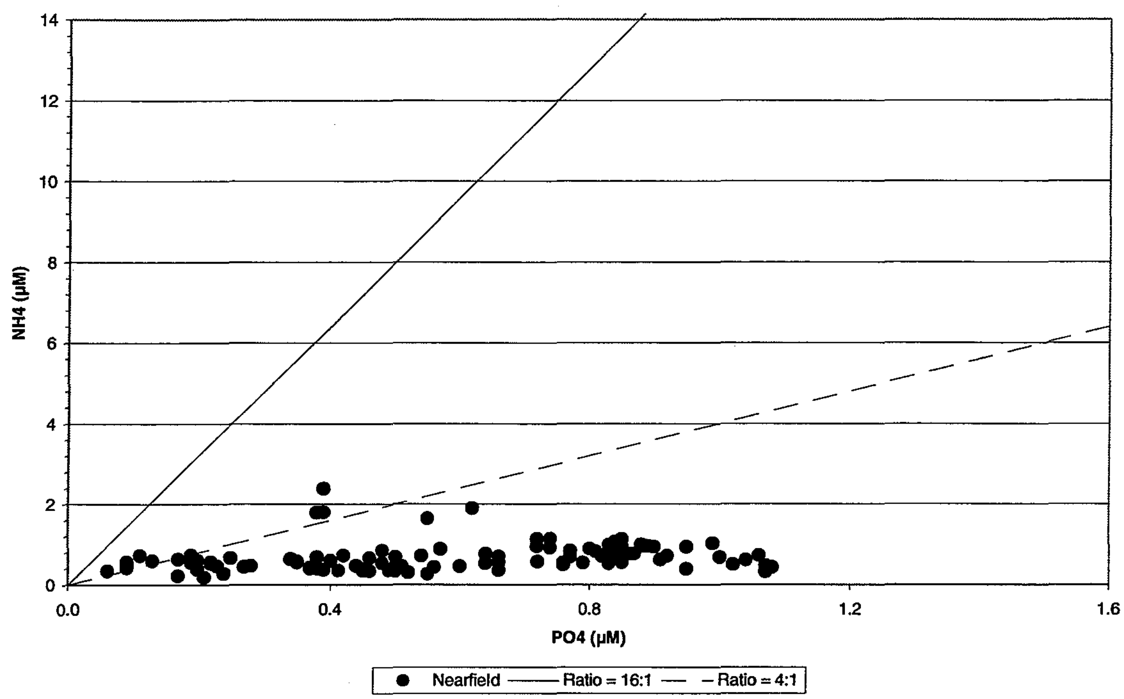


Figure D-5. Nutrient vs. Nutrient Plots for Nearfield Survey WN98A, (Aug 98)

(a)



(b)

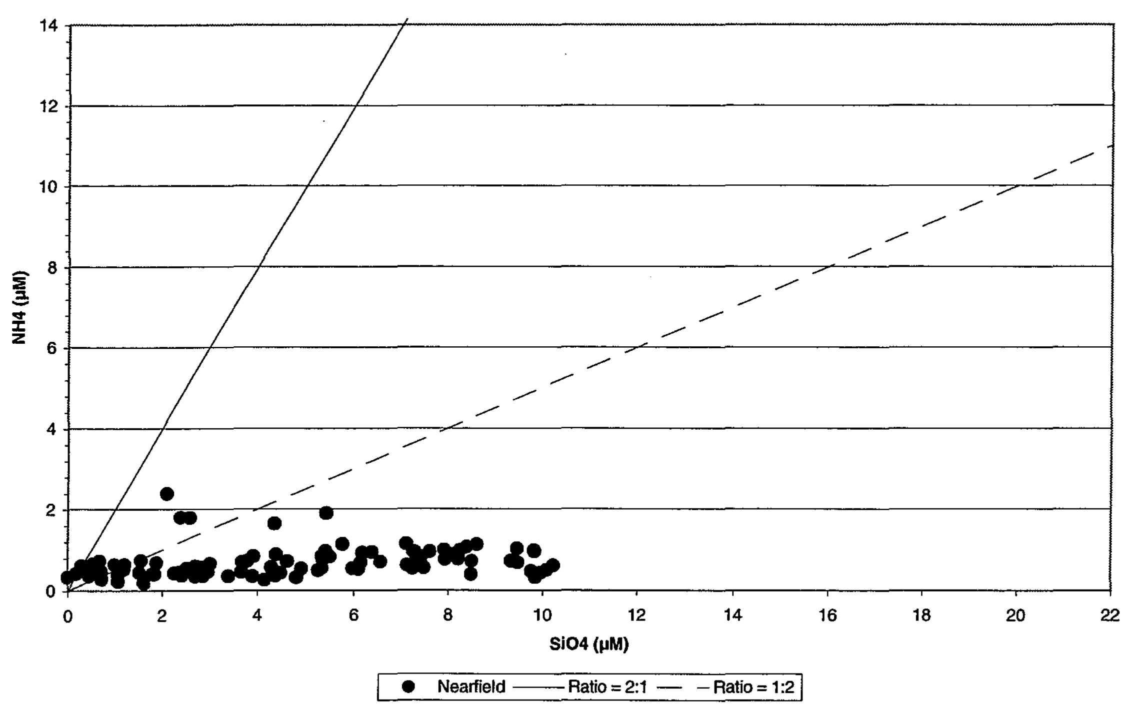
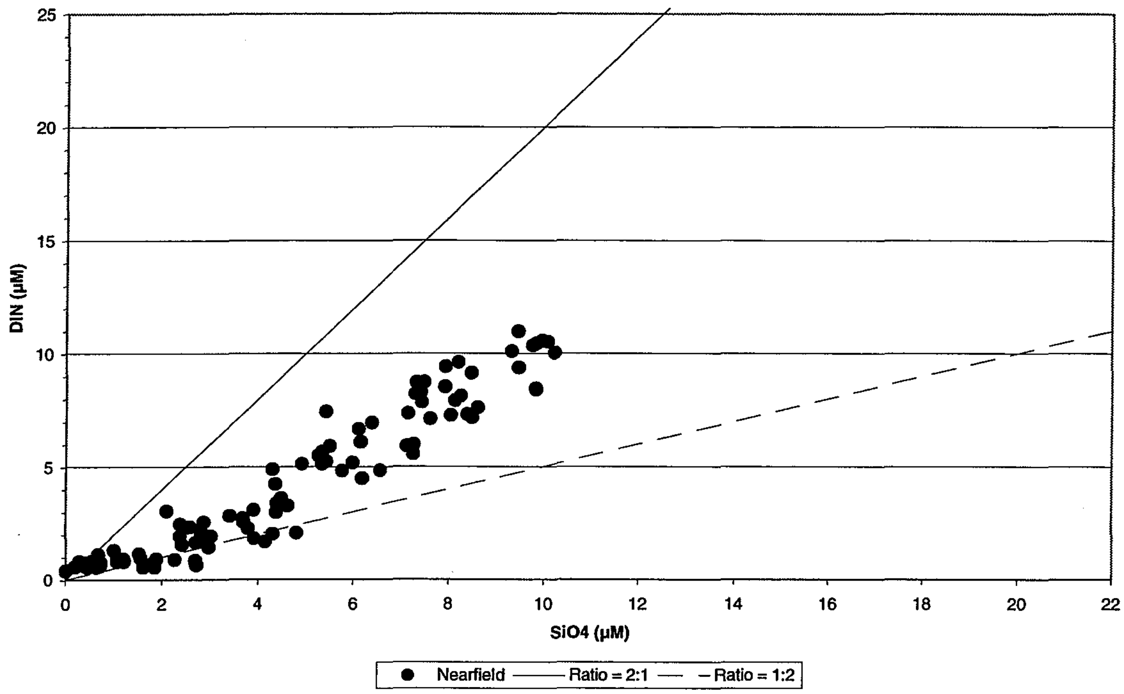


Figure D-6. Nutrient vs. Nutrient Plots for Nearfield Survey WN98A, (Aug 98)

(a)



(b)

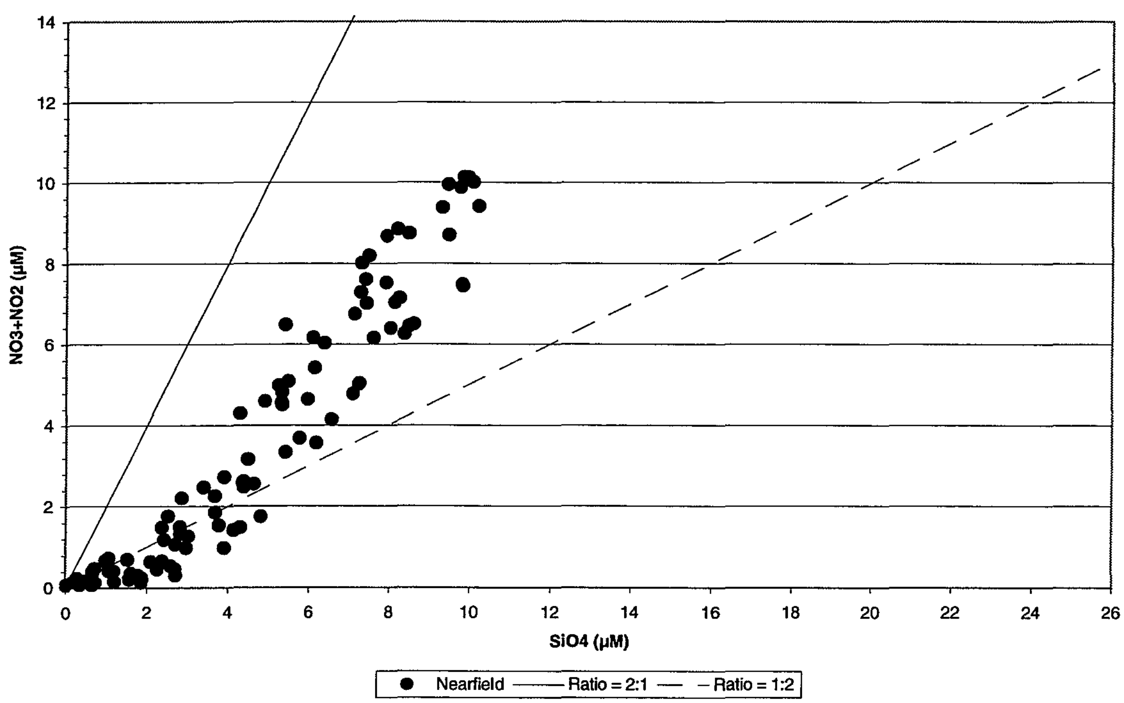
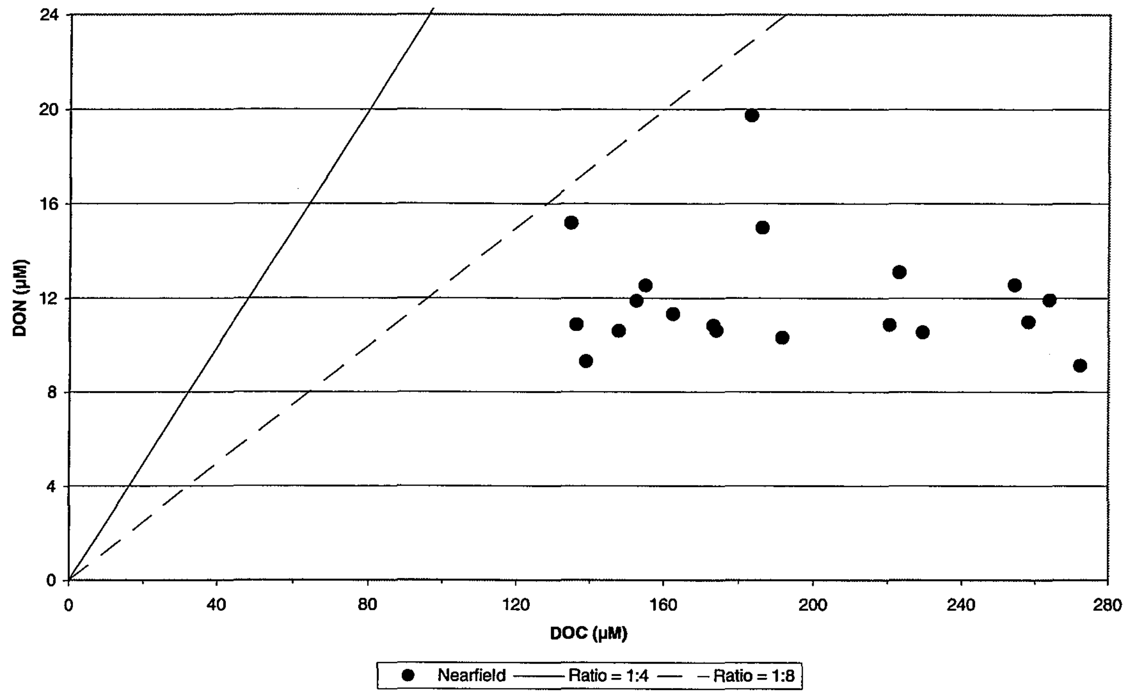


Figure D-7. Nutrient vs. Nutrient Plots for Nearfield Survey WN98A, (Aug 98)

(a)



(b)

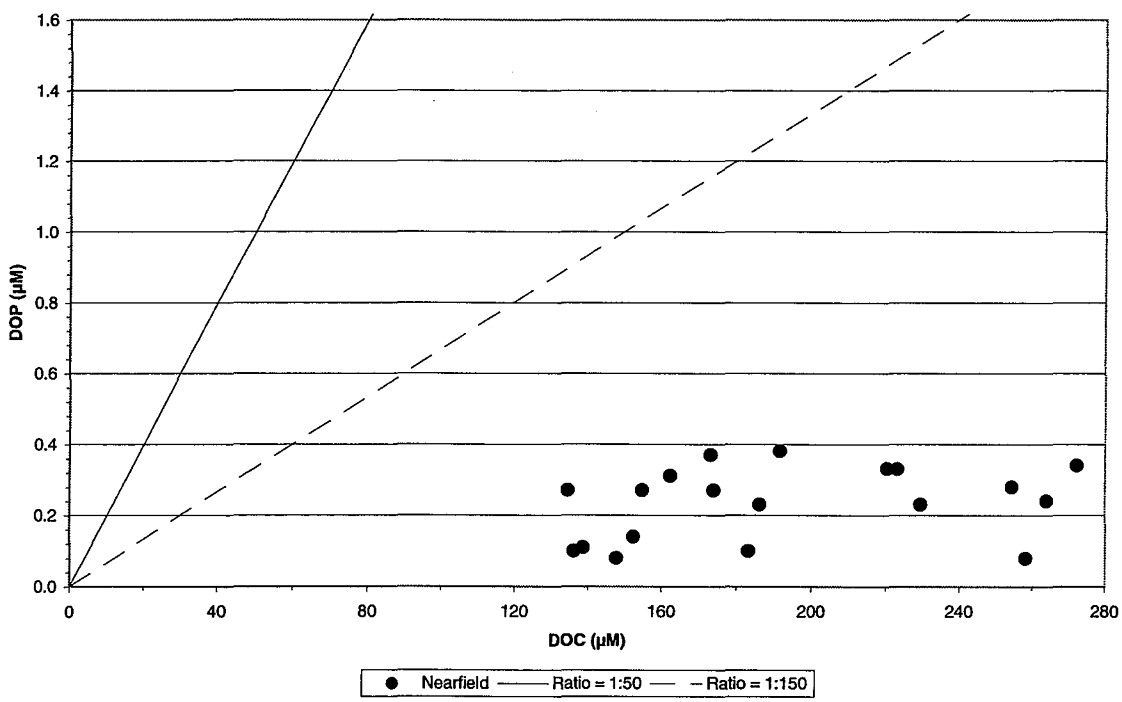
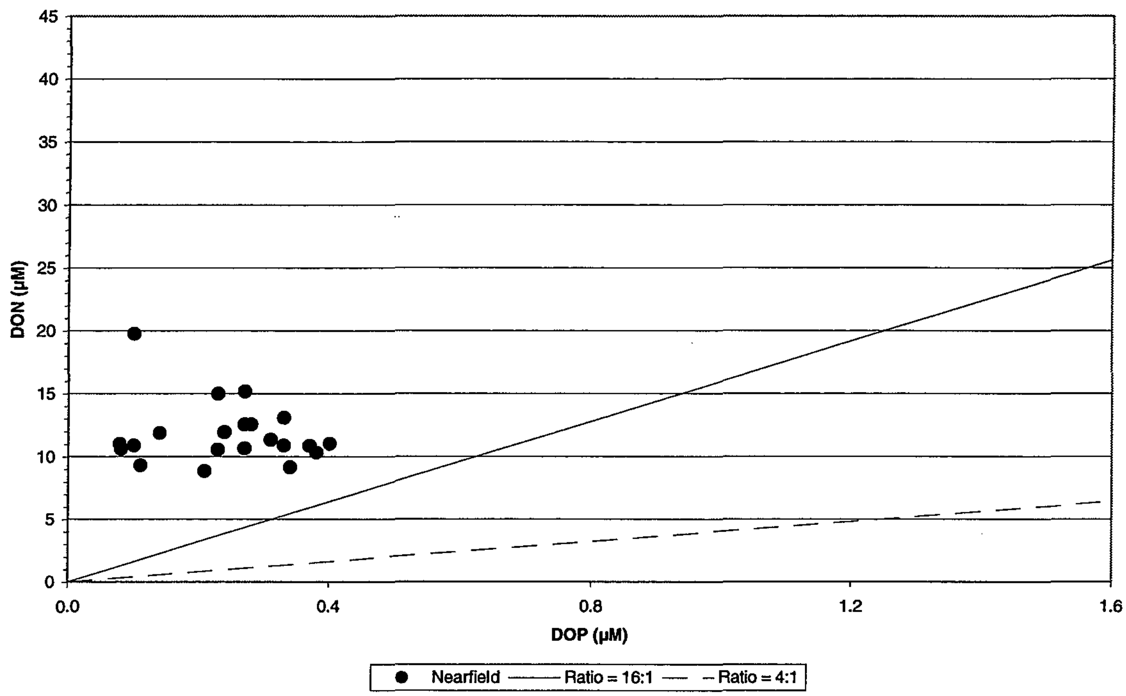


Figure D-8. Nutrient vs. Nutrient Plots for Nearfield Survey WN98A, (Aug 98)

(a)



(b)

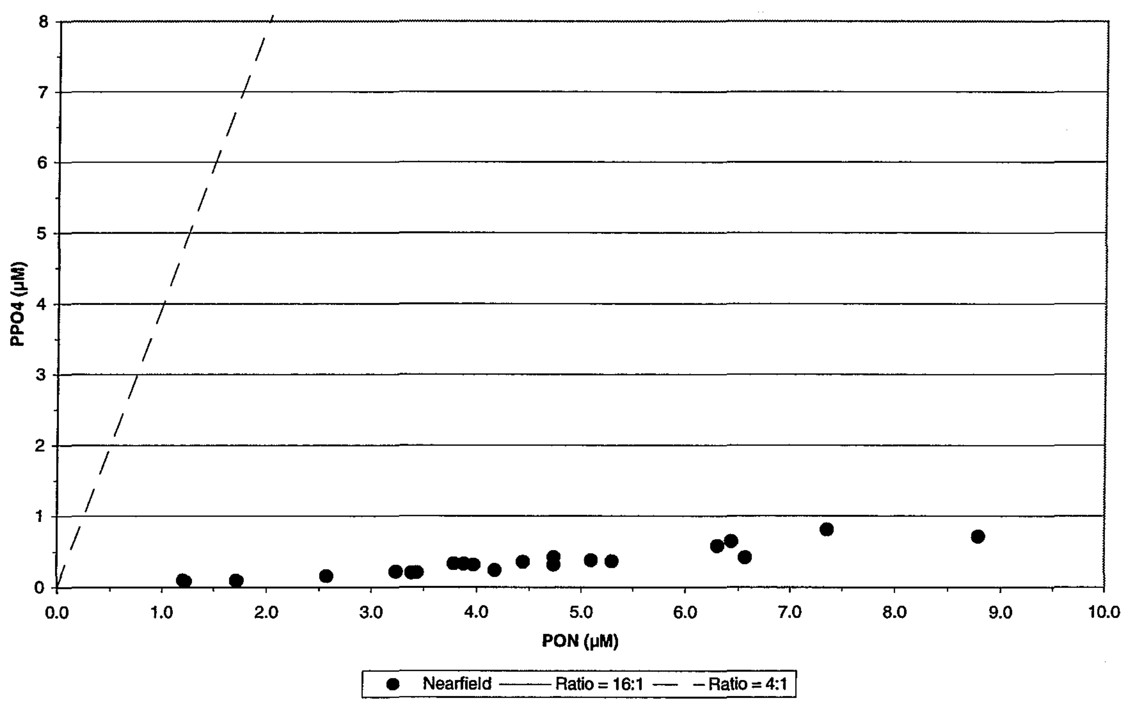
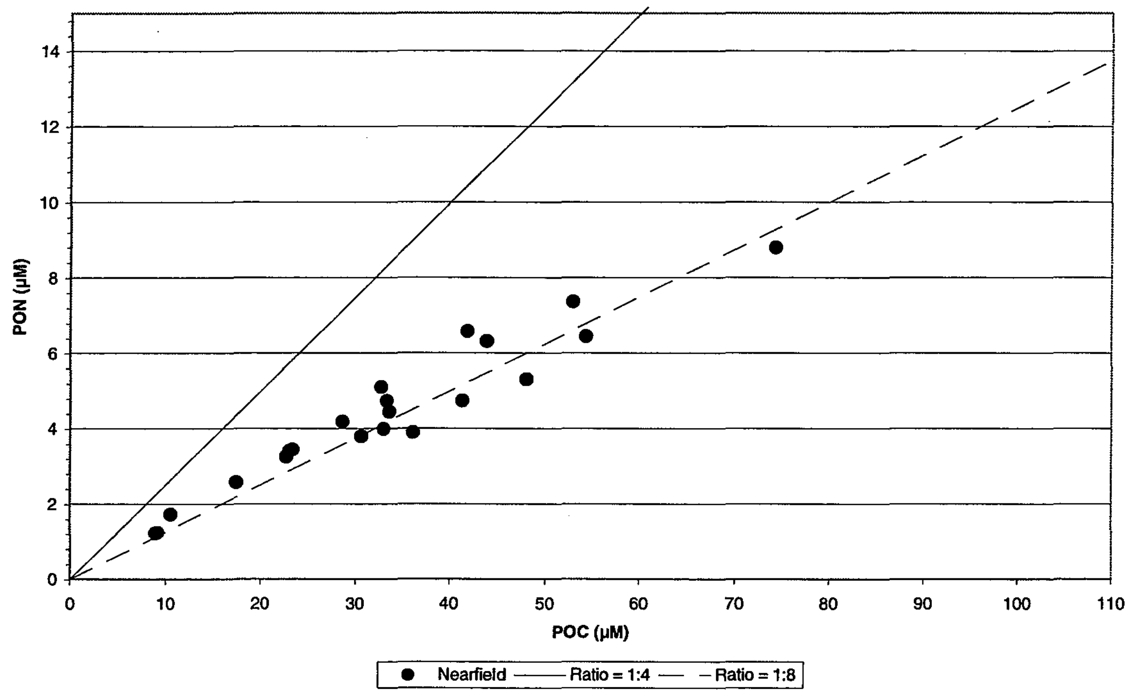


Figure D-9. Nutrient vs. Nutrient Plots for Nearfield Survey WN98A, (Aug 98)

(a)



(b)

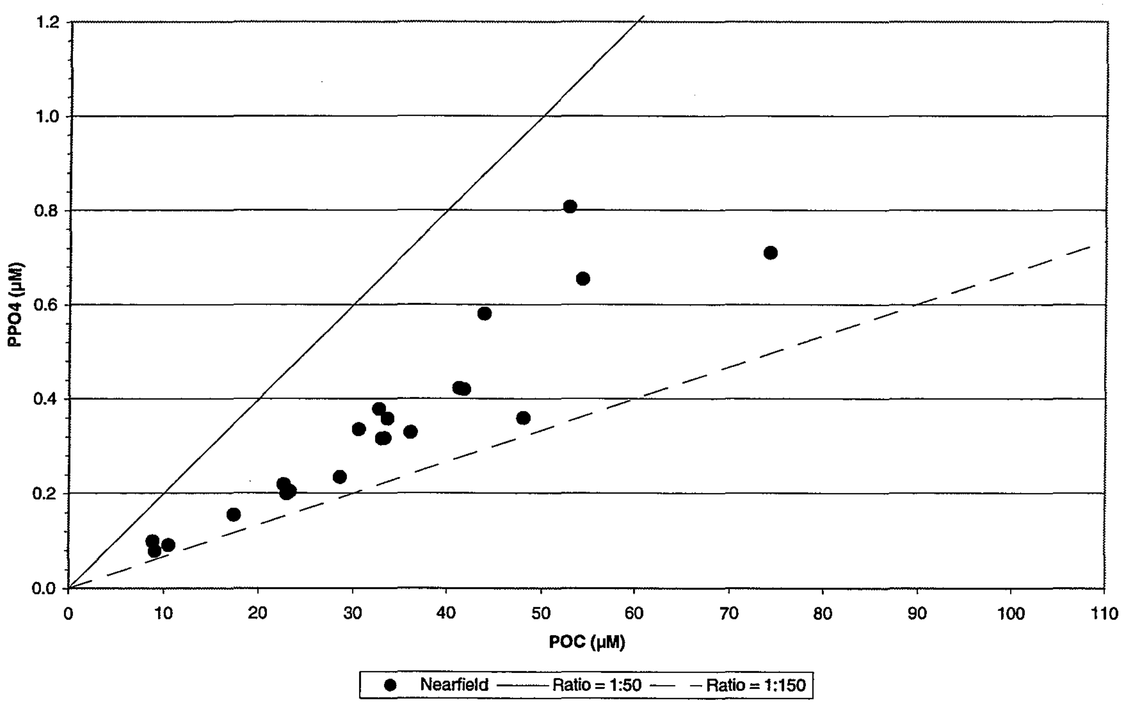
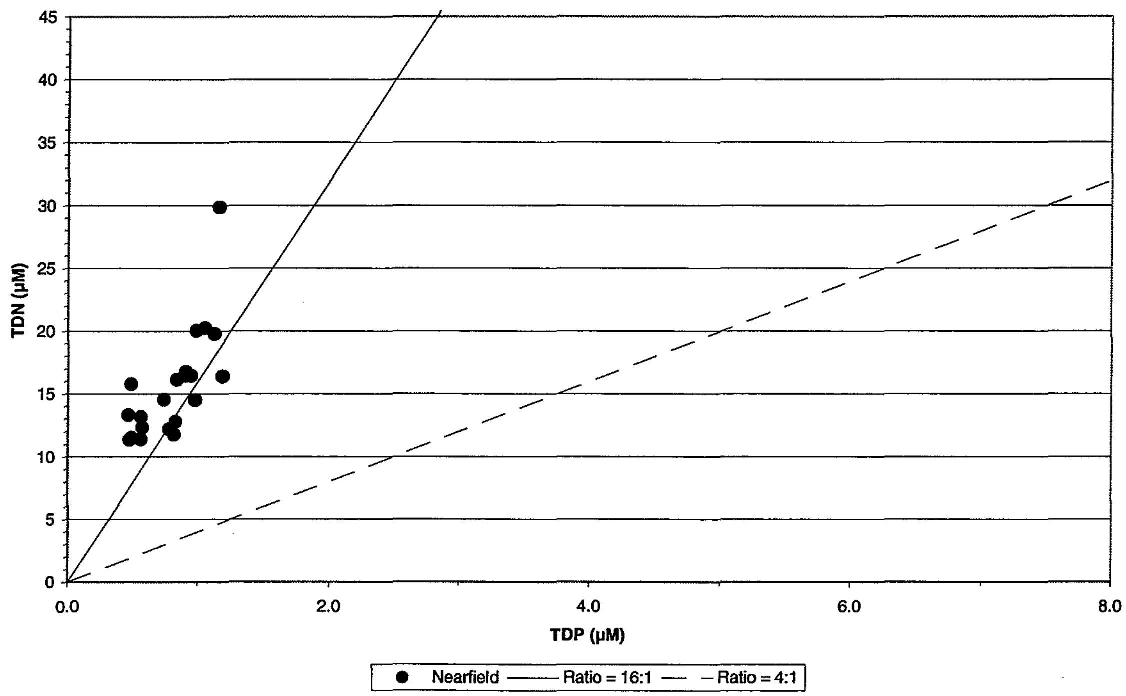


Figure D-10. Nutrient vs. Nutrient Plots for Nearfield Survey WN98A, (Aug 98)

(a)



(b)

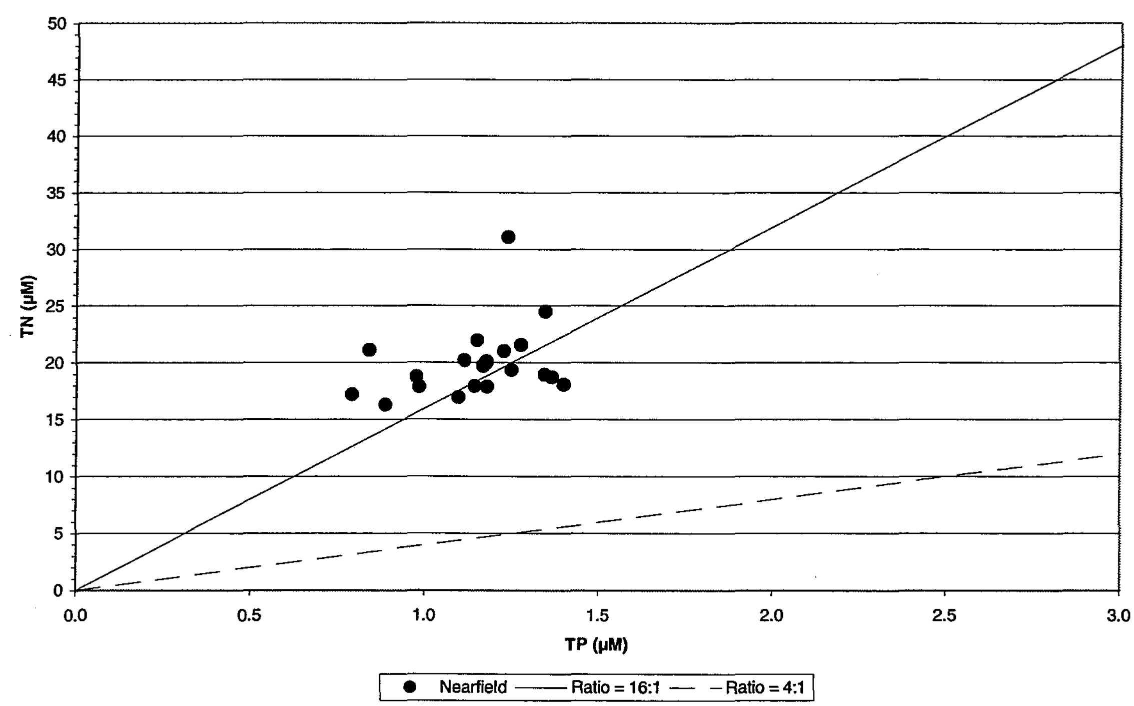
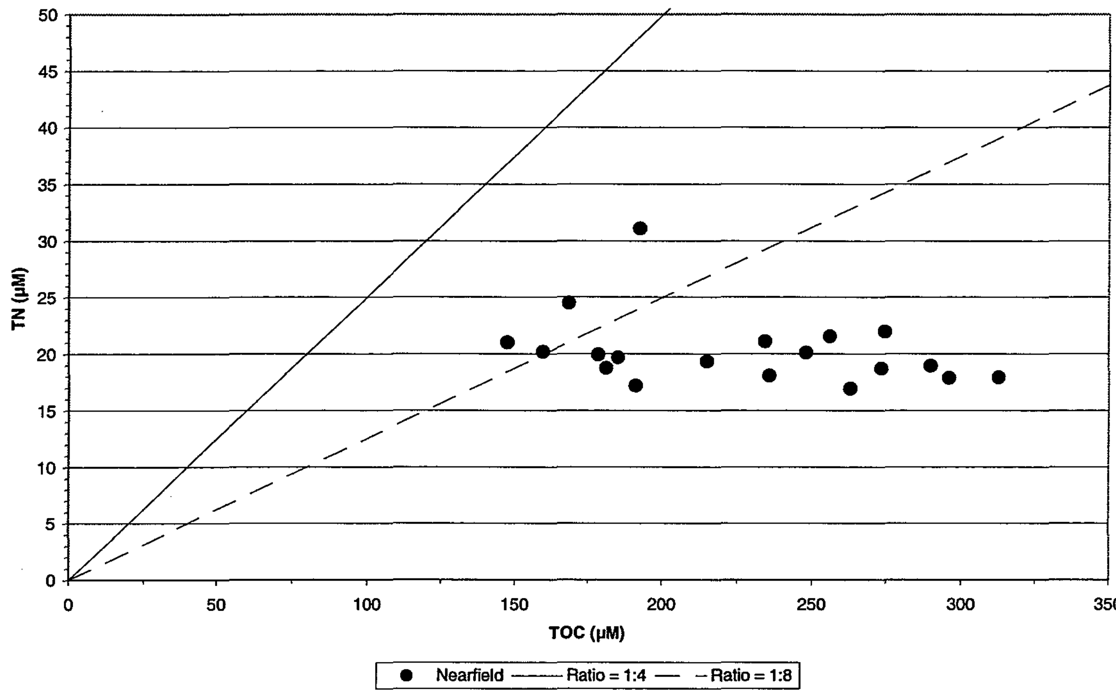


Figure D-11. Nutrient vs. Nutrient Plots for Nearfield Survey WN98A, (Aug 98)

(a)



(b)

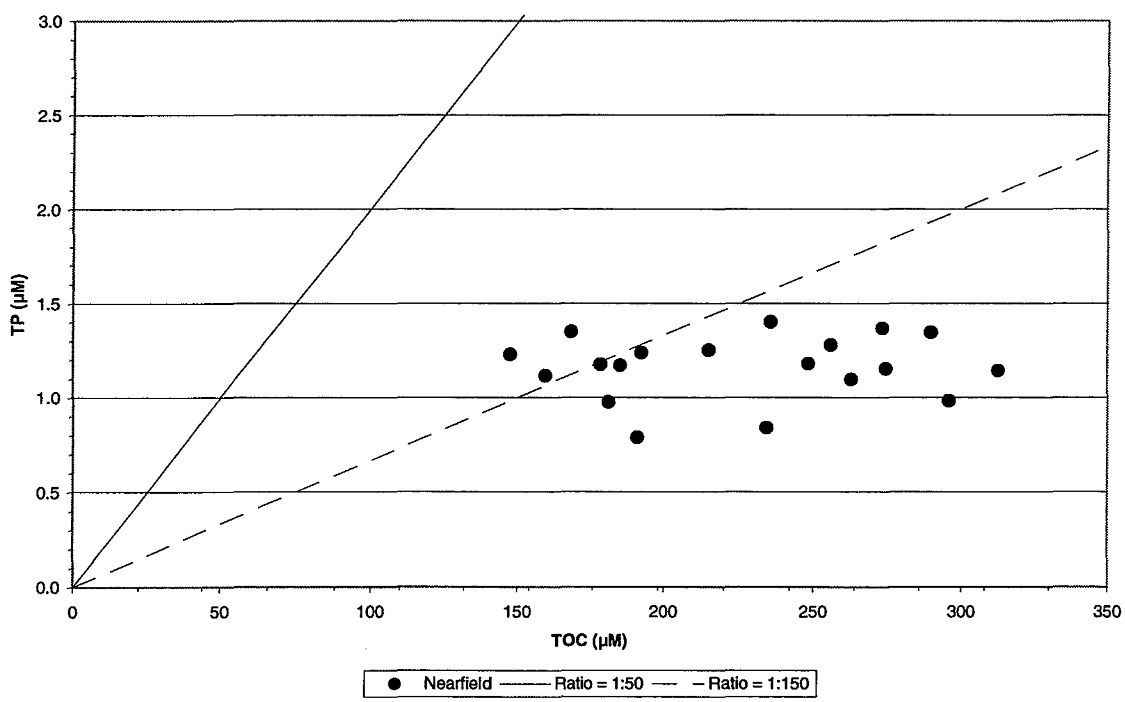


Figure D-12. Nutrient vs. Nutrient Plots for Nearfield Survey WN98A, (Aug 98)

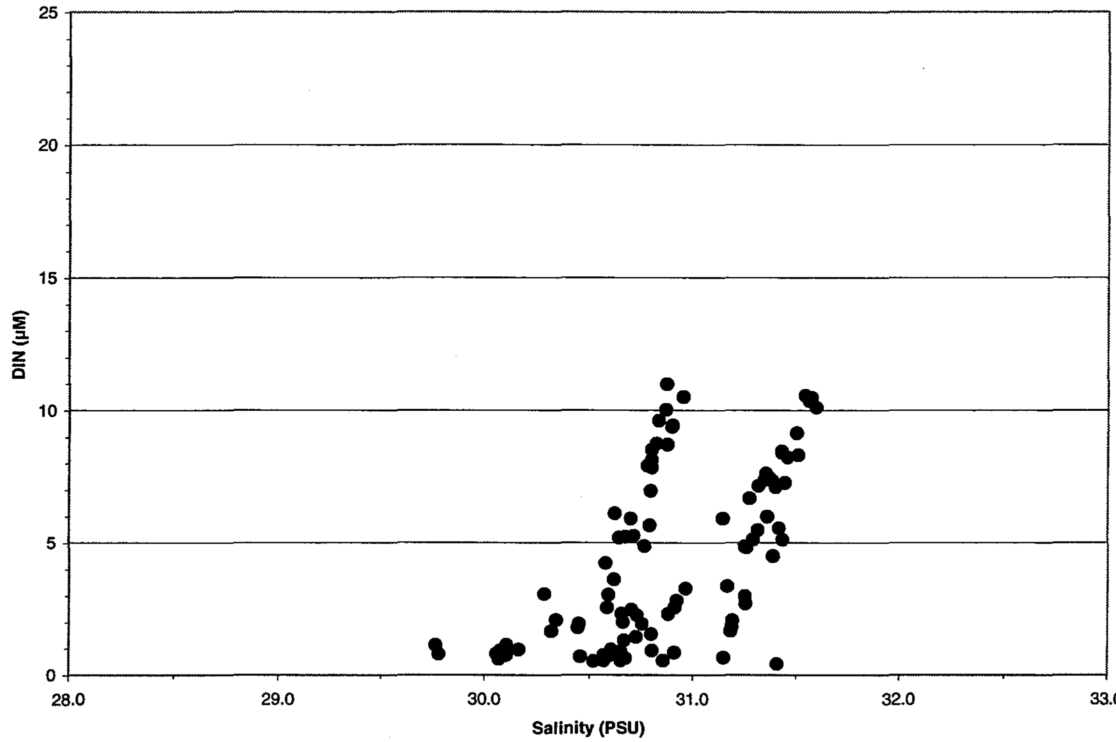
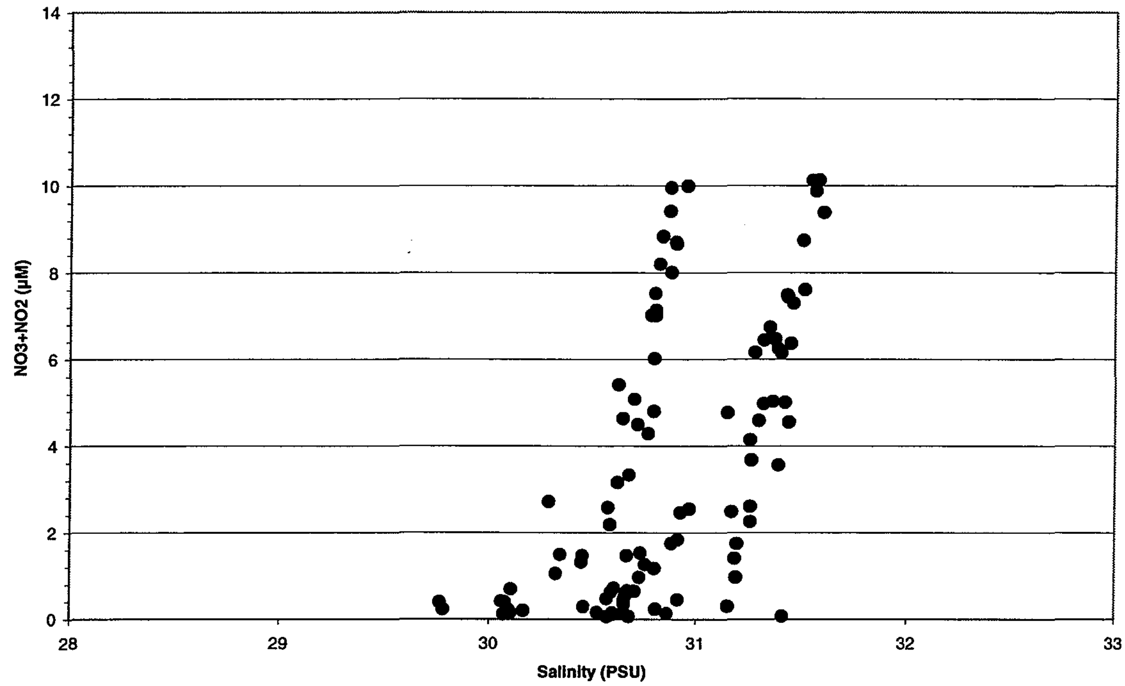


Figure D-13. Nutrient vs. Salinity Plots for Nearfield Survey WN98A, (Aug 98)

(a)



(b)

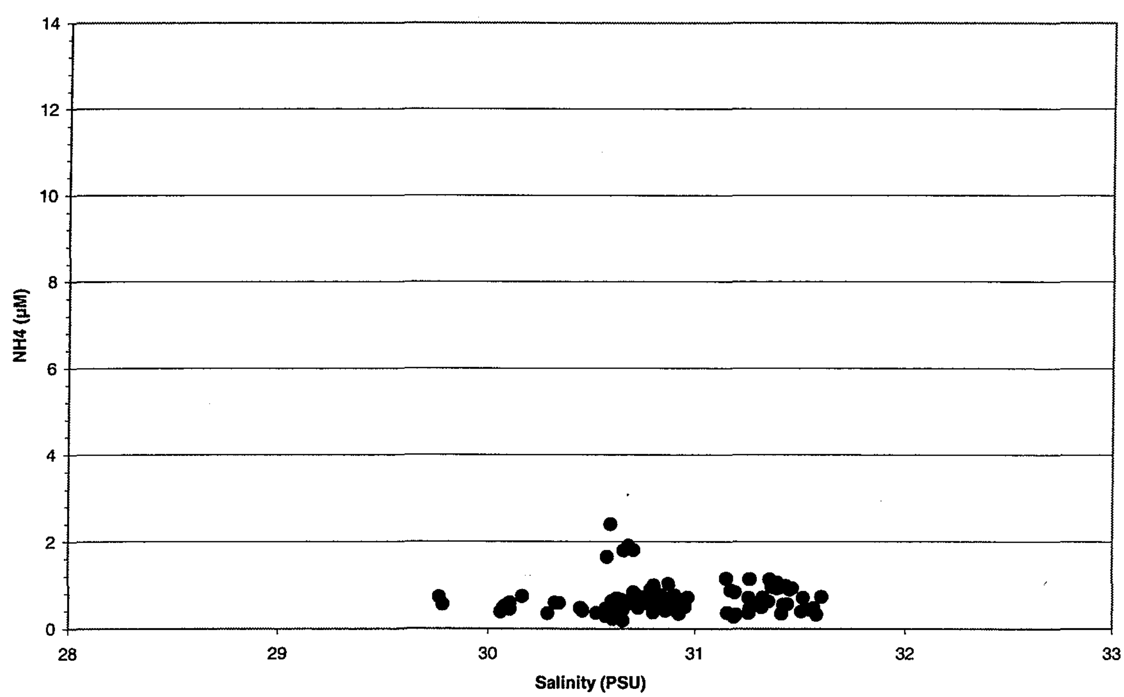
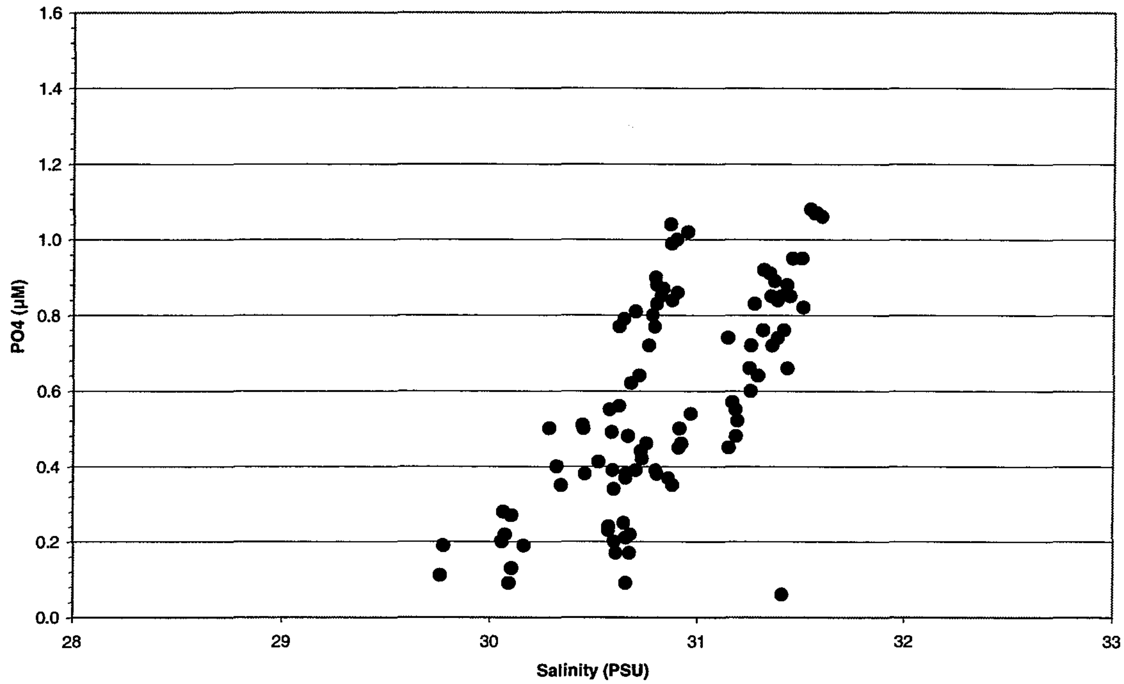


Figure D-14. Nutrient vs. Salinity Plots for Nearfield Survey WN98A, (Aug 98)

(a)



(b)

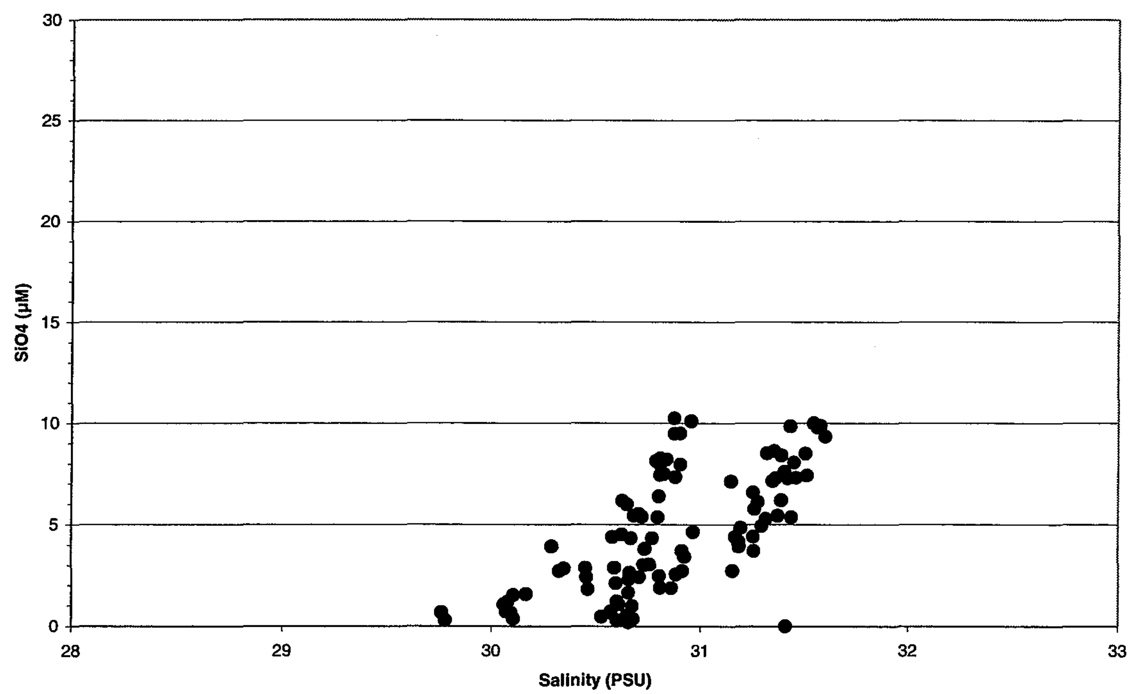


Figure D-15. Nutrient vs. Salinity Plots for Nearfield Survey WN98A, (Aug 98)

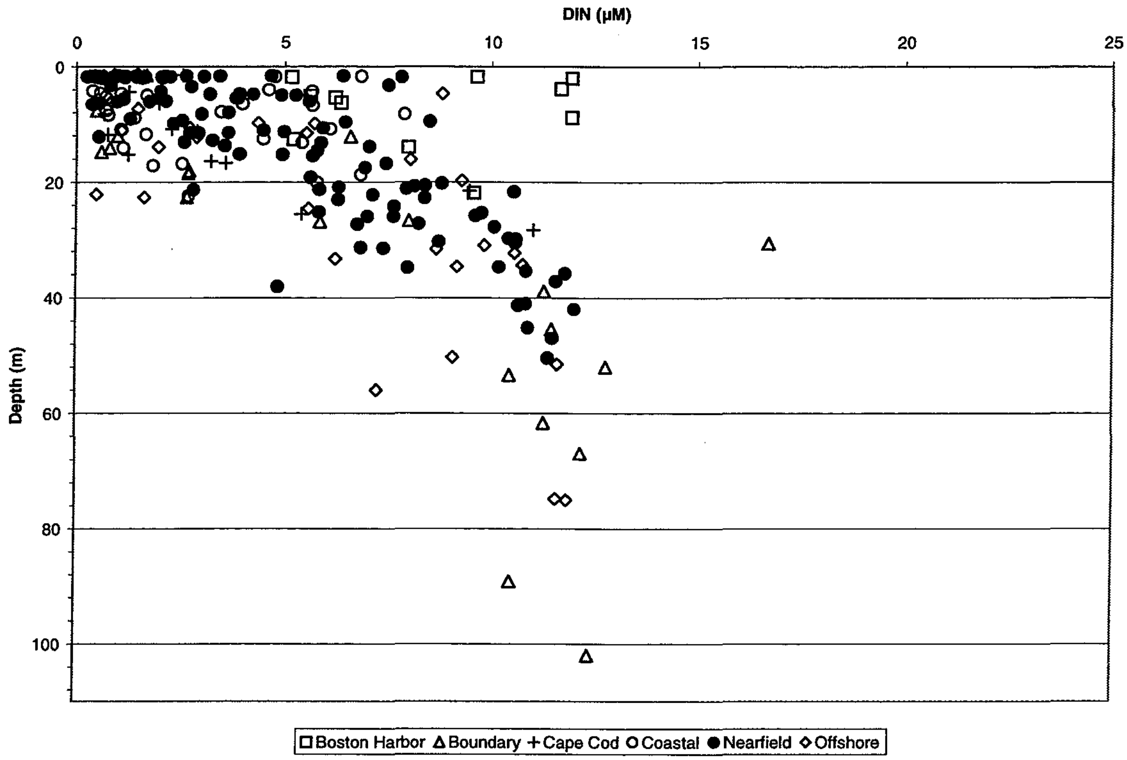
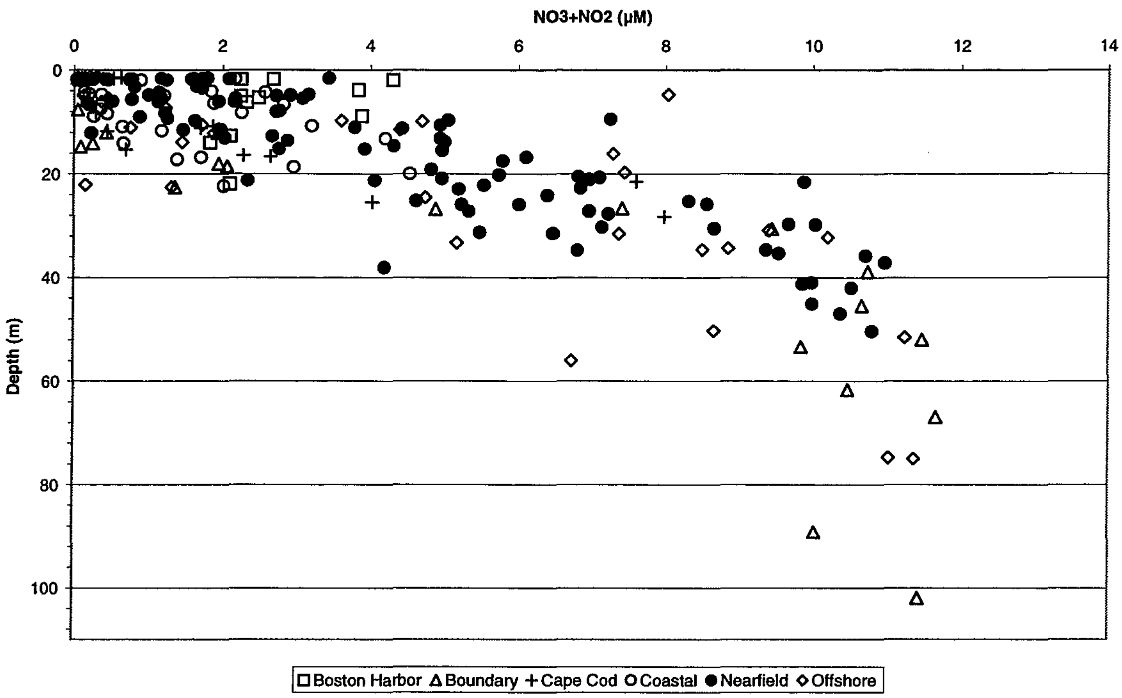


Figure D-16. Depth vs. Nutrient Plots for Farfield Survey WF98B, (Aug 98)

(a)



(b)

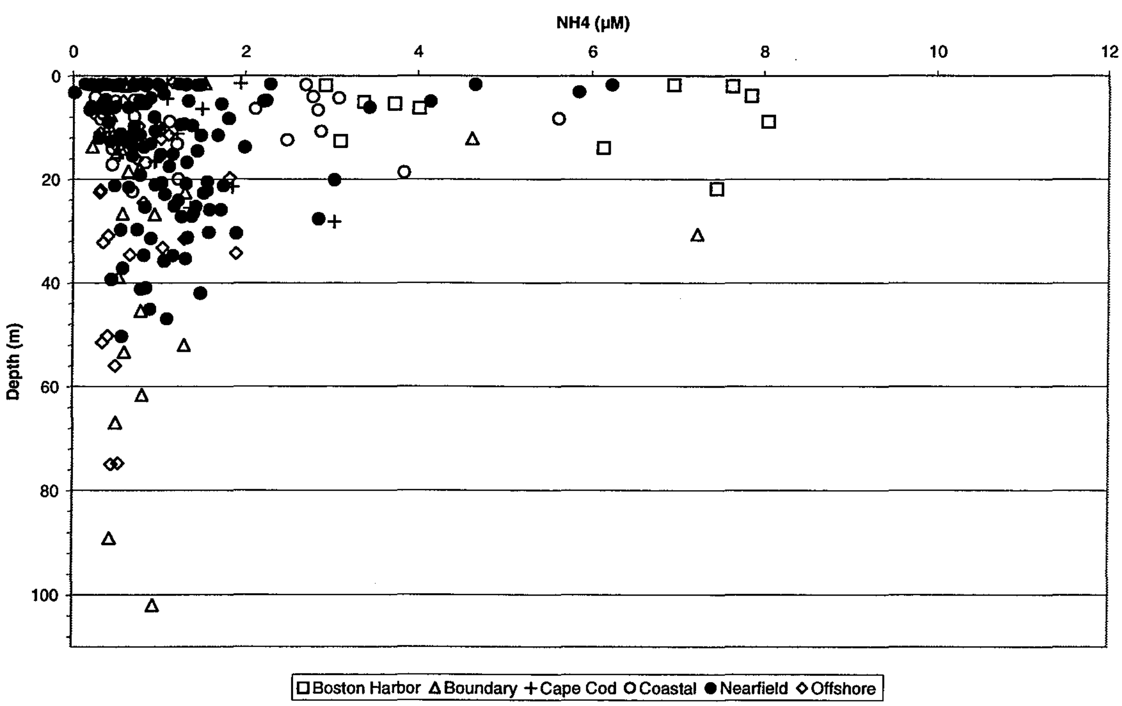
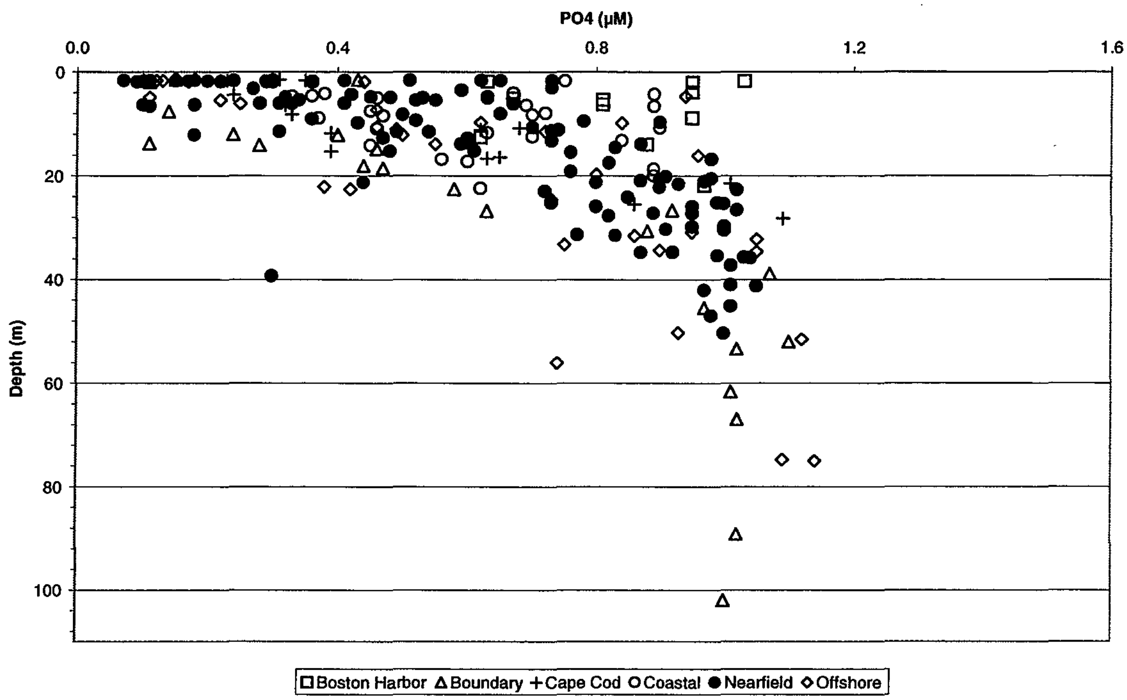


Figure D-17. Depth vs. Nutrient Plots for Farfield Survey WF98B, (Aug 98)

(a)



(b)

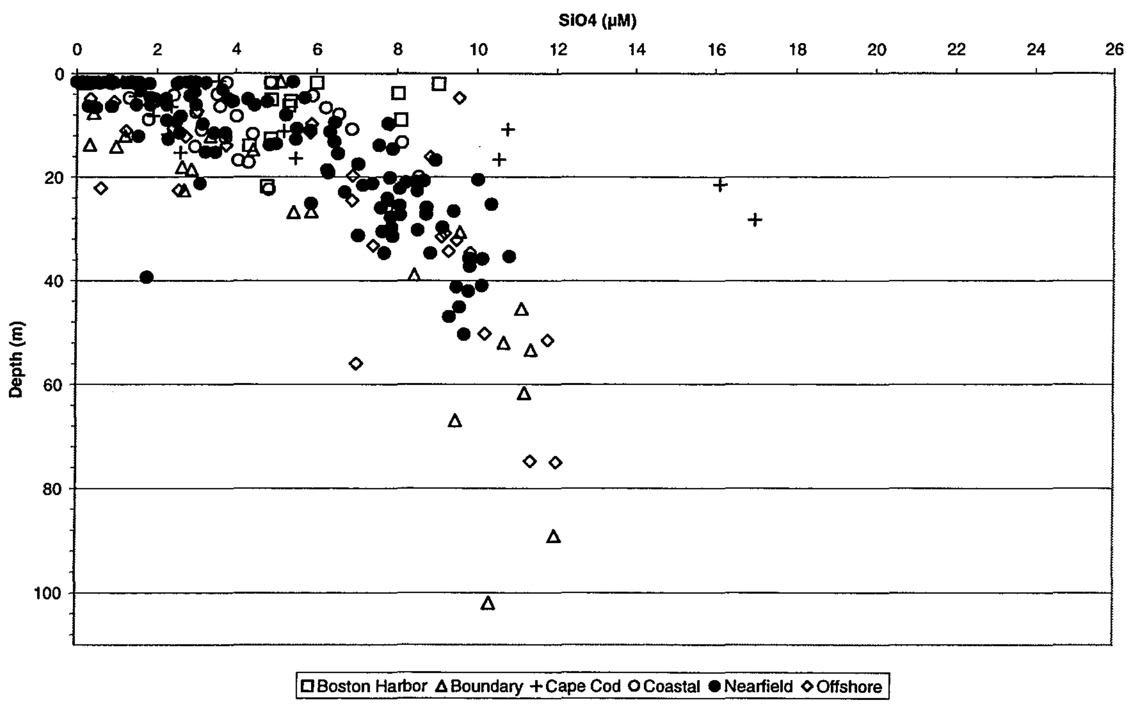
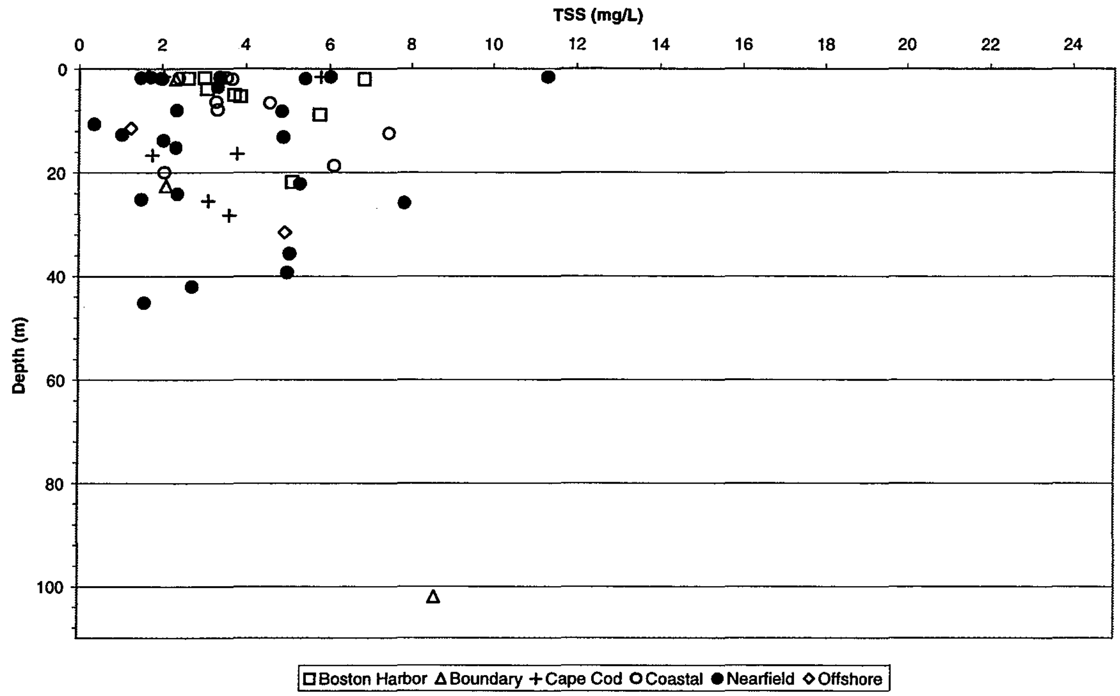


Figure D-18. Depth vs. Nutrient Plots for Farfield Survey WF98B, (Aug 98)

(a)



(b)

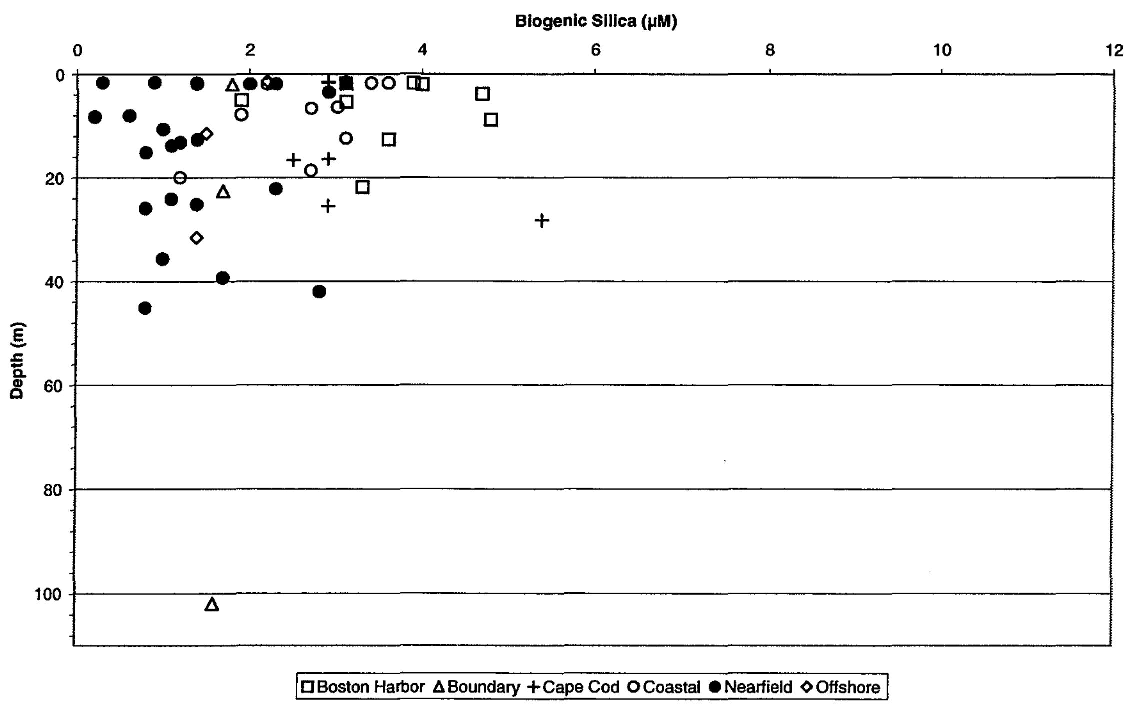
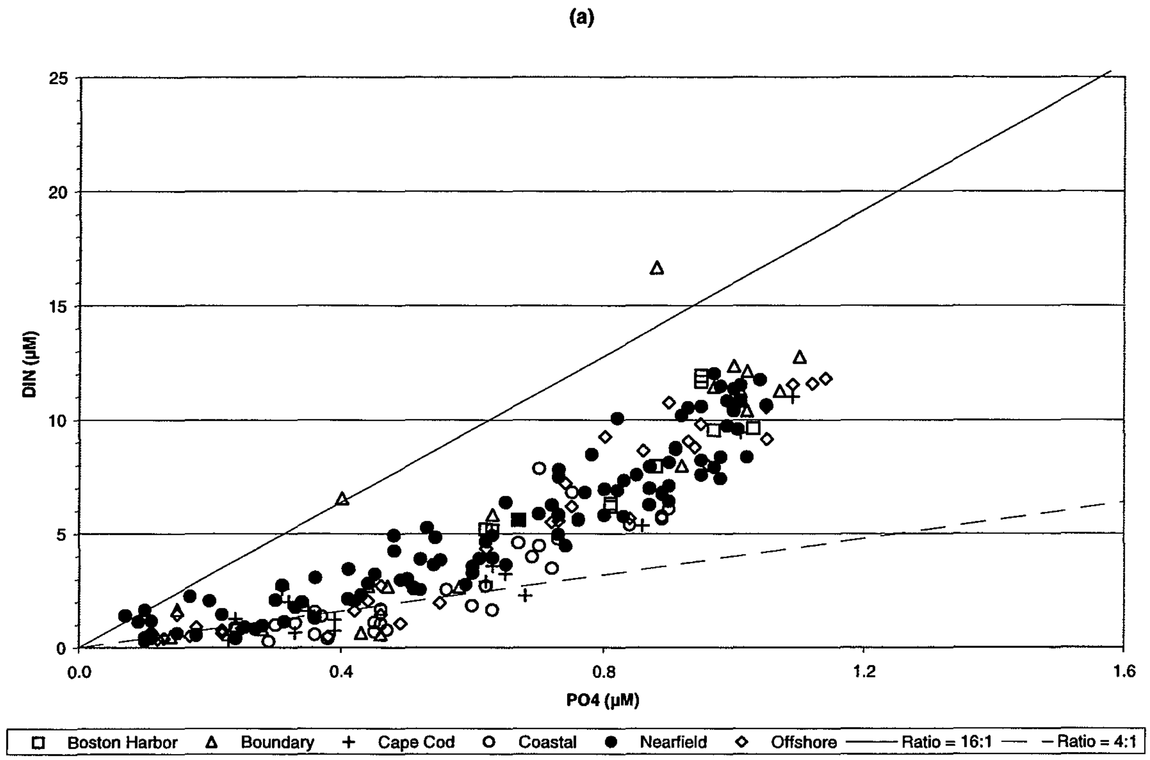


Figure D-19. Depth vs. Nutrient Plots for Farfield Survey WF98B, (Aug 98)



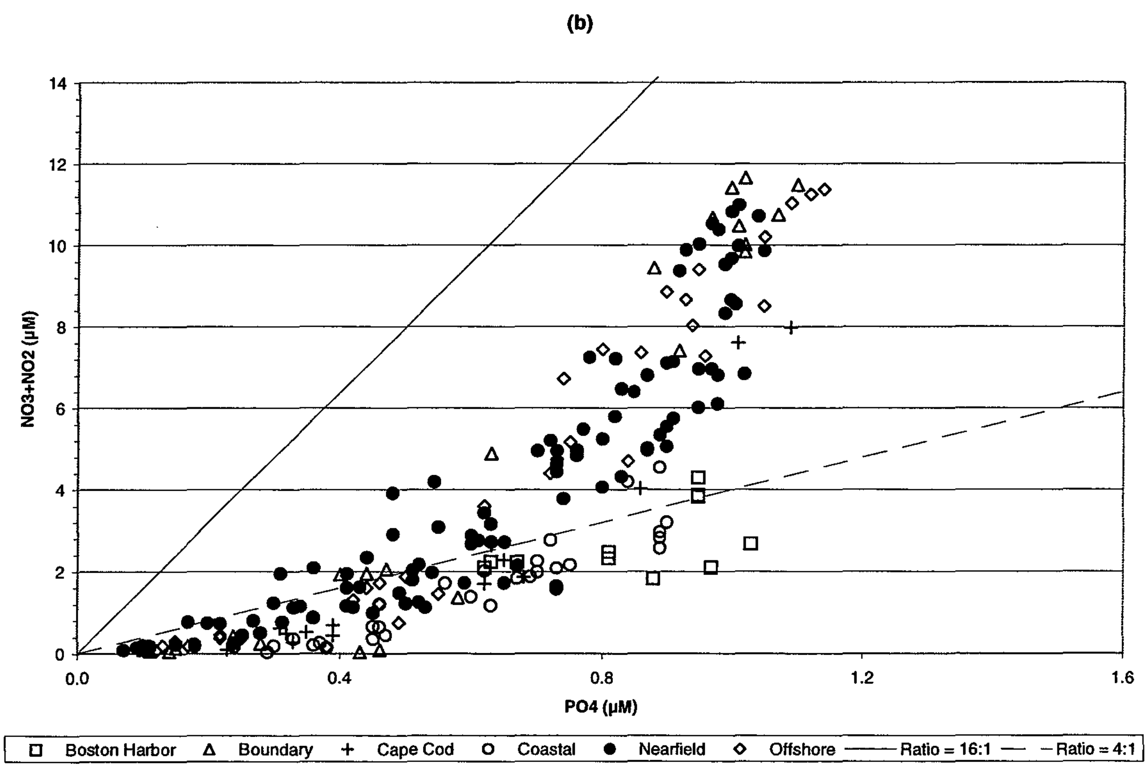
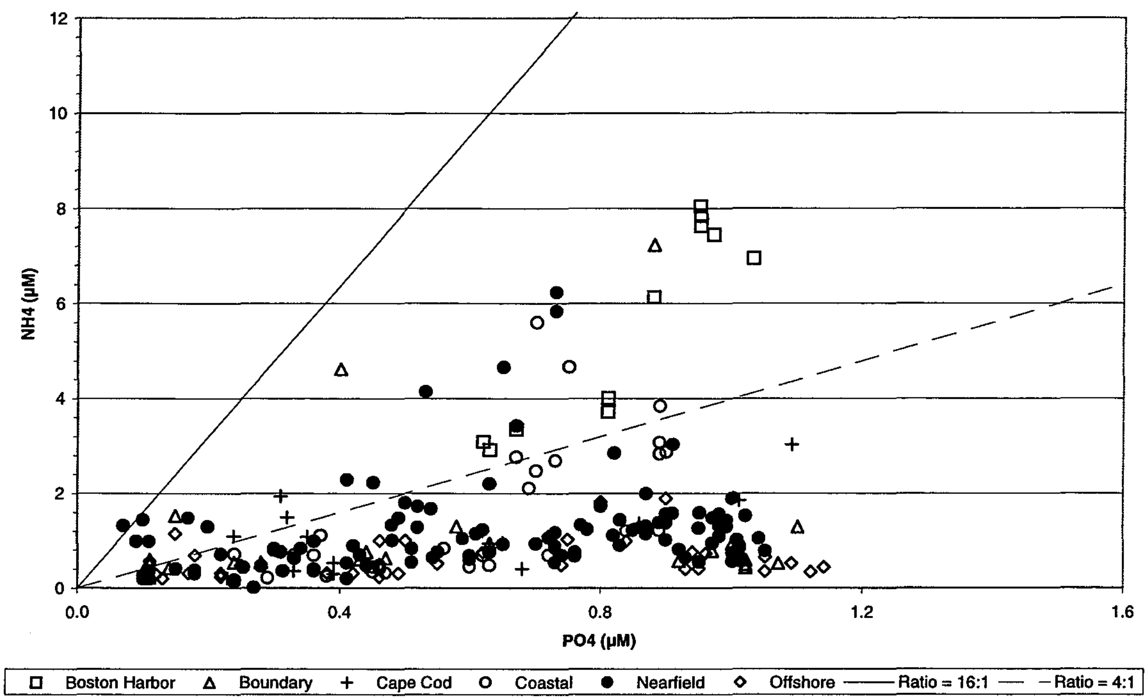


Figure D-20. Nutrient vs. Nutrient Plots for Farfield Survey WF98B, (Aug 98)

(a)



(b)

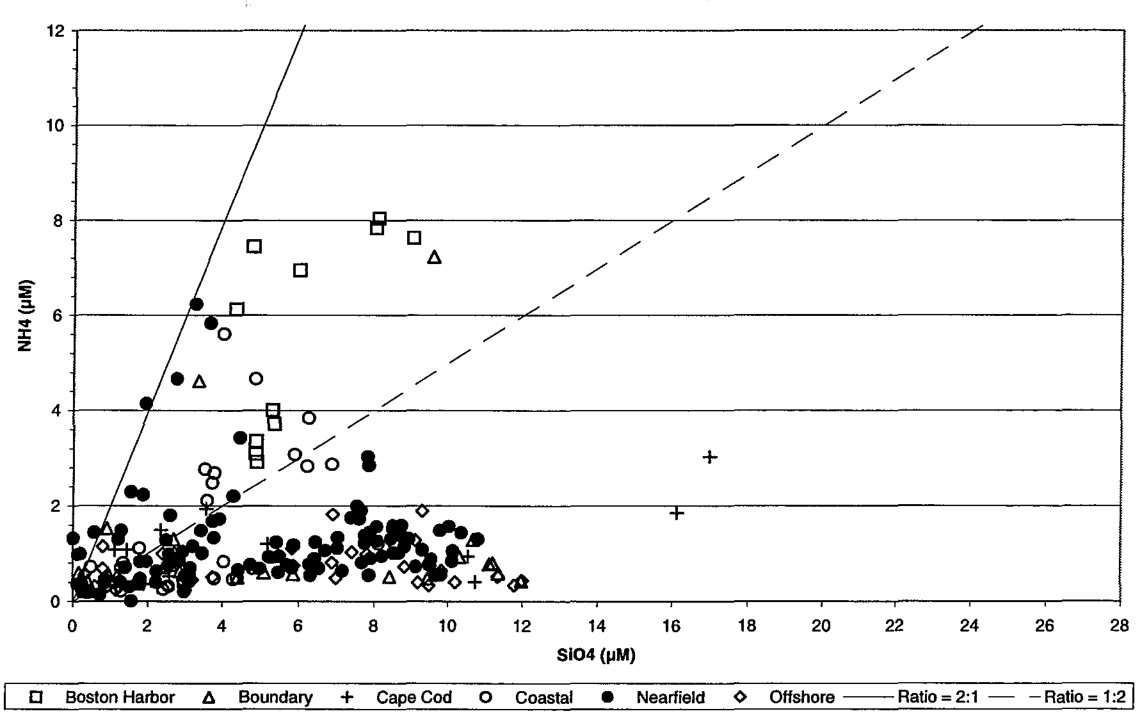


Figure D-21. Nutrient vs. Nutrient Plots for Farfield Survey WF98B, (Aug 98)

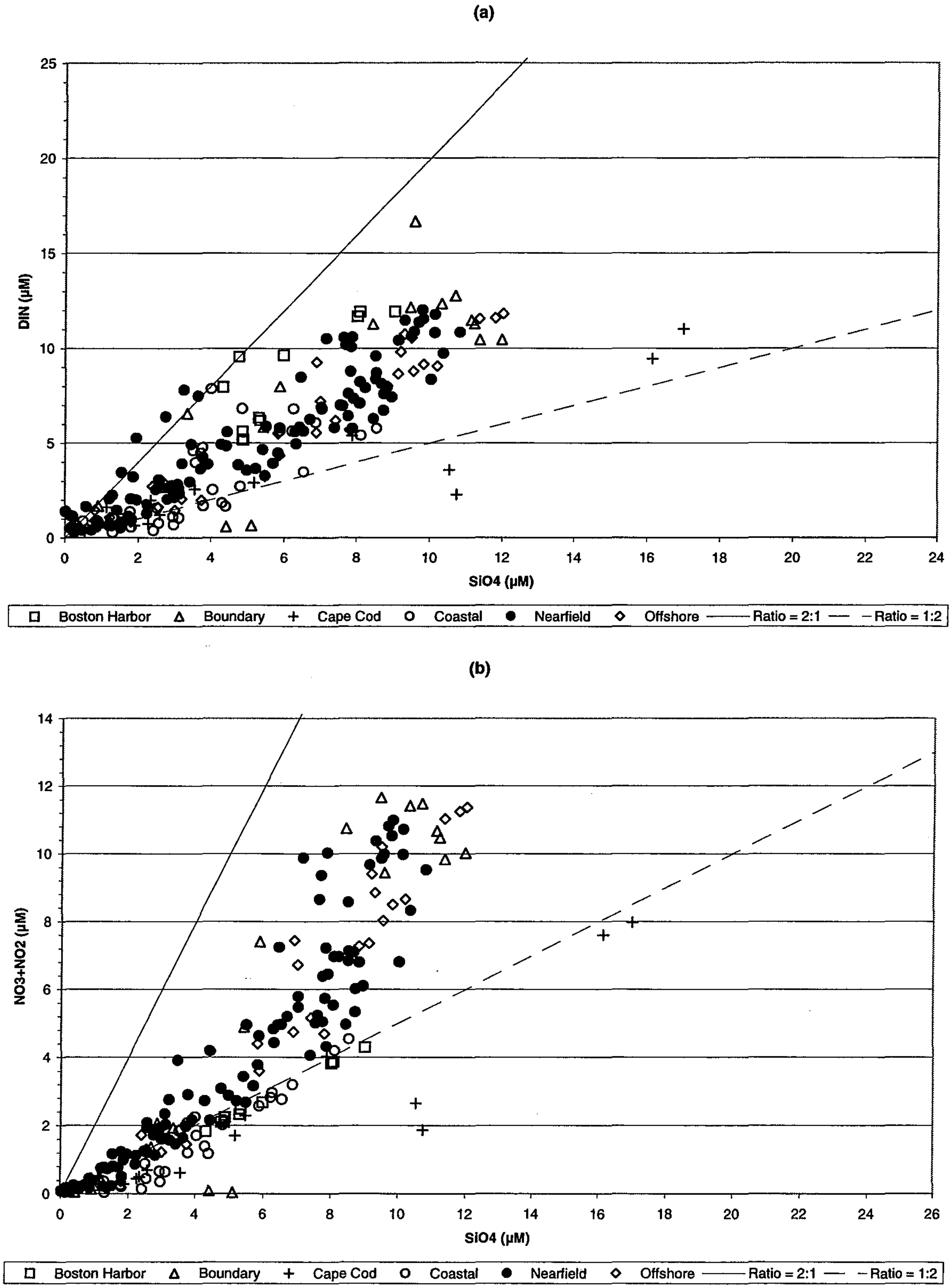
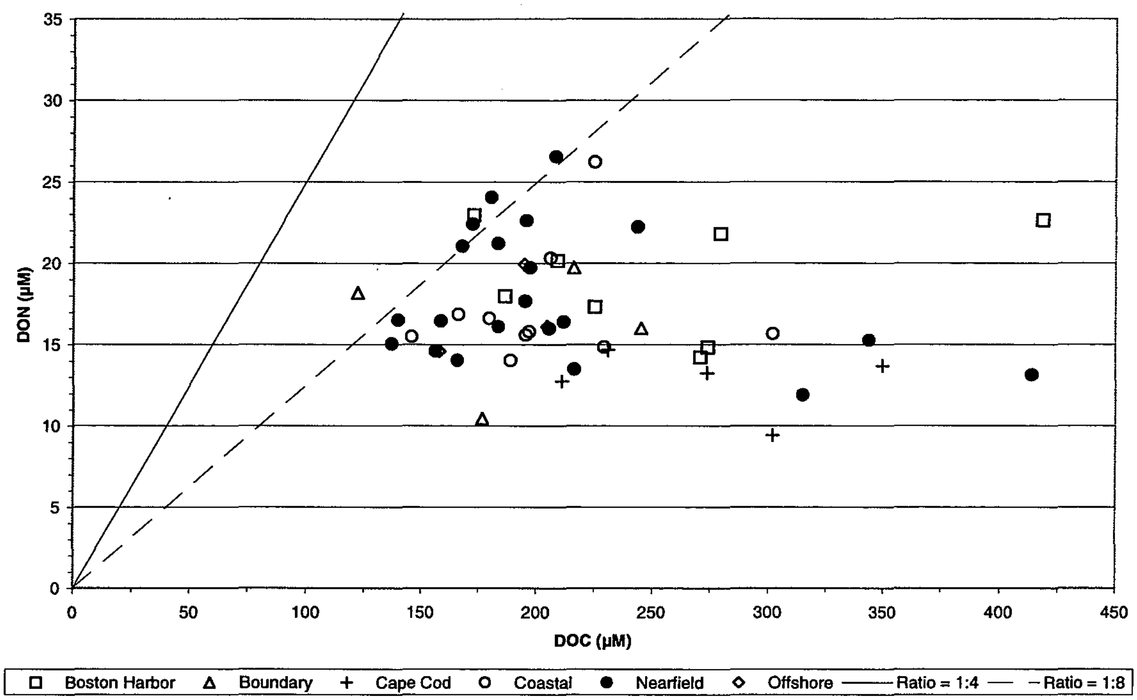


Figure D-22. Nutrient vs. Nutrient Plots for Farfield Survey WF98B, (Aug 98)

(a)



(b)

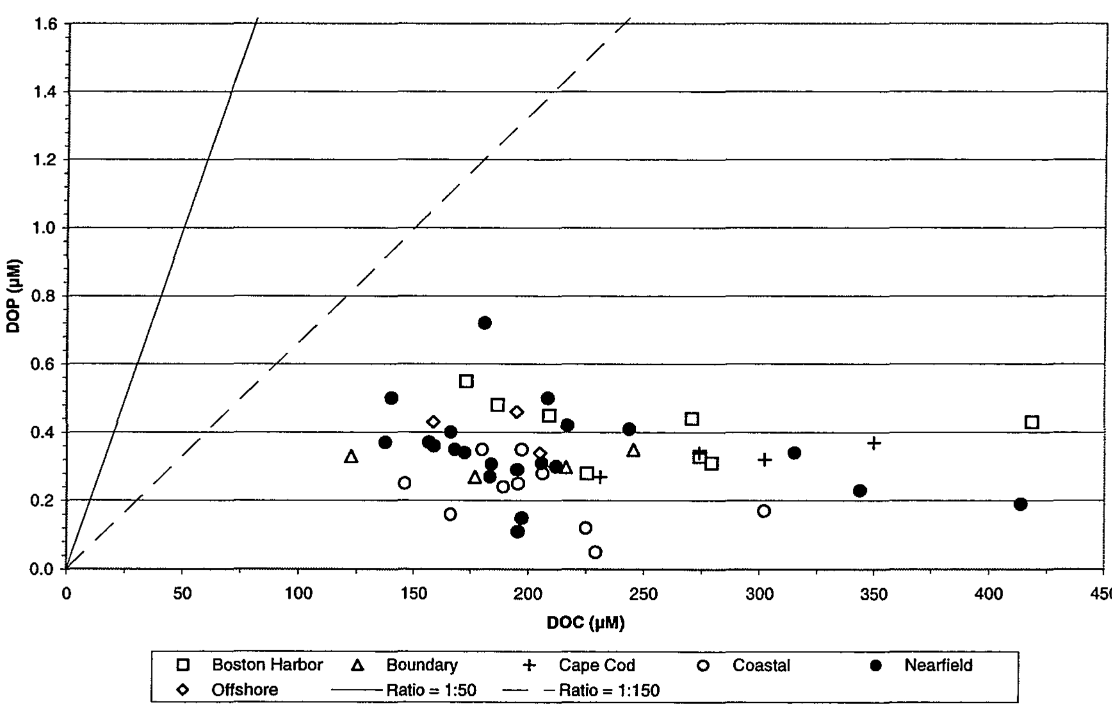
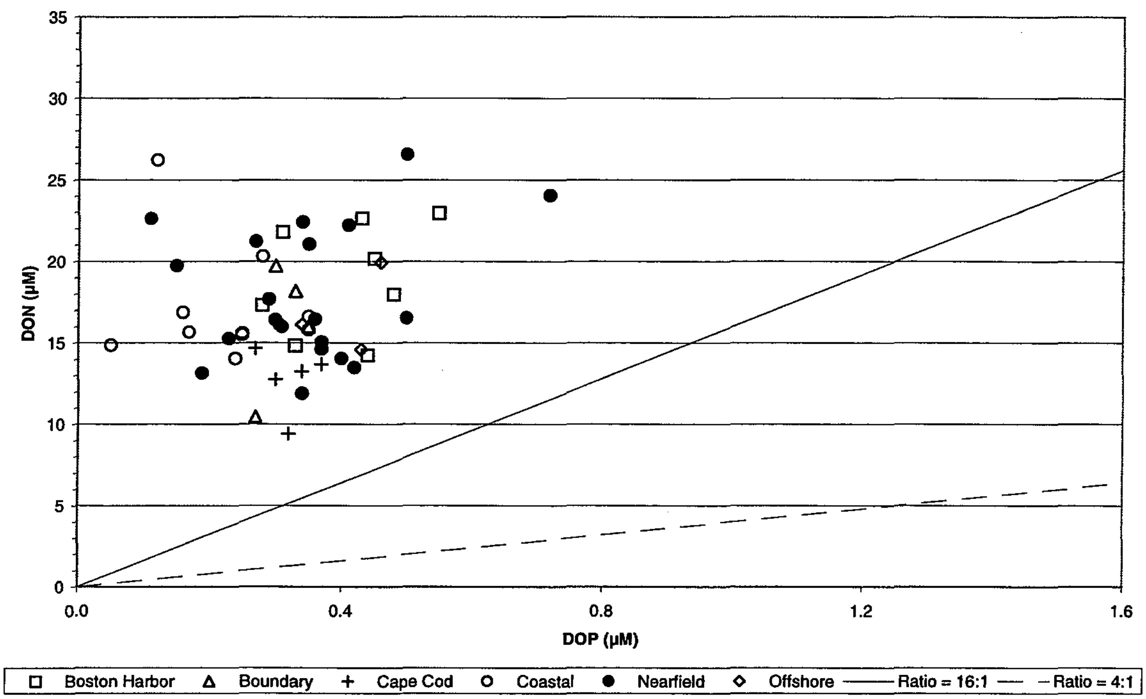


Figure D-23. Nutrient vs. Nutrient Plots for Farfield Survey WF98B, (Aug 98)

(a)



(b)

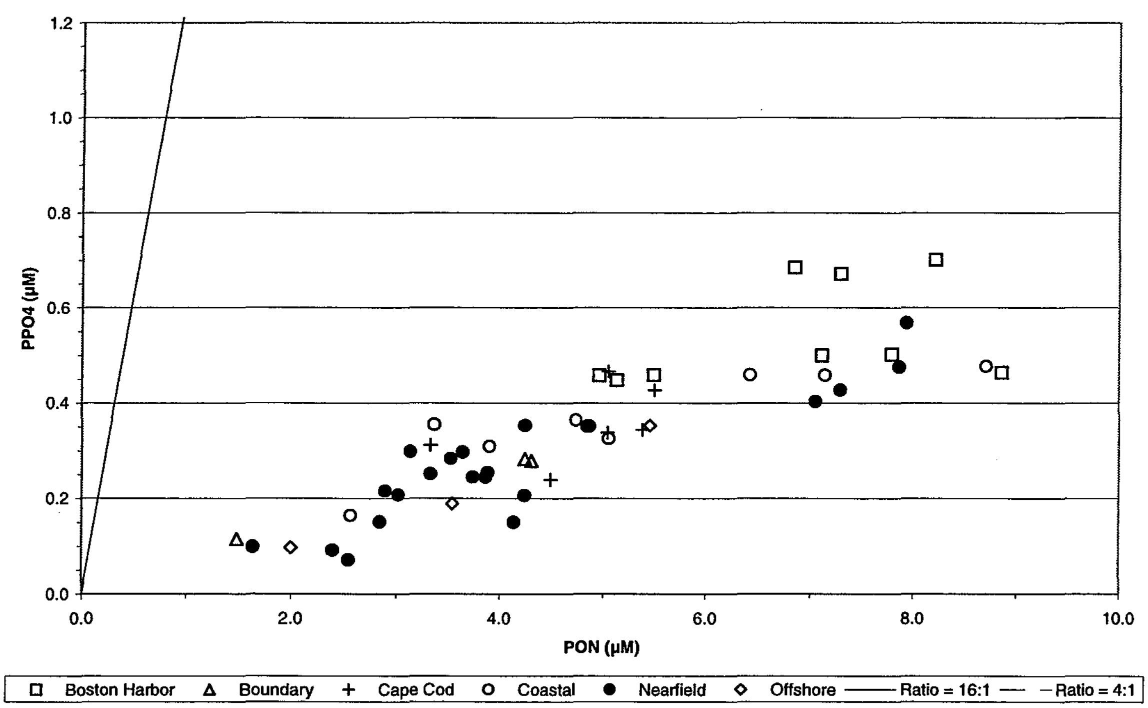
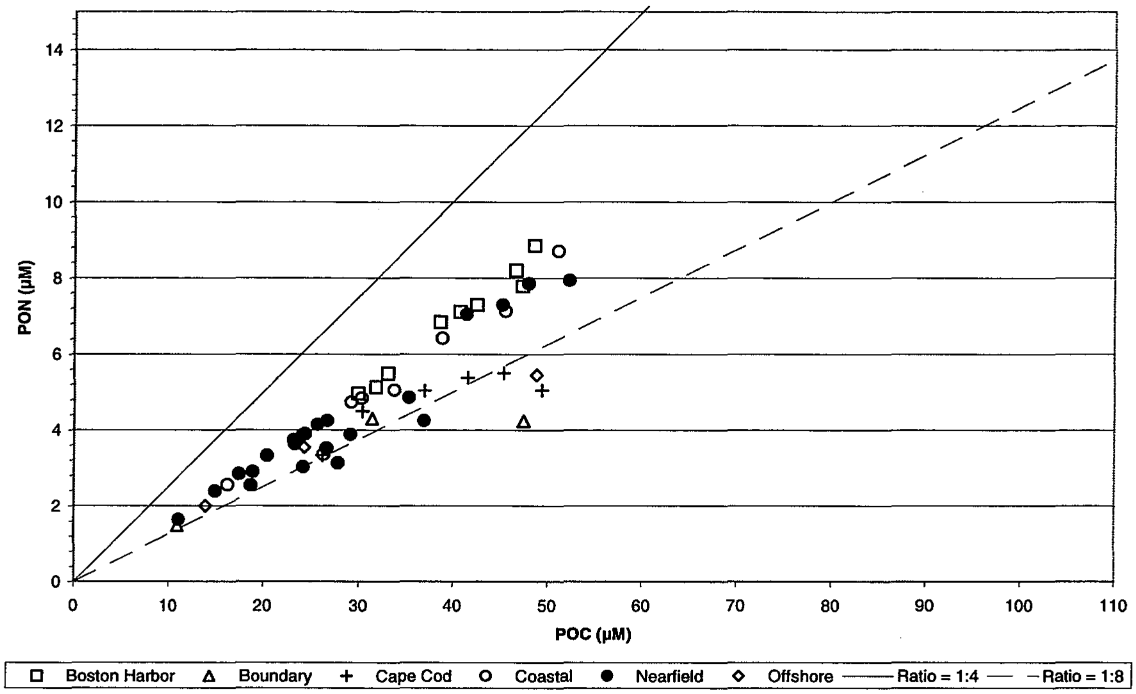


Figure D-24. Nutrient vs. Nutrient Plots for Farfield Survey WF98B, (Aug 98)

(a)



(b)

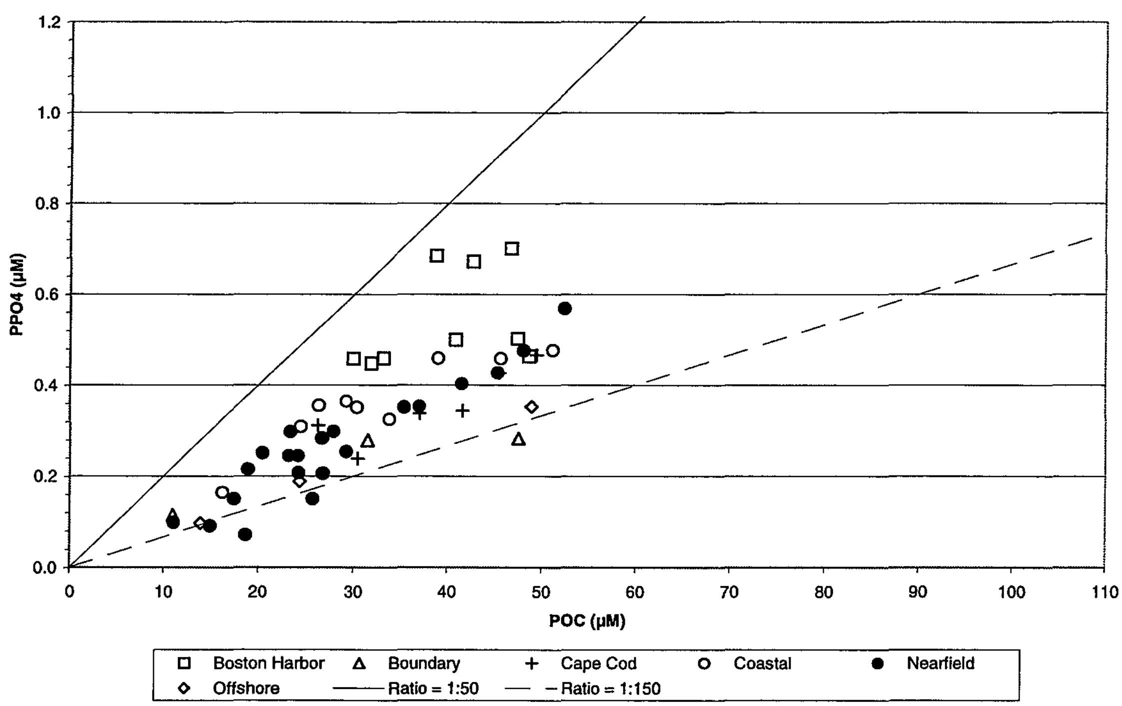
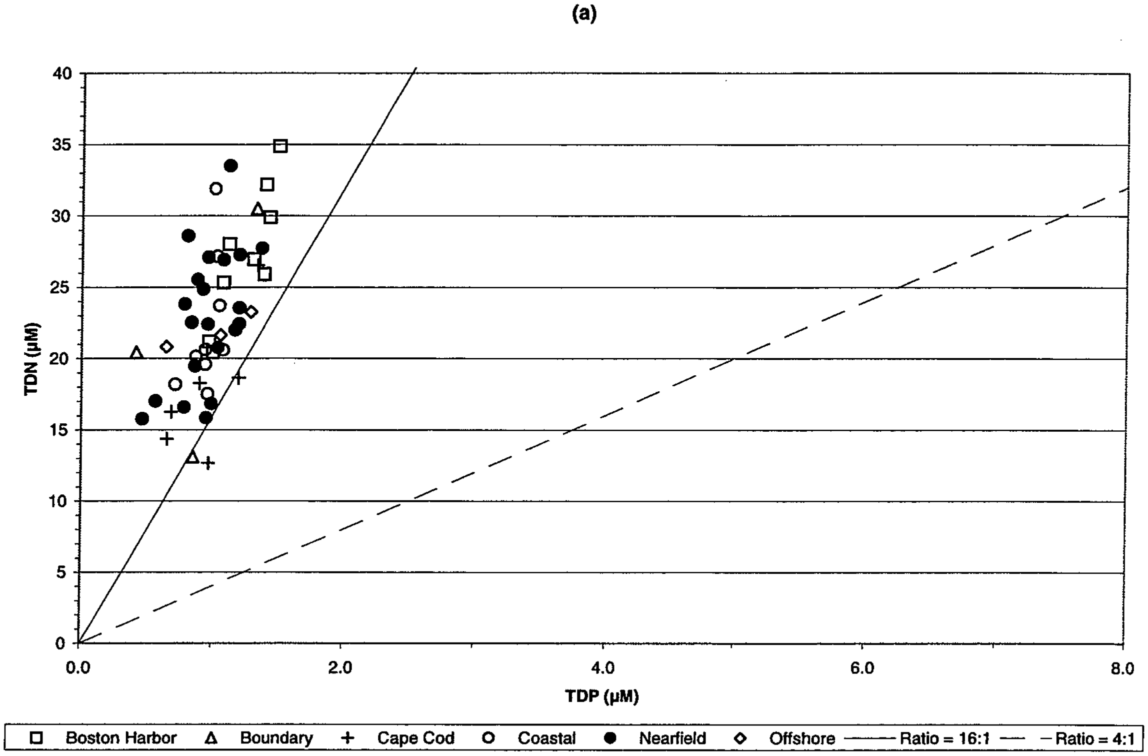


Figure D-25. Nutrient vs. Nutrient Plots for Farfield Survey WF98B, (Aug 98)



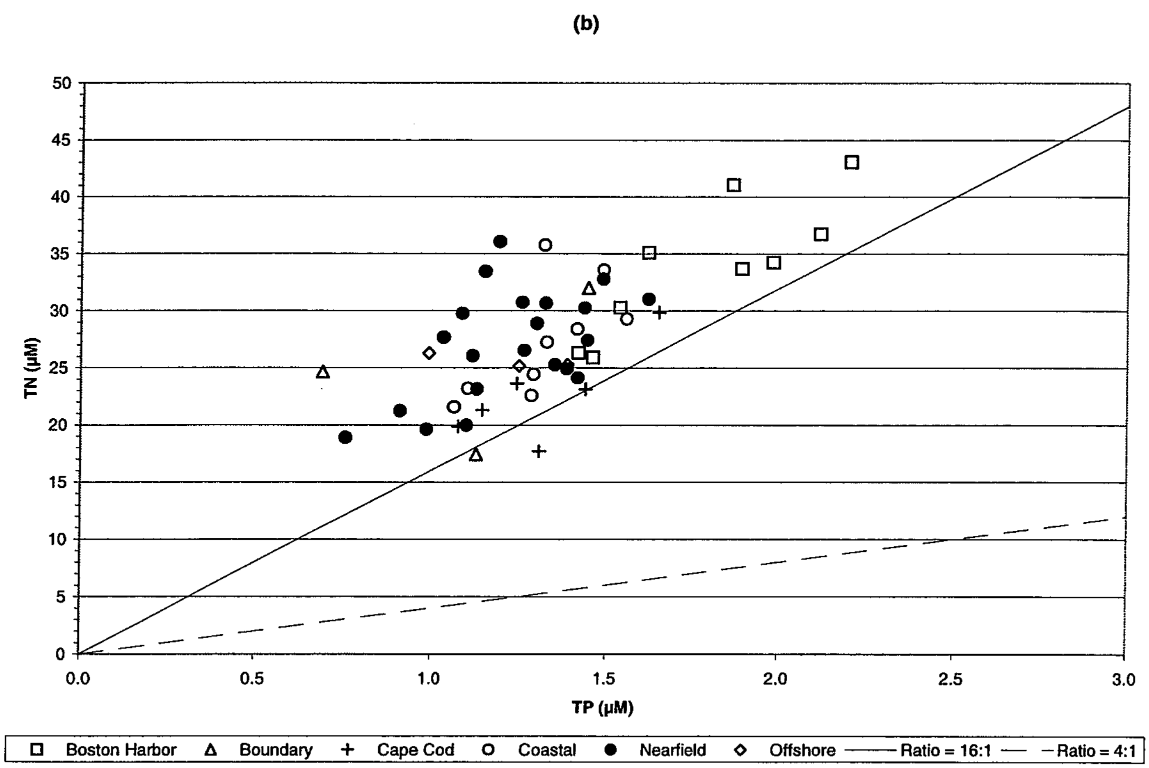
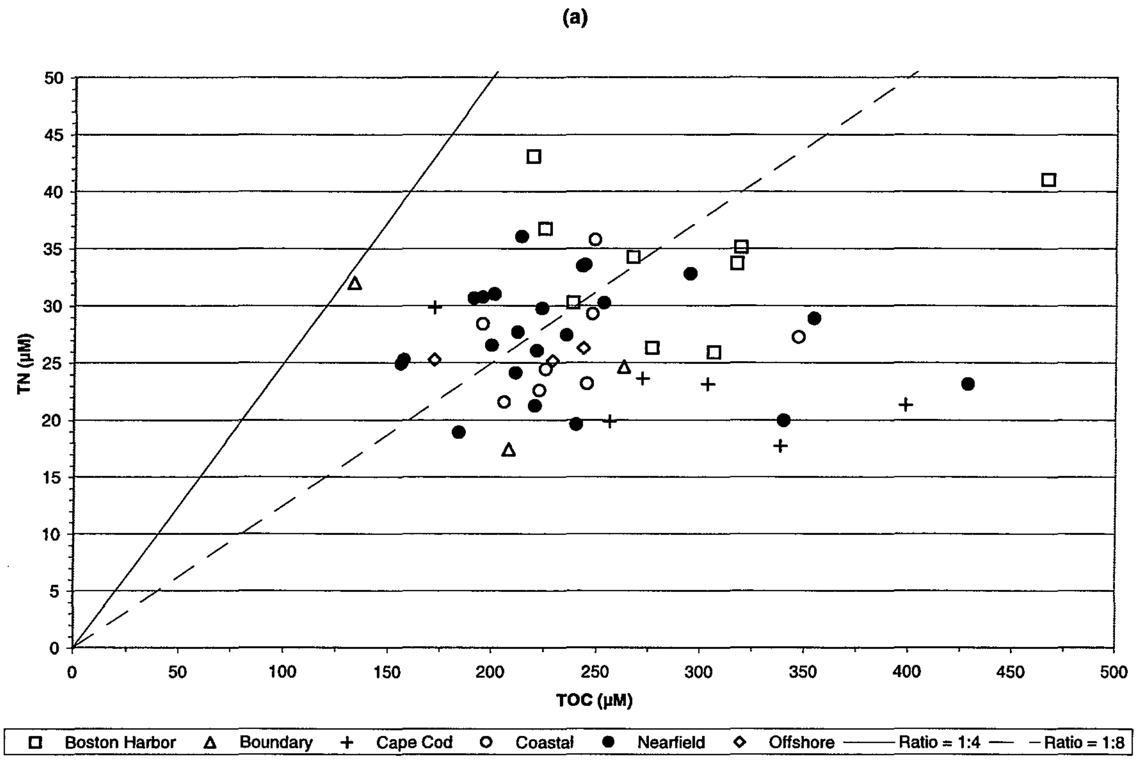


Figure D-26. Nutrient vs. Nutrient Plots for Farfield Survey WF98B, (Aug 98)



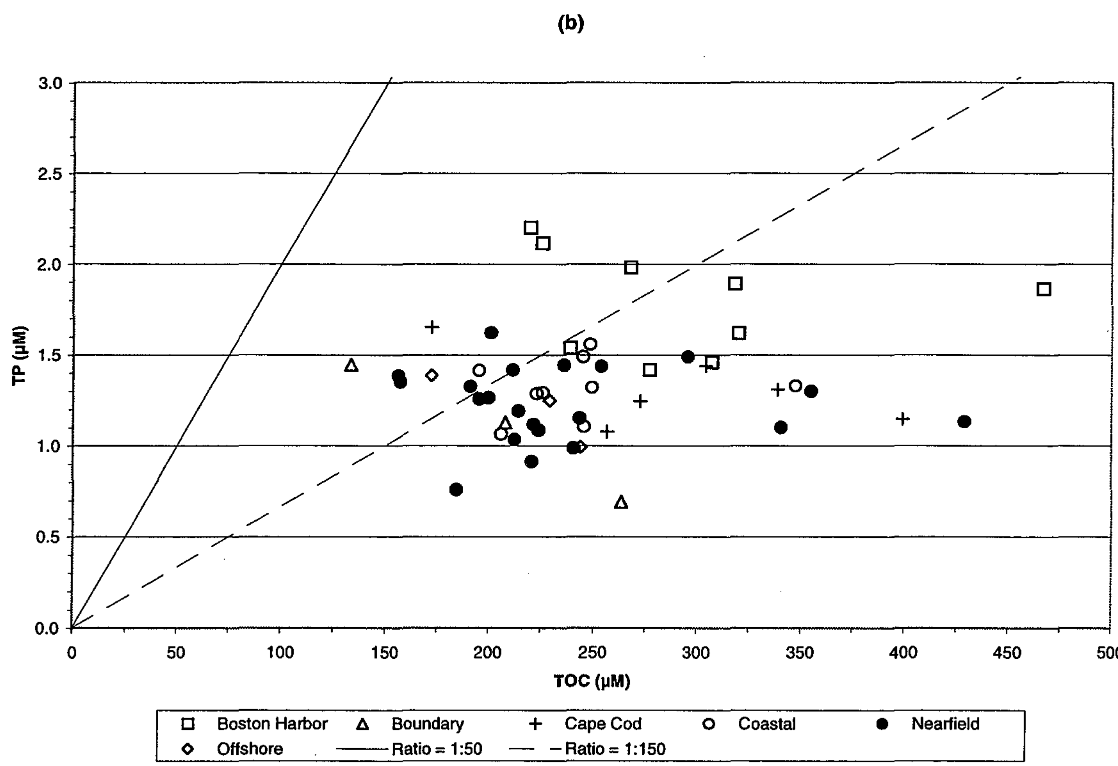


Figure D-27. Nutrient vs. Nutrient Plots for Farfield Survey WF98B, (Aug 98)

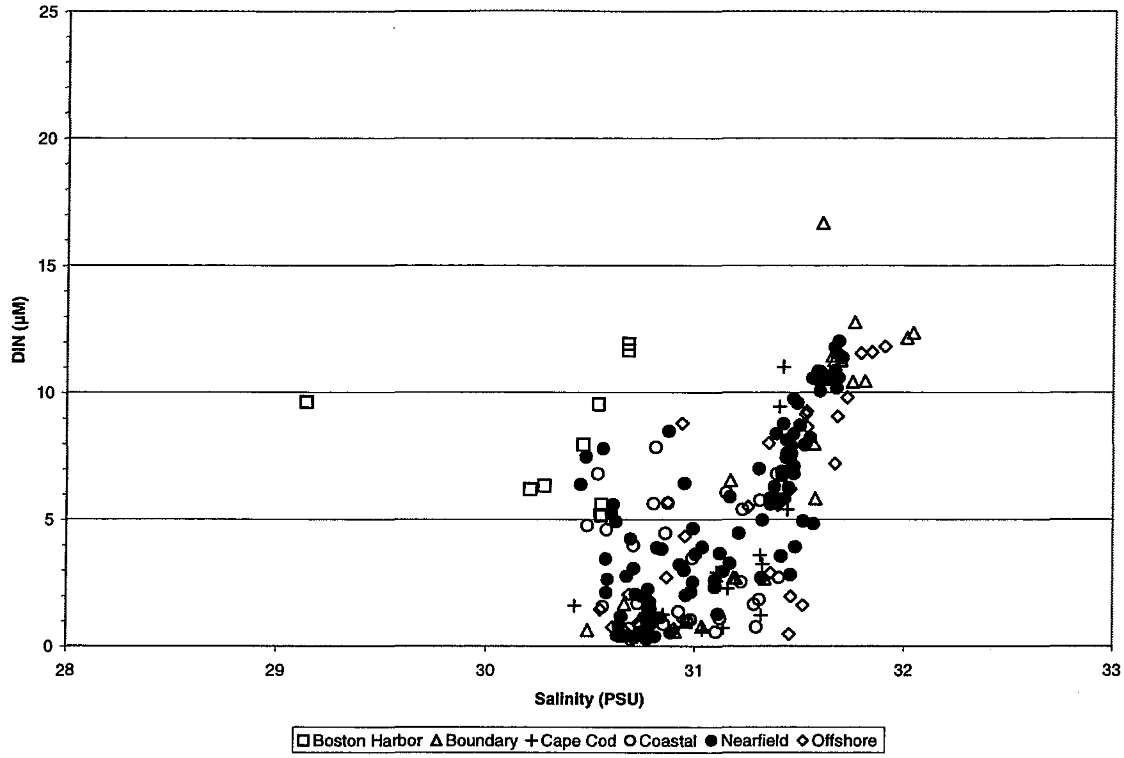
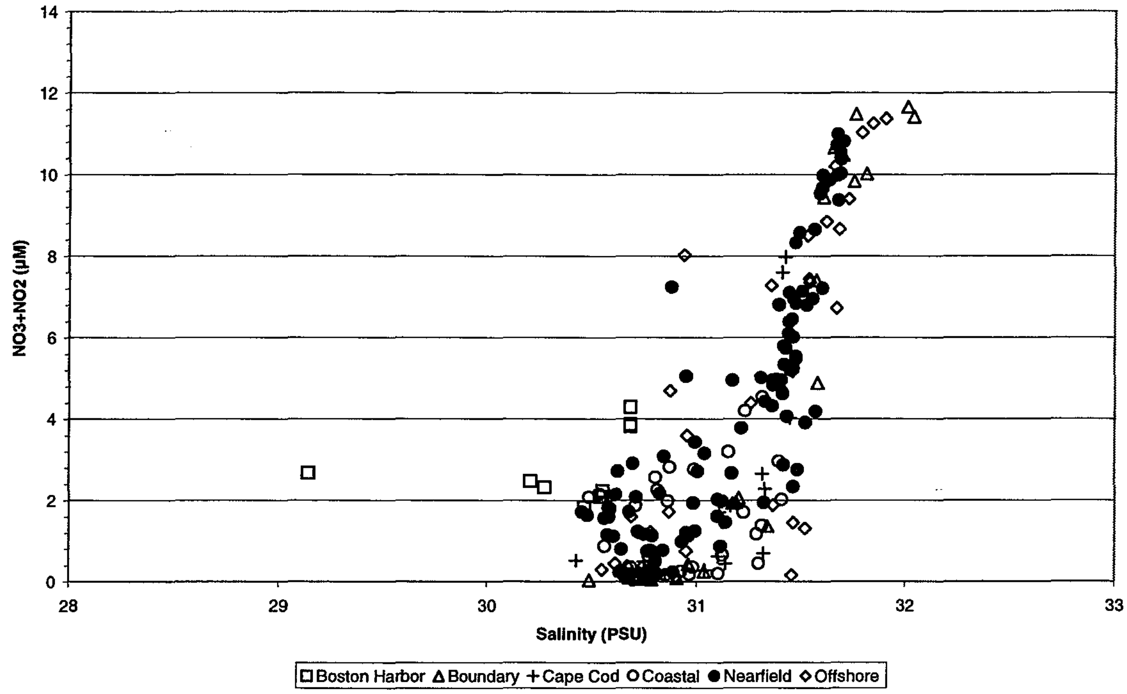


Figure D-28. Nutrient vs. Salinity Plots for Farfield Survey WF98B, (Aug 98)

(a)



(b)

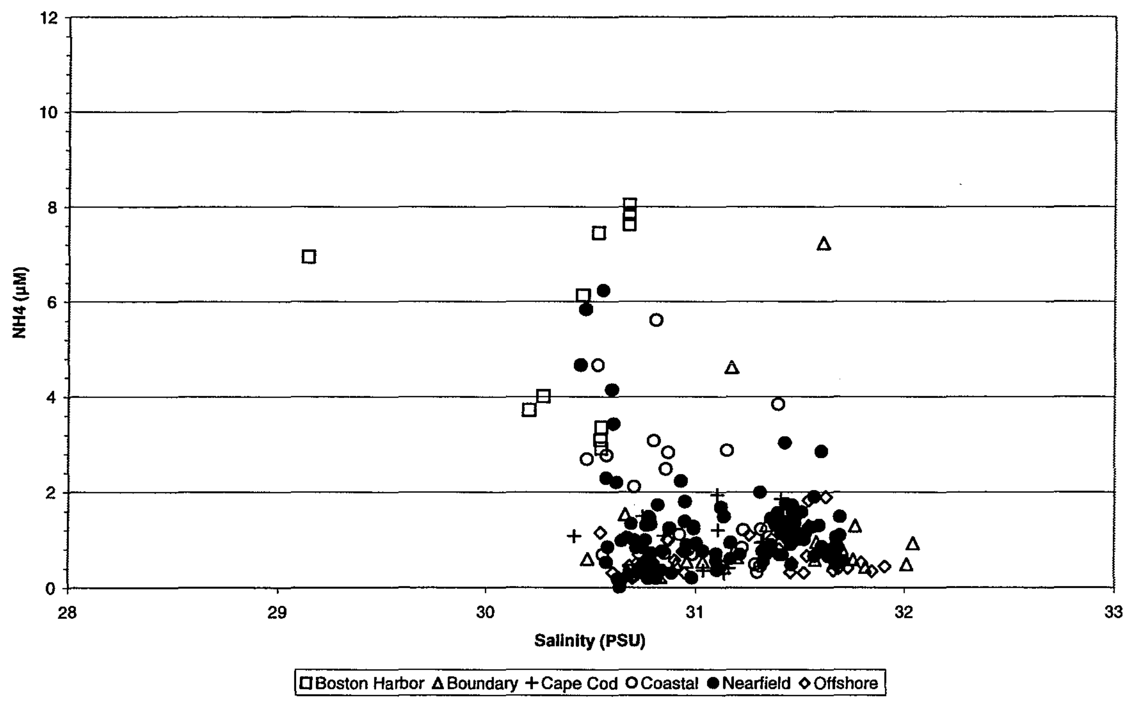
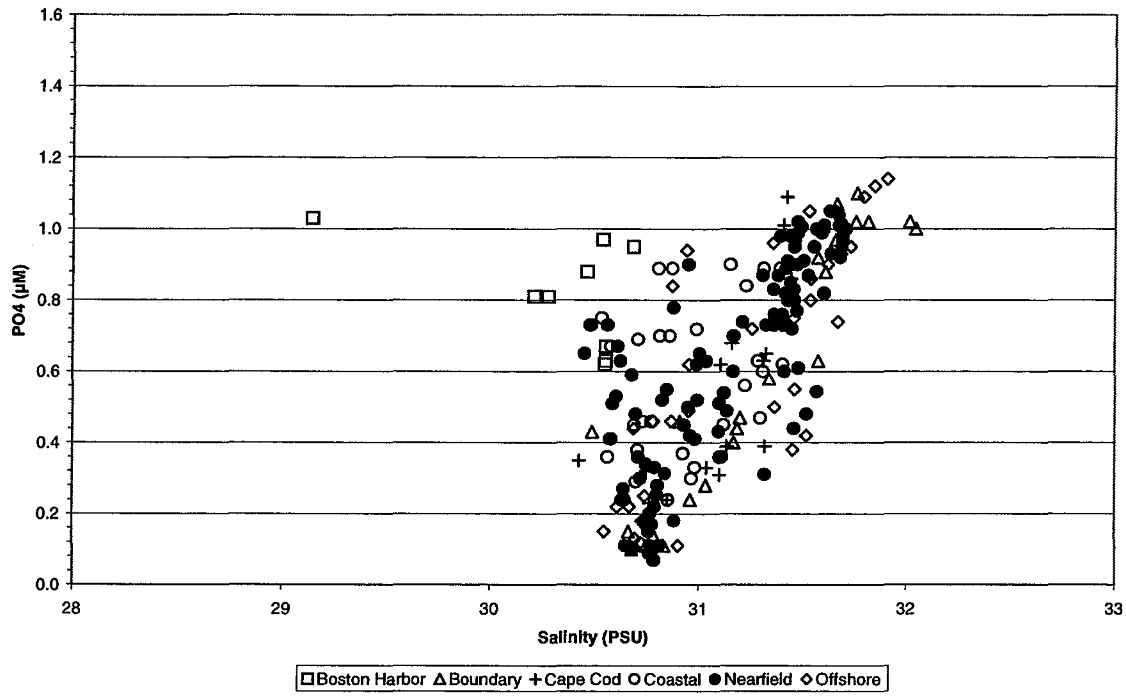


Figure D-29. Nutrient vs. Salinity Plots for Farfield Survey WF98B, (Aug 98)

(a)



(b)

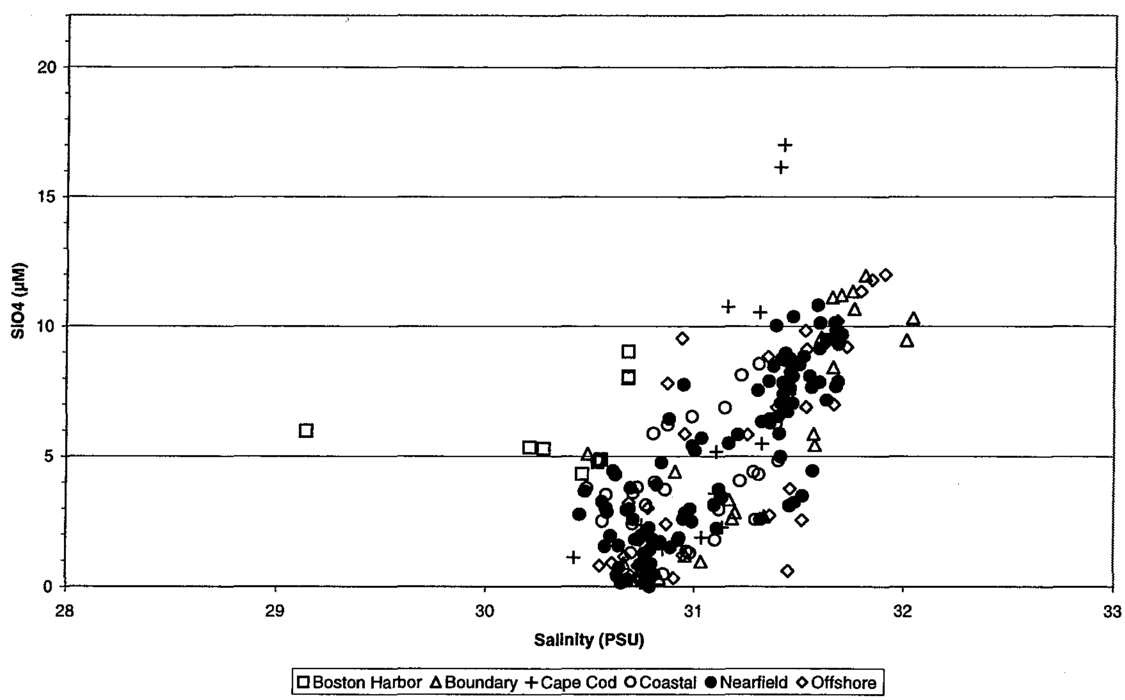


Figure D-30. Nutrient vs. Salinity Plots for Farfield Survey WF98B, (Aug 98)

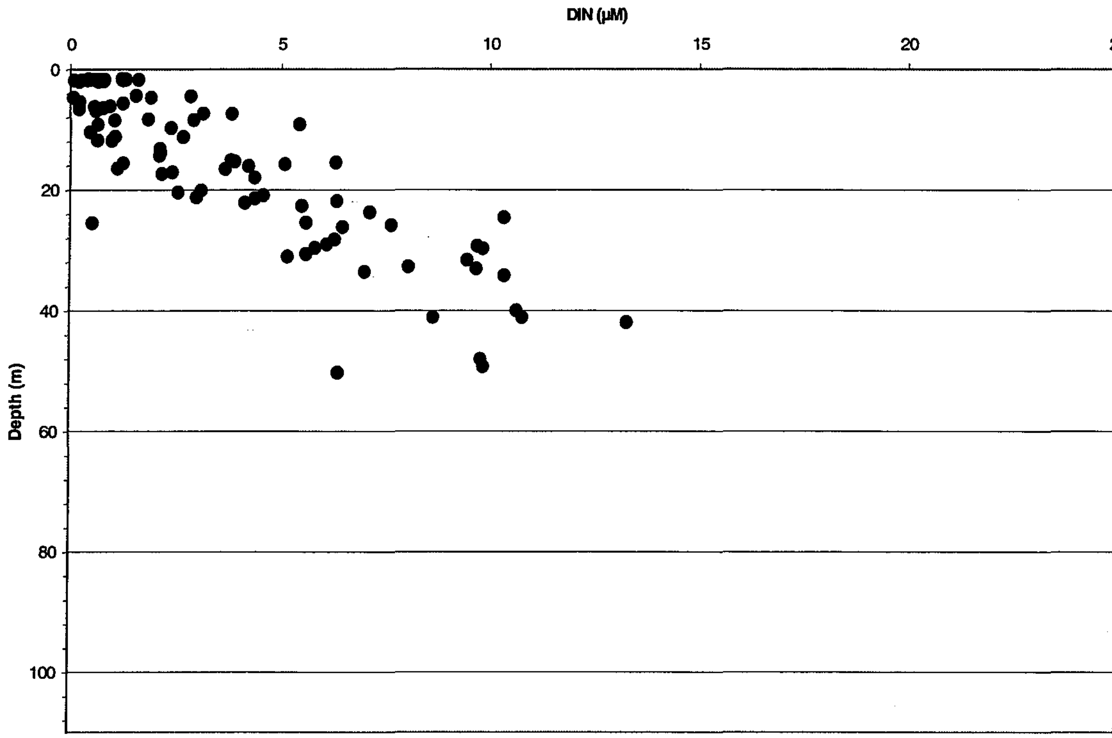
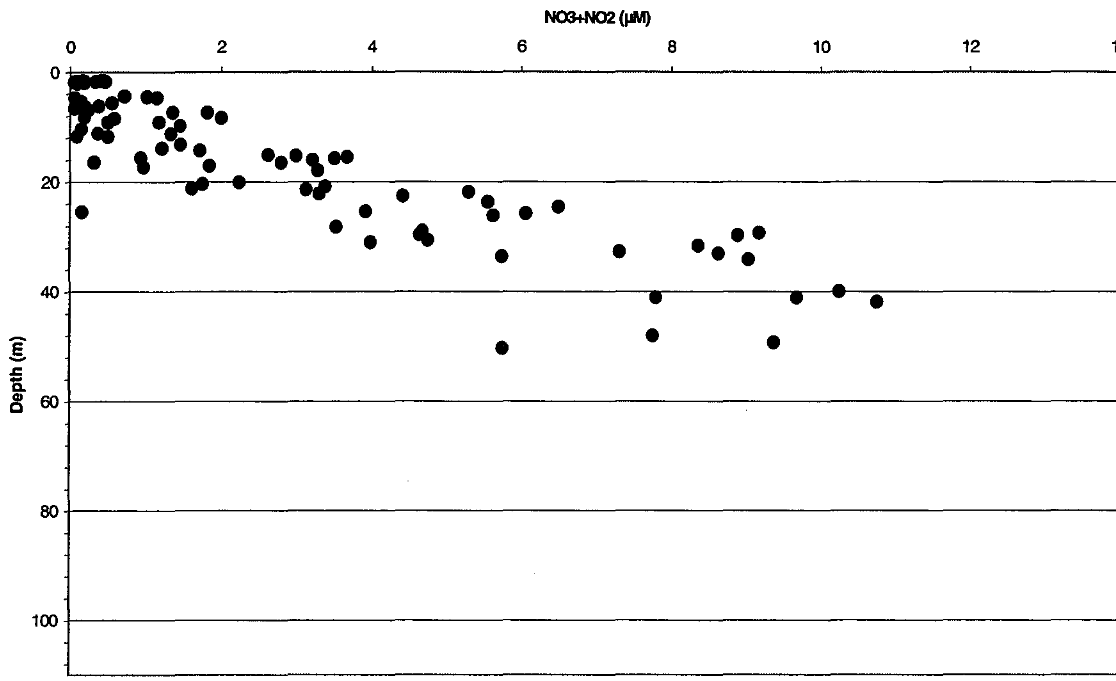


Figure D-31. Depth vs. Nutrient Plots for Nearfield Survey WN98C, (Sep 98)

(a)



(b)

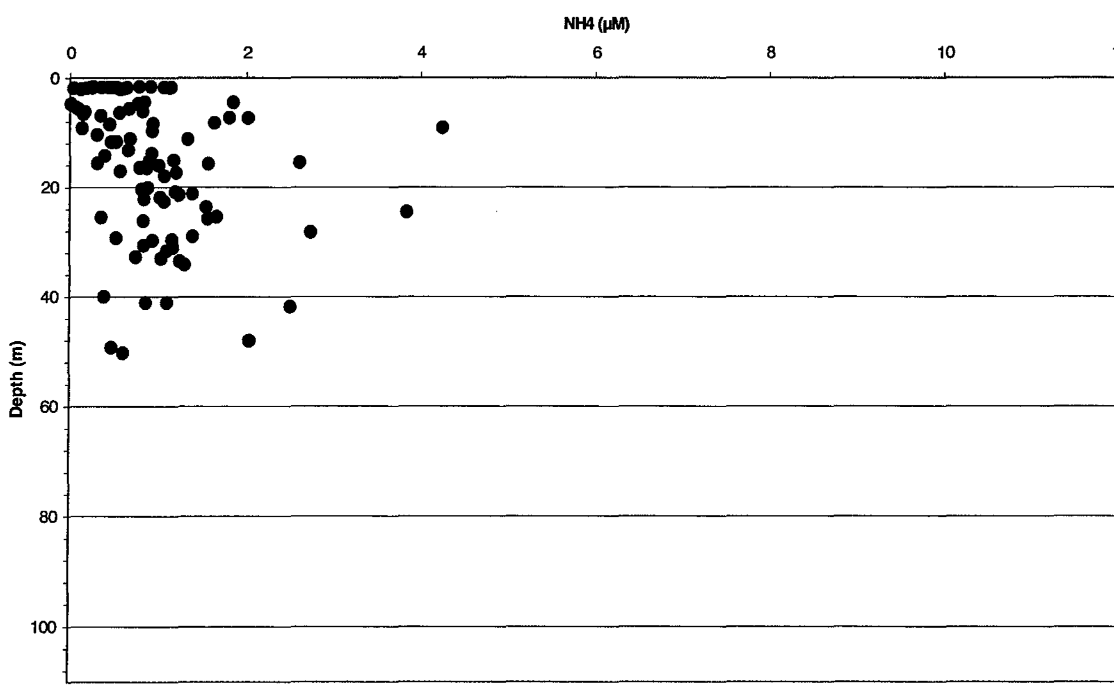
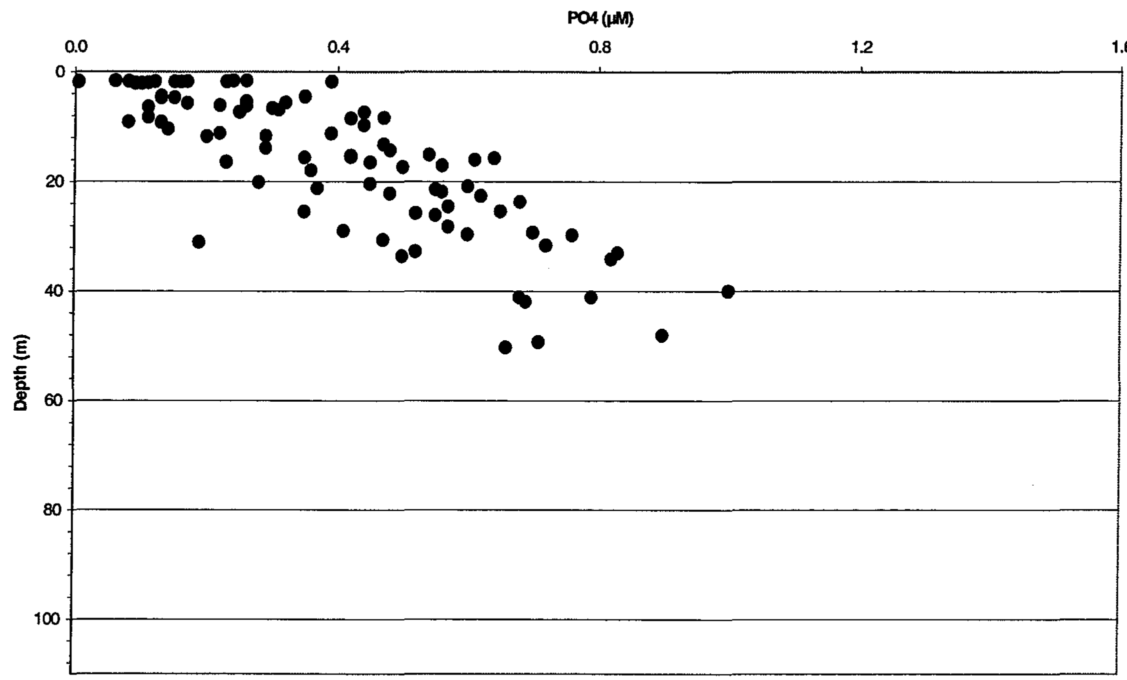


Figure D-32. Depth vs. Nutrient Plots for Nearfield Survey WN98C, (Sep 98)

(a)



(b)

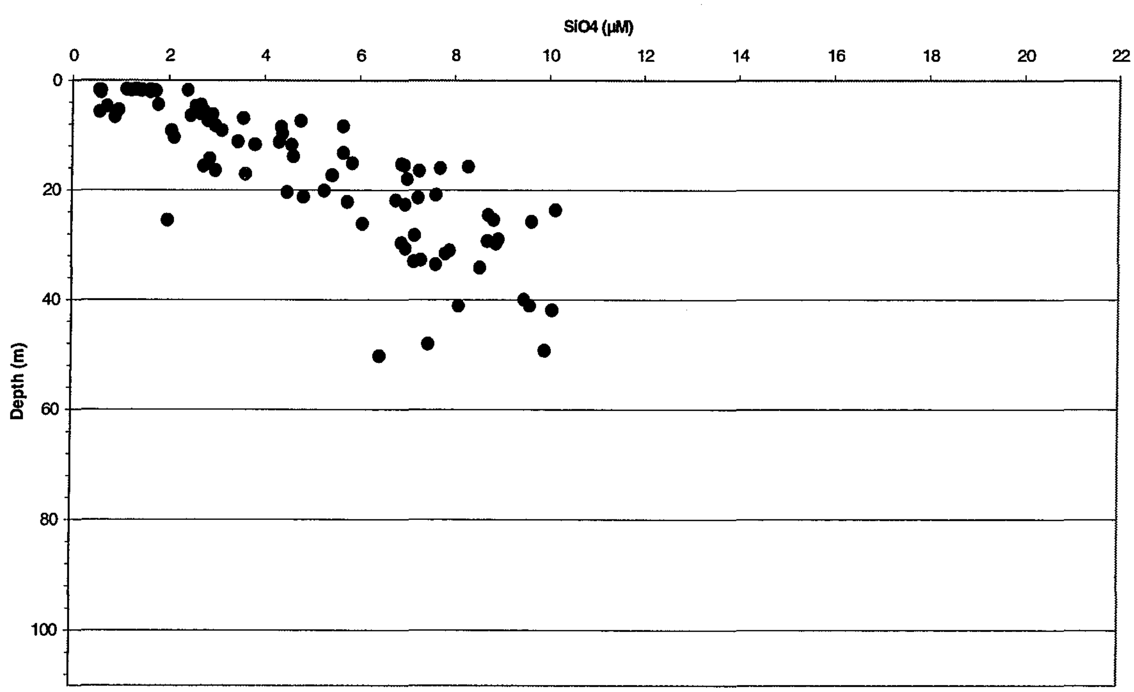


Figure D-33. Depth vs. Nutrient Plots for Nearfield Survey WN98C, (Sep 98)

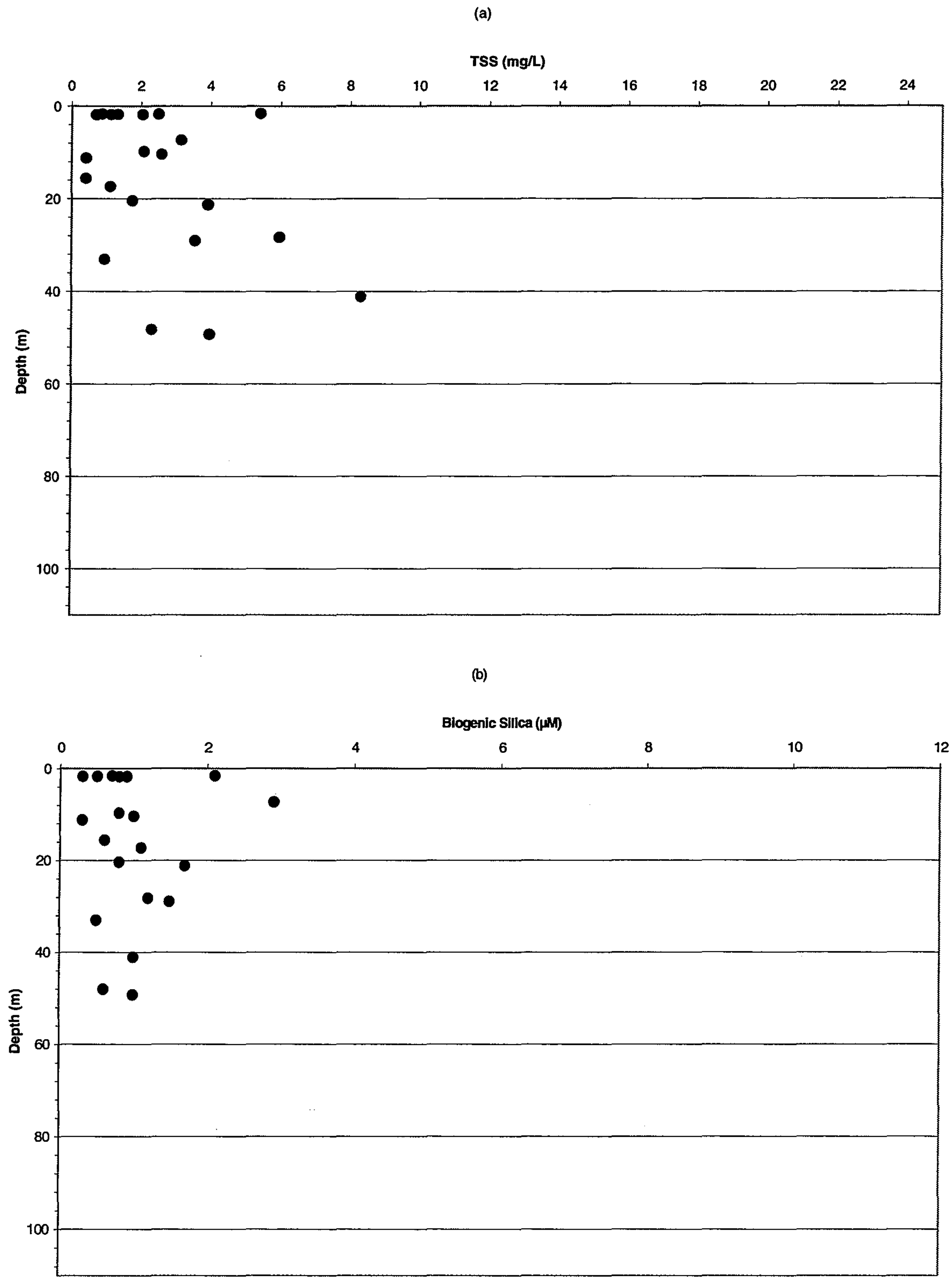
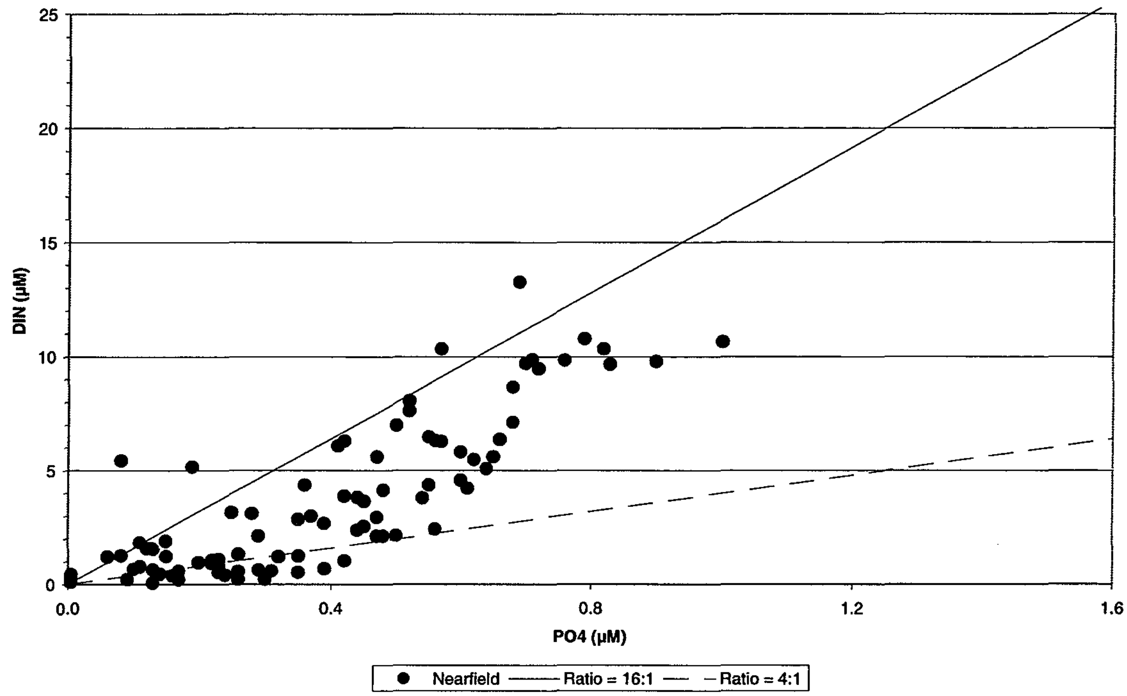


Figure D-34. Depth vs. Nutrient Plots for Nearfield Survey WN98C, (Sep 98)

(a)



(b)

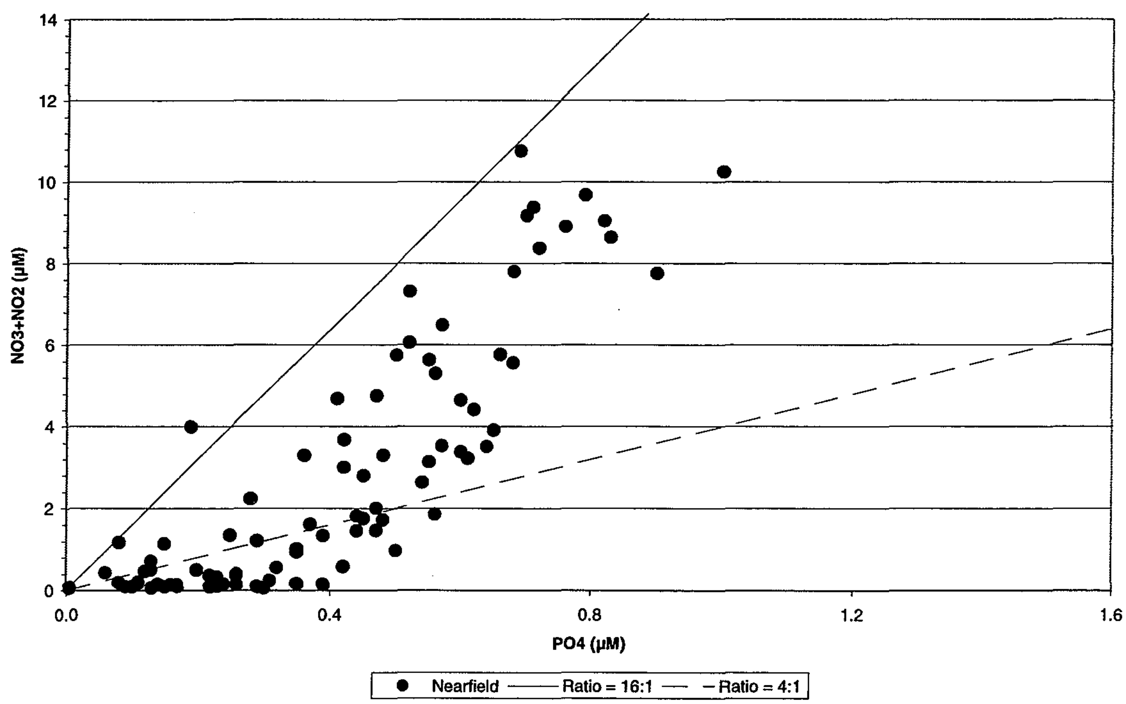


Figure D-35. Nutrient vs. Nutrient Plots for Nearfield Survey WN98C, (Sep 98)

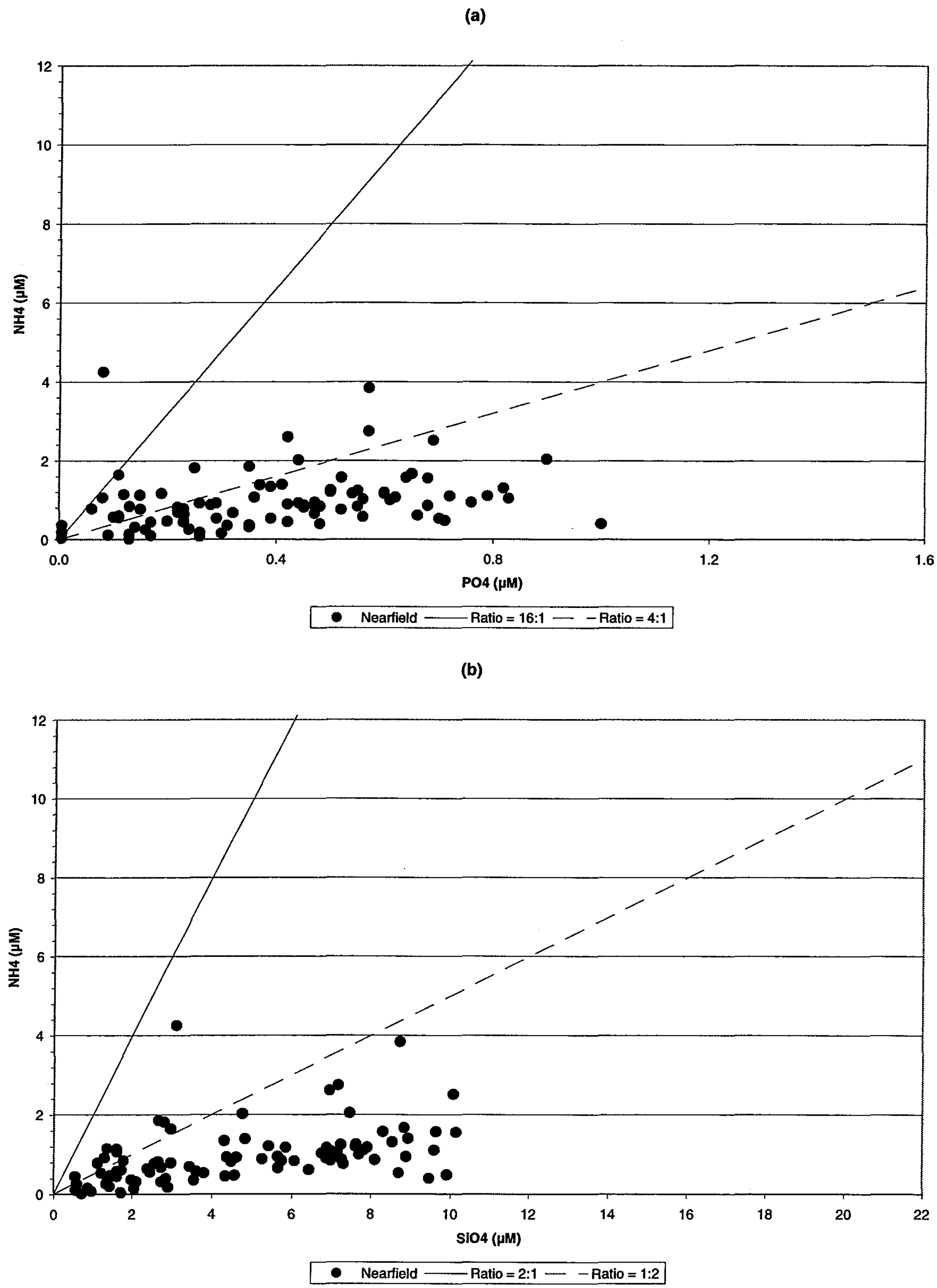


Figure D-36. Nutrient vs. Nutrient Plots for Nearfield Survey WN98C, (Sep 98)

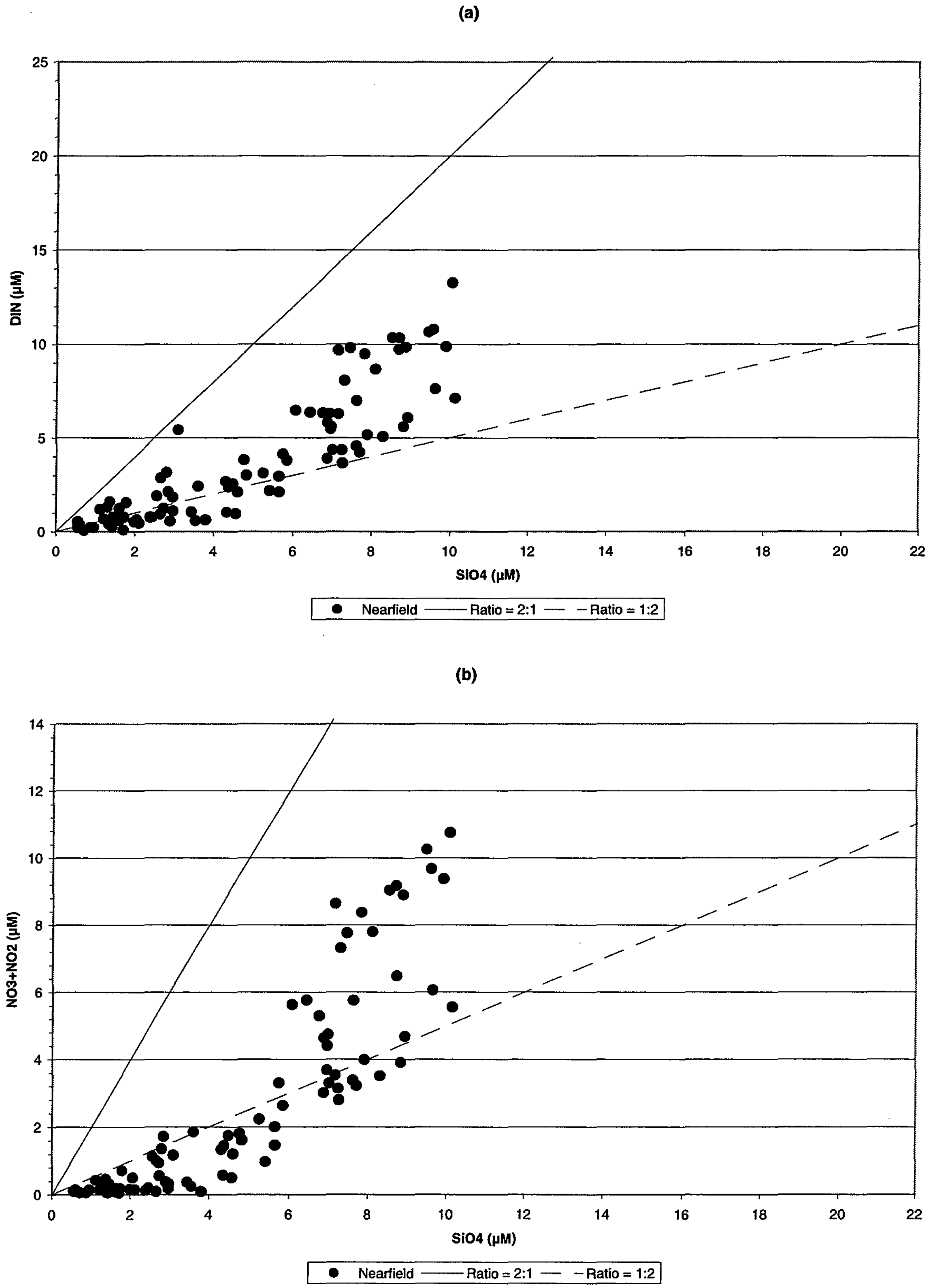
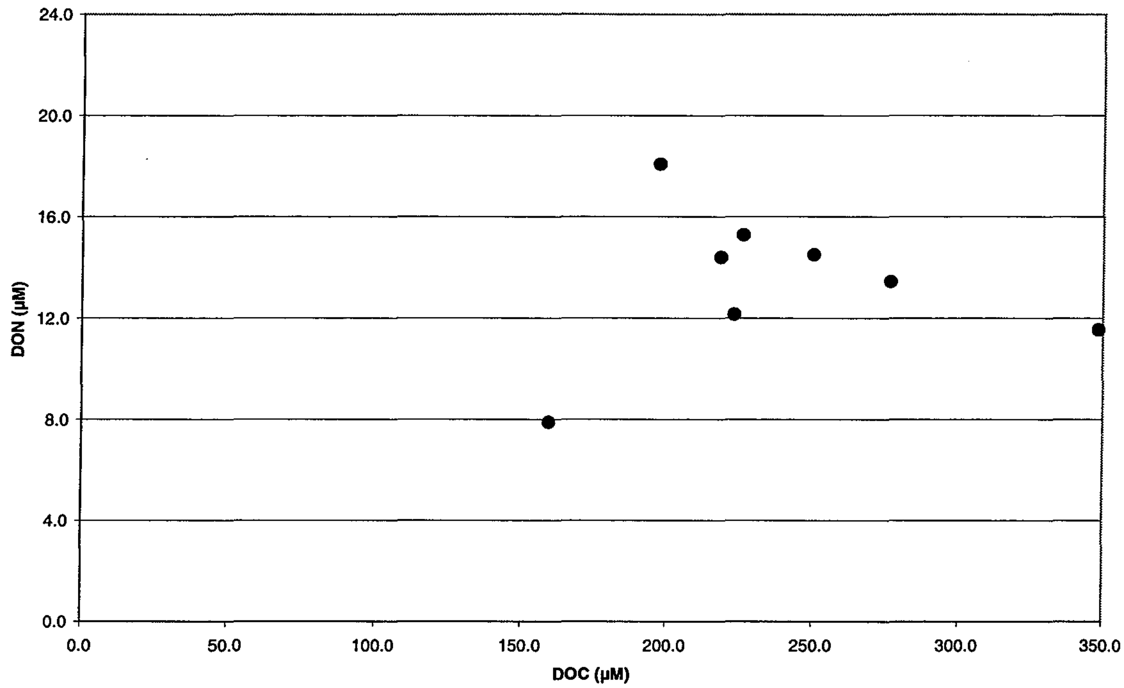


Figure D-37. Nutrient vs. Nutrient Plots for Nearfield Survey WN98C, (Sep 98)

(a)



(b)

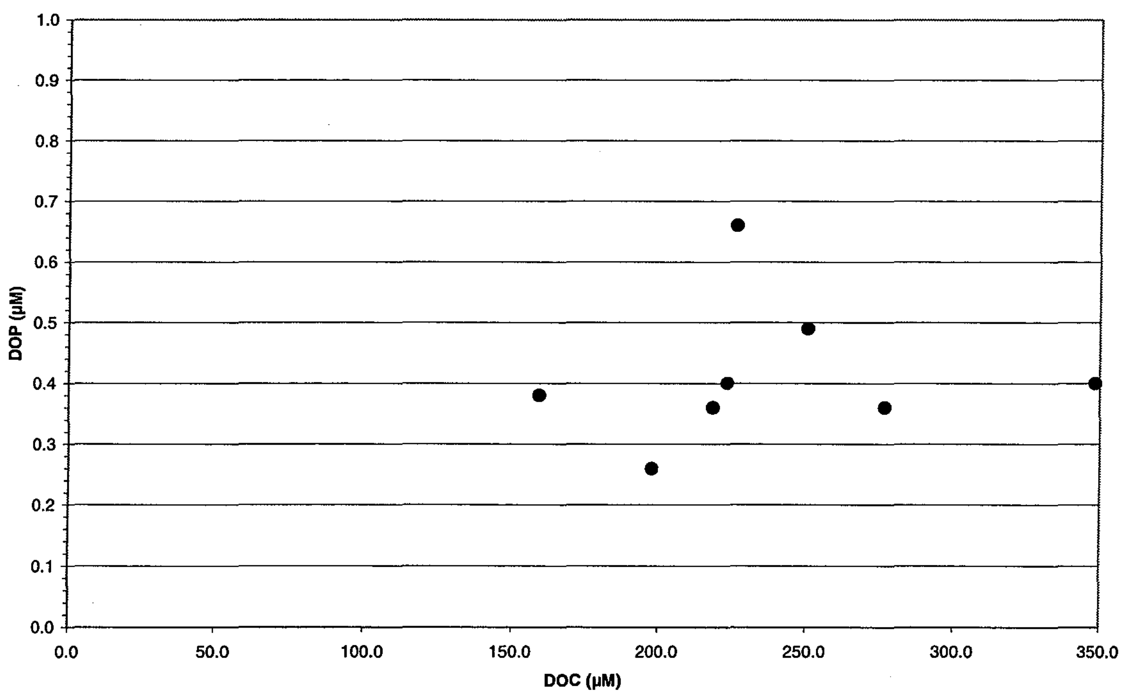
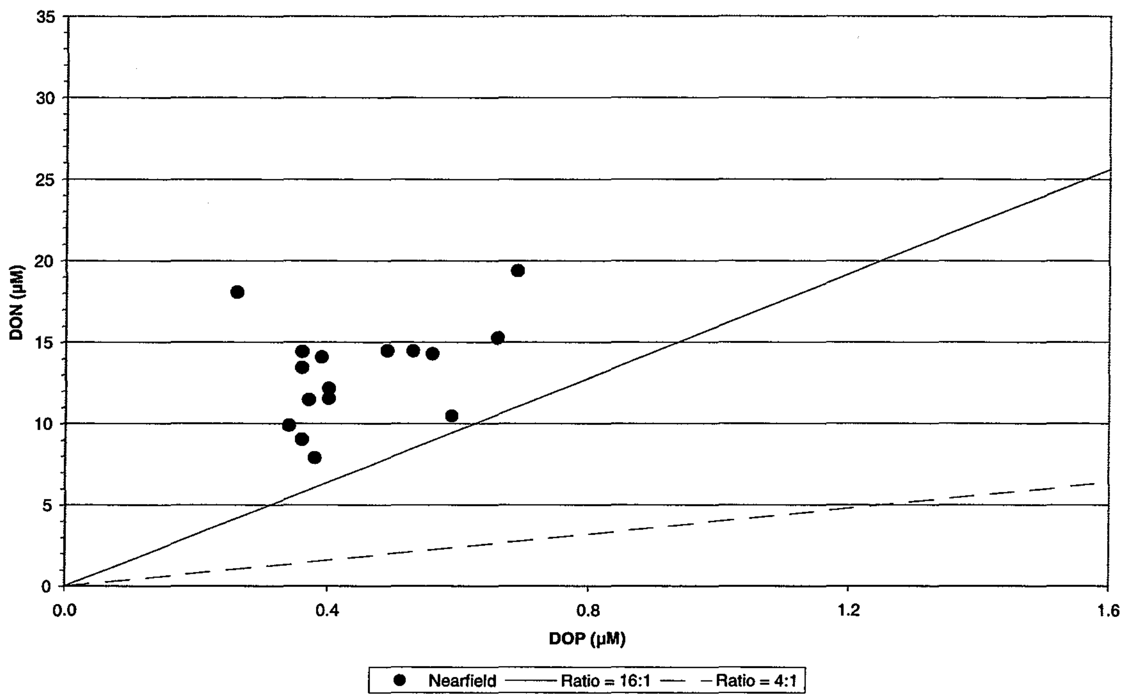


Figure D-38. Nutrient vs. Nutrient Plots for Nearfield Survey WN98C, (Sep 98)

(a)



(b)

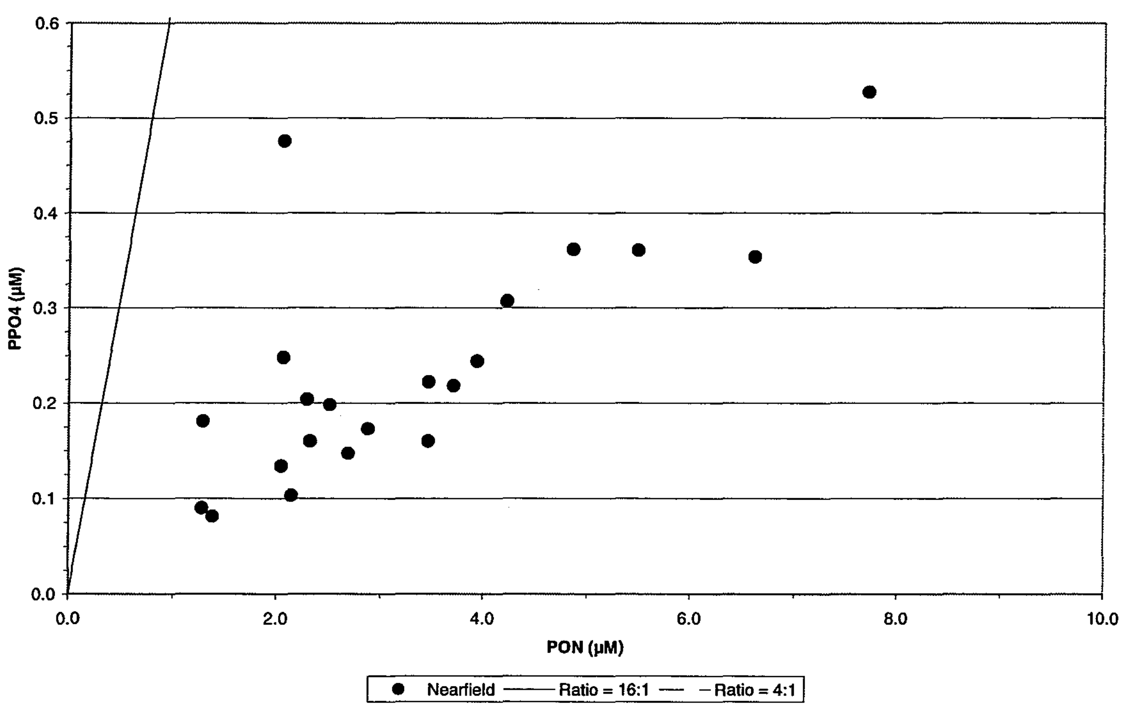
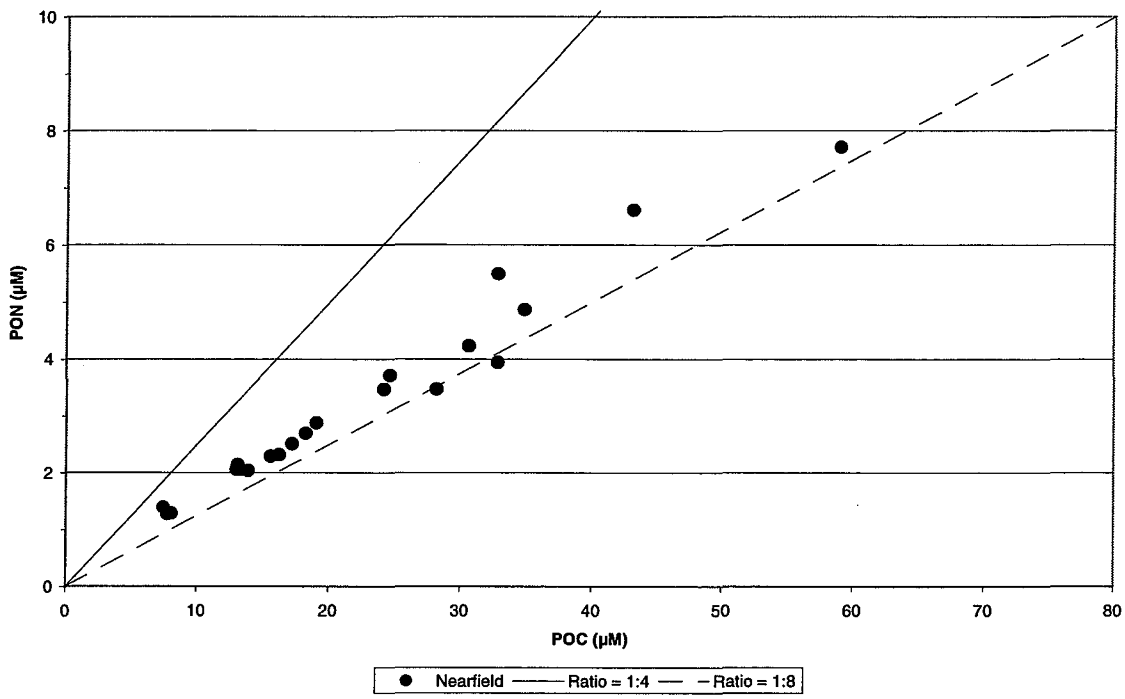


Figure D-39. Nutrient vs. Nutrient Plots for Nearfield Survey WN98C, (Sep 98)

(a)



(b)

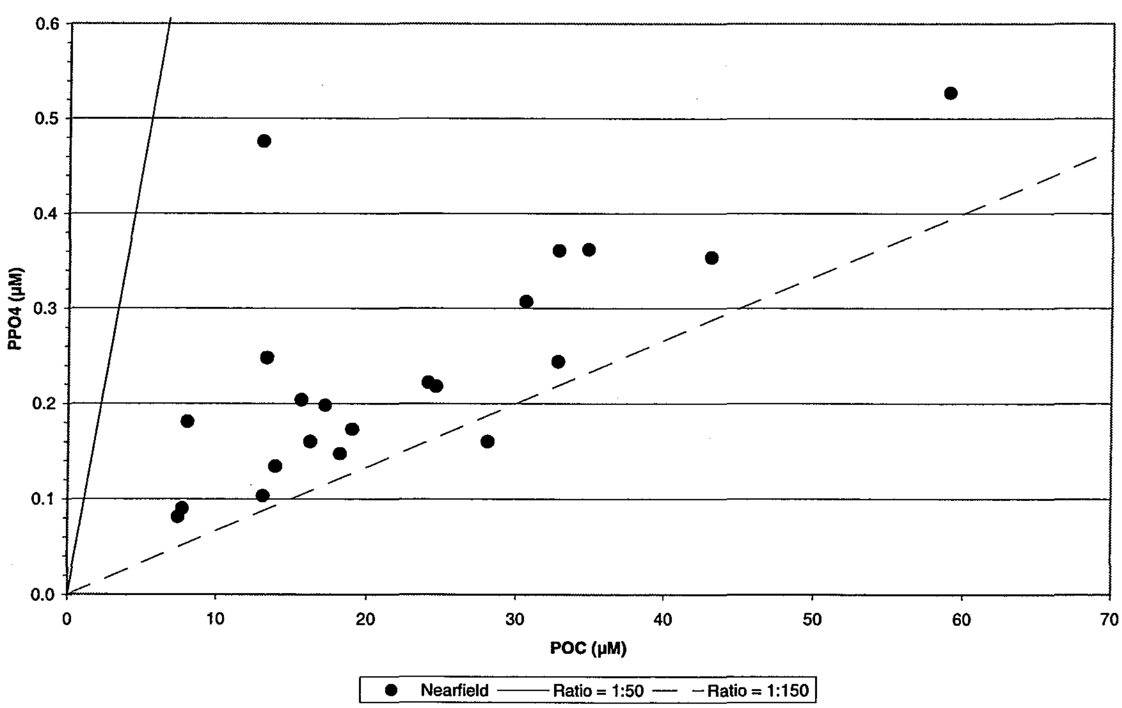
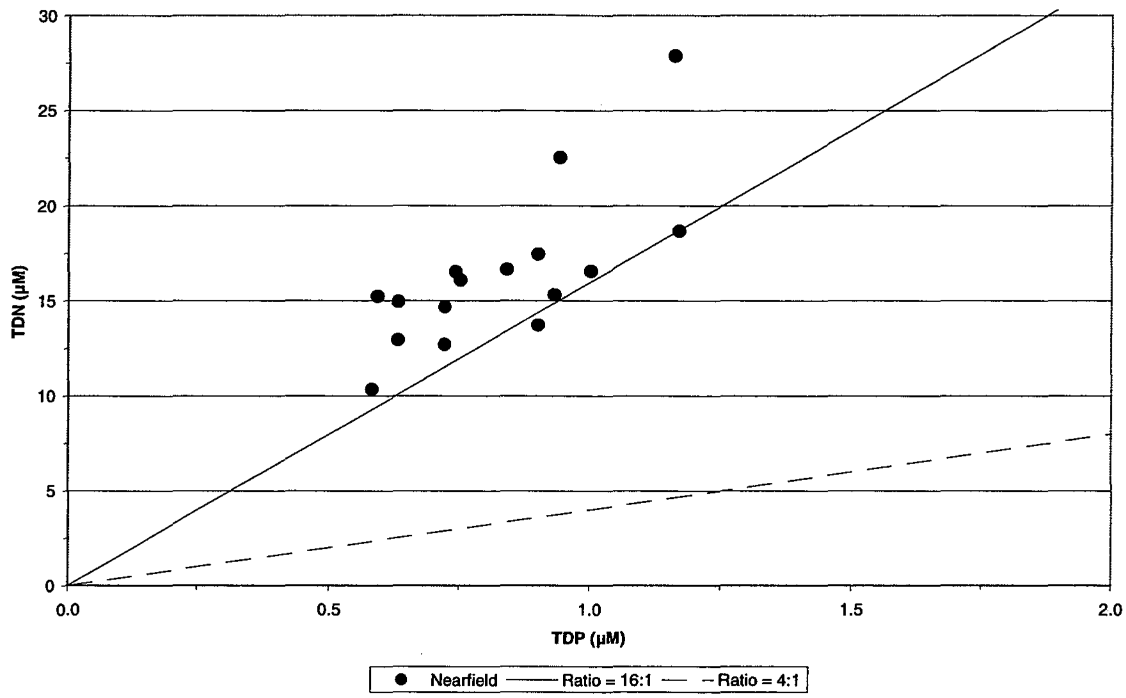


Figure D-40. Nutrient vs. Nutrient Plots for Nearfield Survey WN98C, (Sep 98)

(a)



(b)

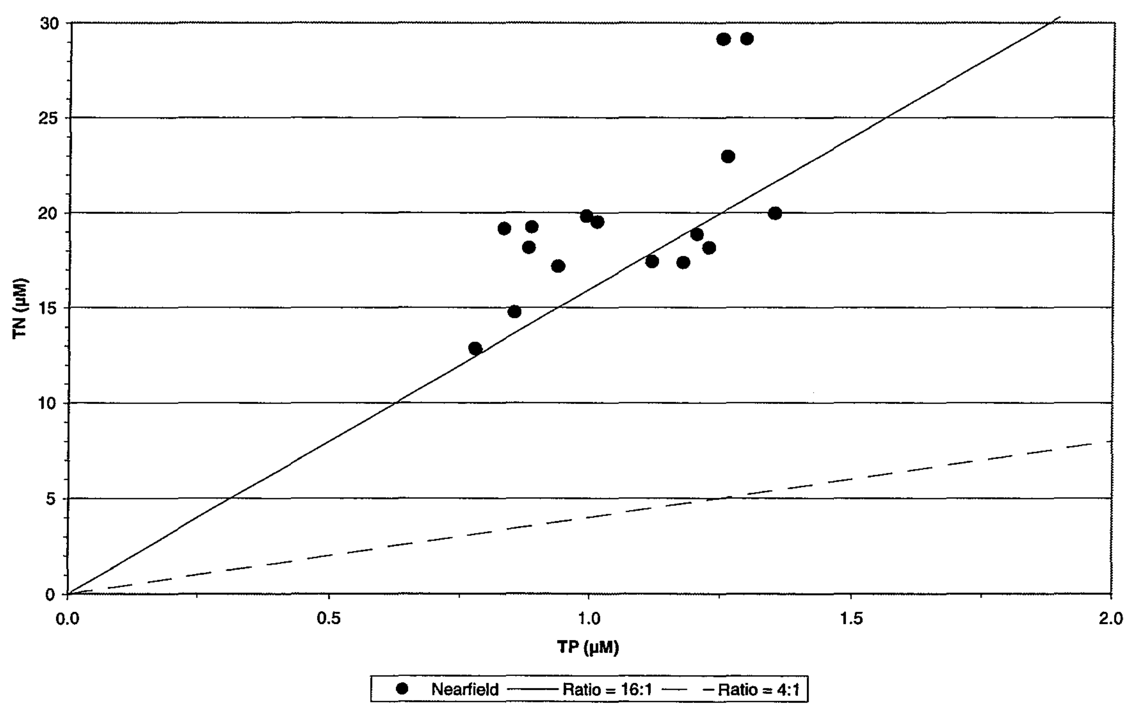
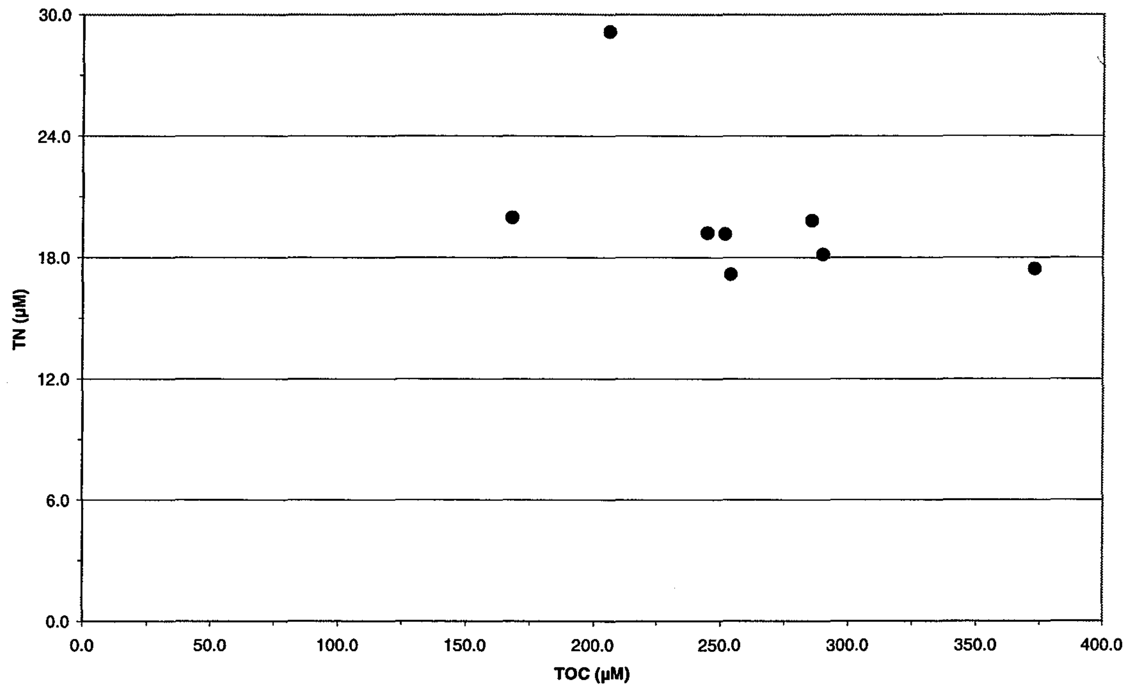


Figure D-41. Nutrient vs. Nutrient Plots for Nearfield Survey WN98C, (Sep 98)

(a)



(b)

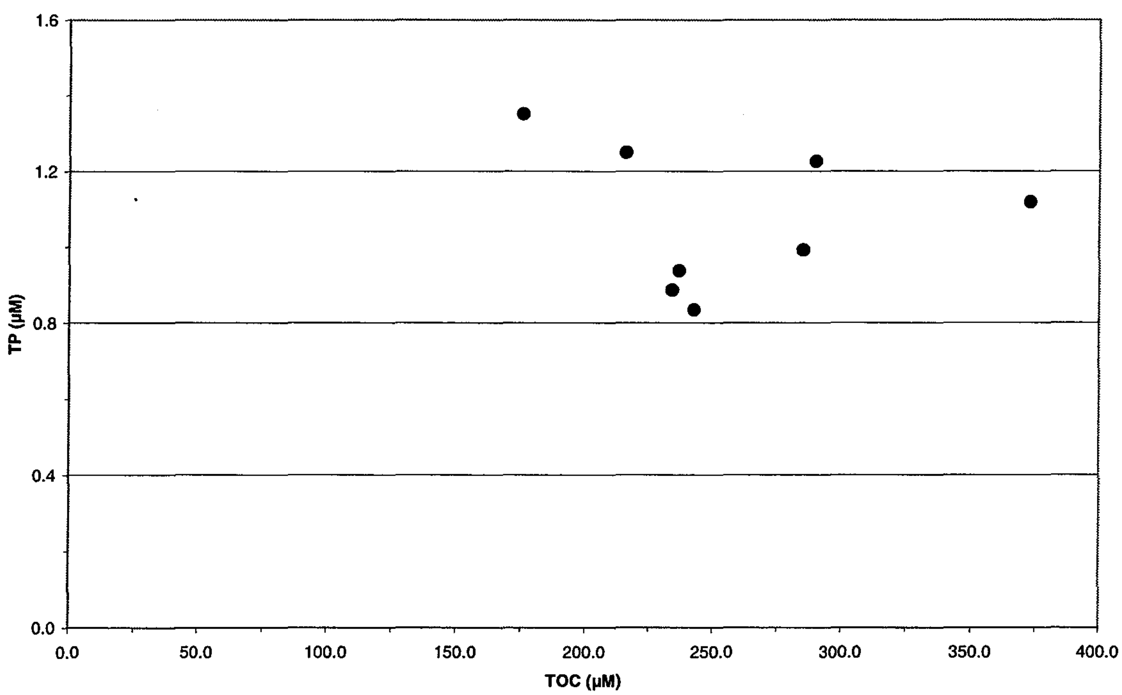


Figure D-42. Nutrient vs. Nutrient Plots for Nearfield Survey WN98C, (Sep 98)

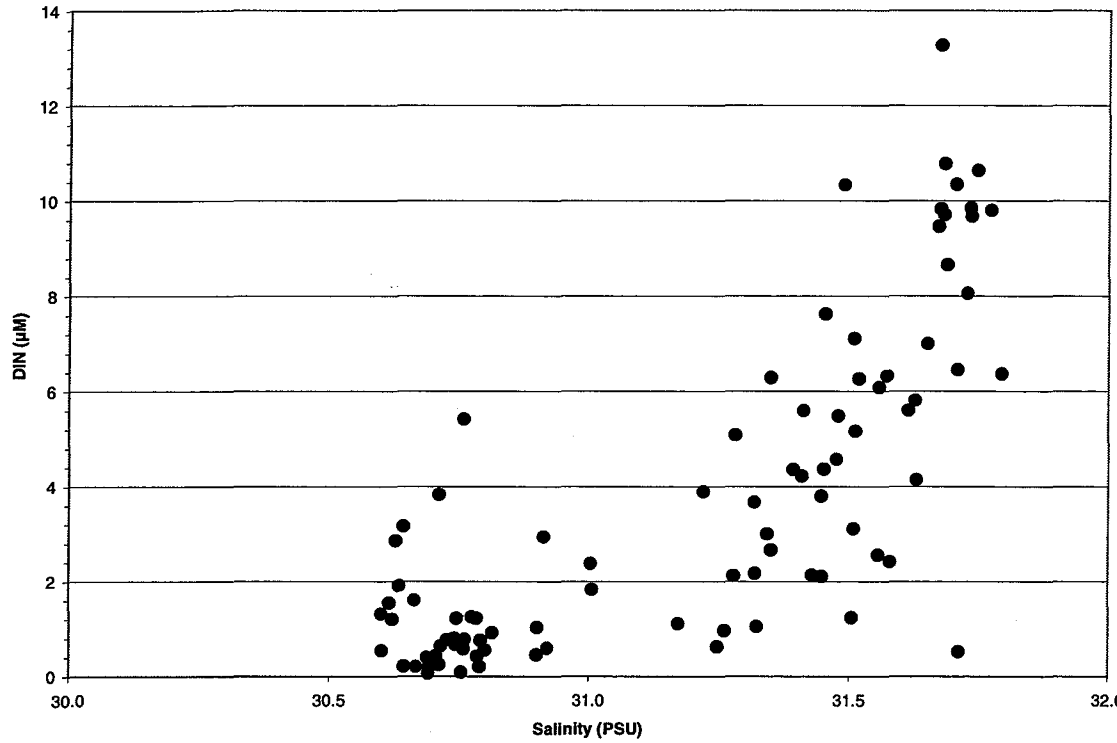
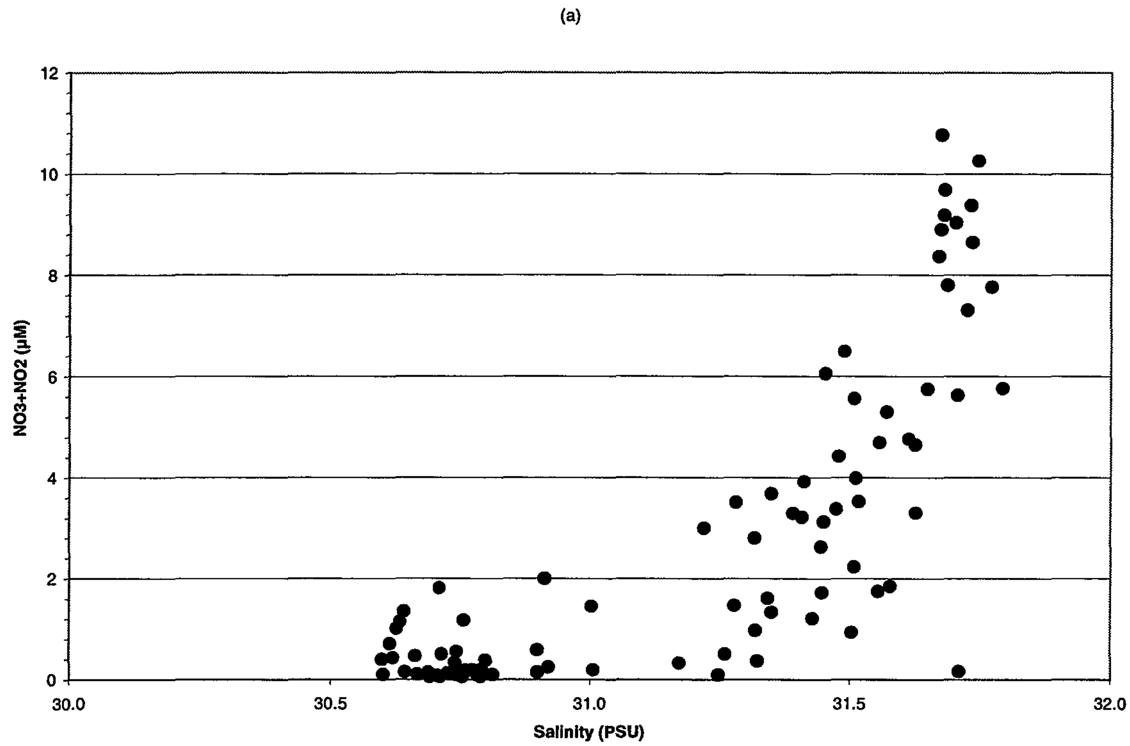


Figure D-43. Nutrient vs. Salinity Plots for Nearfield Survey WN98C, (Sep 98)



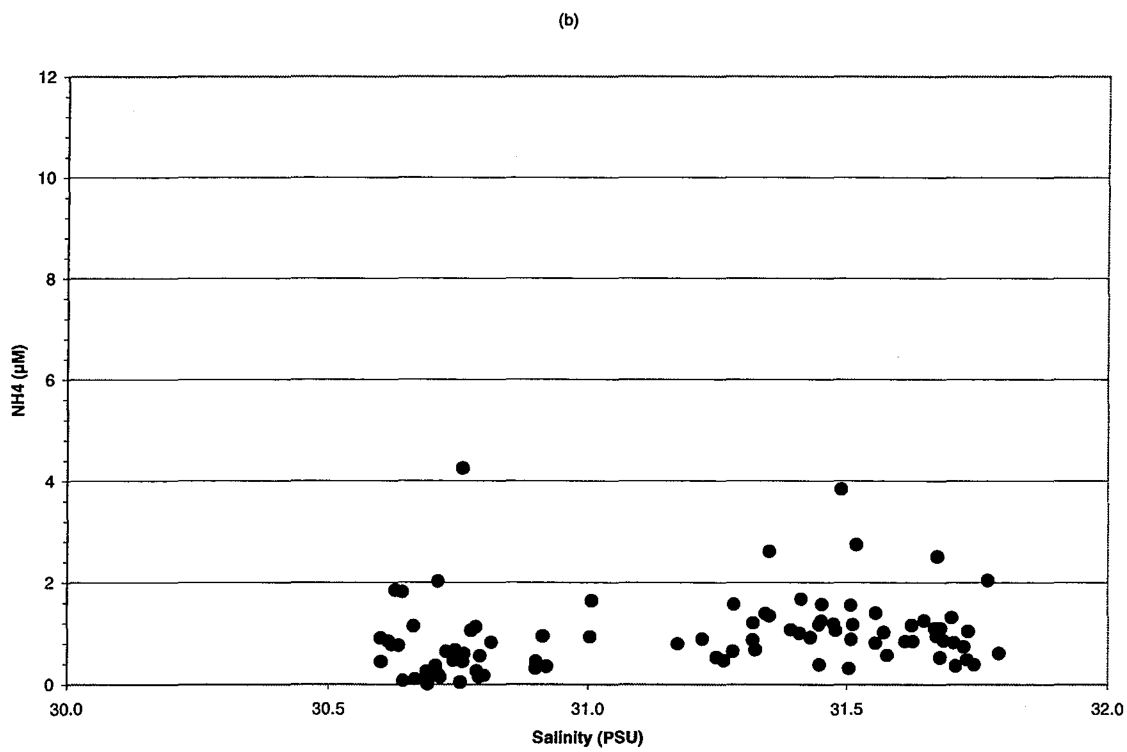


Figure D-44. Nutrient vs. Salinity Plots for Nearfield Survey WN98C, (Sep 98)

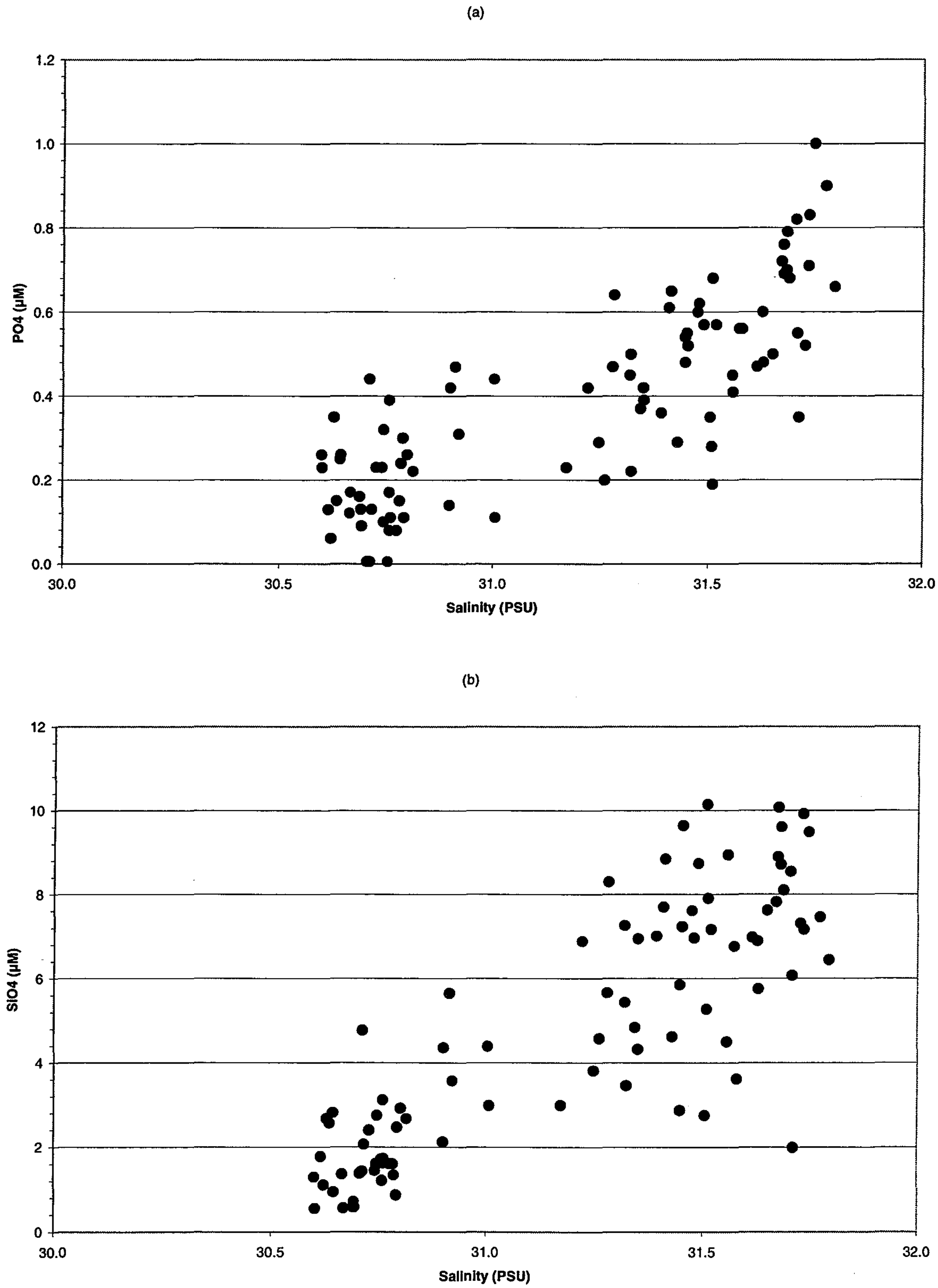


Figure D-45. Nutrient vs. Salinity Plots for Nearfield Survey WN98C, (Sep 98)

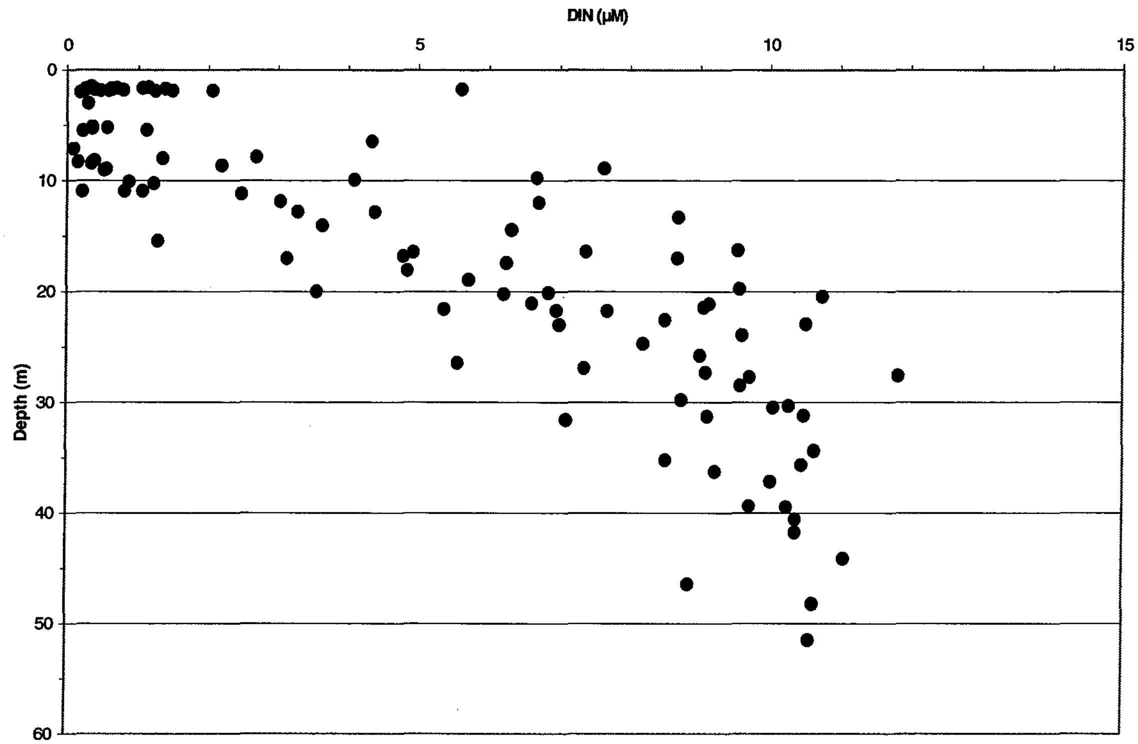
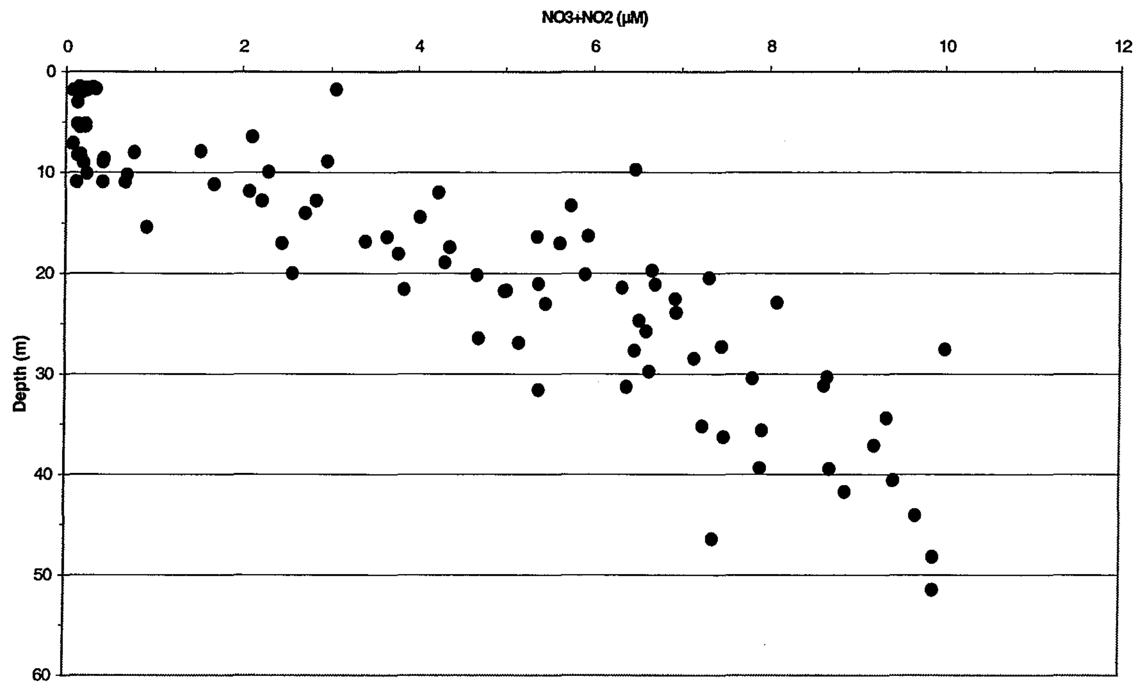


Figure D-46. Depth vs. Nutrient Plots for Nearfield Survey WN98D, (Sep 98)

(a)



(b)

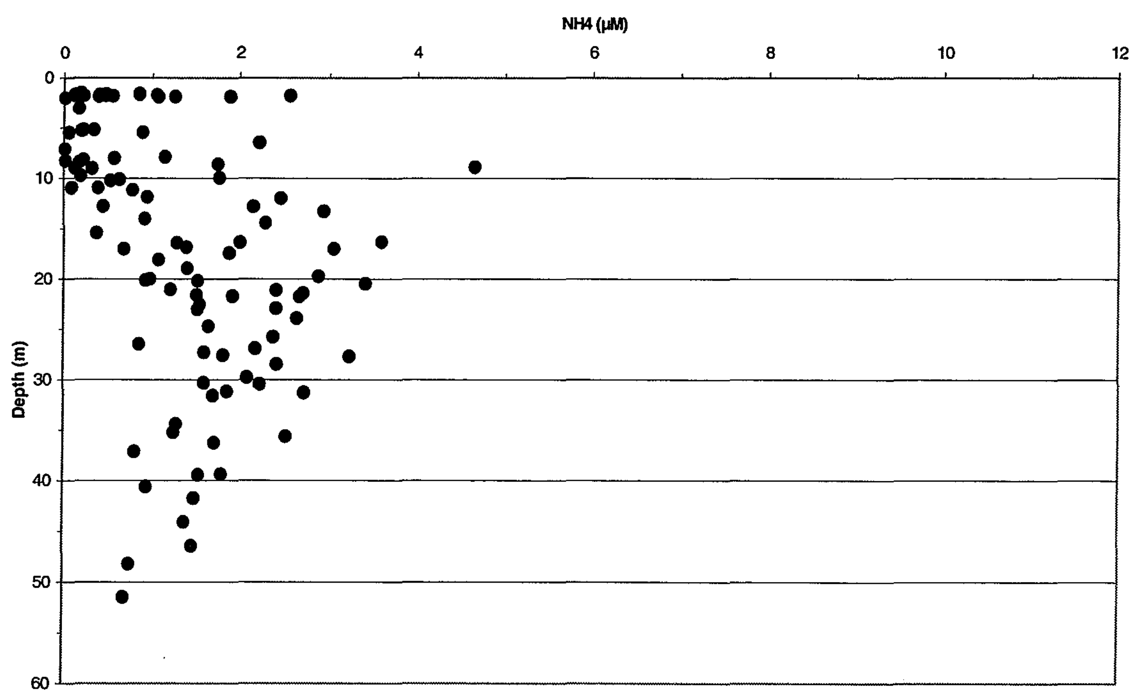
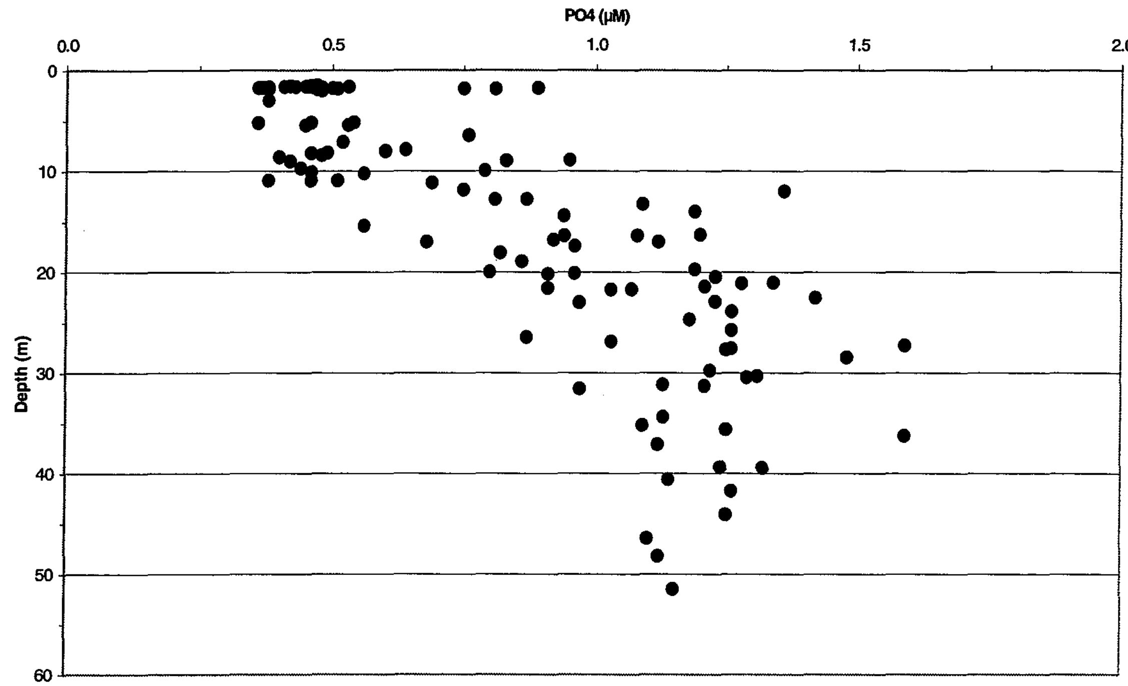


Figure D-47. Depth vs. Nutrient Plots for Nearfield Survey WN98D, (Sep 98)

(a)



(b)

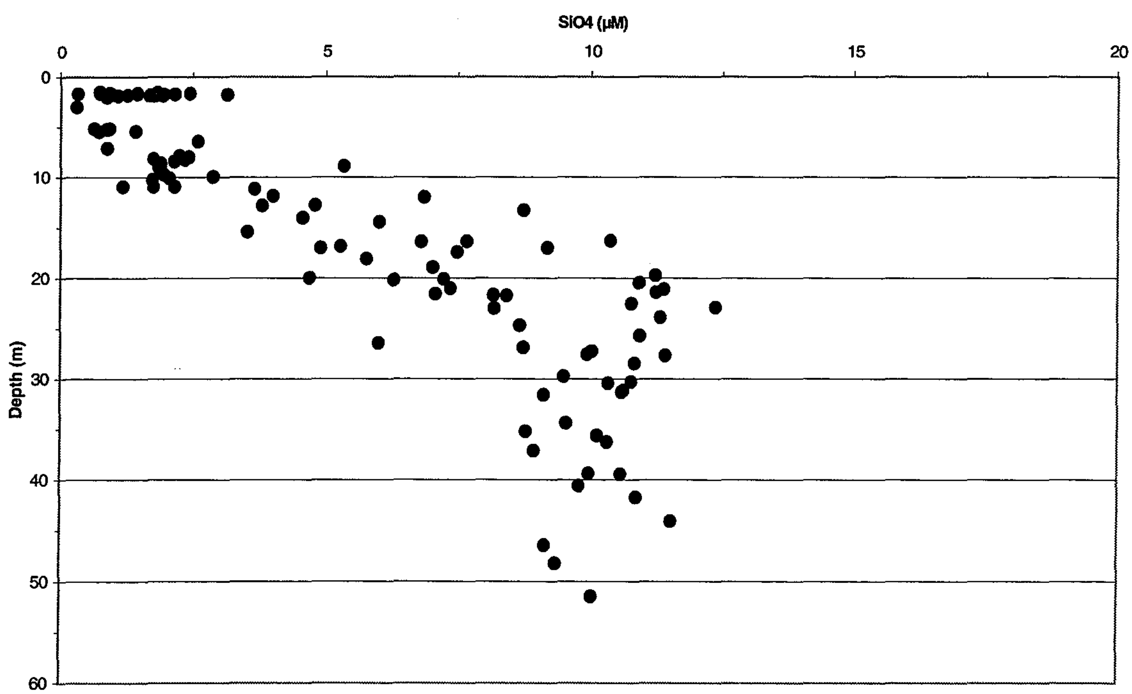
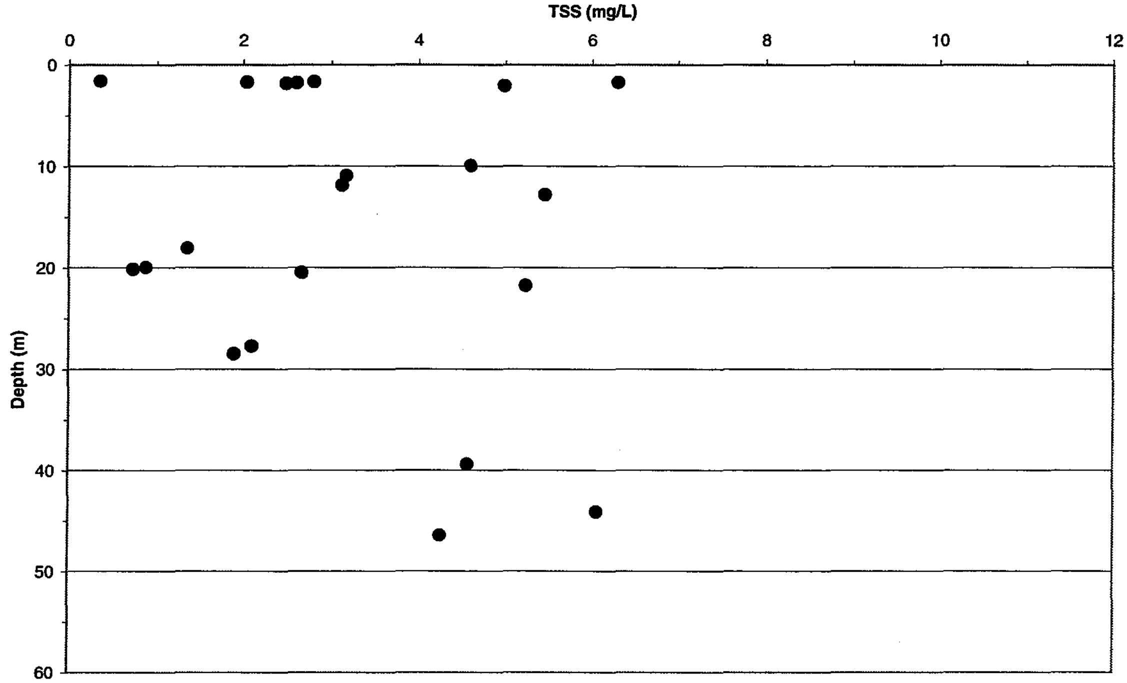


Figure D- 48. Depth vs. Nutrient Plots for Nearfield Survey WN98D, (Sep 98)

(a)



(b)

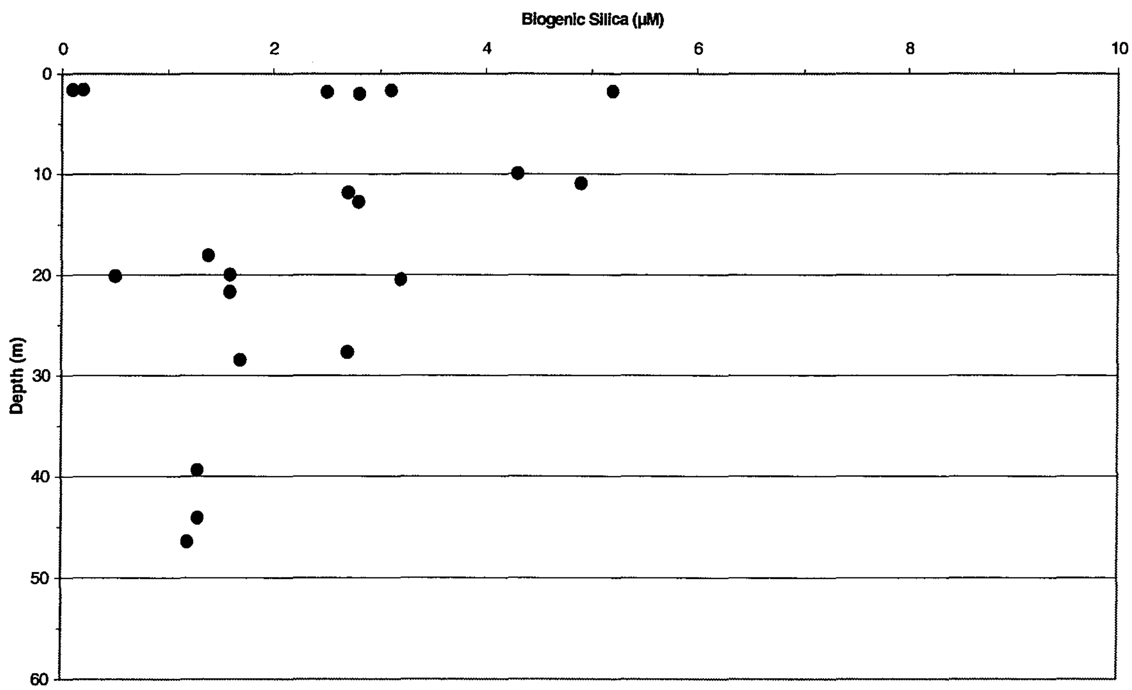
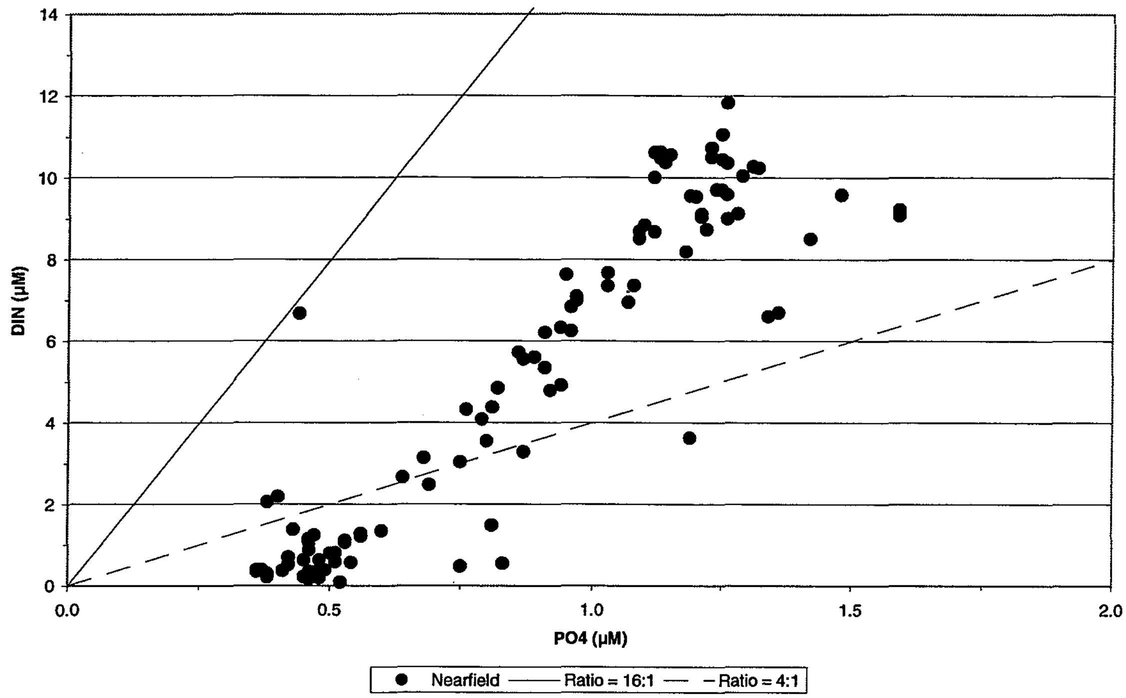


Figure D-49. Depth vs. Nutrient Plots for Nearfield Survey WN98D, (Sep 98)

(a)



(b)

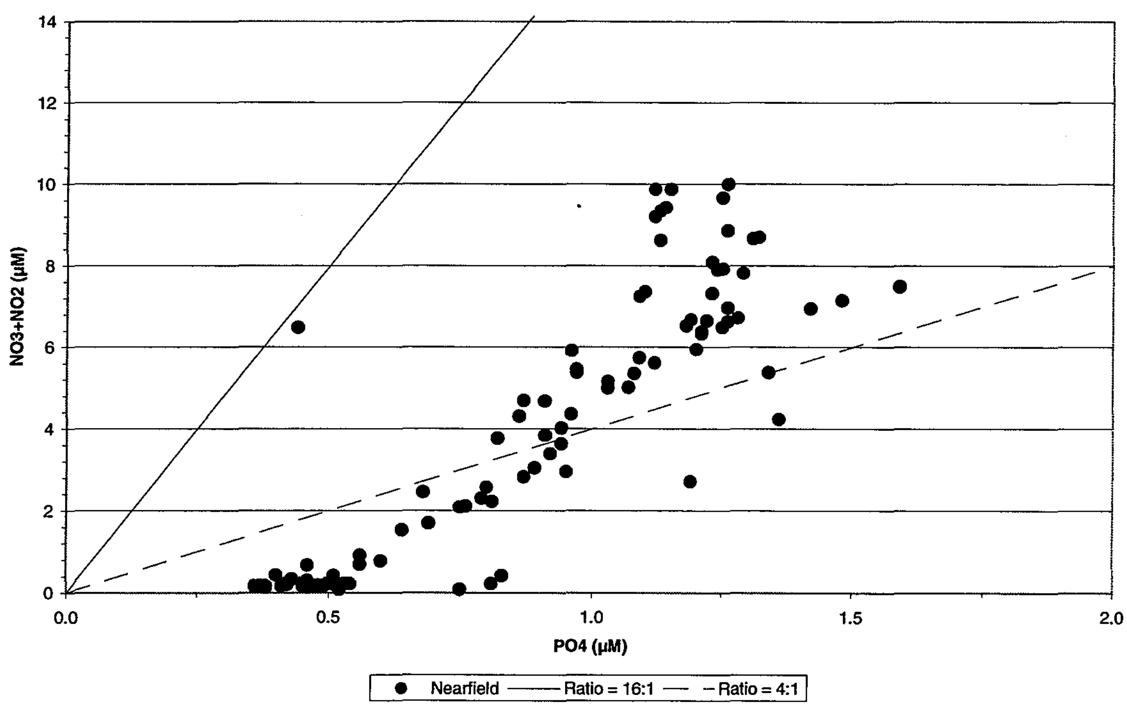


Figure D-50. Nutrient vs. Nutrient Plots for Nearfield Survey WN98D, (Sep 98)

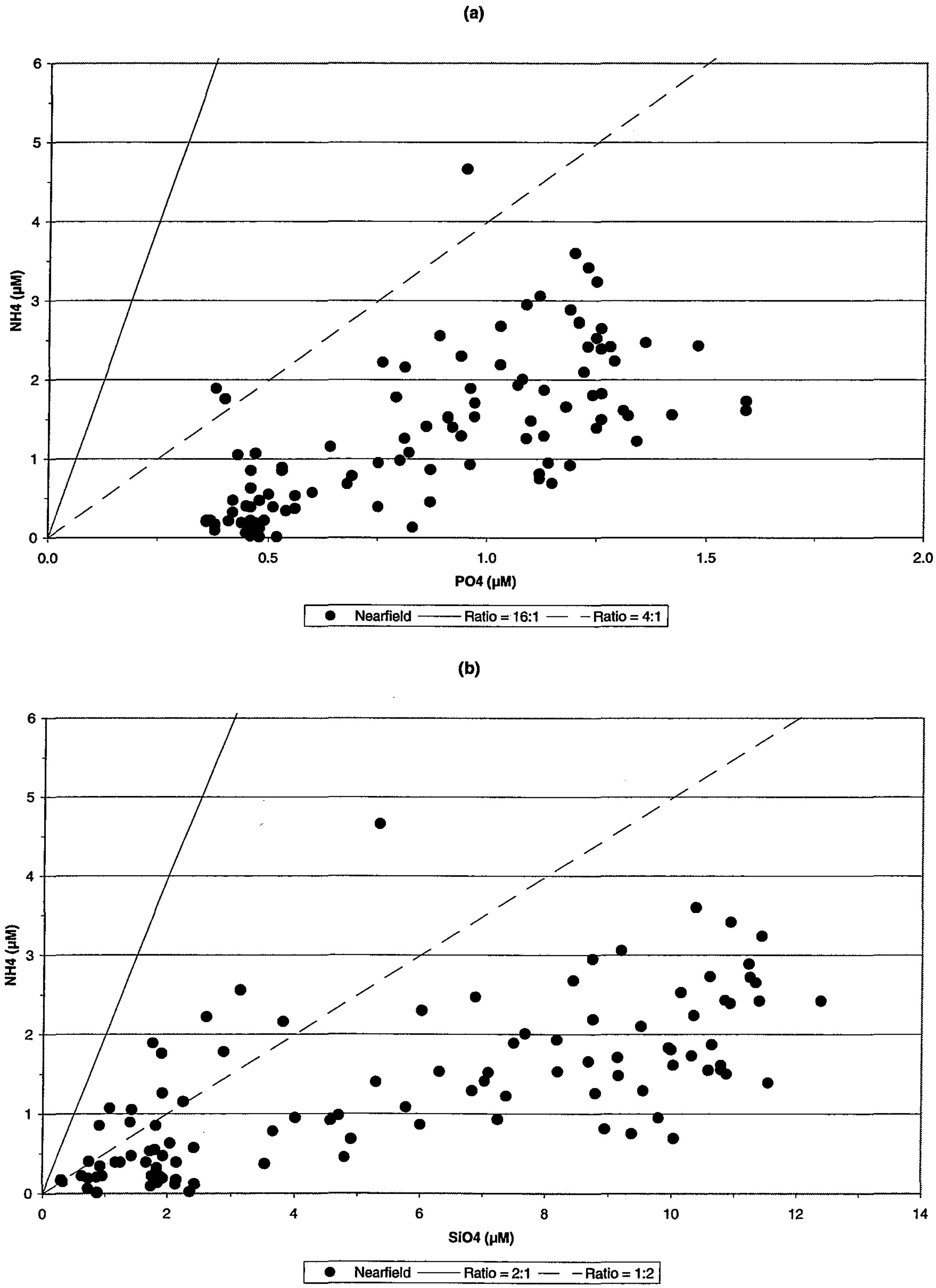
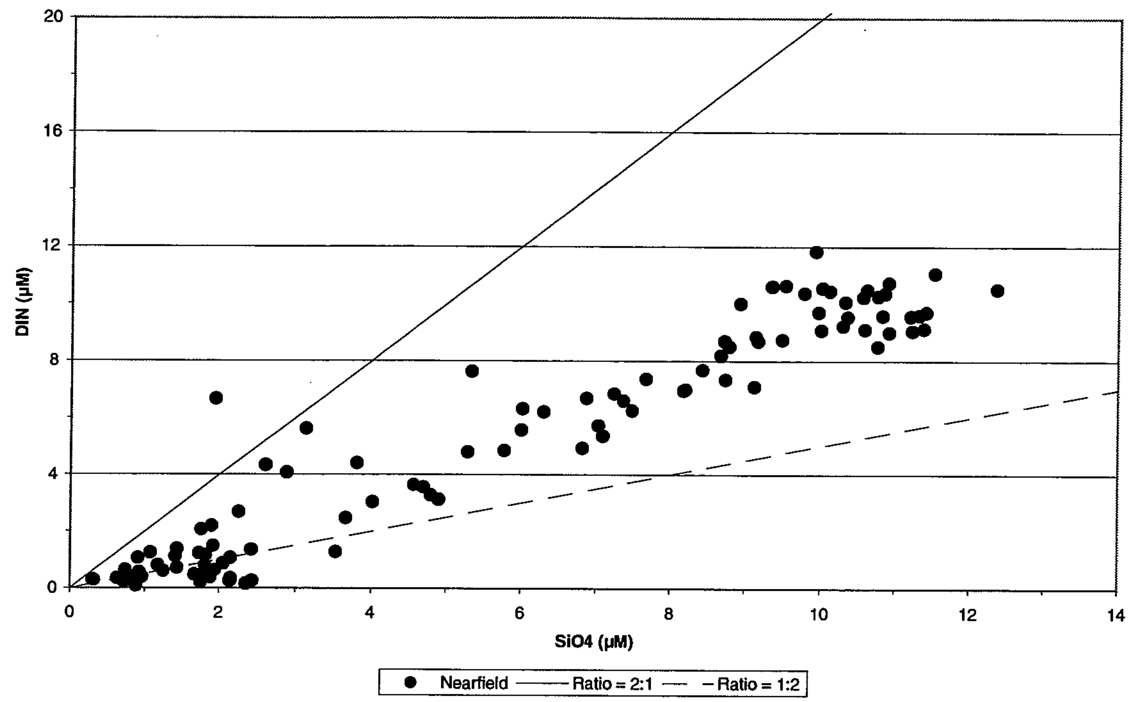


Figure D-51. Nutrient vs. Nutrient Plots for Nearfield Survey WN98D, (Sep 98)

(a)



(b)

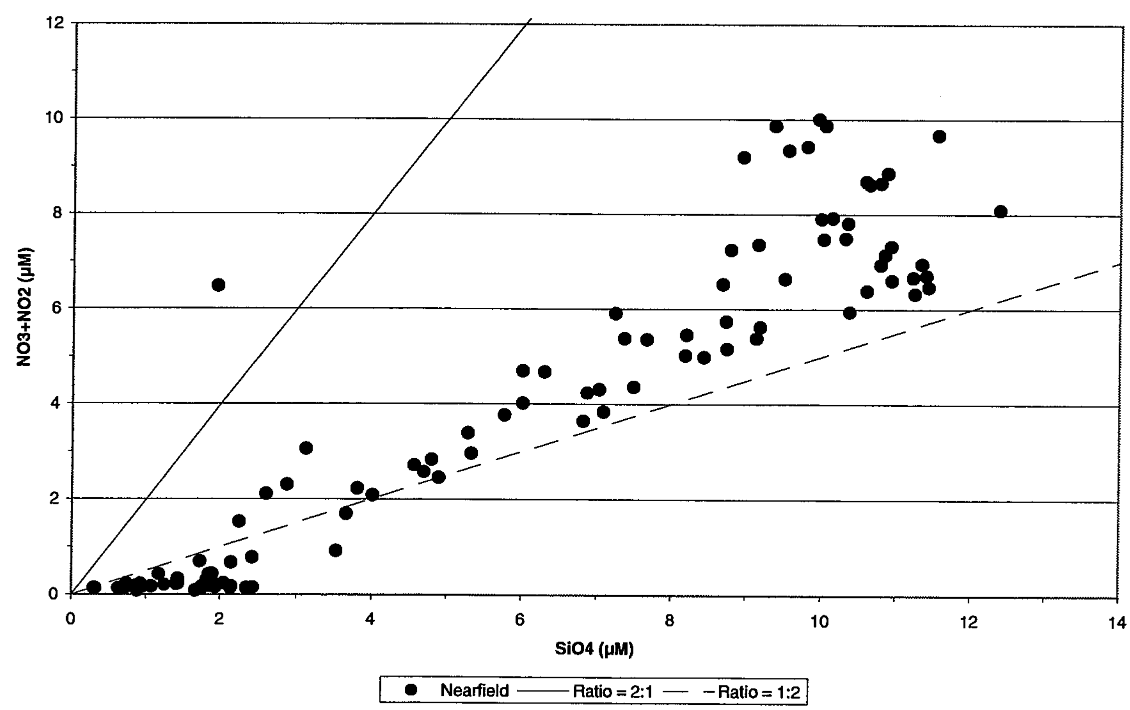
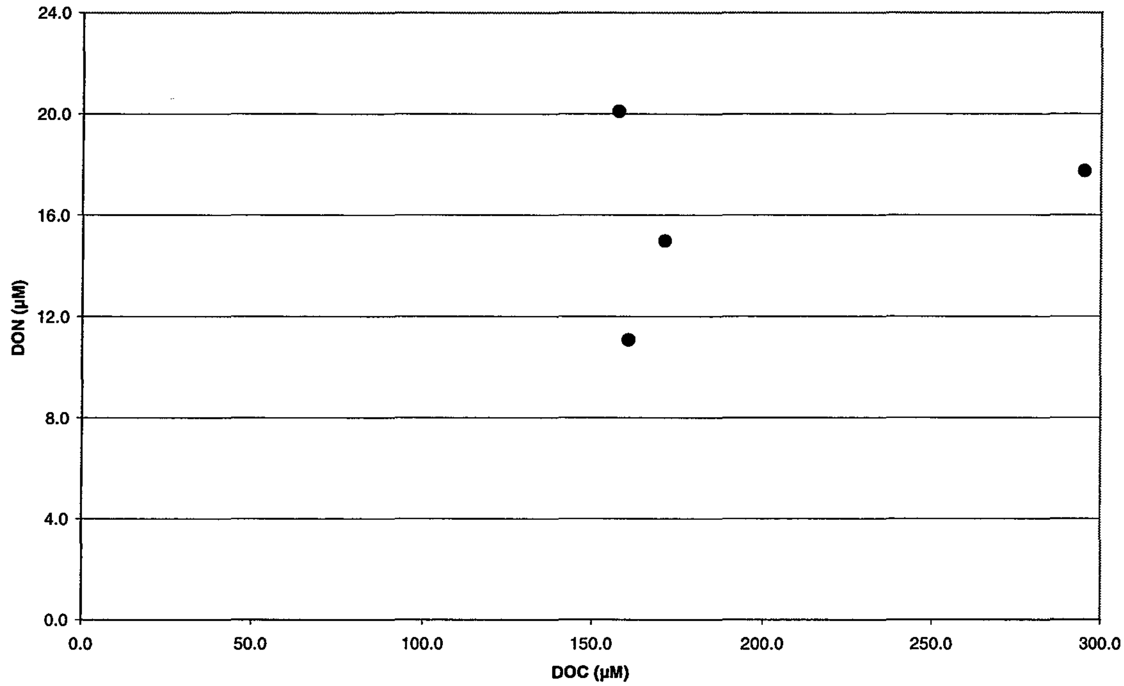


Figure D-52. Nutrient vs. Nutrient Plots for Nearfield Survey WN98D, (Sep 98)

(a)



(b)

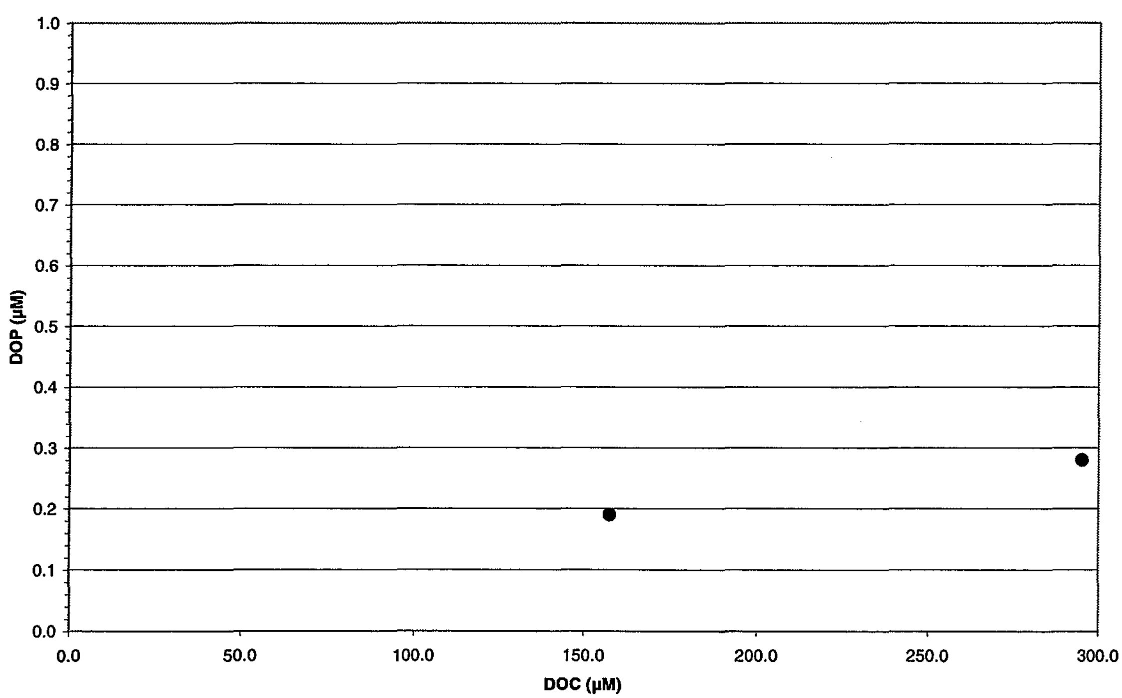
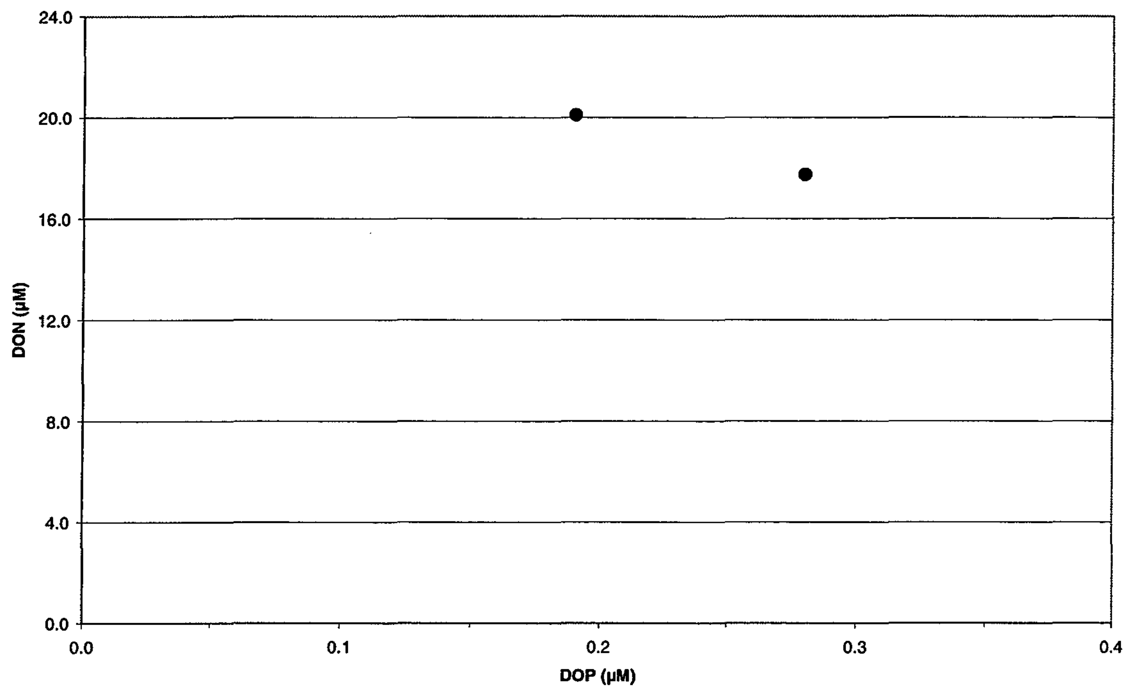


Figure D-53. Nutrient vs. Nutrient Plots for Nearfield Survey WN98D, (Sep 98)

(a)



(b)

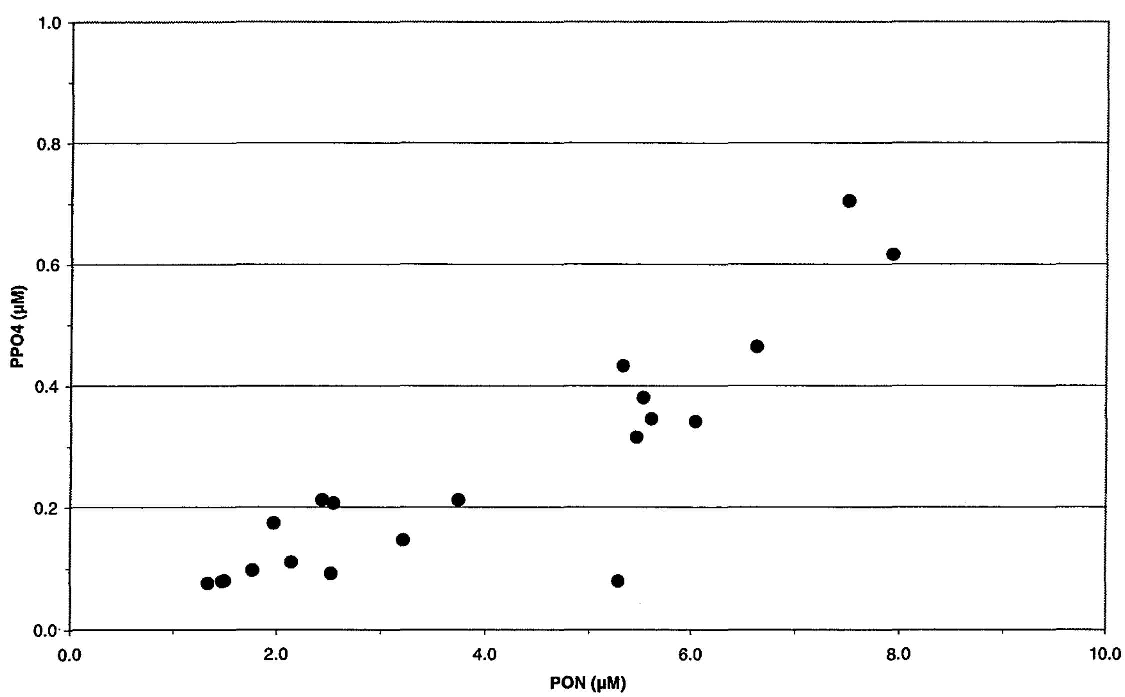
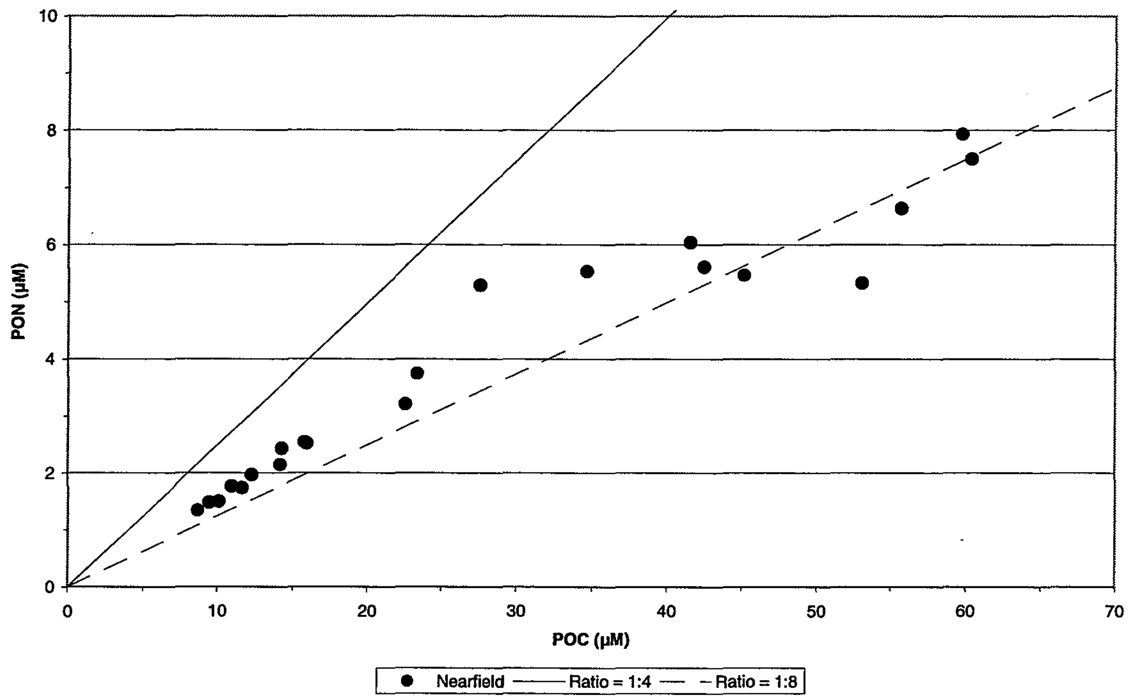


Figure D-54. Nutrient vs. Nutrient Plots for Nearfield Survey WN98D, (Sep 98)

(a)



(b)

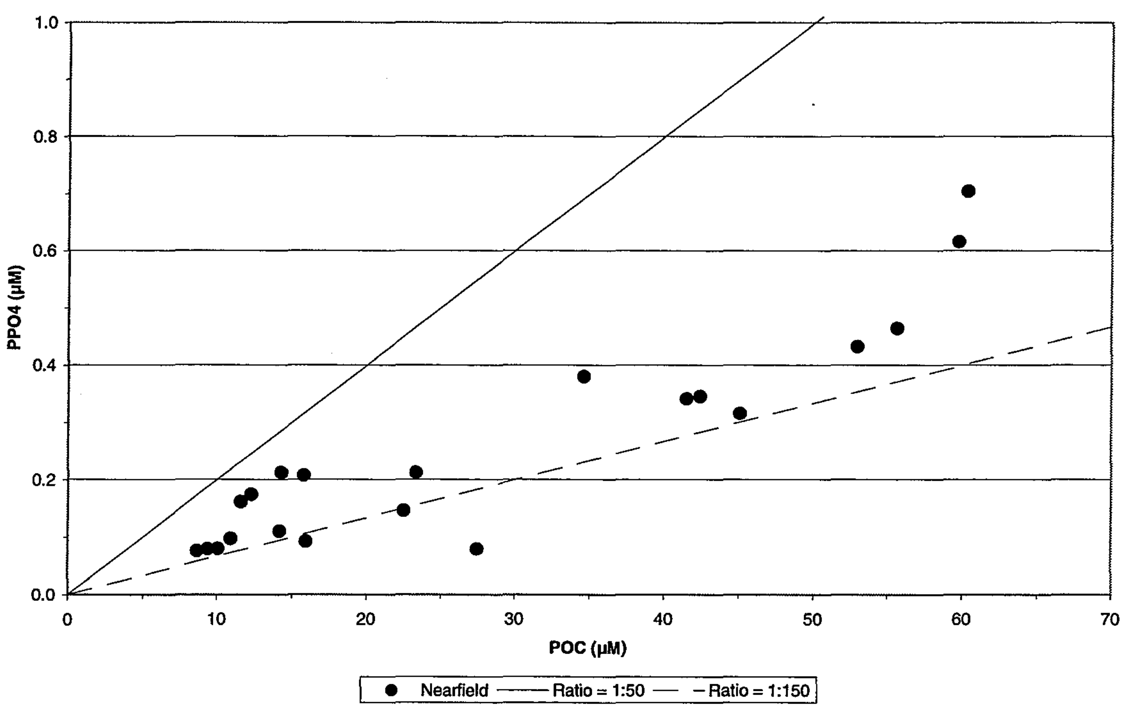
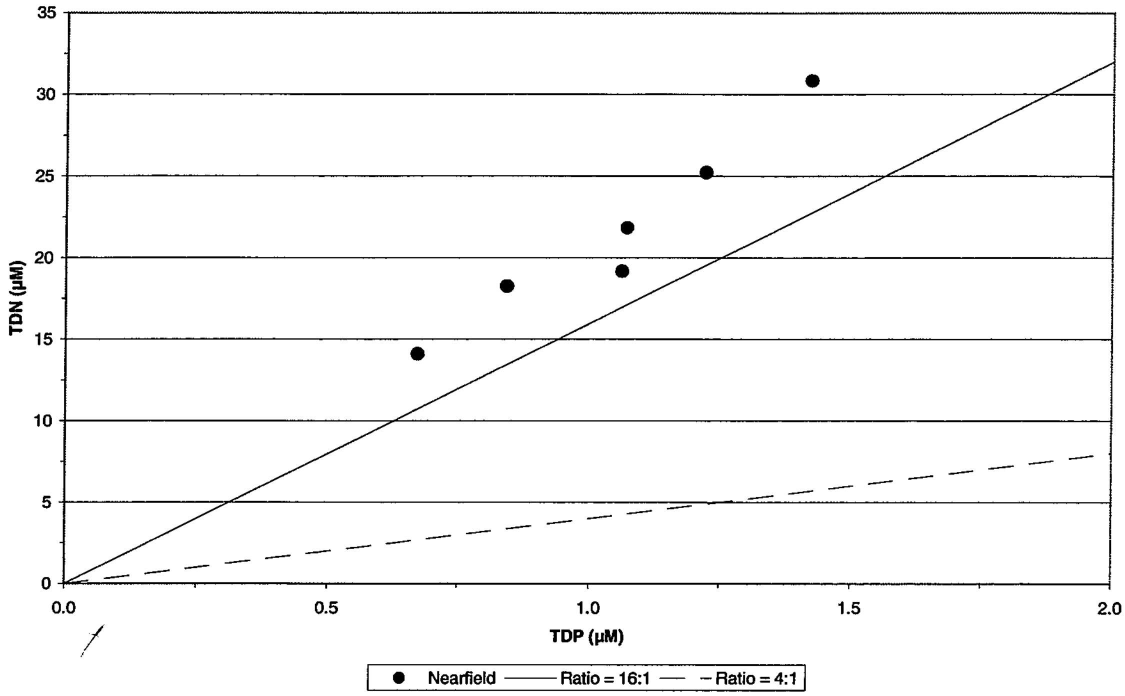


Figure D-55. Nutrient vs. Nutrient Plots for Nearfield Survey WN98D, (Sep 98)

(a)



(b)

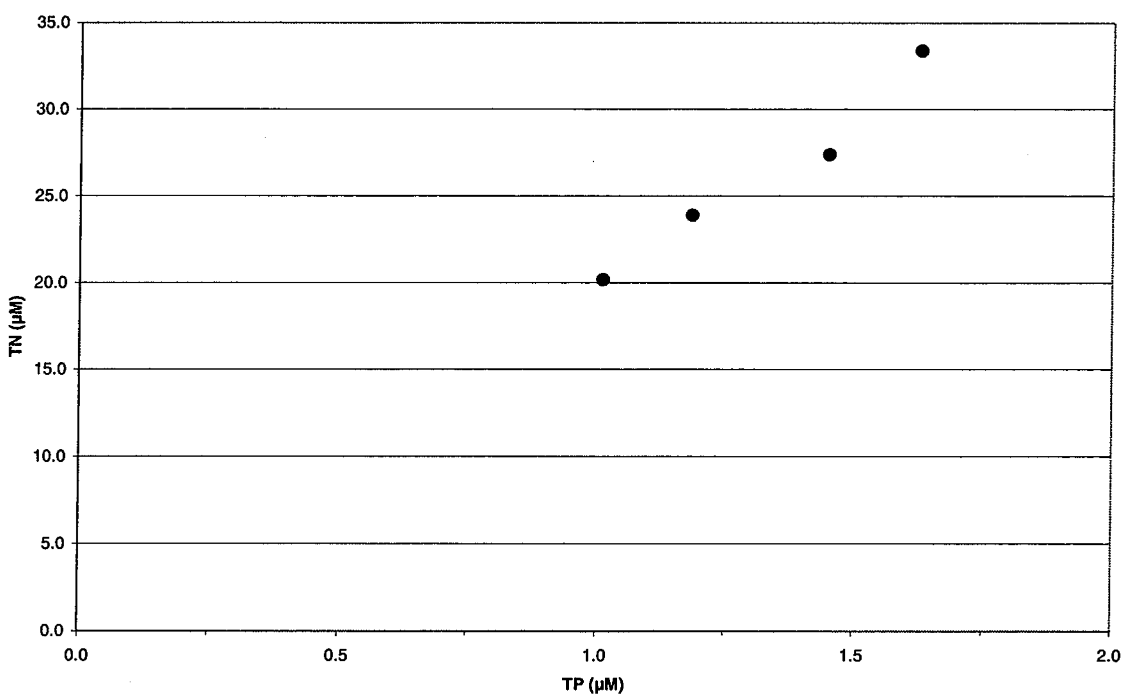
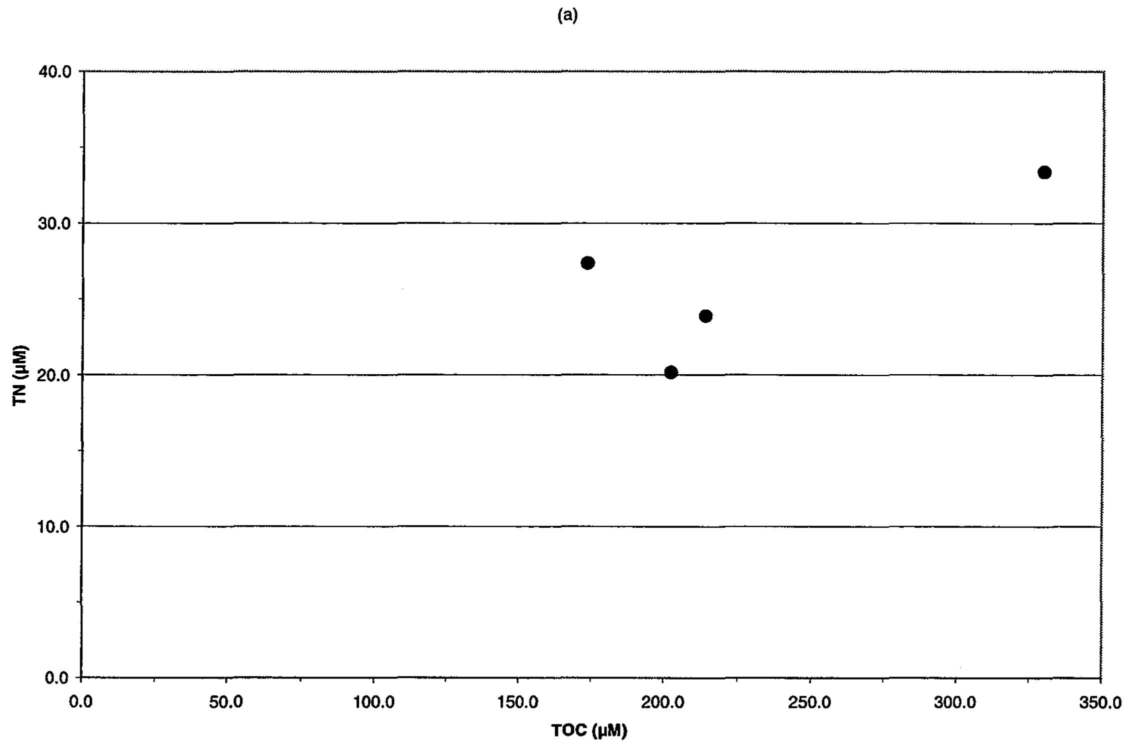


Figure D-56. Nutrient vs. Nutrient Plots for Nearfield Survey WN98D, (Sep 98)



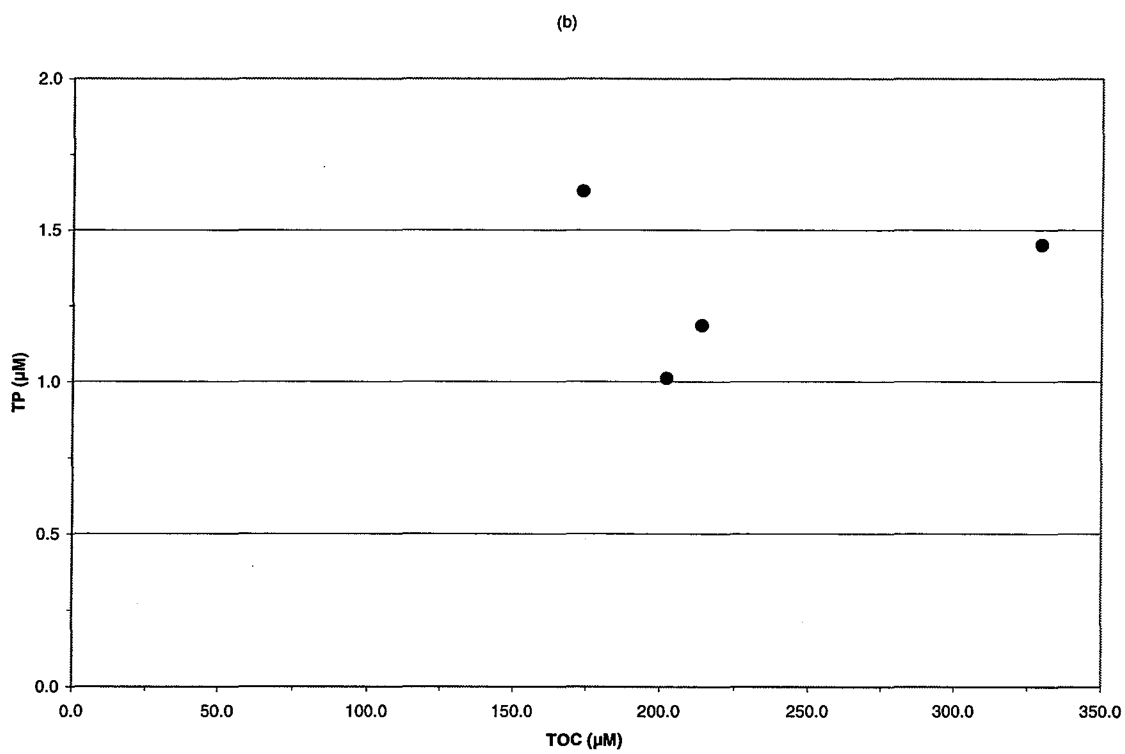


Figure D-57. Nutrient vs. Nutrient Plots for Nearfield Survey WN98D, (Sep 98)

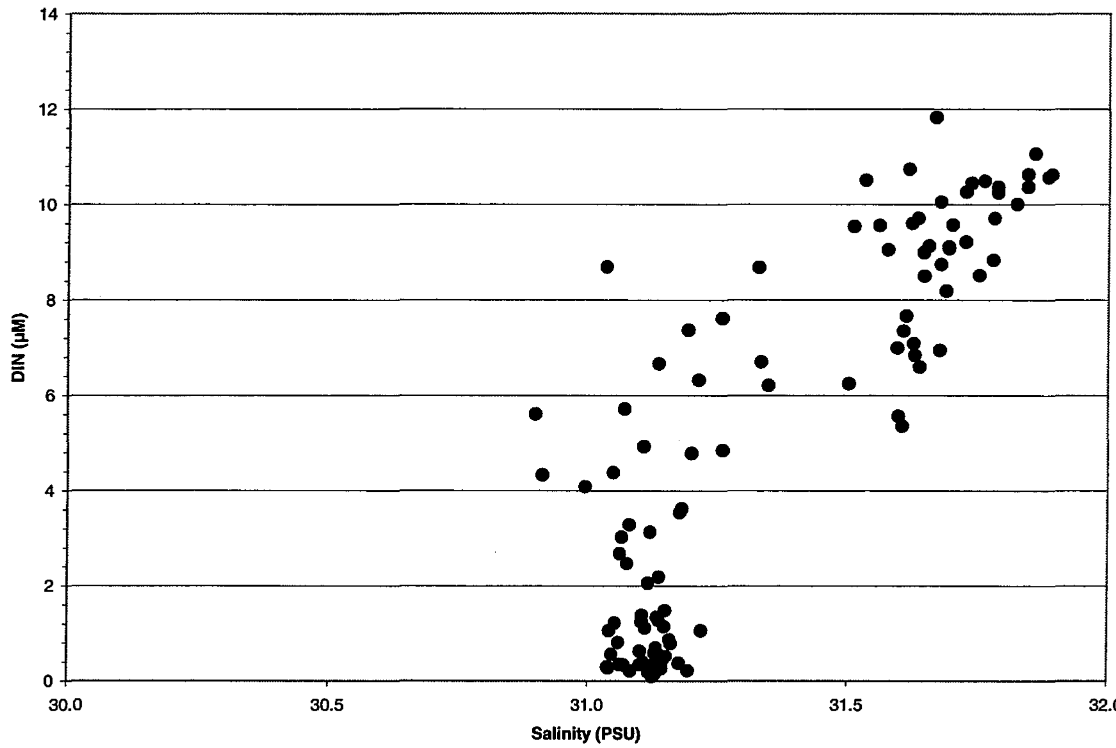
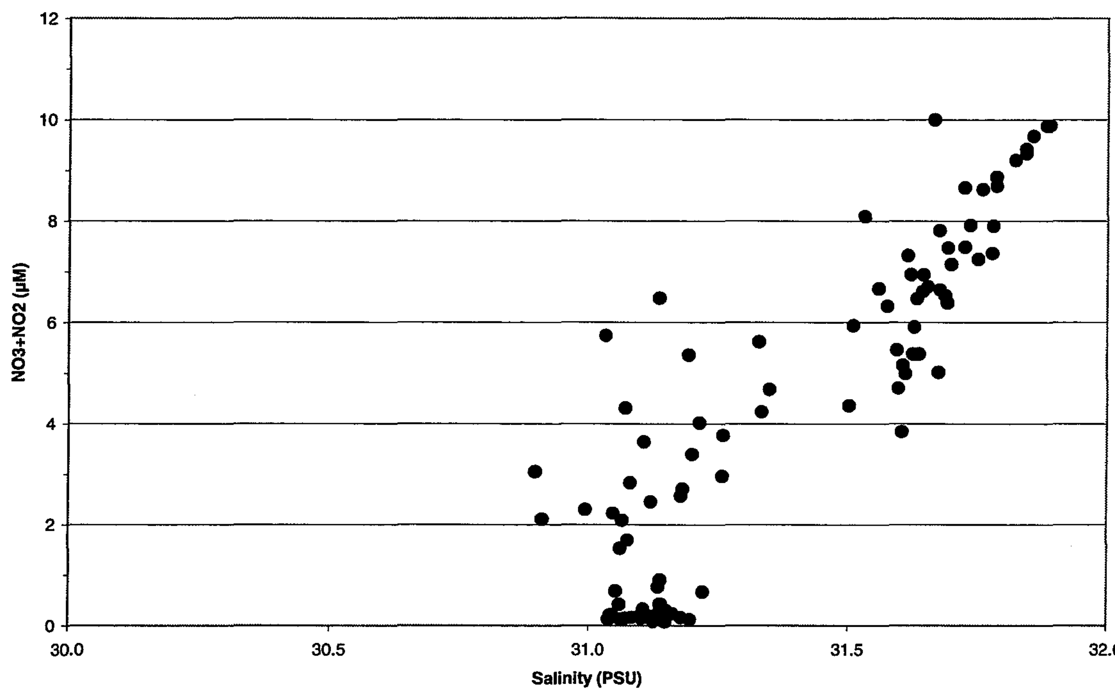


Figure D-58. Nutrient vs. Salinity Plots for Nearfield Survey WN98D, (Sep 98)

(a)



(b)

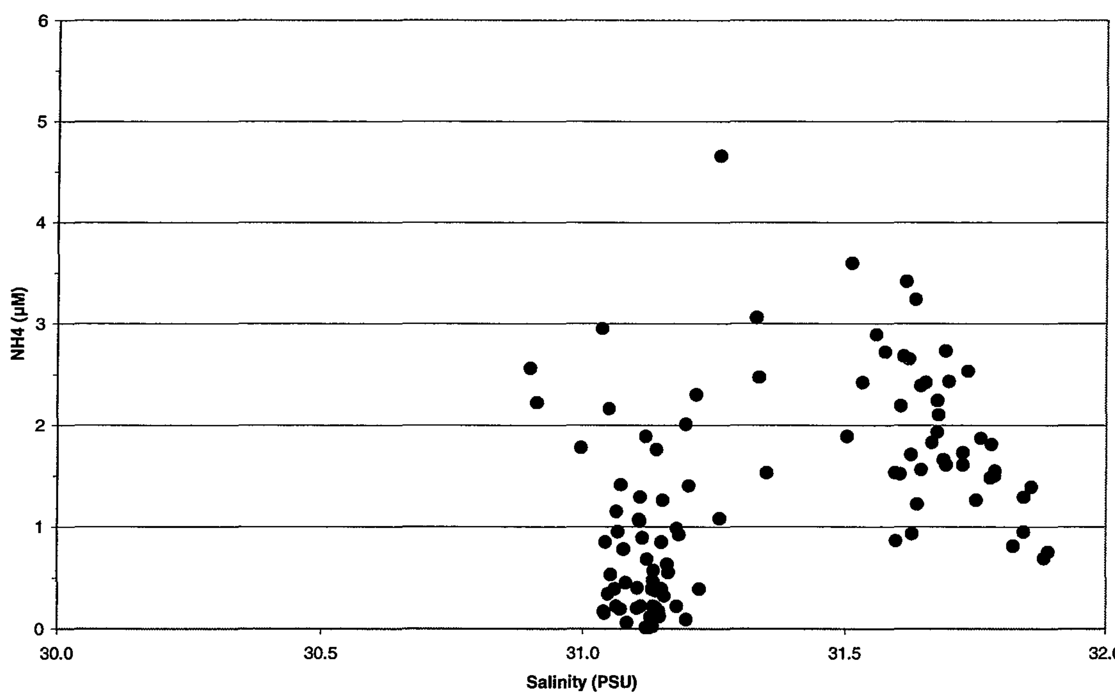
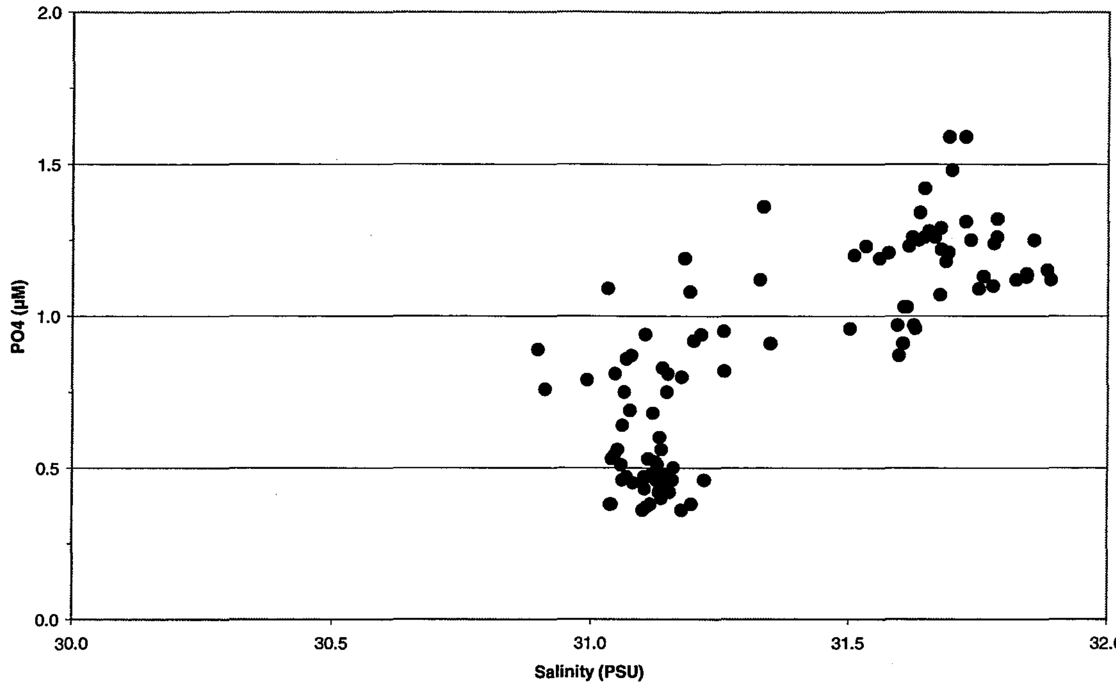


Figure D-59. Nutrient vs. Salinity Plots for Nearfield Survey WN98D, (Sep 98)

(a)



(b)

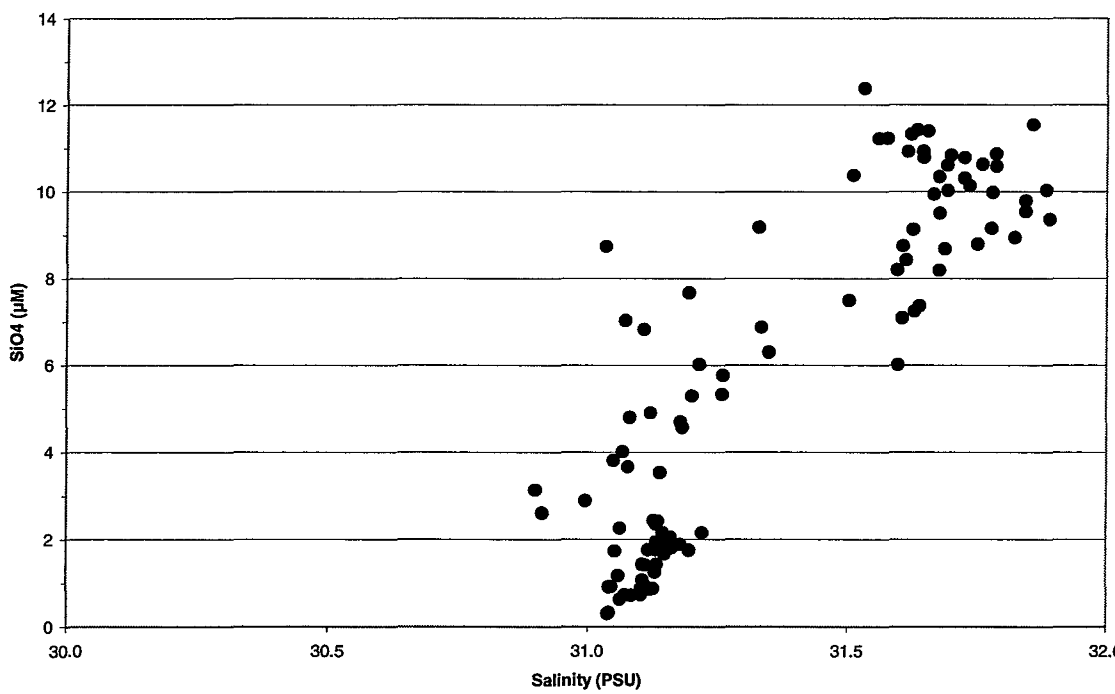


Figure D-60. Nutrient vs. Salinity Plots for Nearfield Survey WN98D, (Sep 98)

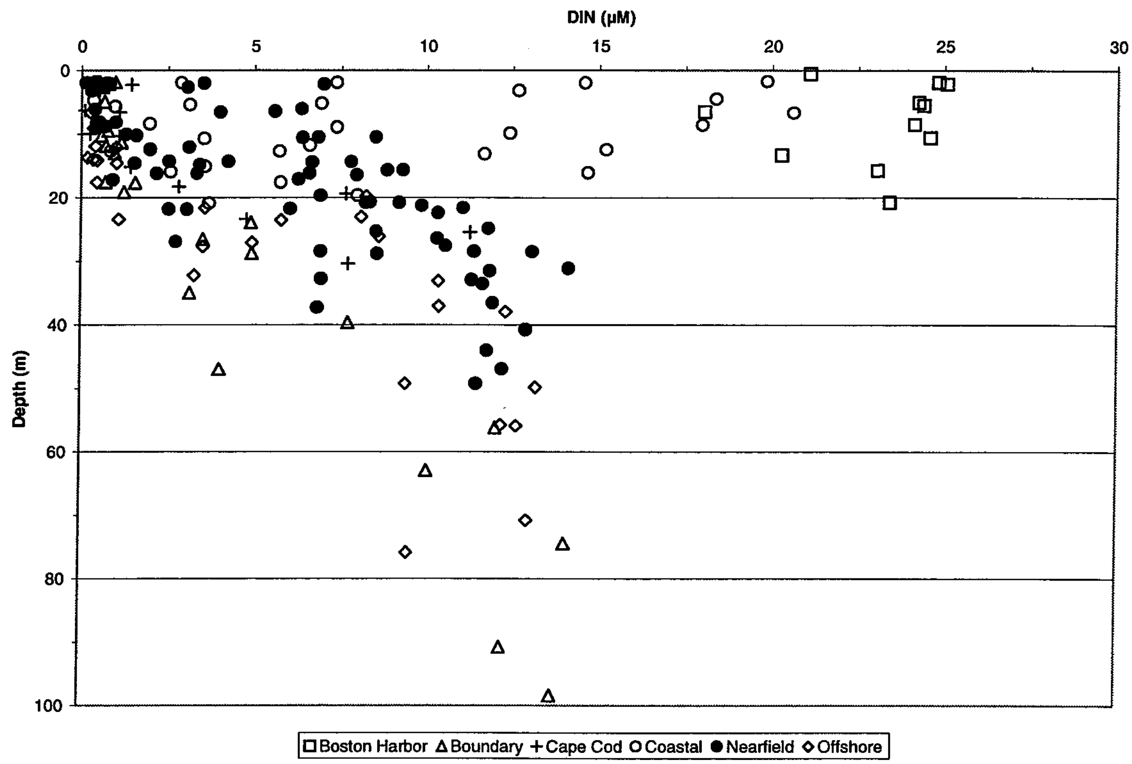


Figure D-61. Depth vs. Nutrient Plots for Farfield Survey WF98E, (Oct 98)

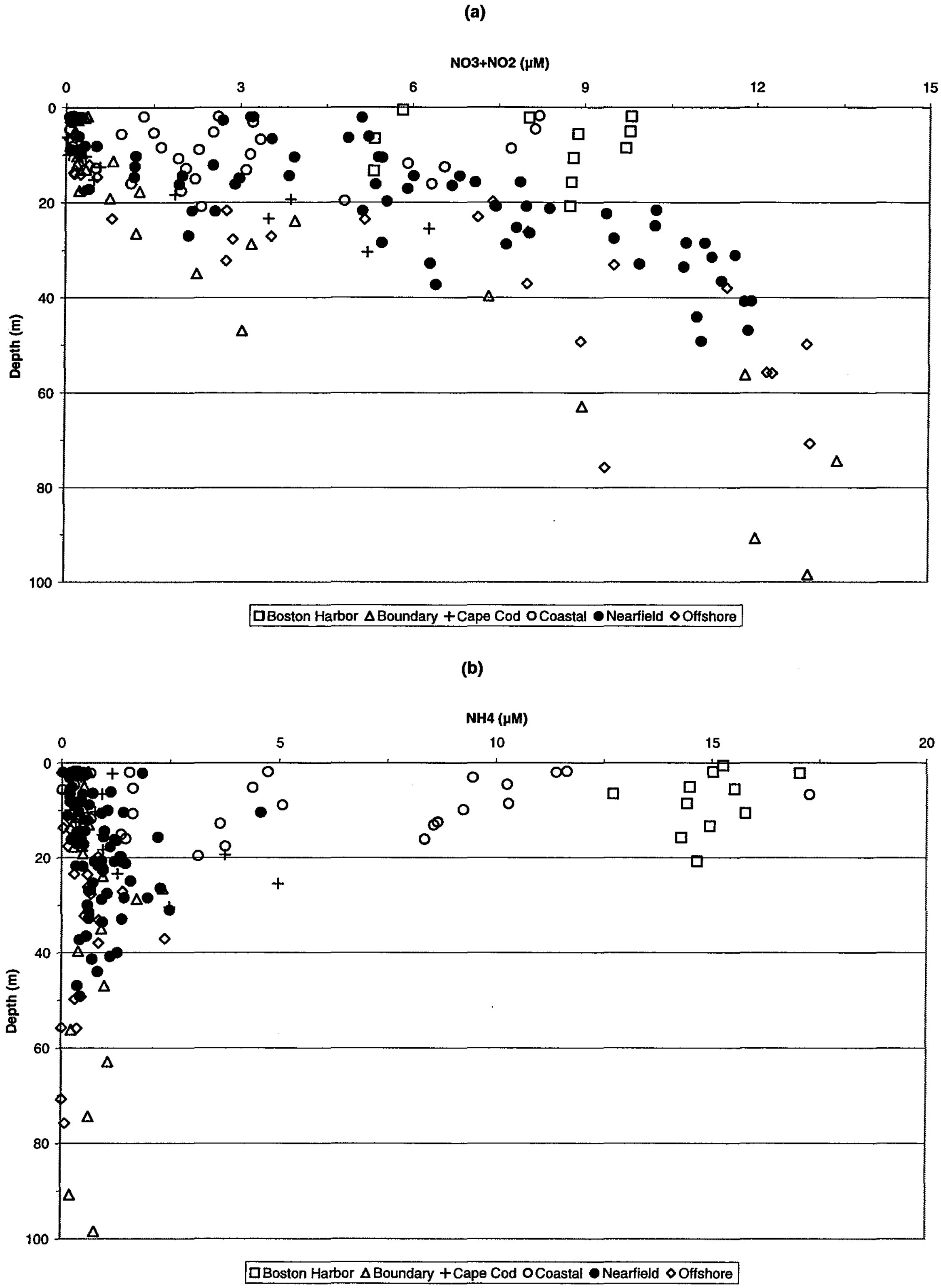
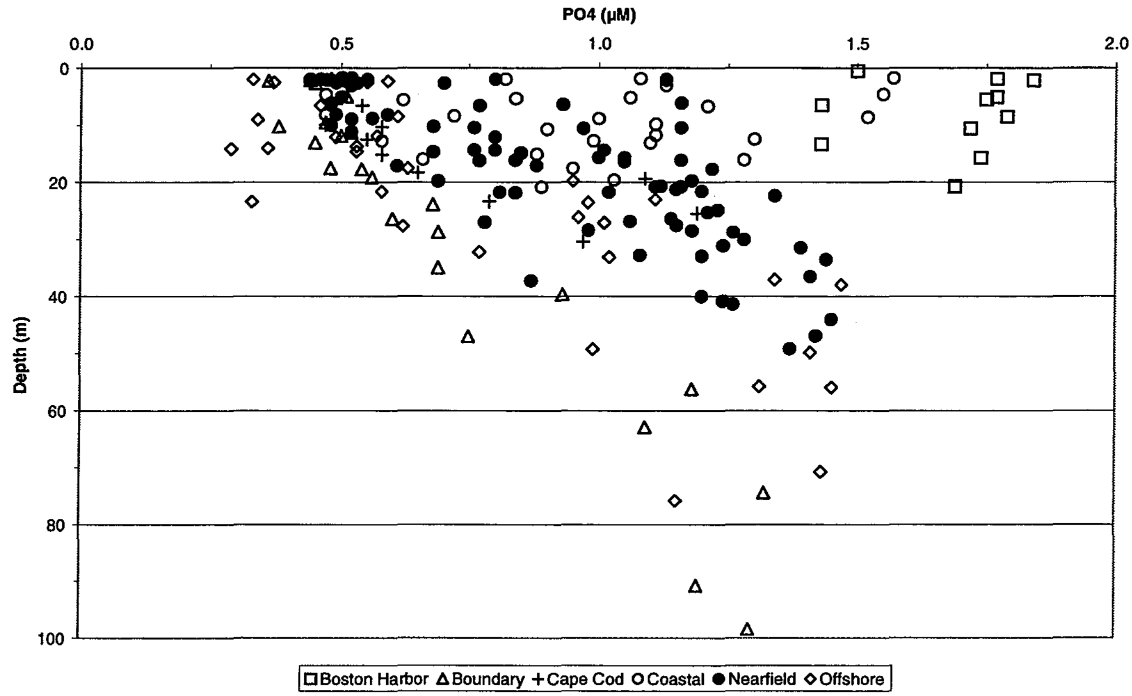


Figure D-62. Depth vs. Nutrient Plots for Farfield Survey WF98E, (Oct 98)

(a)



(b)

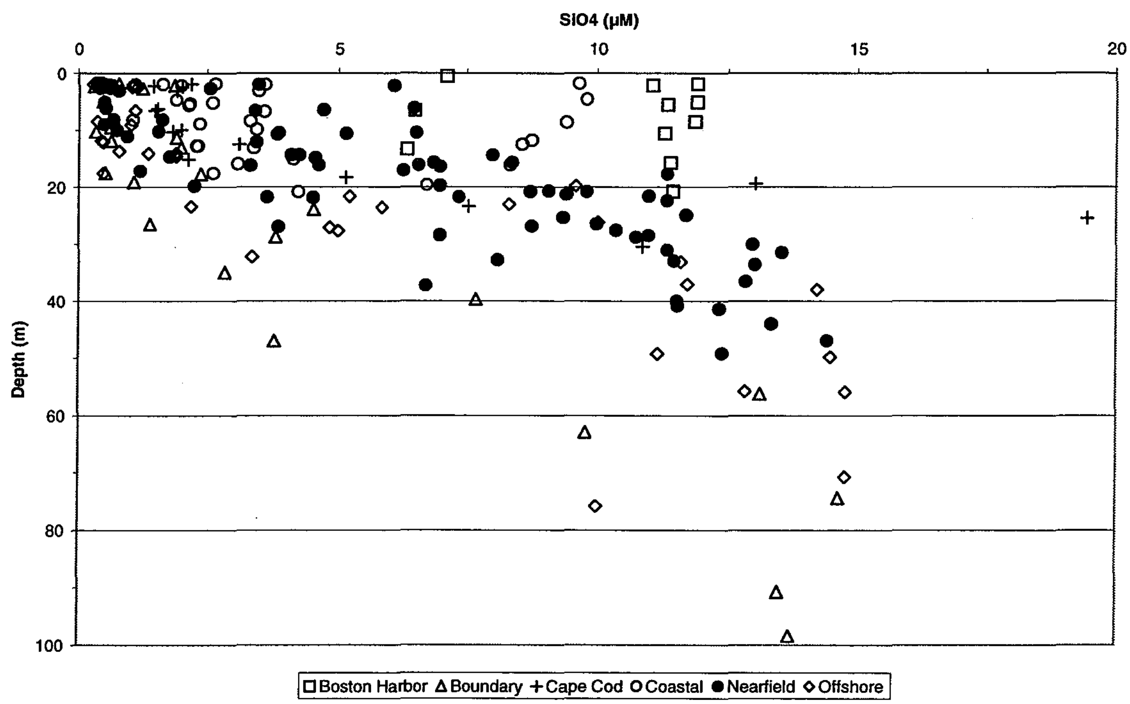
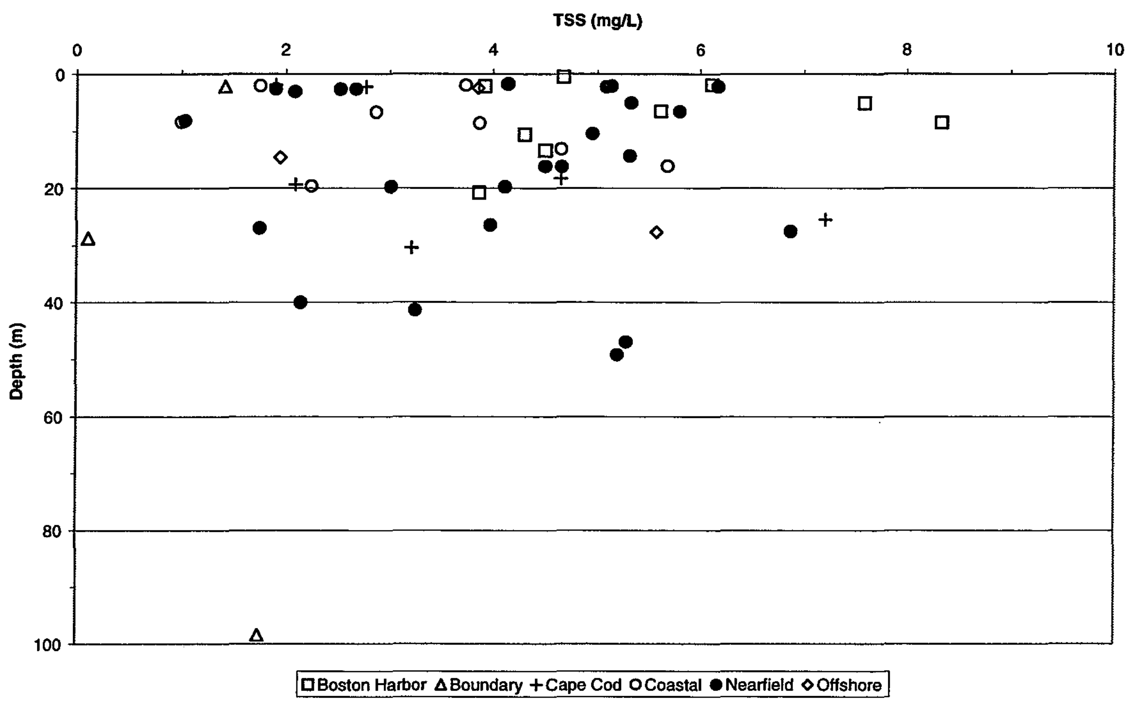


Figure D-63. Depth vs. Nutrient Plots for Farfield Survey WF98E, (Oct 98)

(a)



(b)

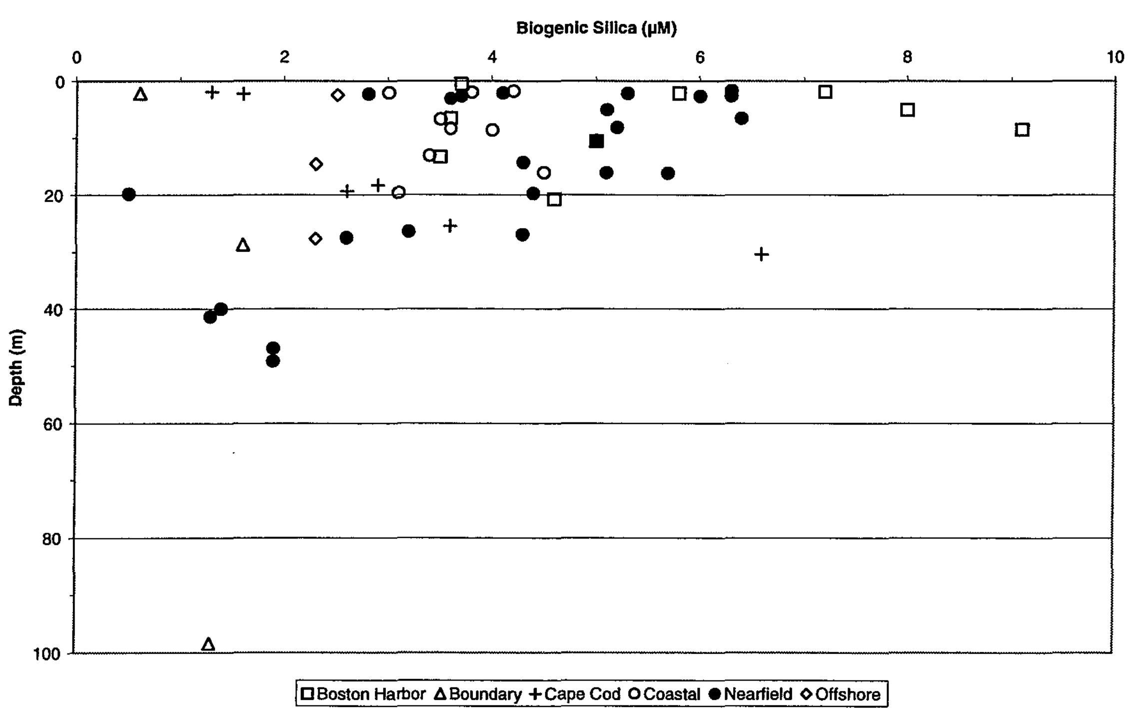
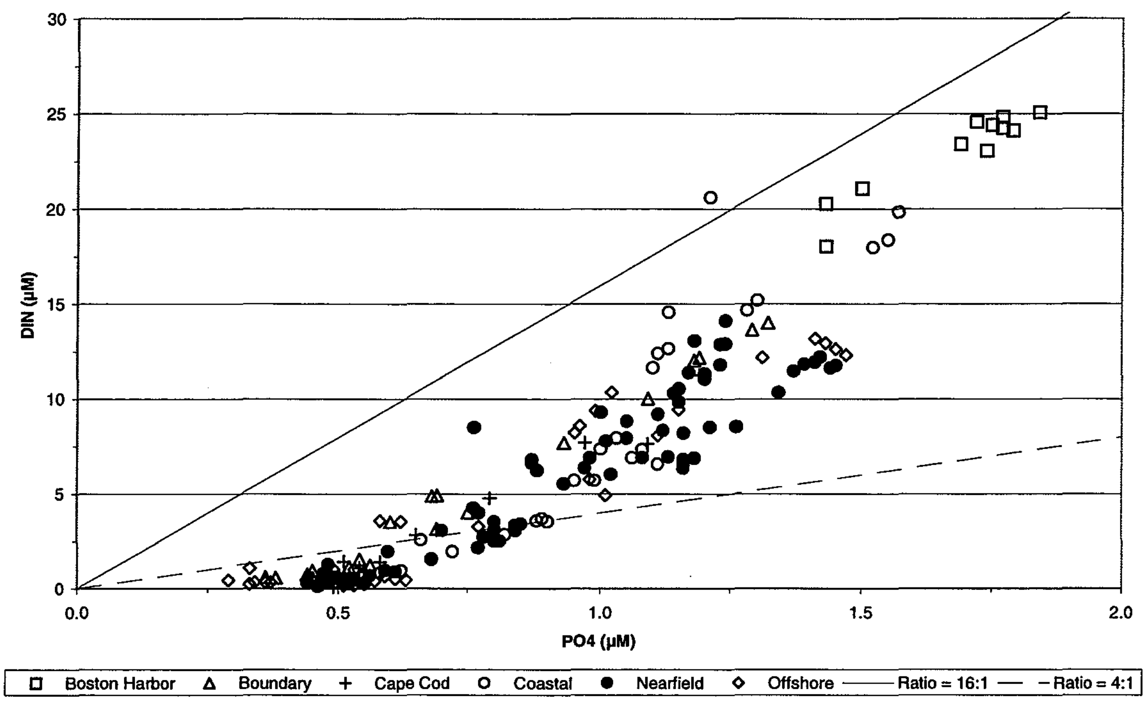


Figure D-64. Depth vs. Nutrient Plots for Farfield Survey WF98E, (Oct 98)

(a)



(b)

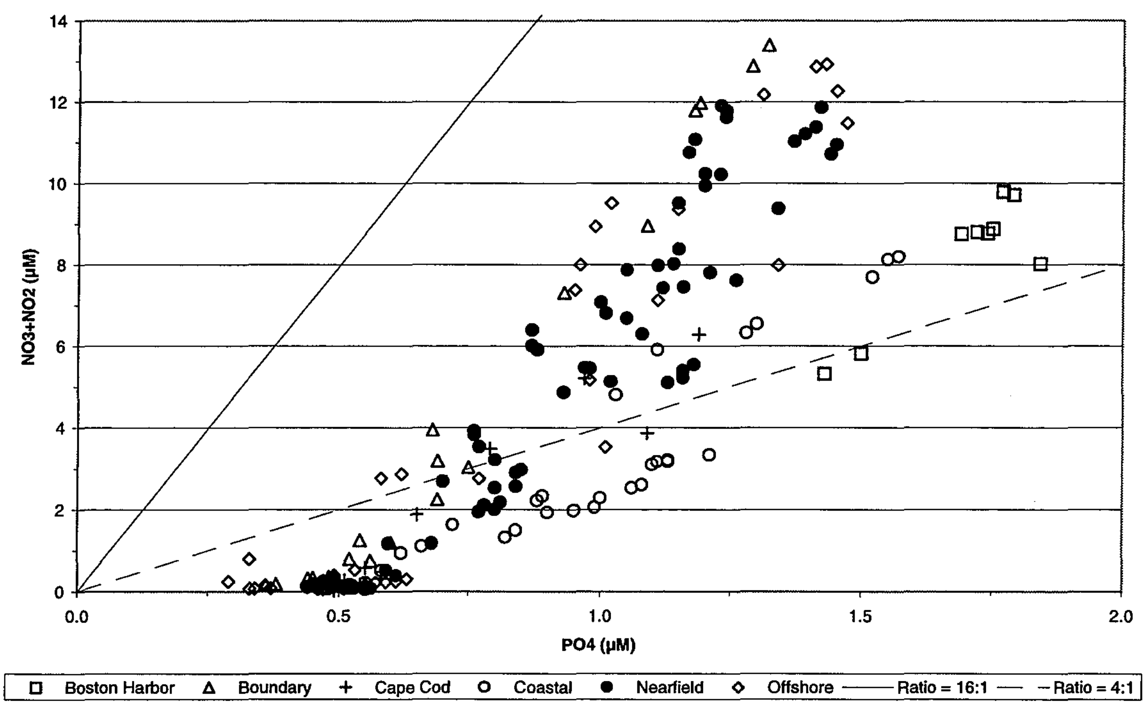
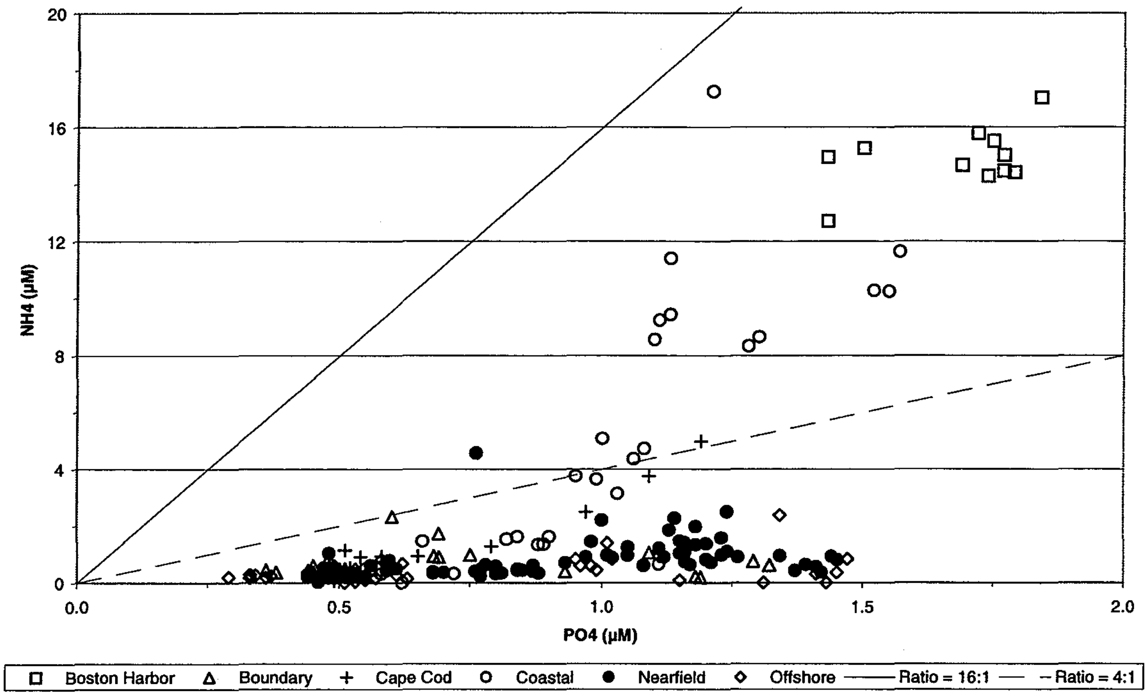


Figure D-65. Nutrient vs. Nutrient Plots for Farfield Survey WF98E, (Oct 98)

(a)



(b)

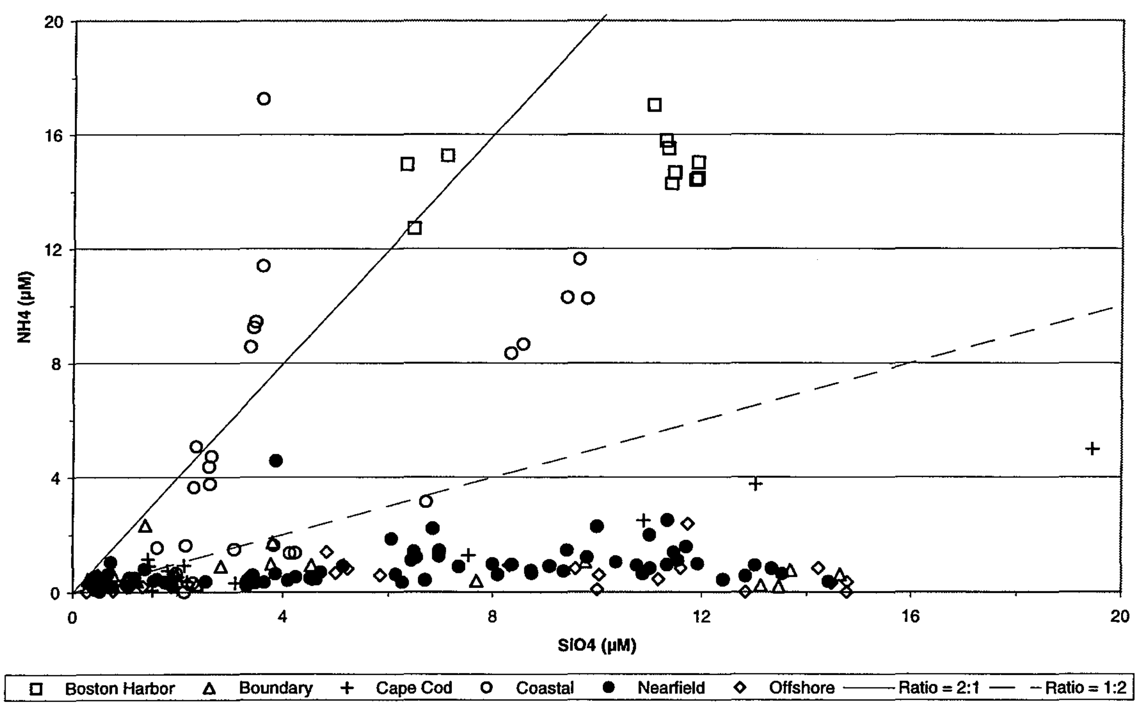
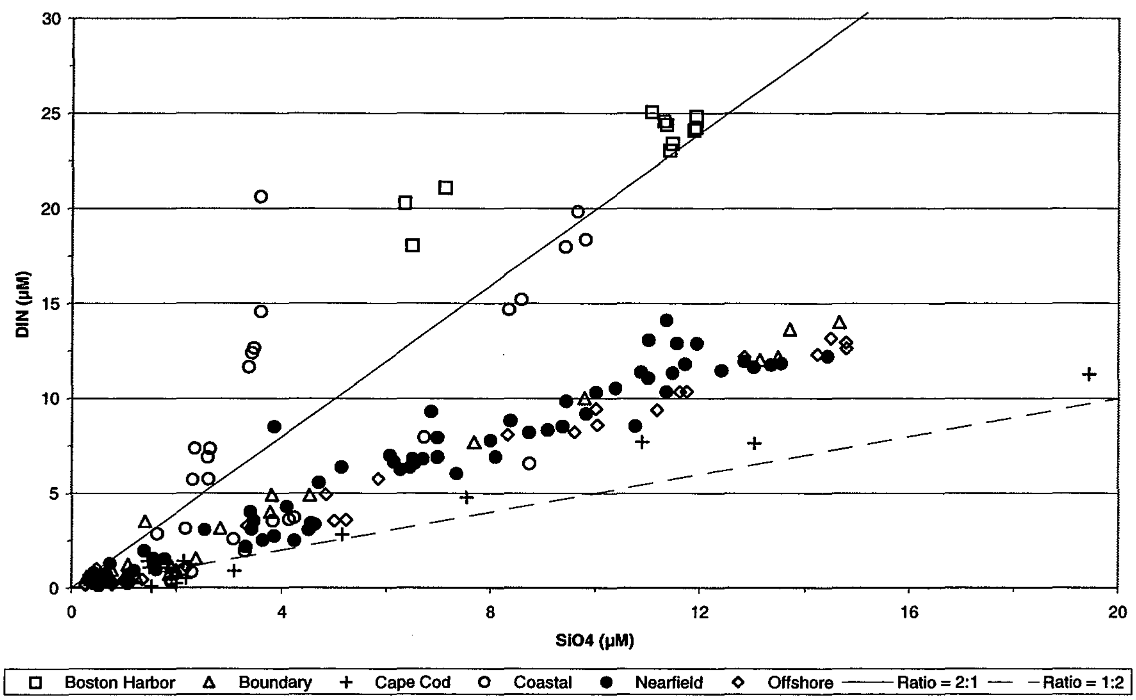


Figure D-66. Nutrient vs. Nutrient Plots for Farfield Survey WF98E, (Oct 98)

(a)



(b)

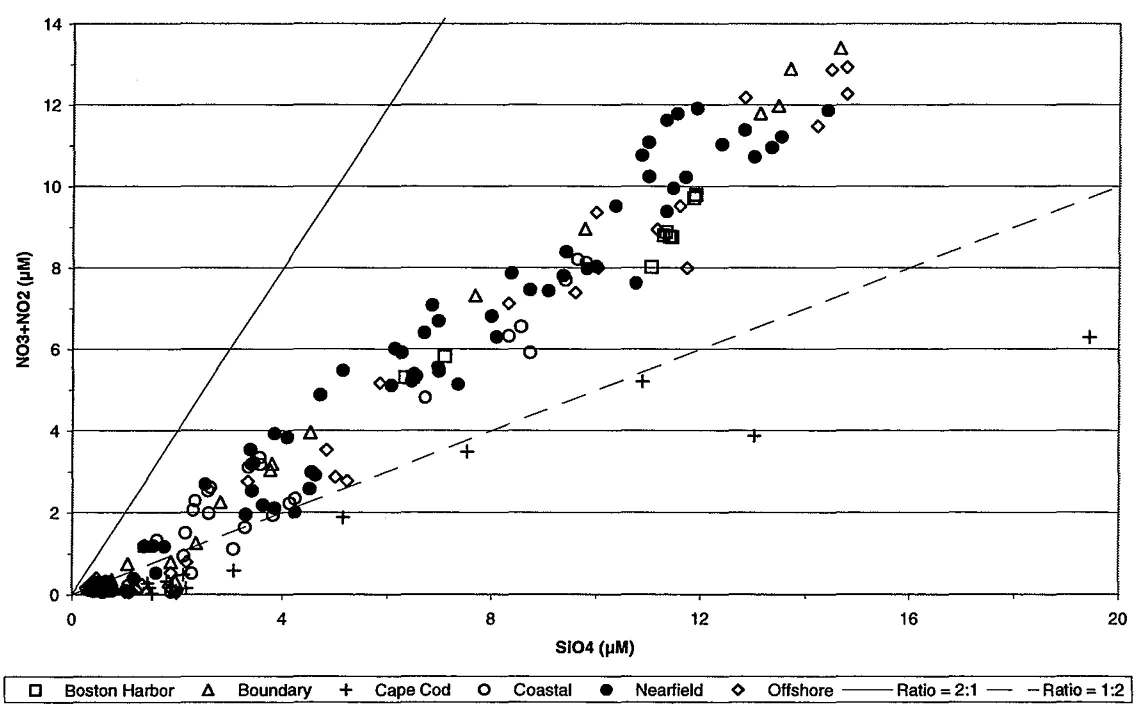
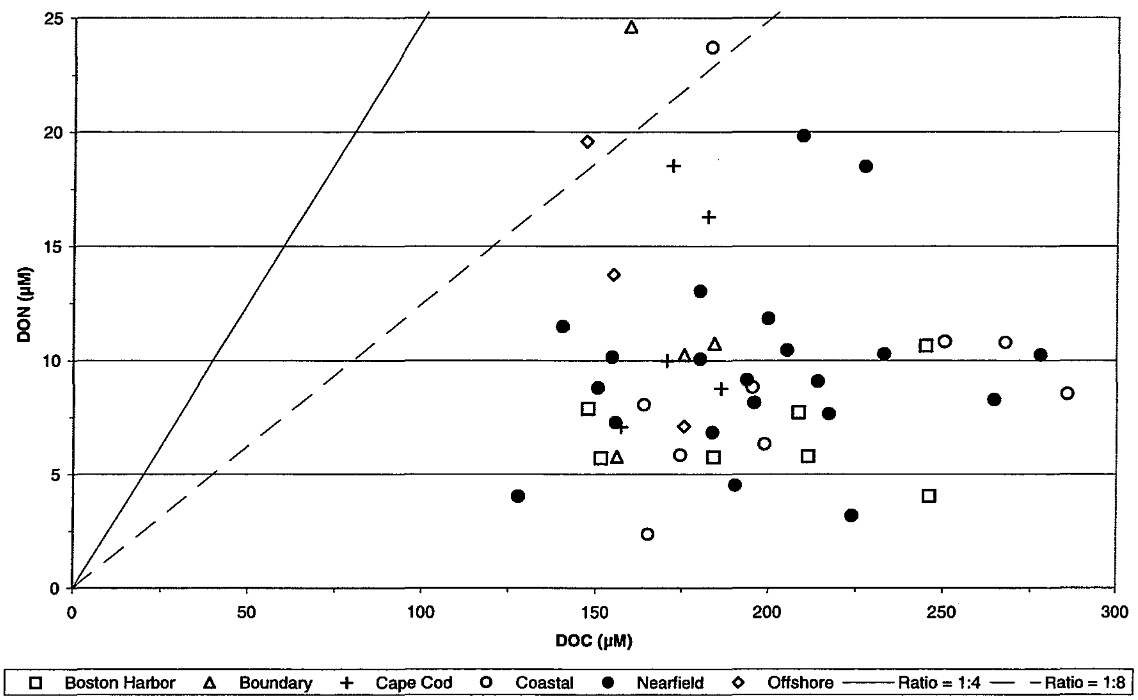


Figure D-67. Nutrient vs. Nutrient Plots for Farfield Survey WF98E, (Oct 98)

(a)



(b)

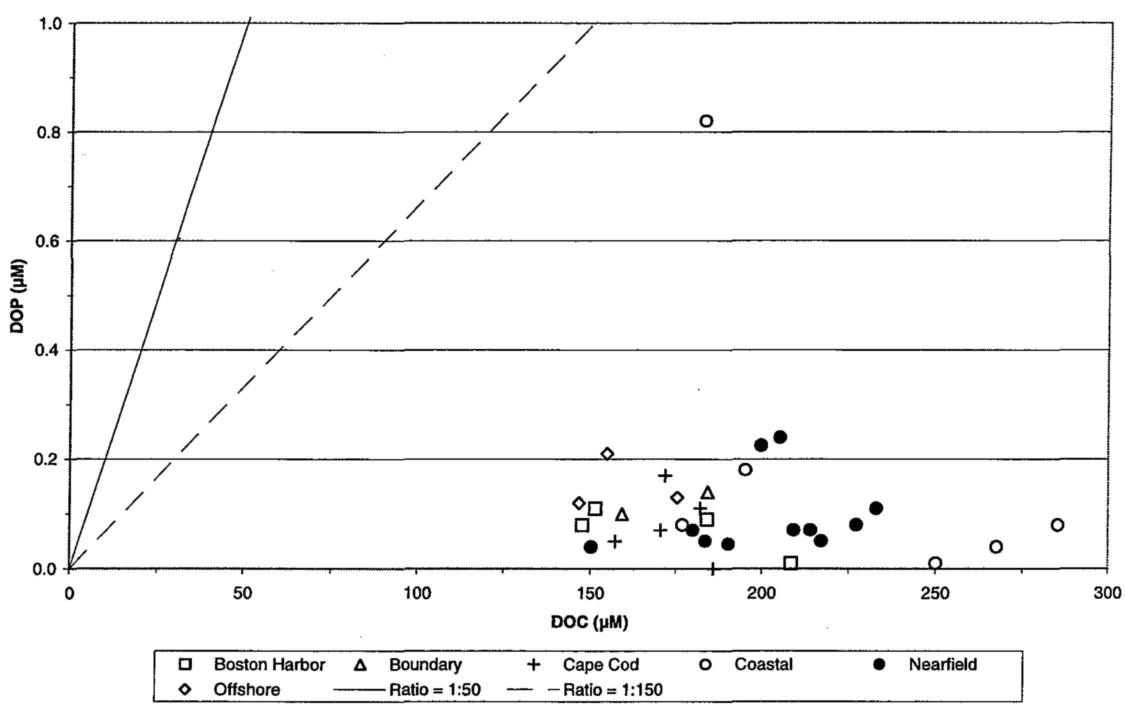
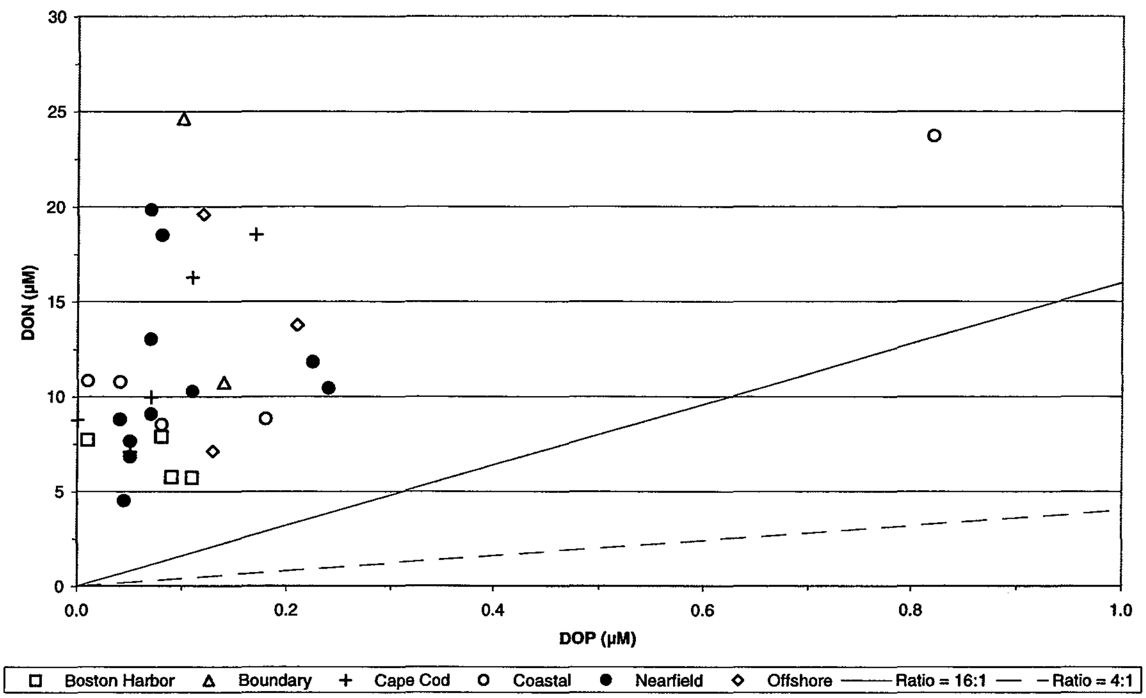


Figure D-68. Nutrient vs. Nutrient Plots for Farfield Survey WF98E, (Oct 98)

(a)



(b)

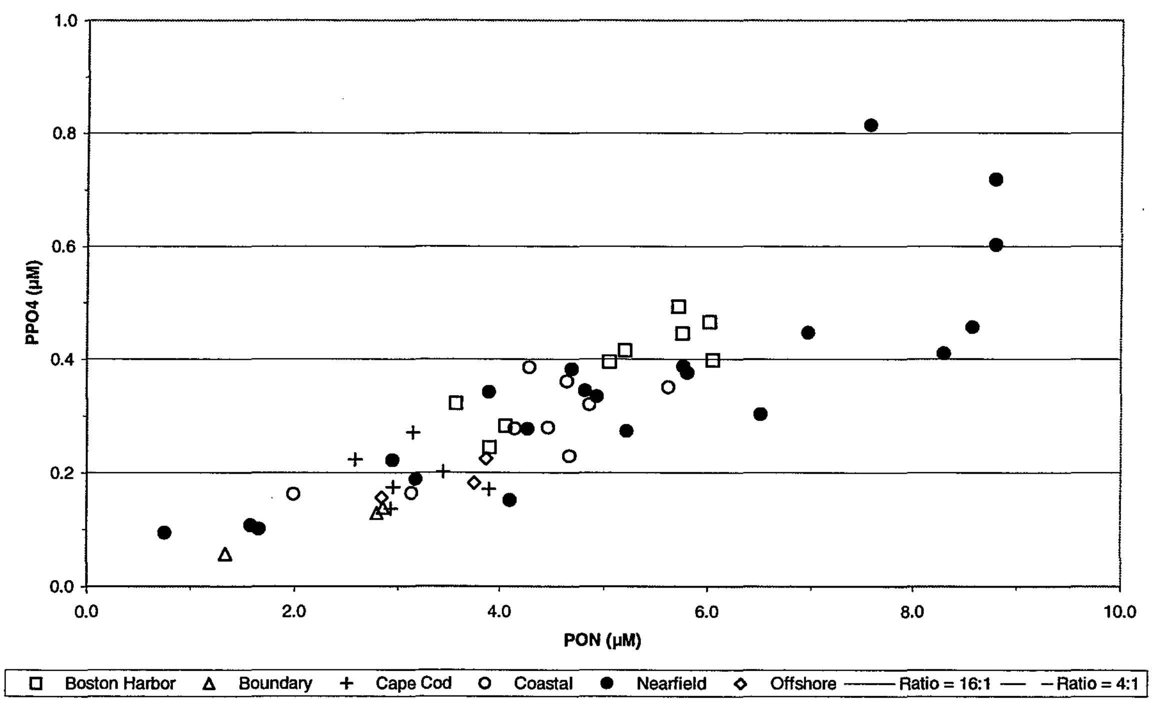
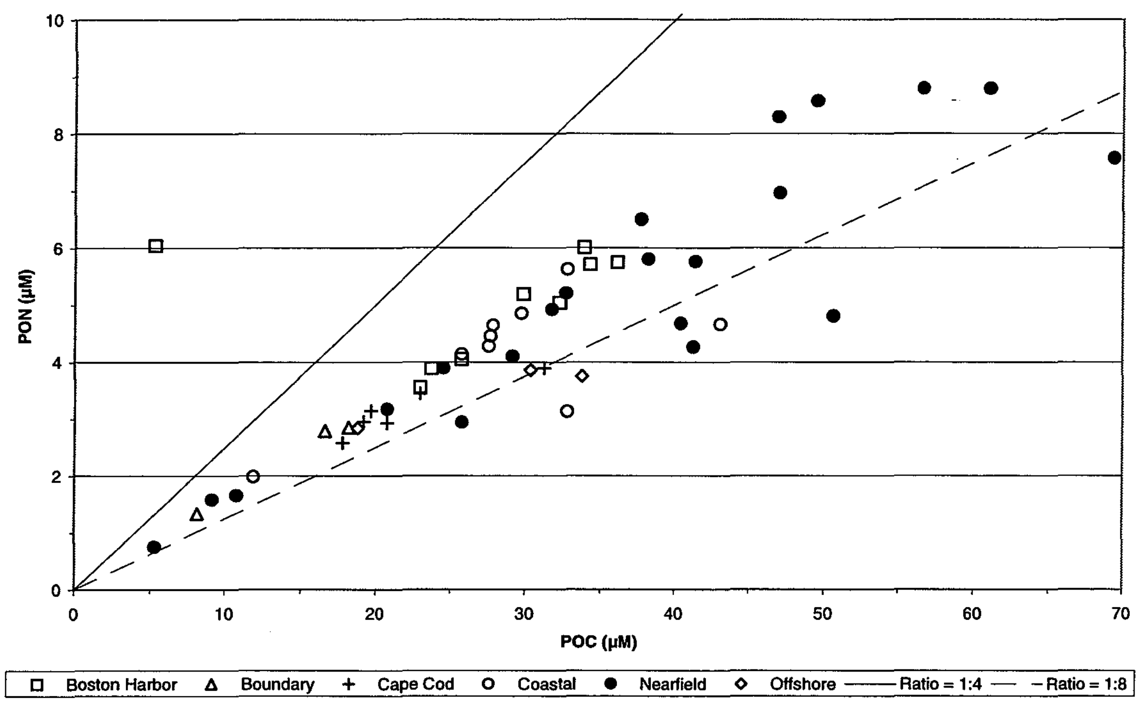


Figure D-69. Nutrient vs. Nutrient Plots for Farfield Survey WF98E, (Oct 98)

(a)



(b)

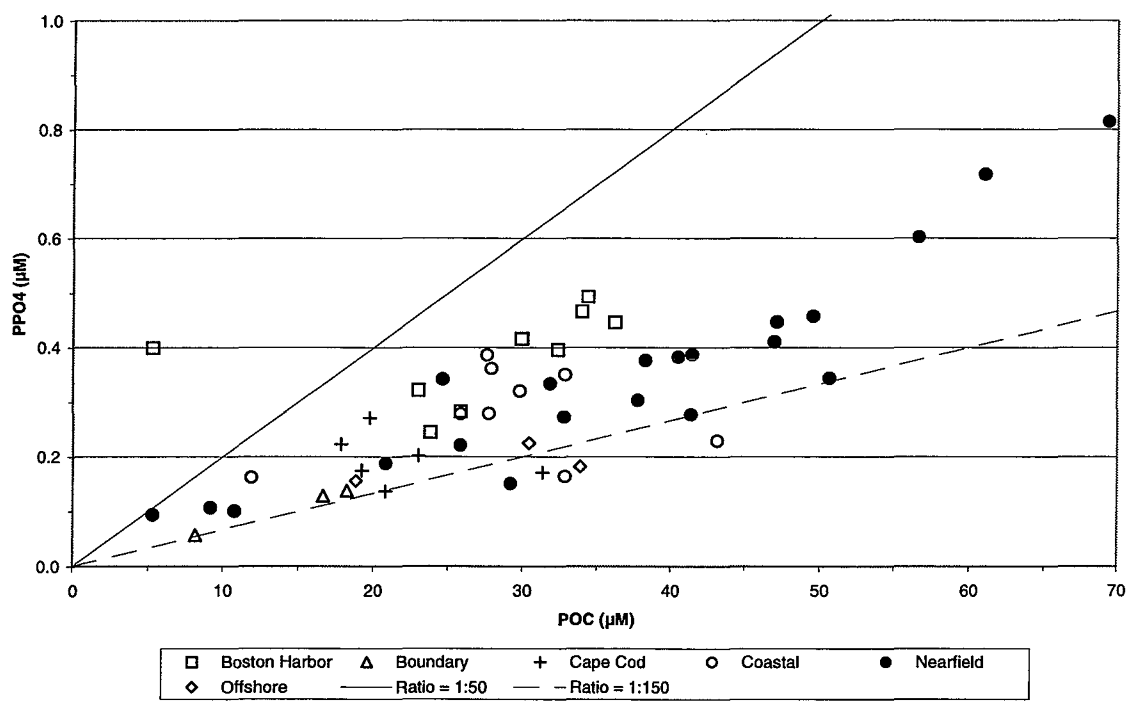
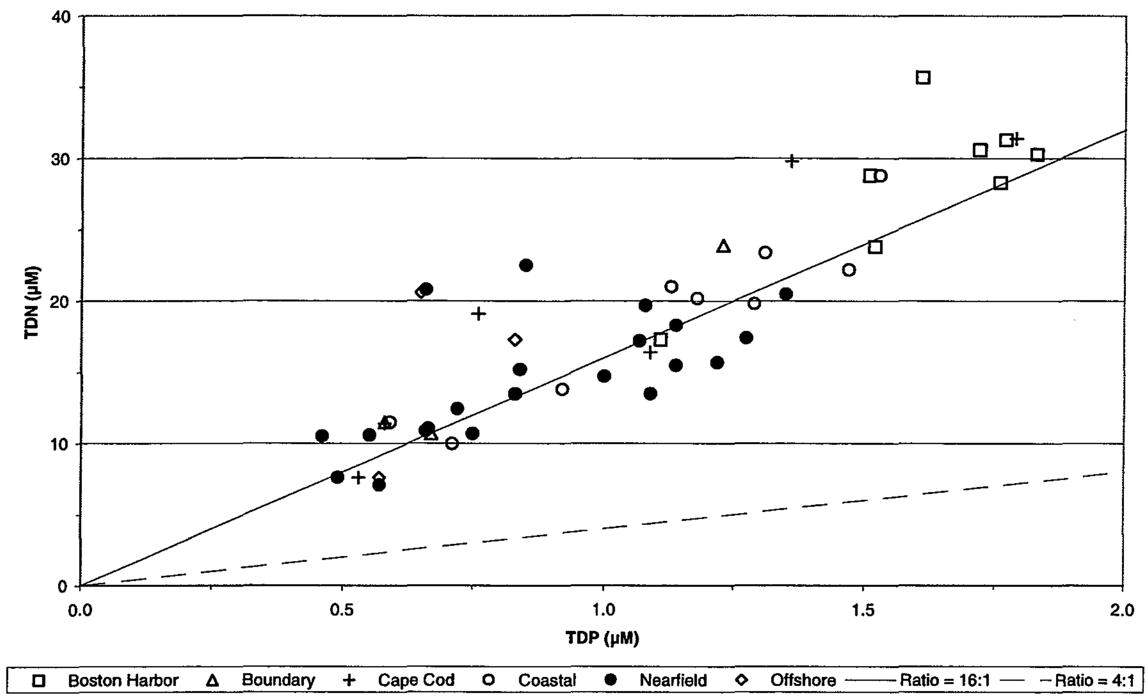


Figure D-70. Nutrient vs. Nutrient Plots for Farfield Survey WF98E, (Oct 98)

(a)



(b)

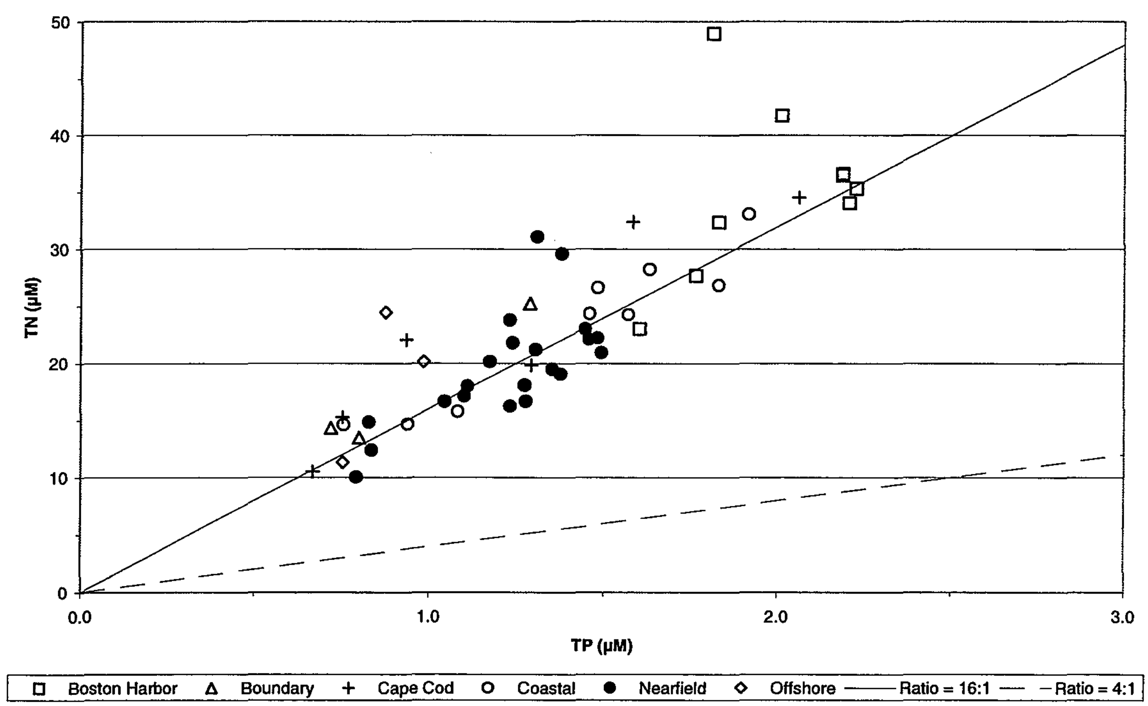
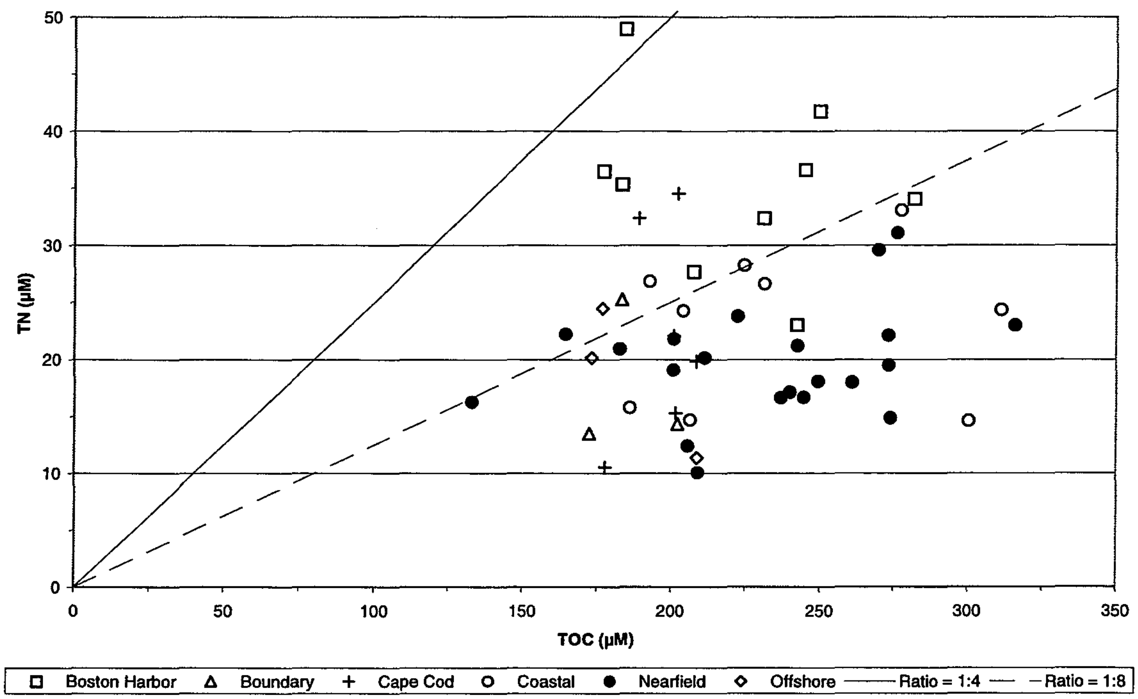


Figure D-71. Nutrient vs. Nutrient Plots for Farfield Survey WF98E, (Oct 98)

(a)



(b)

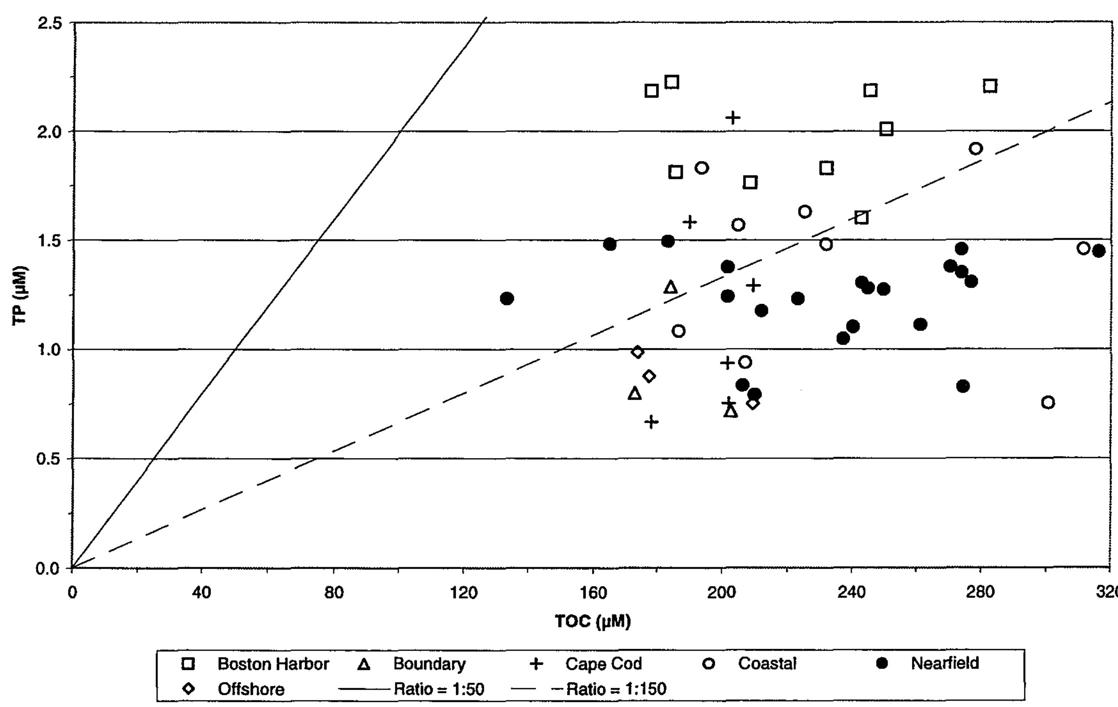


Figure D-72. Nutrient vs. Nutrient Plots for Farfield Survey WF98E, (Oct 98)

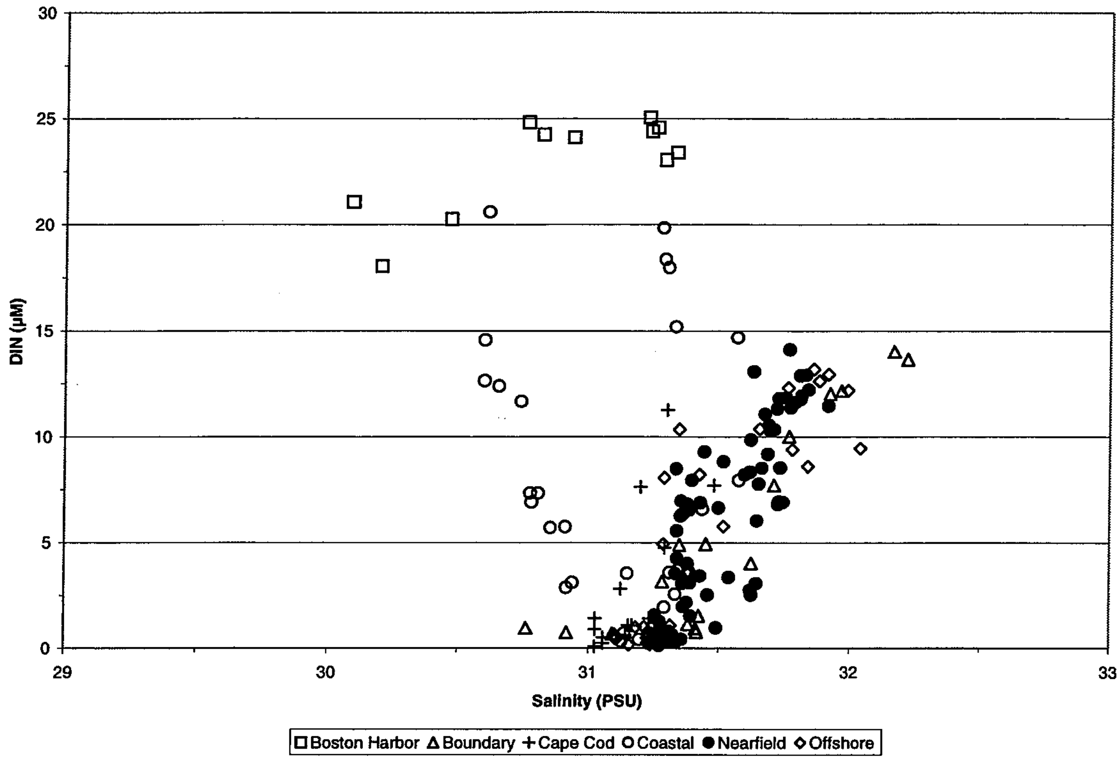
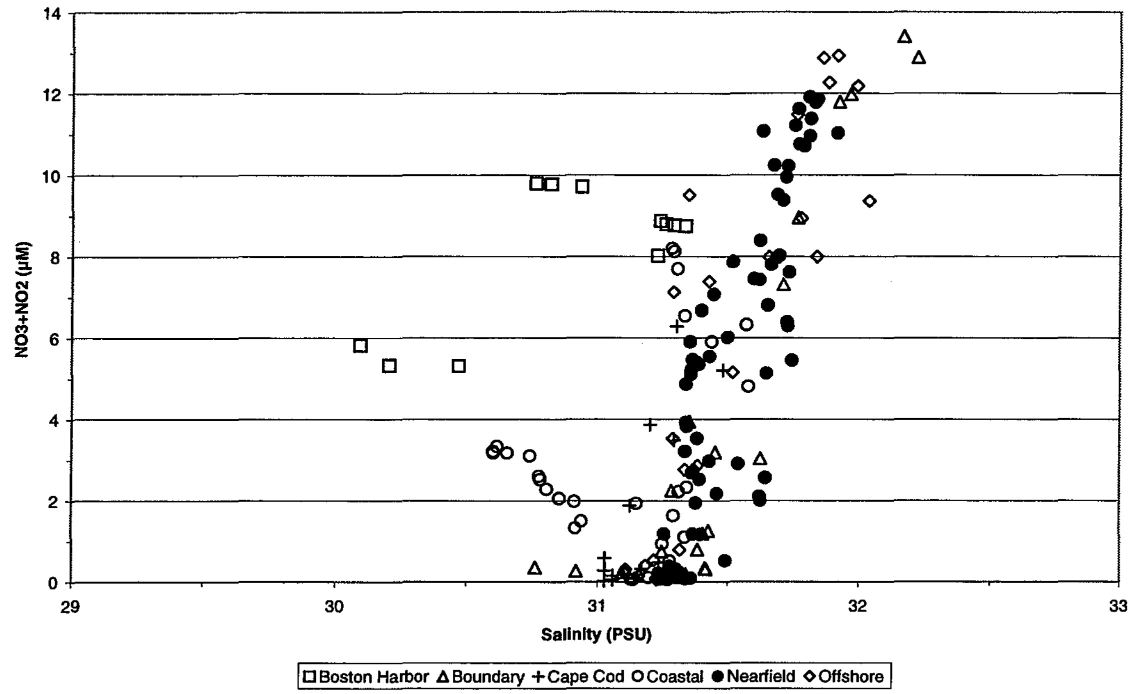


Figure D-73. Nutrient vs. Salinity Plots for Farfield Survey WF98E, (Oct 98)

(a)



(b)

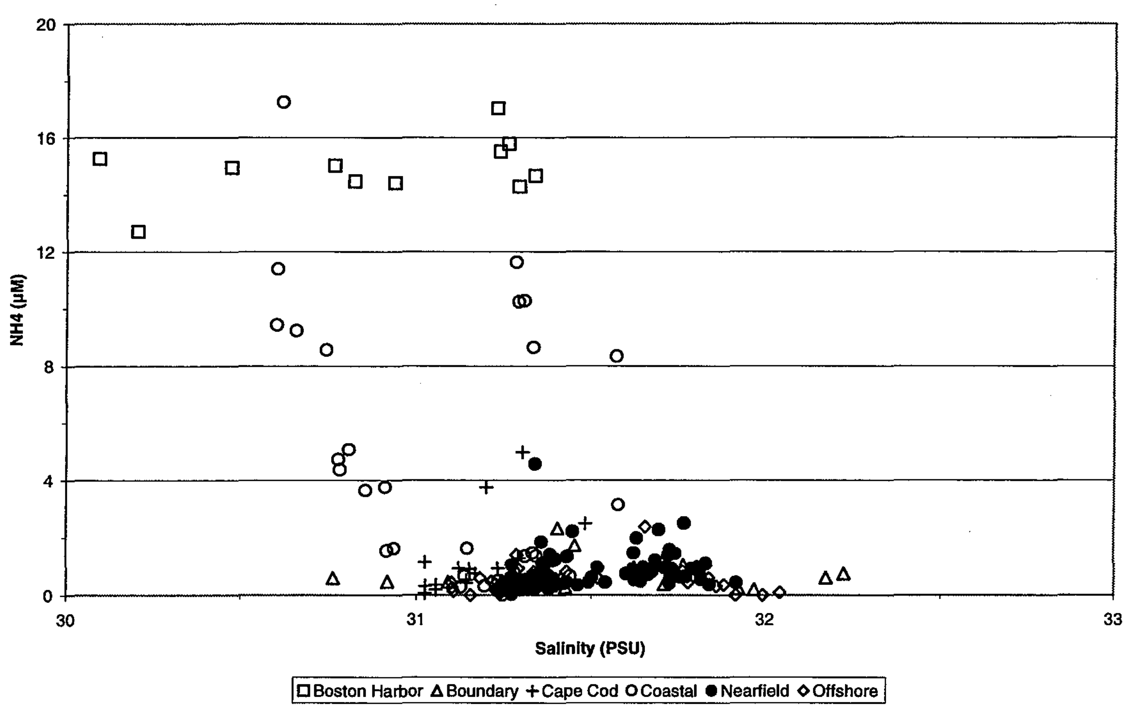


Figure D-74. Nutrient vs. Salinity Plots for Farfield Survey WF98E, (Oct 98)

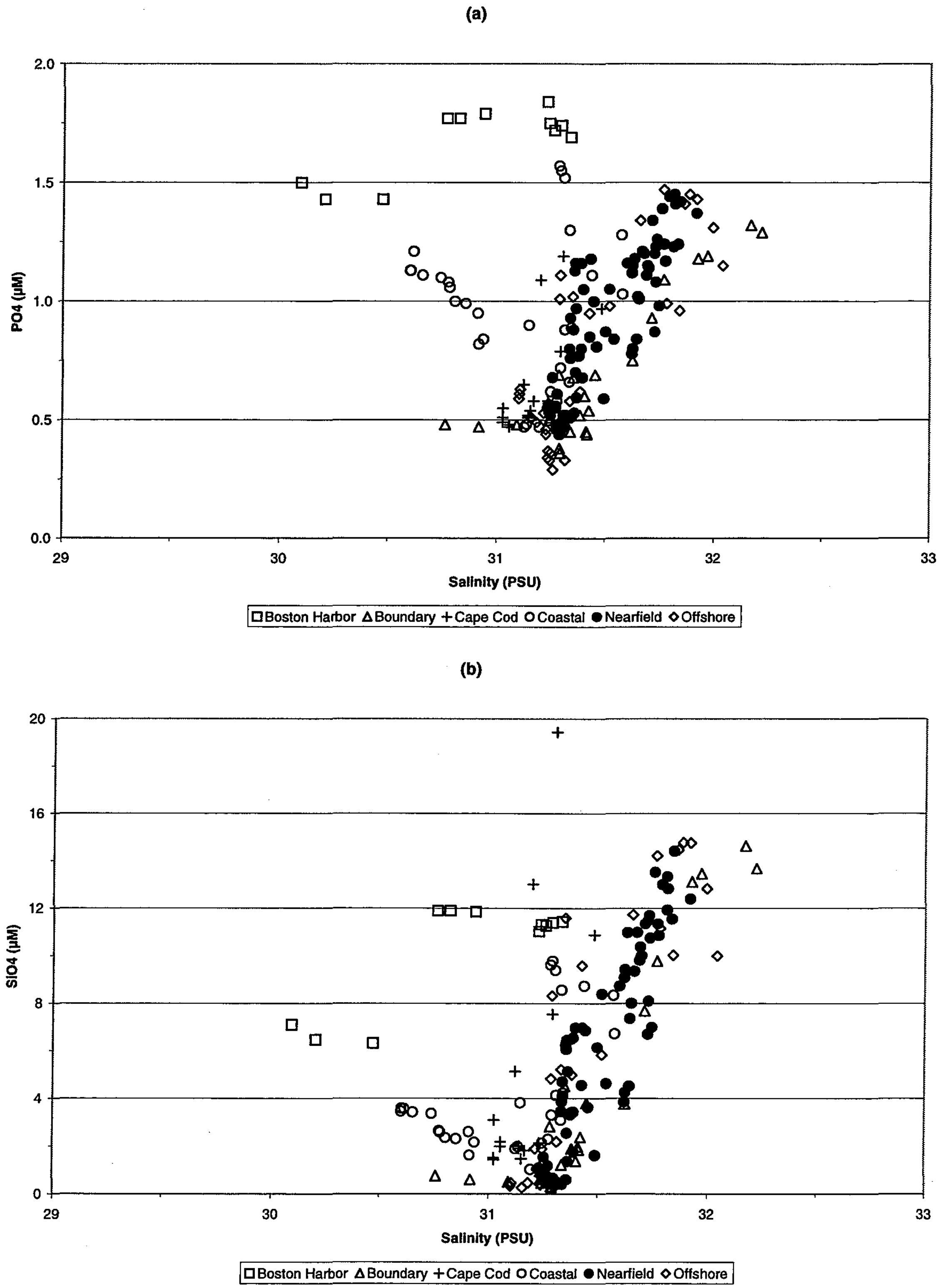


Figure D-75. Nutrient vs. Salinity Plots for Farfield Survey WF98E, (Oct 98)

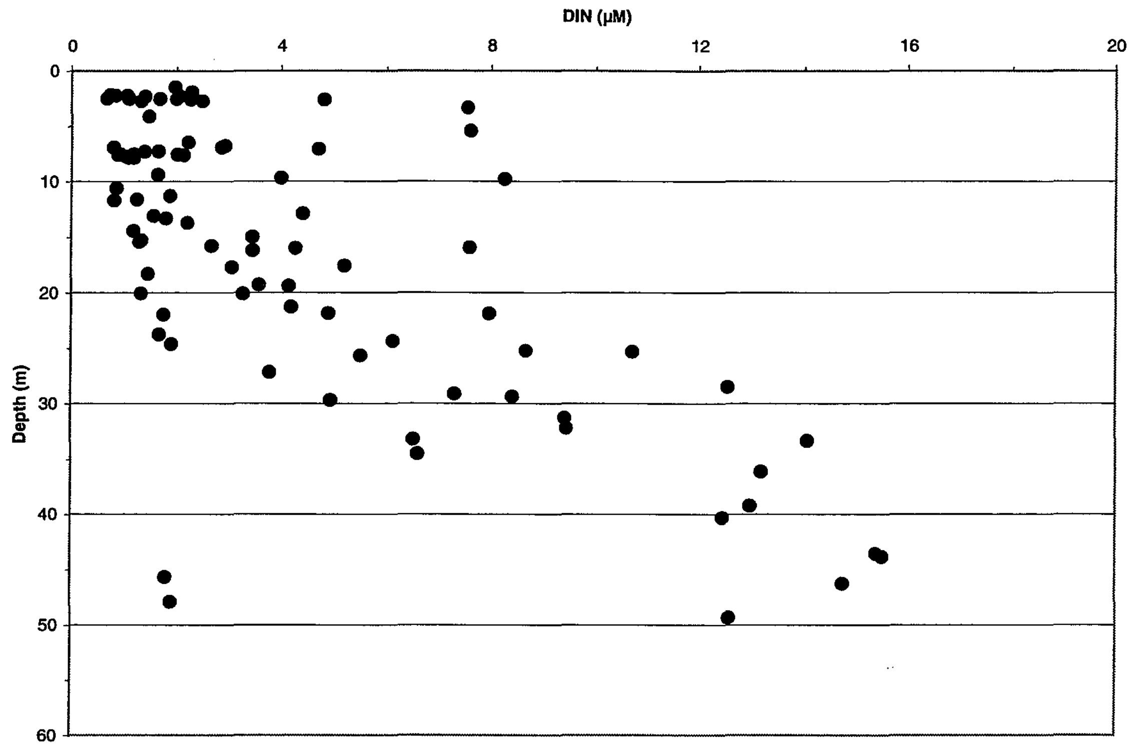
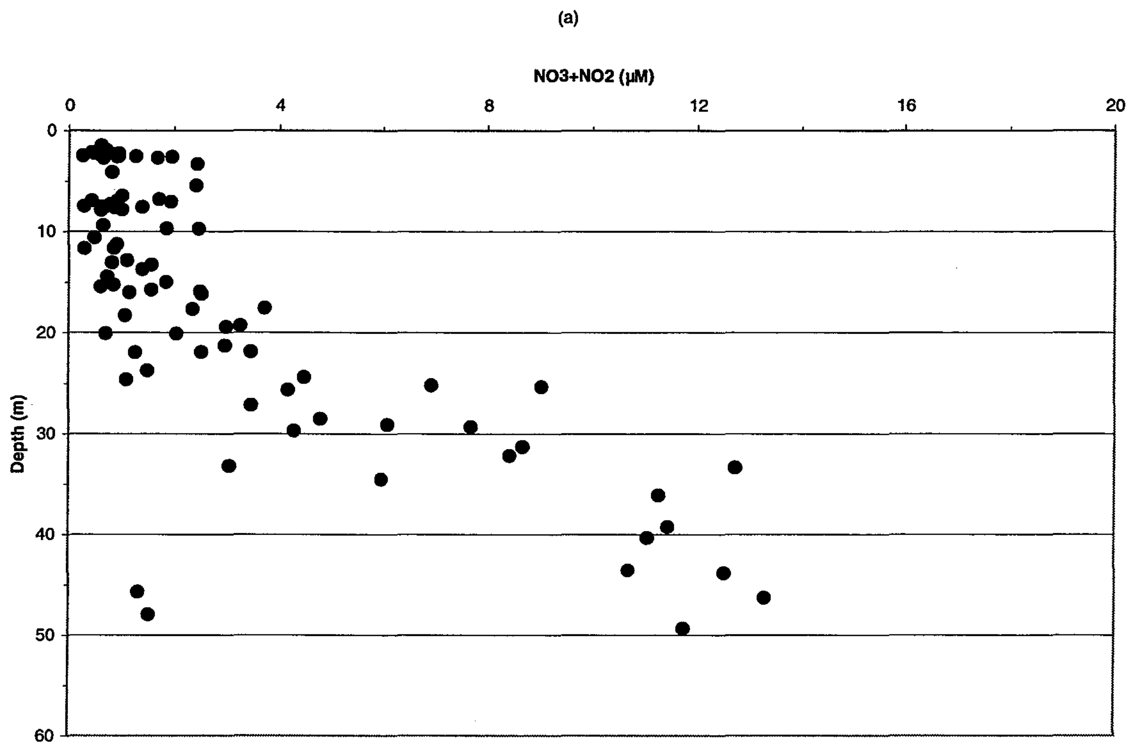


Figure D-76. Depth vs. Nutrient Plots for Nearfield Survey WN98F, (Oct 98)



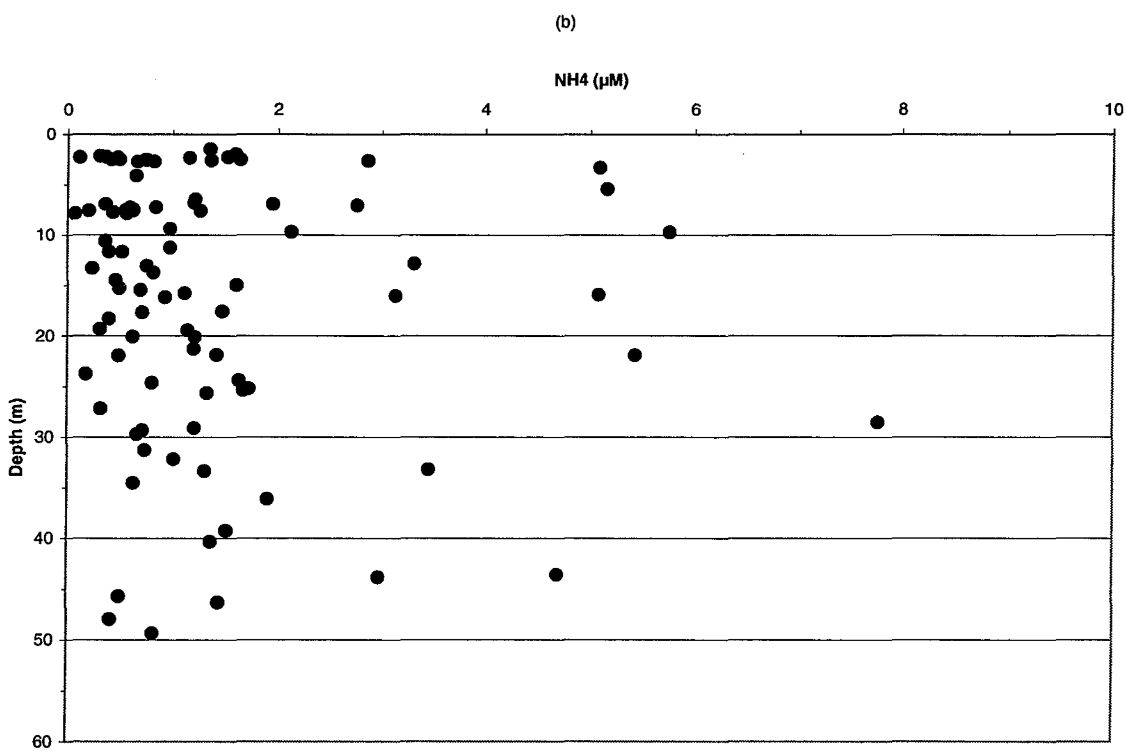
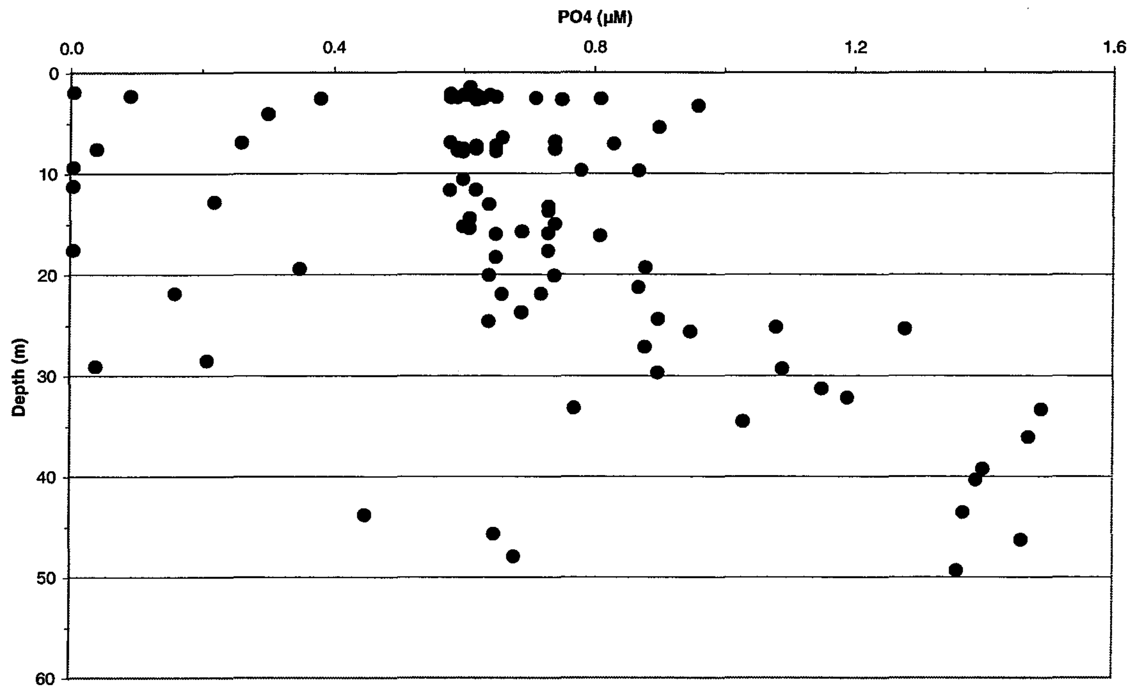


Figure D-77. Depth vs. Nutrient Plots for Nearfield Survey WN98F, (Oct 98)

(a)



(b)

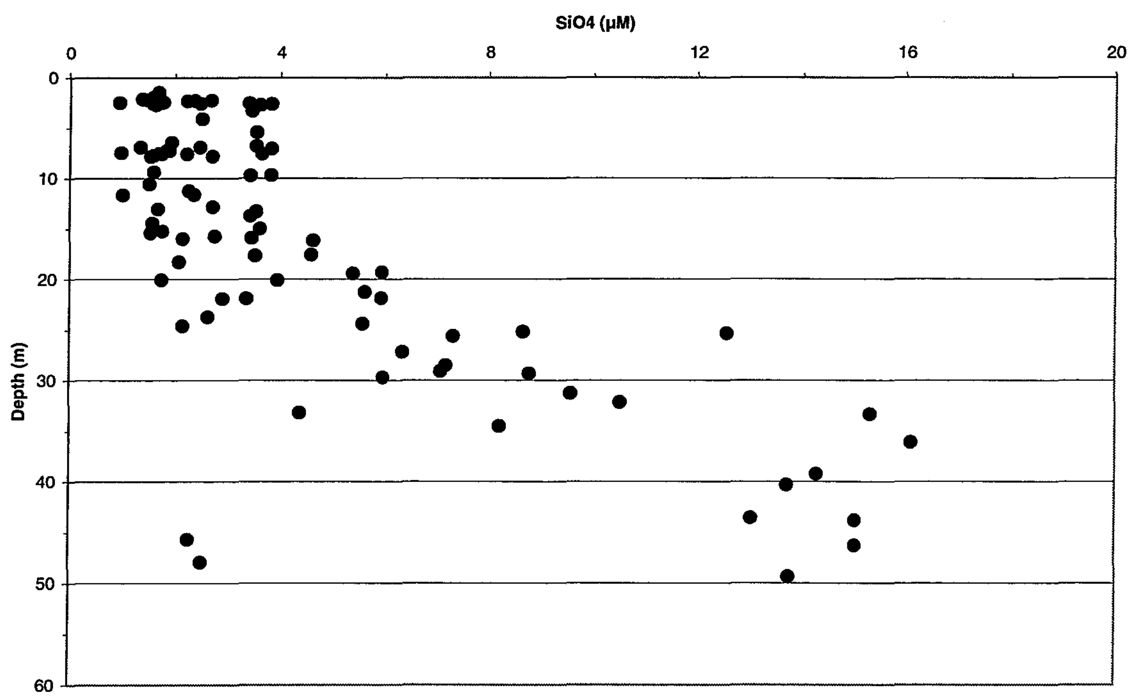
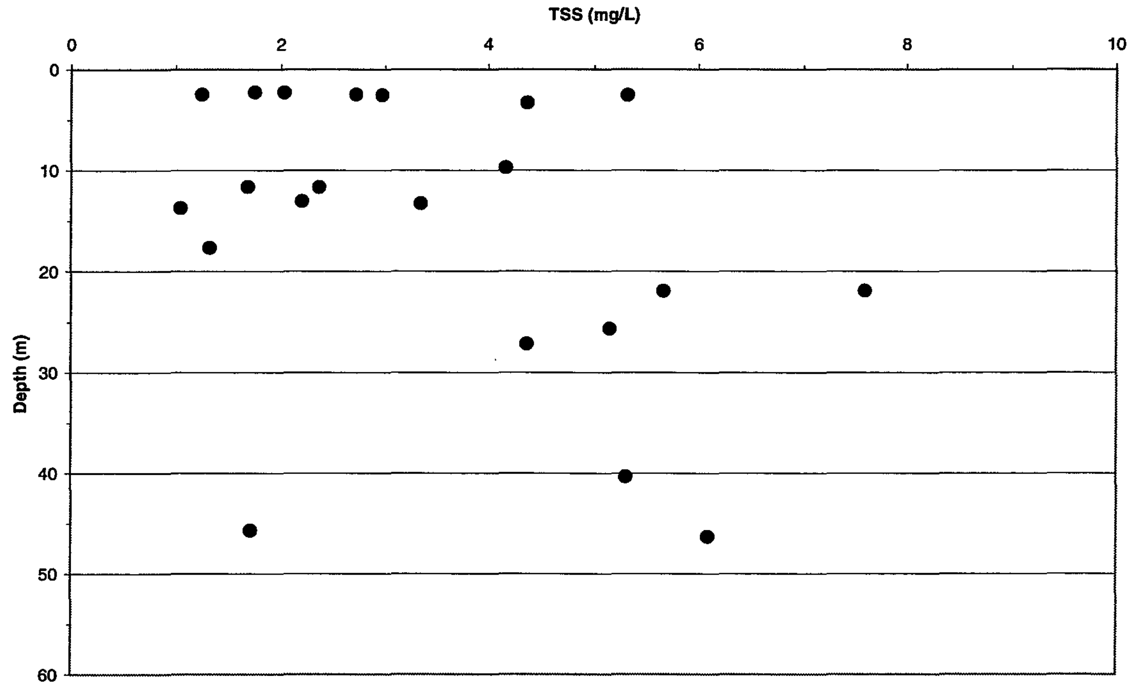


Figure D-78. Depth vs. Nutrient Plots for Nearfield Survey WN98F, (Oct 98)

(a)



(b)

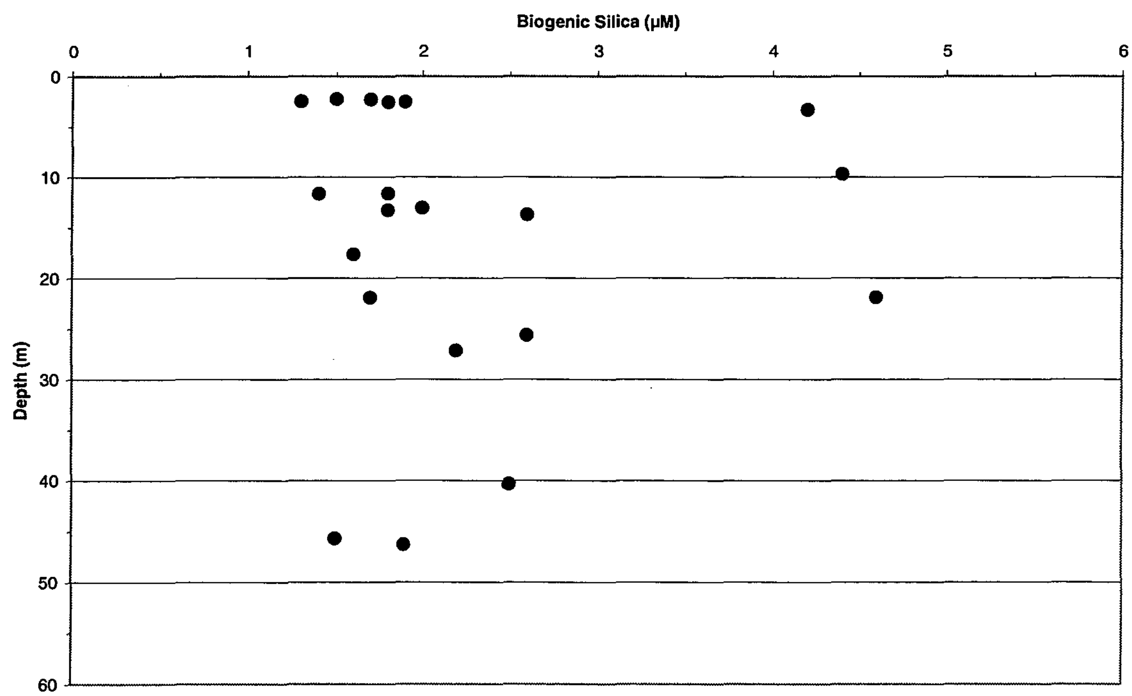
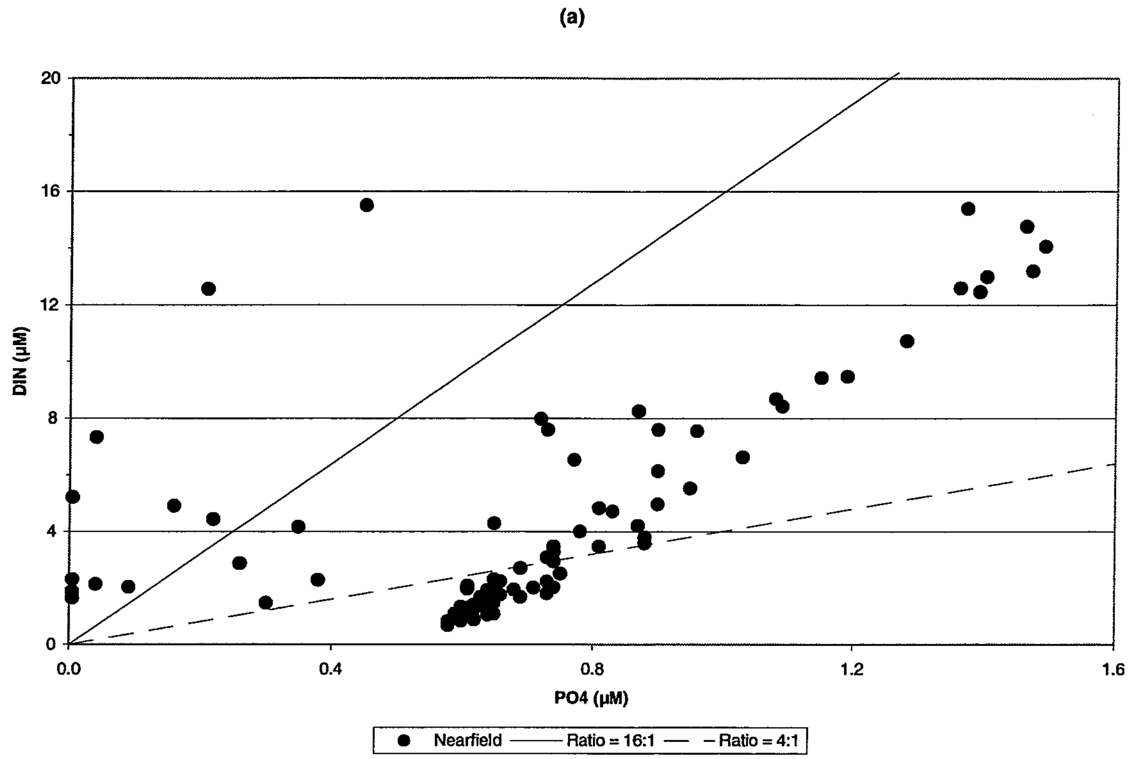


Figure D-79. Depth vs. Nutrient Plots for Nearfield Survey WN98F, (Oct 98)



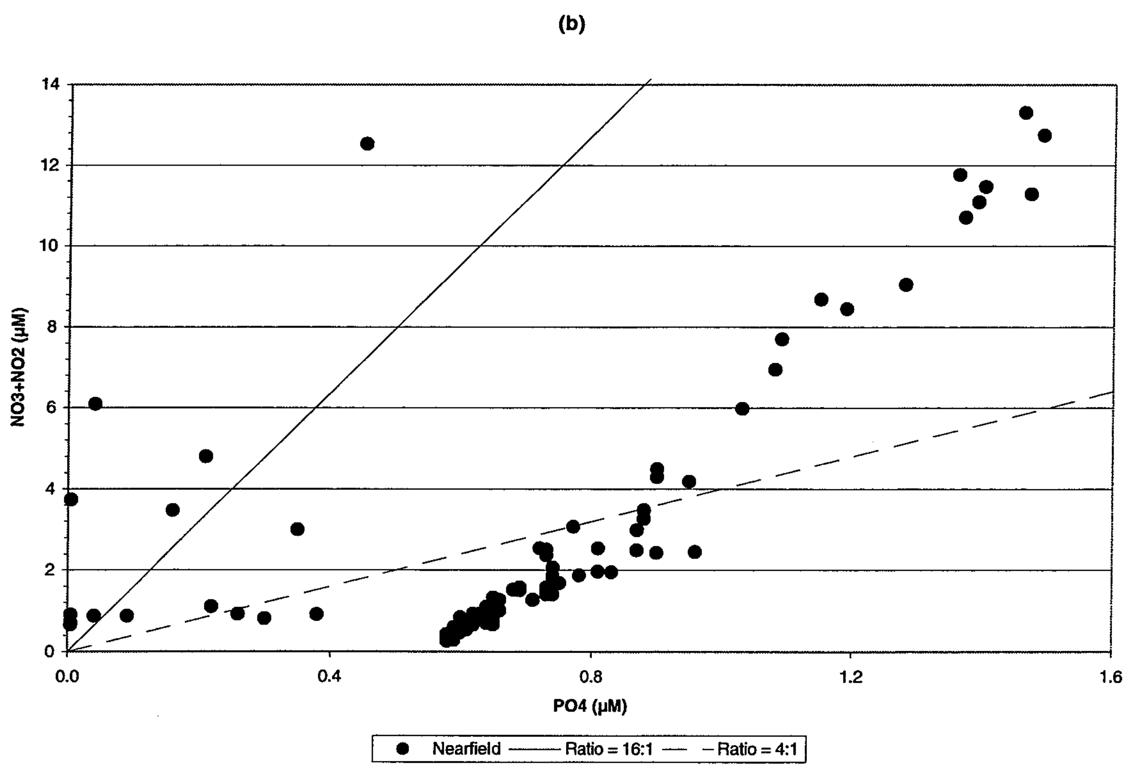
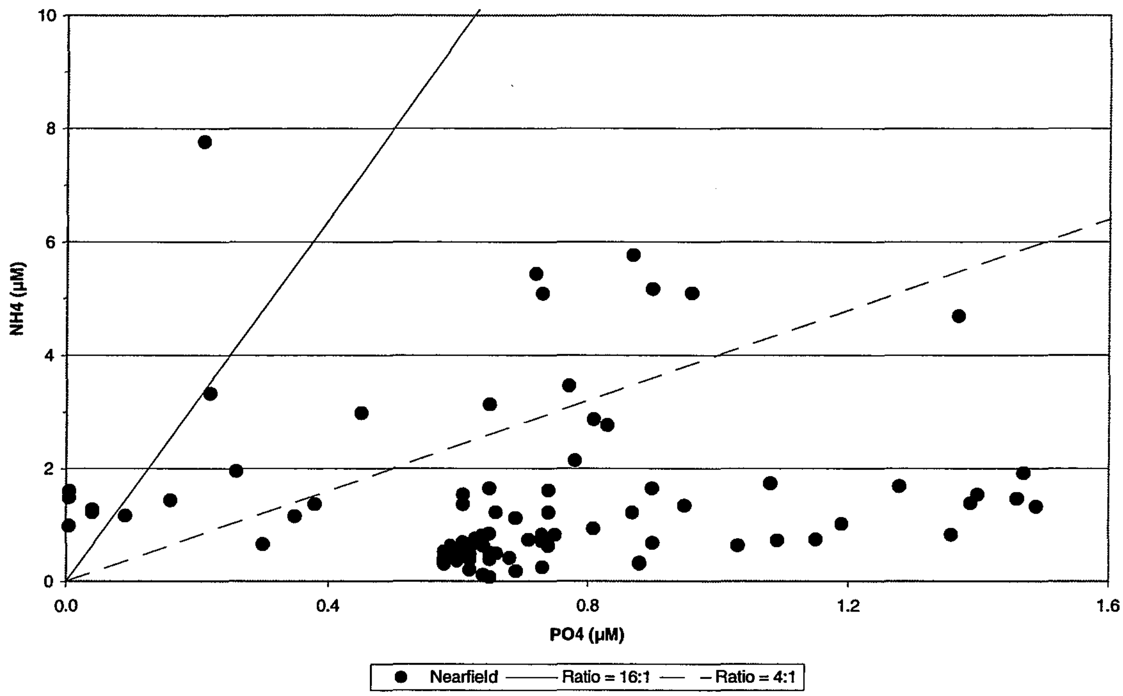


Figure D-80. Nutrient vs. Nutrient Plots for Nearfield Survey WN98F, (Oct 98)

(a)



(b)

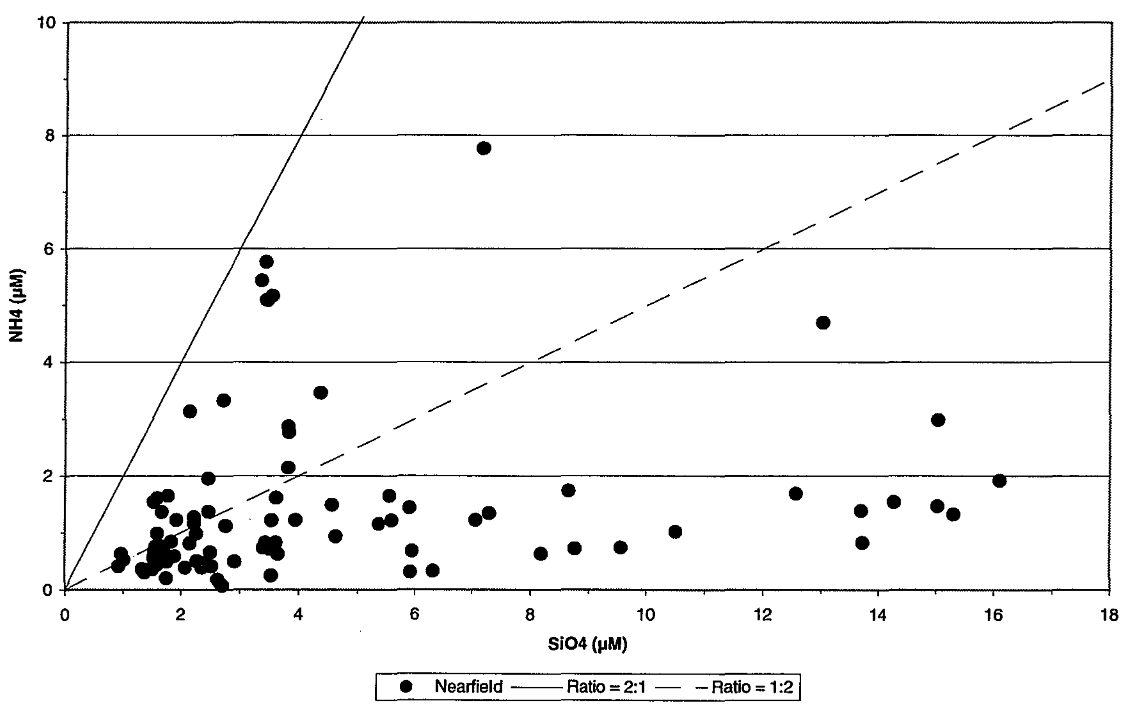
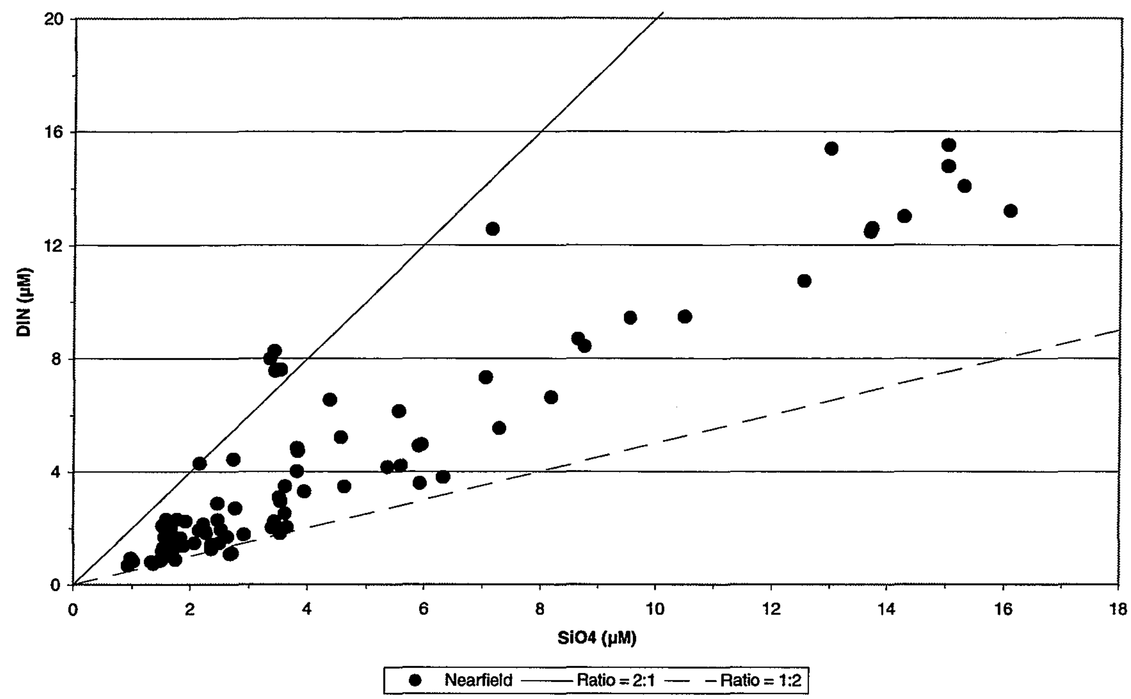


Figure D-81. Nutrient vs. Nutrient Plots for Nearfield Survey WN98F, (Oct 98)

(a)



(b)

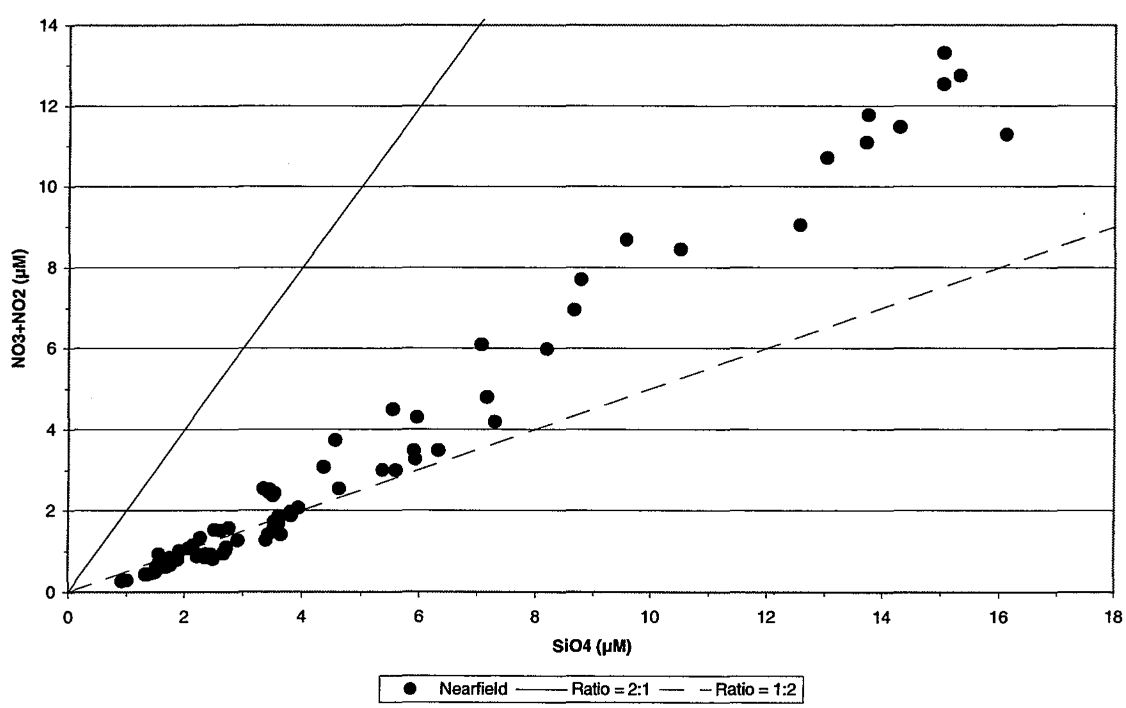
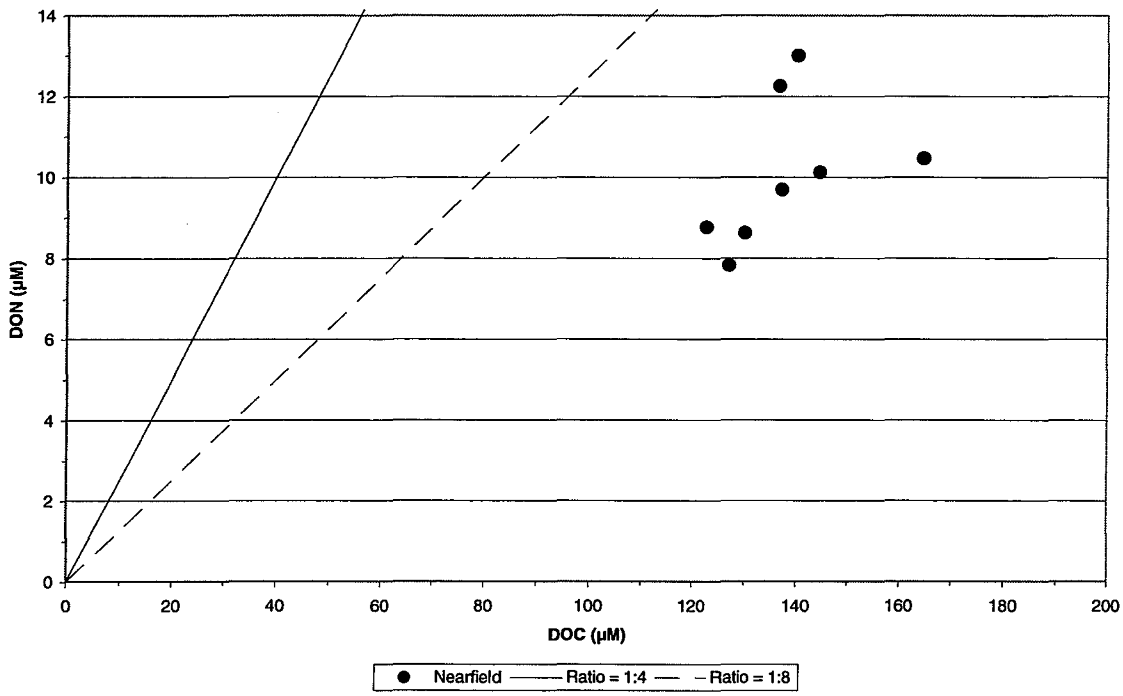


Figure D-82. Nutrient vs. Nutrient Plots for Nearfield Survey WN98F, (Oct 98)

(a)



(b)

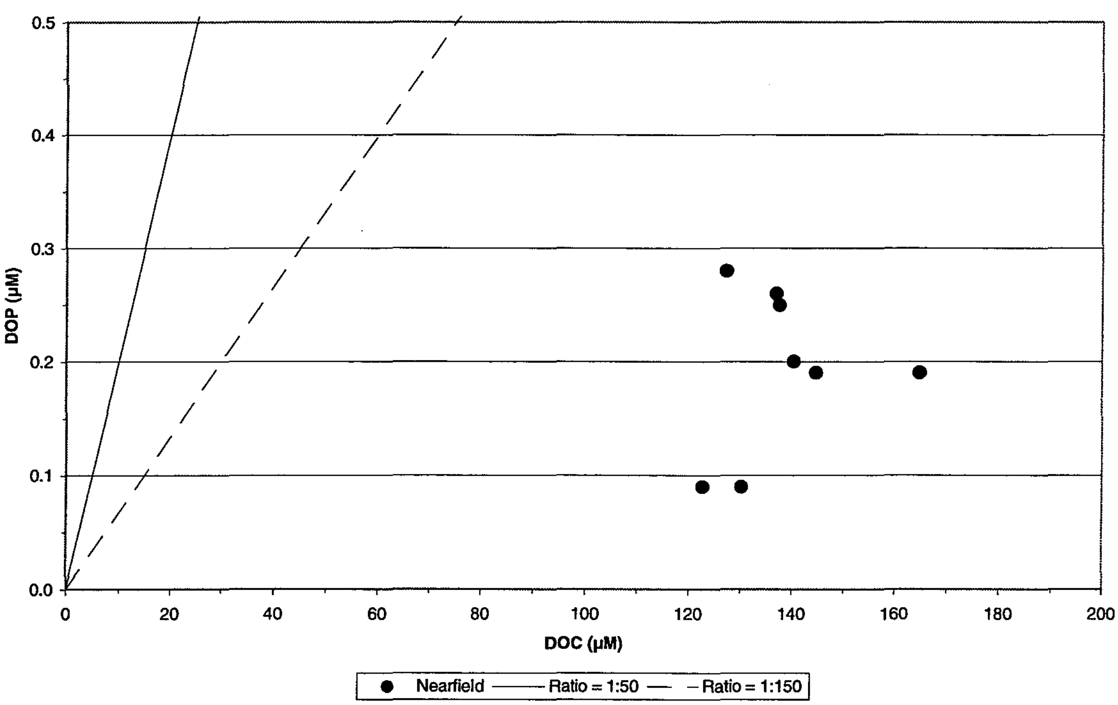
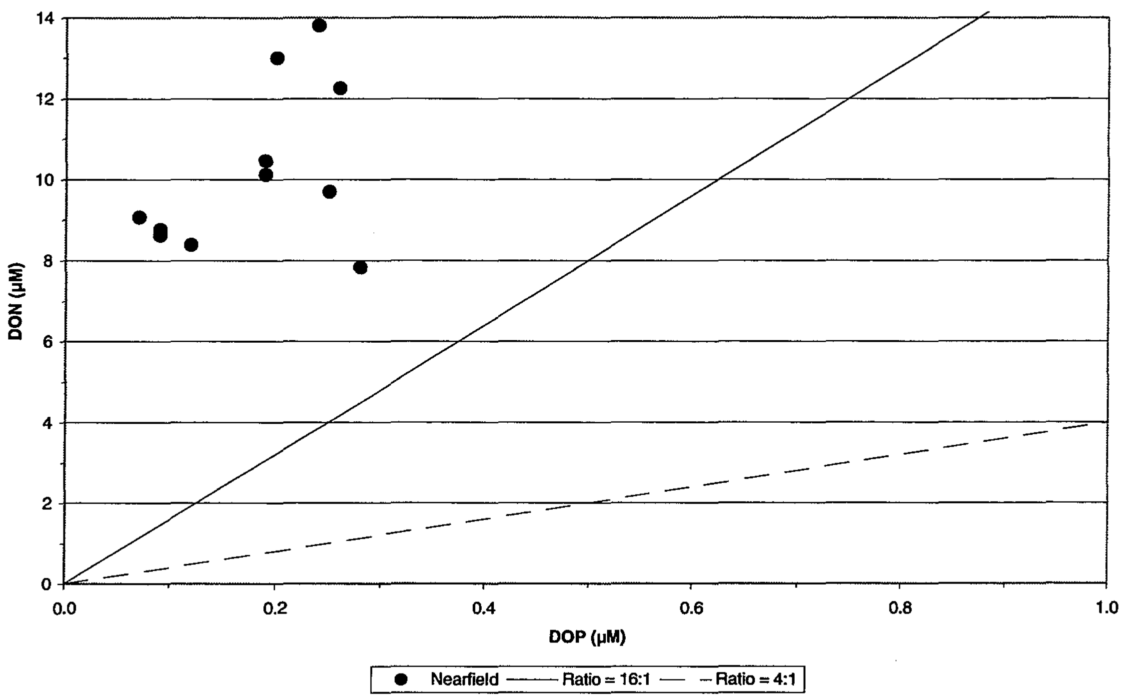


Figure D-83. Nutrient vs. Nutrient Plots for Nearfield Survey WN98F, (Oct 98)

(a)



(b)

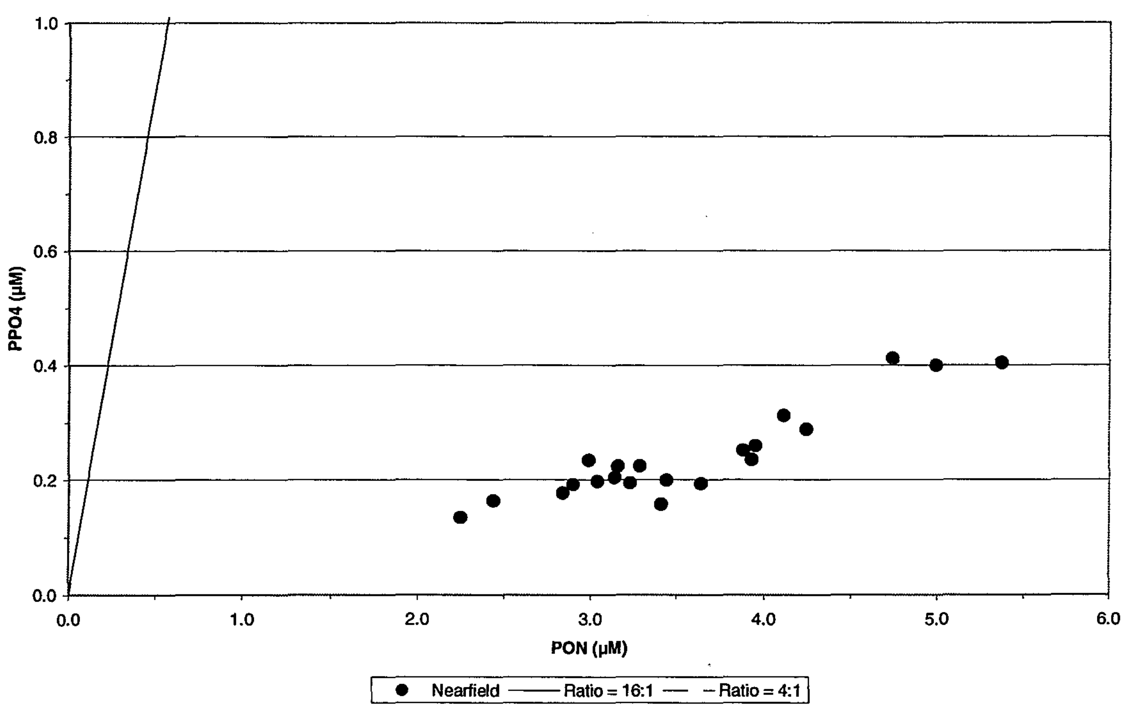


Figure D-84. Nutrient vs. Nutrient Plots for Nearfield Survey WN98F, (Oct 98)

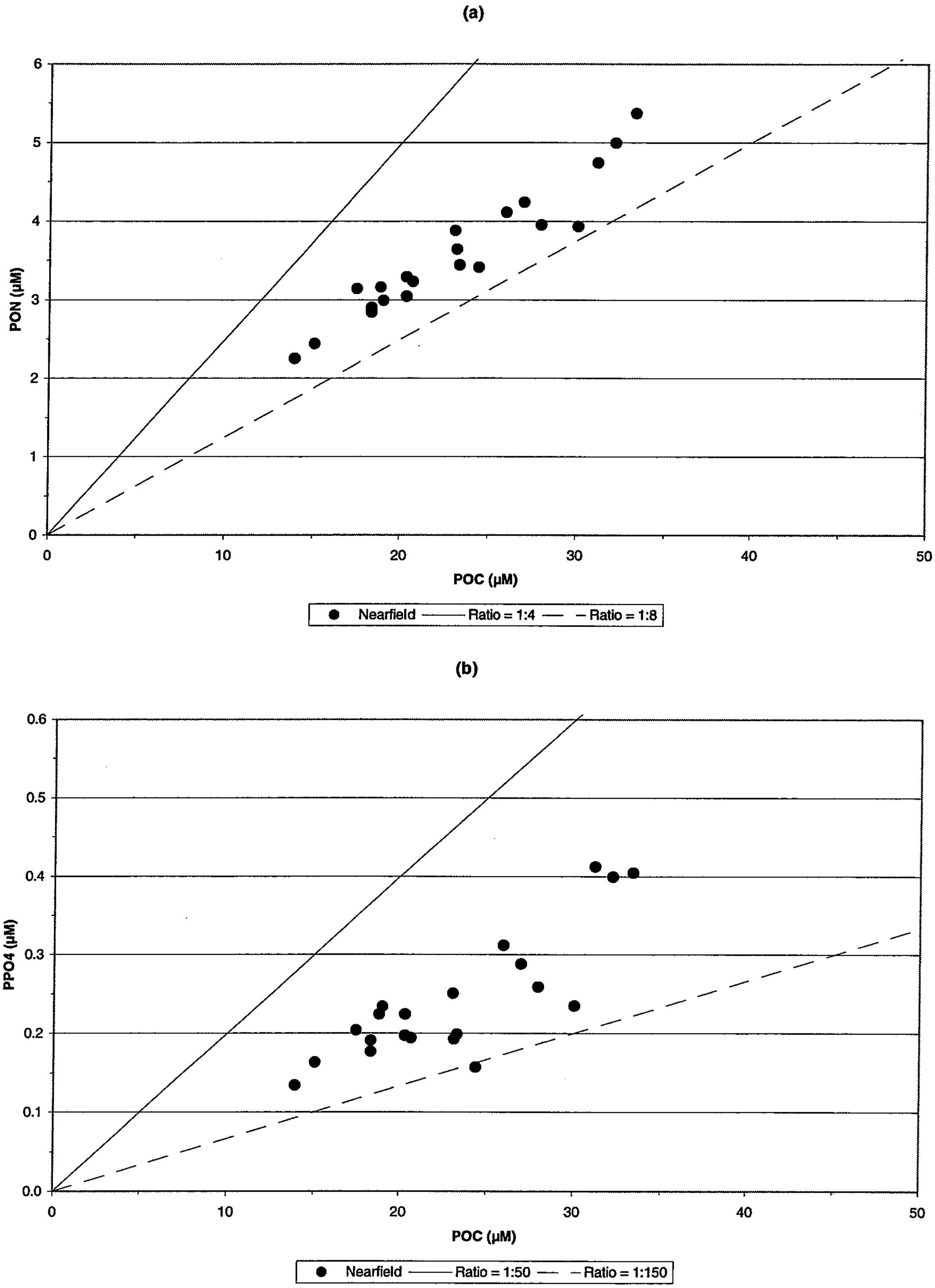
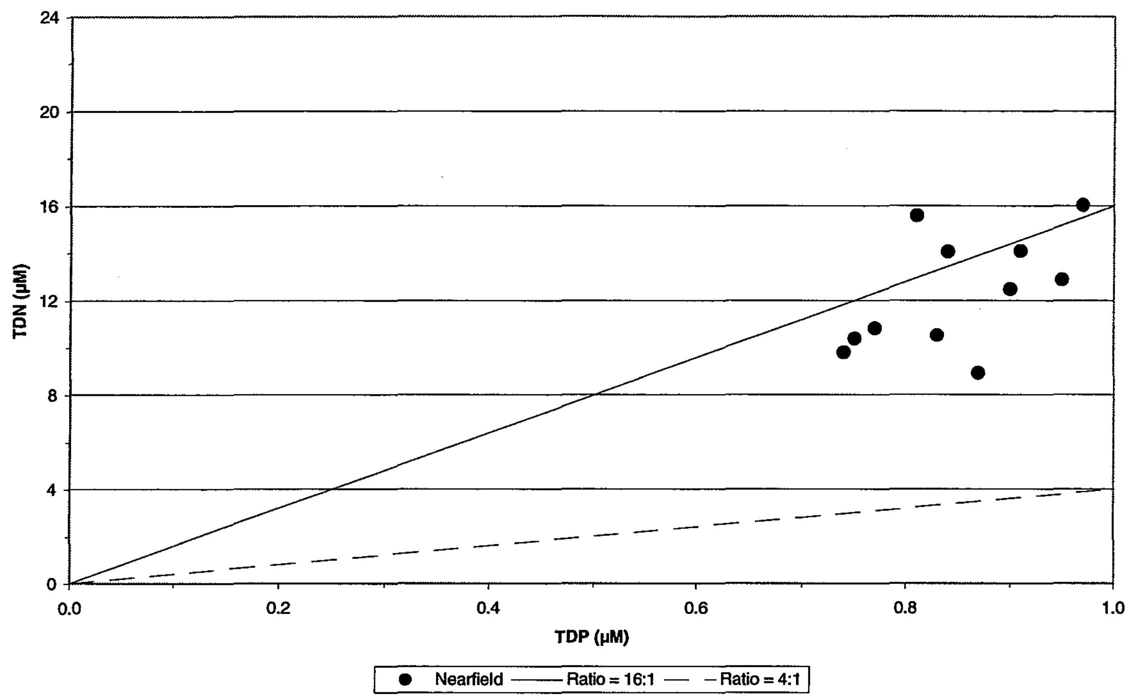


Figure D-85. Nutrient vs. Nutrient Plots for Nearfield Survey WN98F, (Oct 98)

(a)



(b)

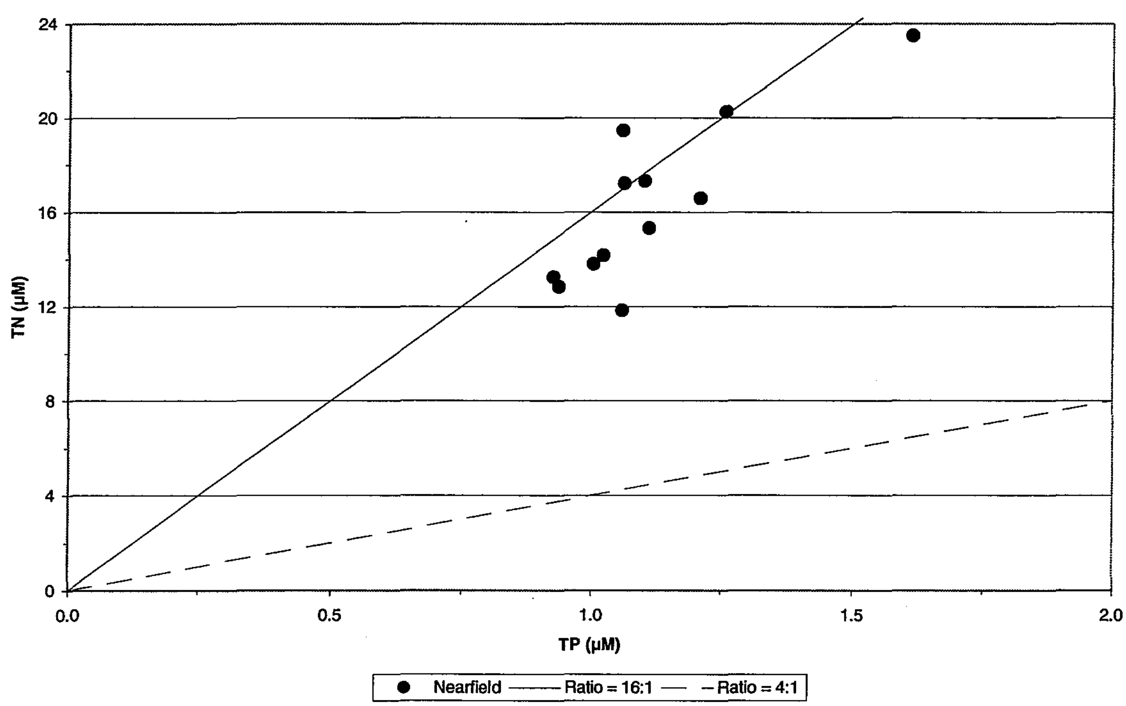
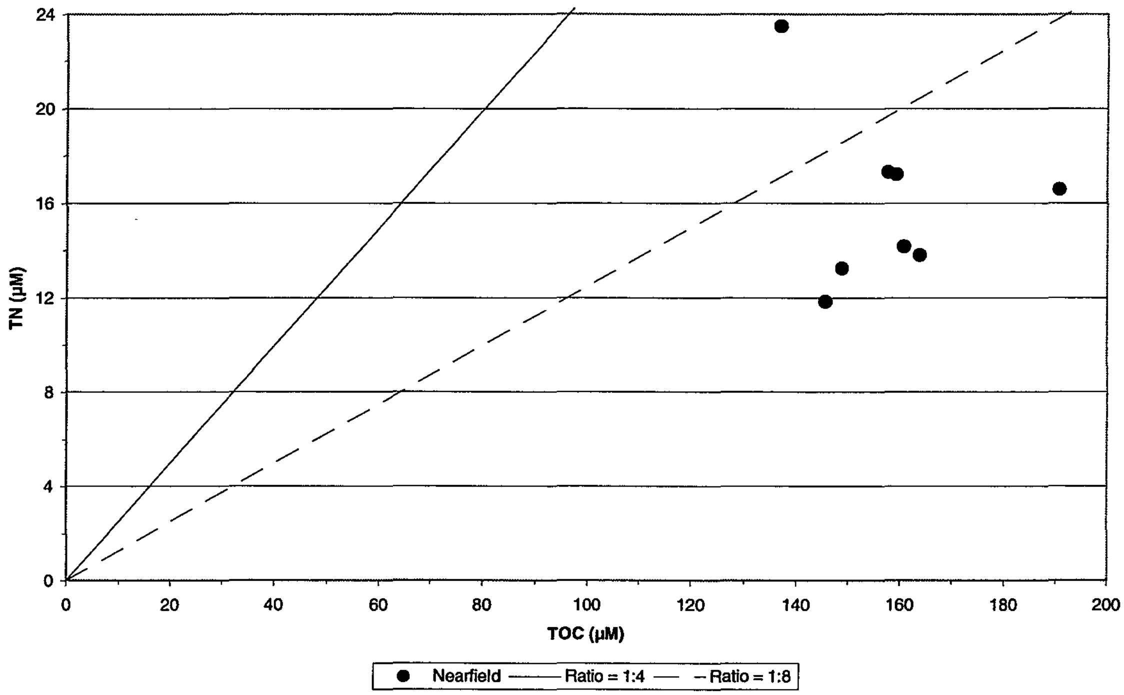


Figure D-86. Nutrient vs. Nutrient Plots for Nearfield Survey WN98F, (Oct 98)

(a)



(b)

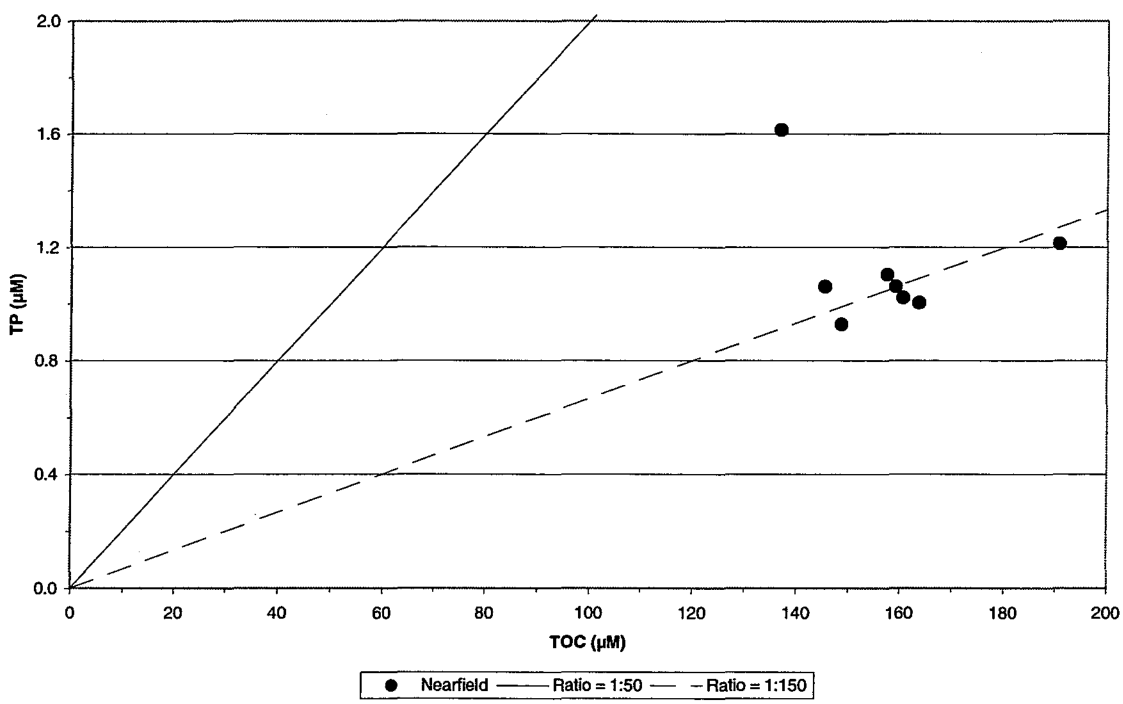


Figure D-87. Nutrient vs. Nutrient Plots for Nearfield Survey WN98F, (Oct 98)

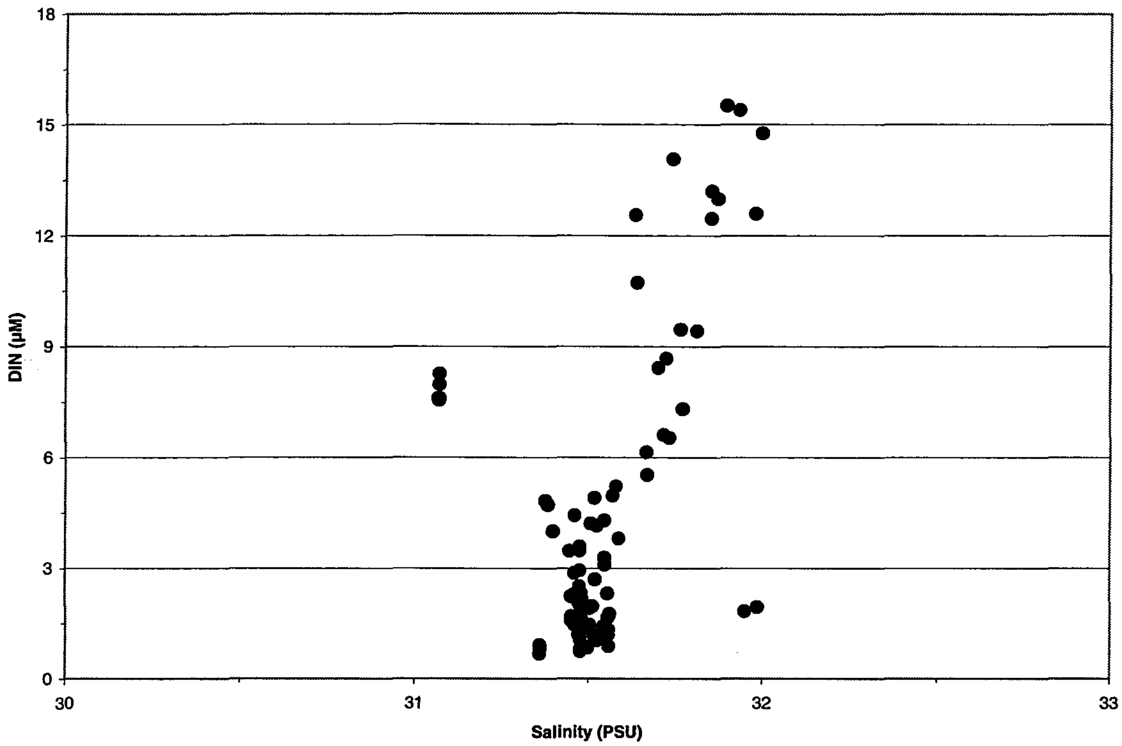


Figure D-88. Nutrient vs. Salinity Plots for Nearfield Survey WN98F (Oct 98)

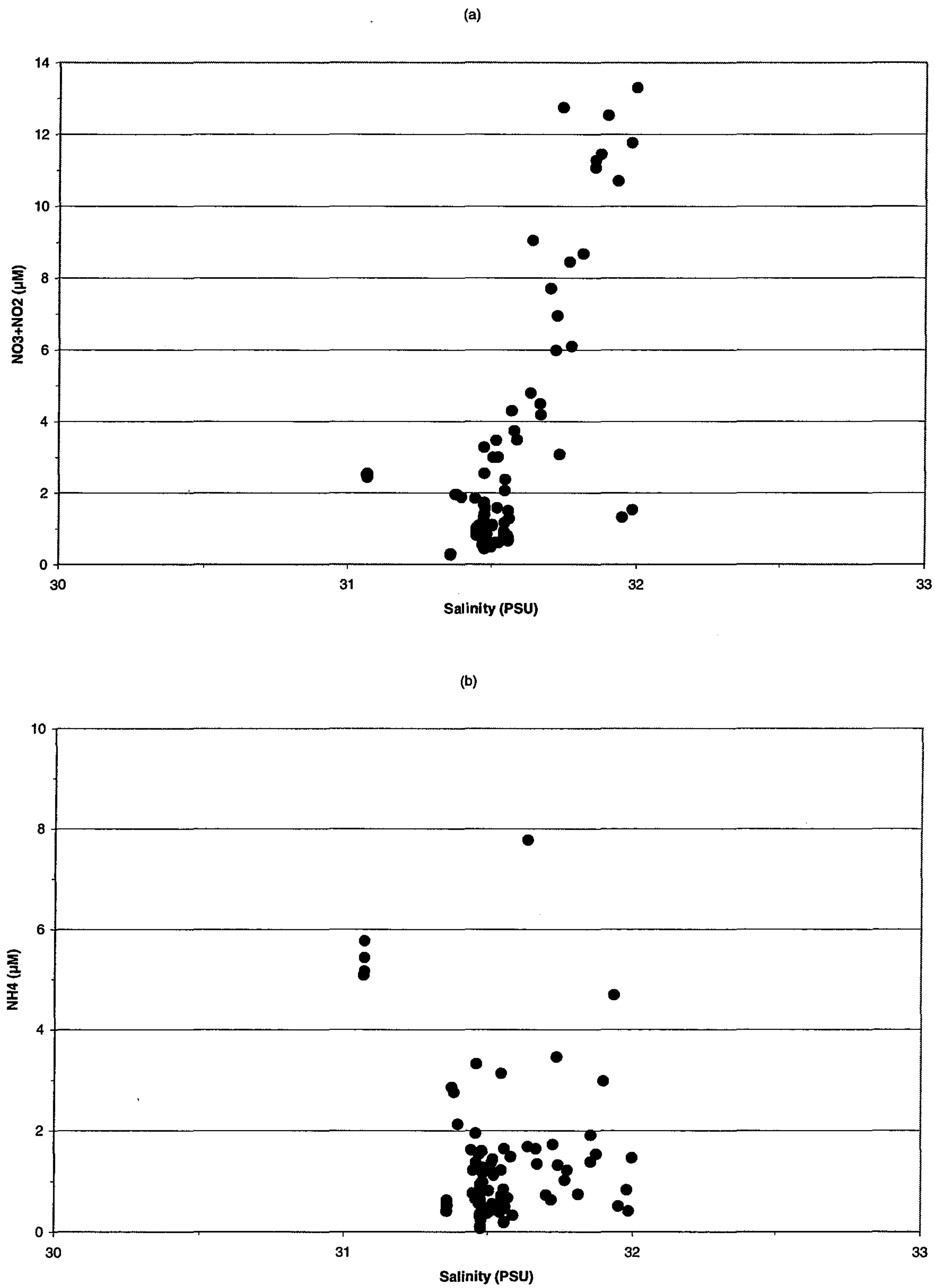
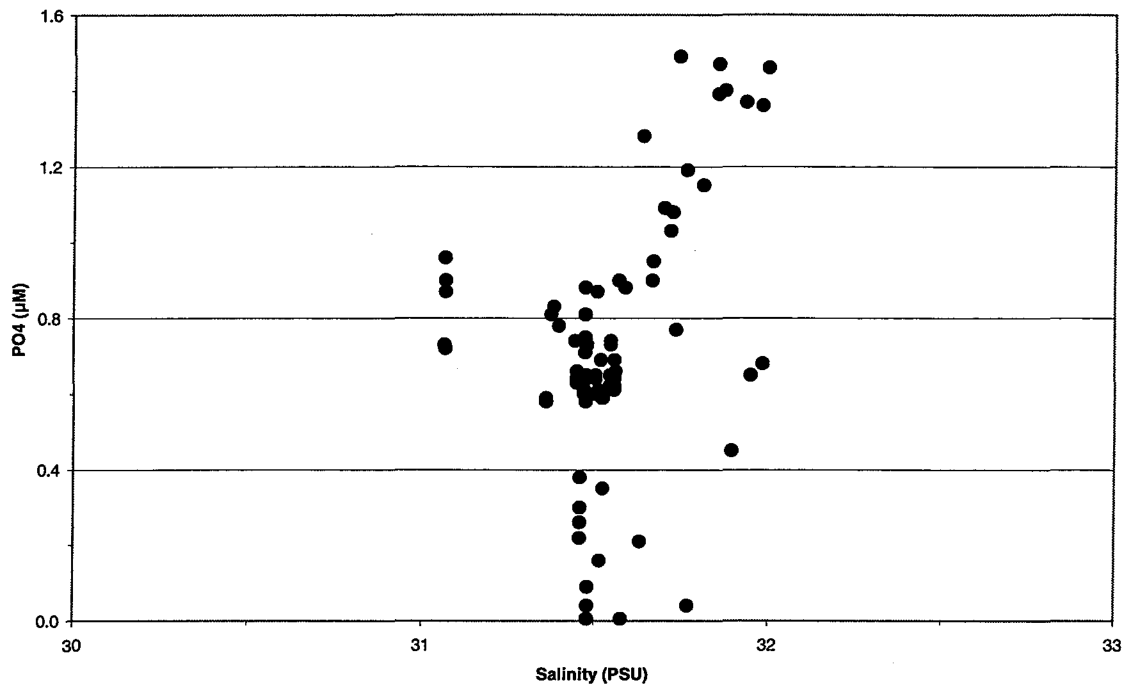


Figure D-89. Nutrient vs. Salinity Plots for Nearfield Survey WN98F, (Oct 98)

(a)



(b)

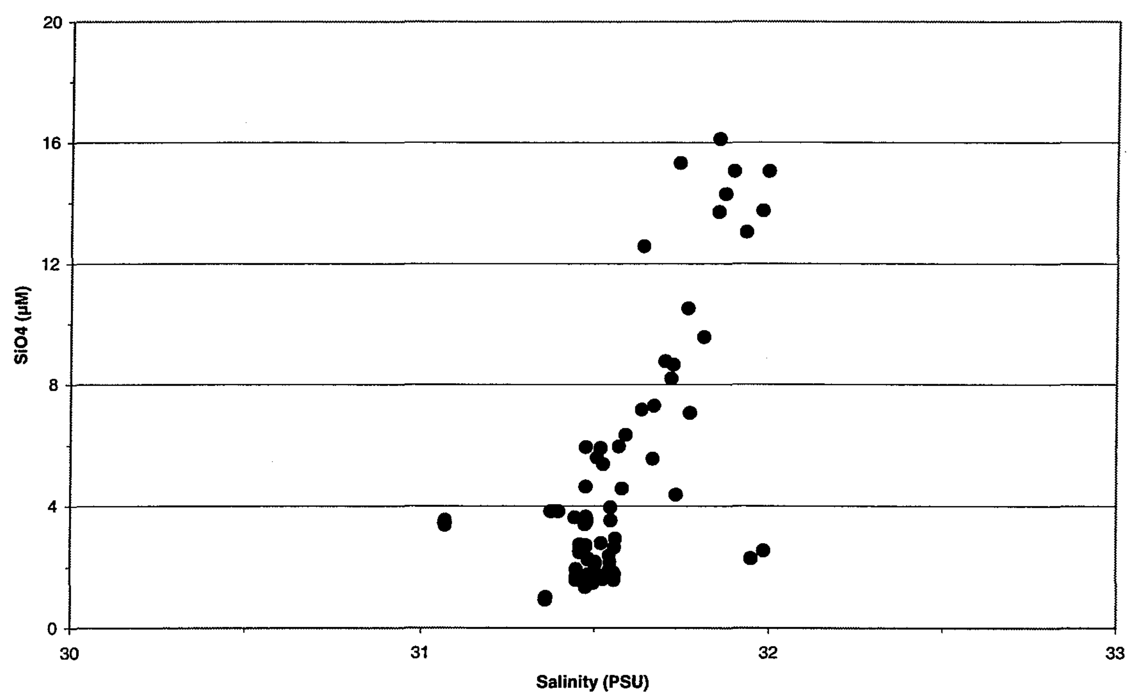


Figure D-90. Nutrient vs. Salinity Plots for Nearfield Survey WN98F, (Oct 98)

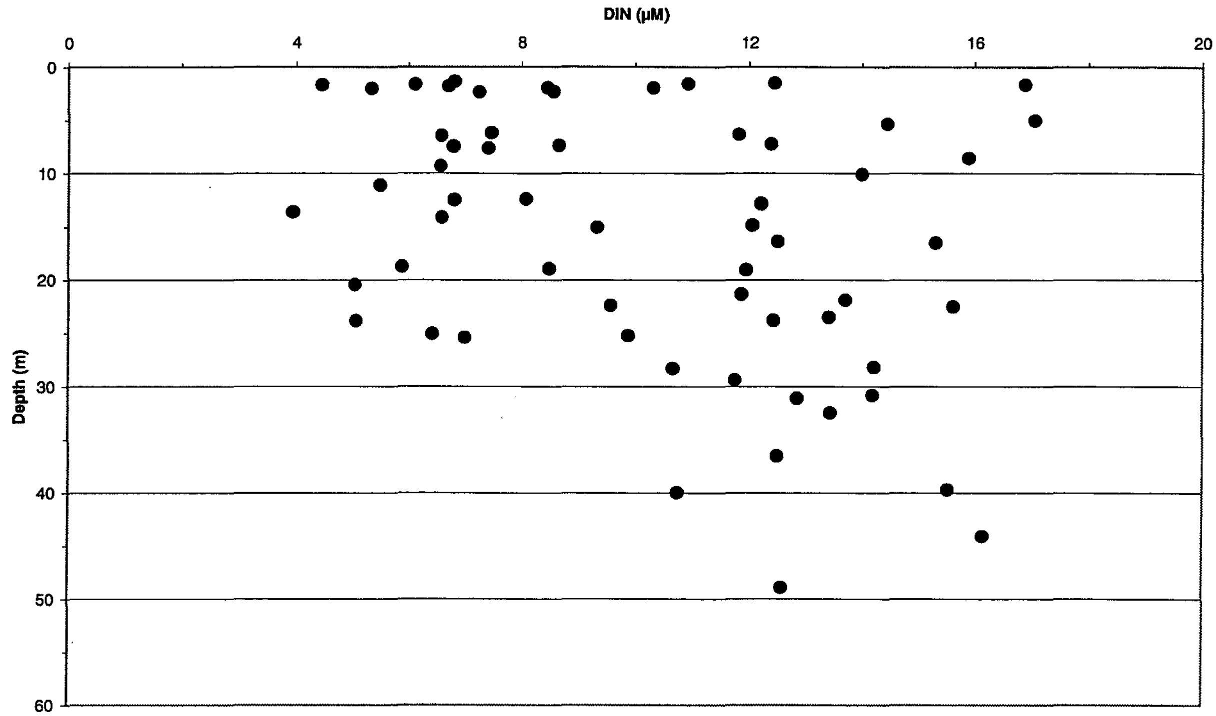
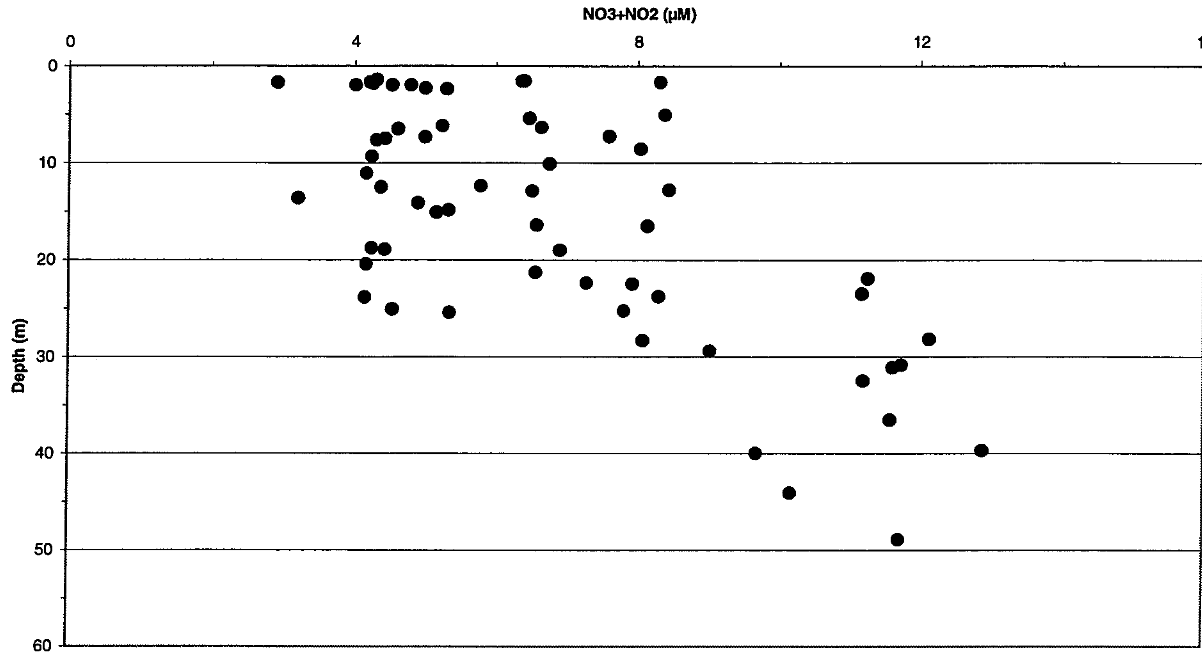


Figure D-91. Depth vs. Nutrient Plots for Nearfield Survey WN98G, (Nov 98)

(a)



(b)

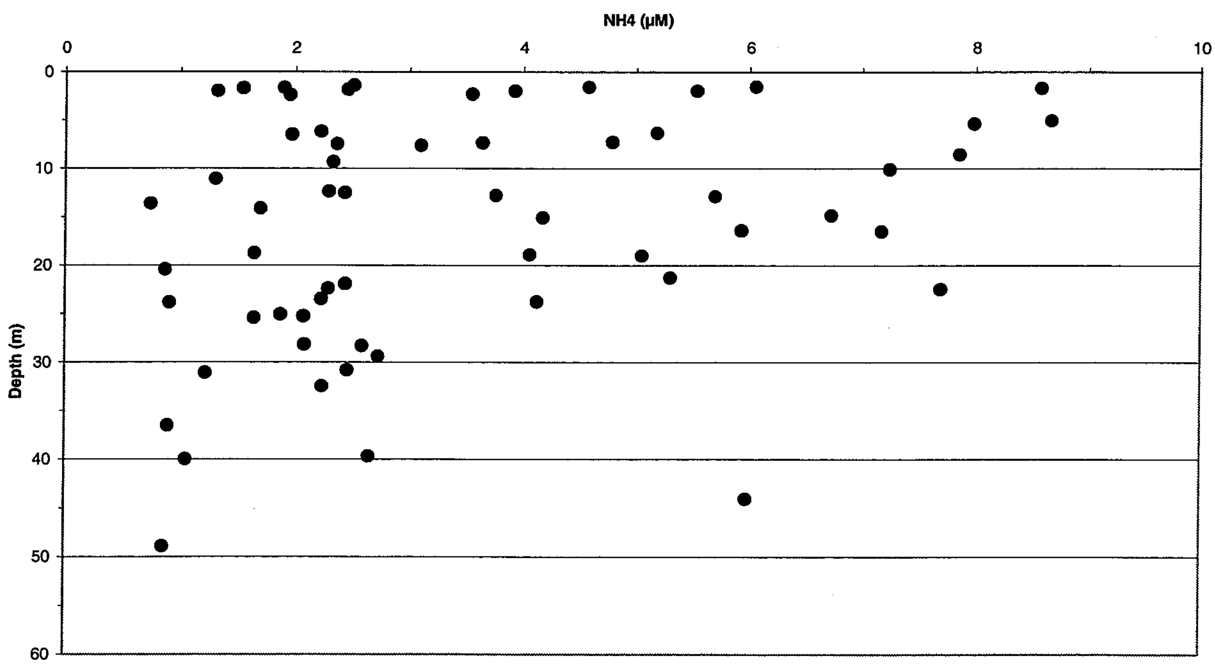
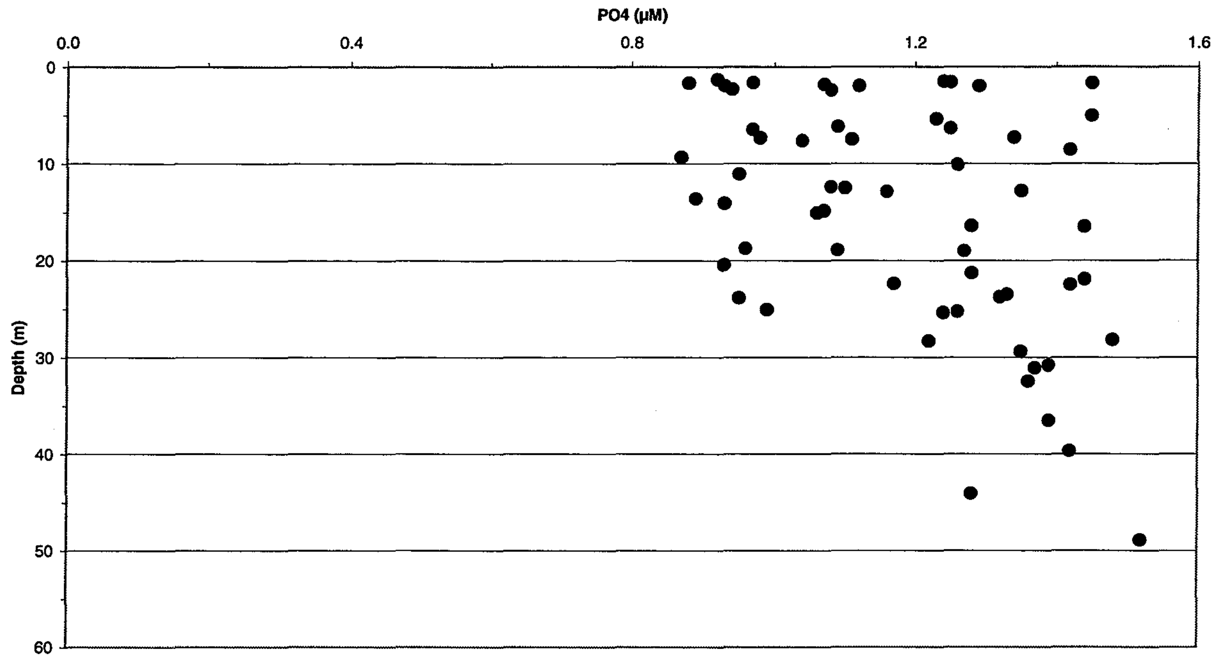


Figure D-92. Depth vs. Nutrient Plots for Nearfield Survey WN98G, (Nov 98)

(a)



(b)

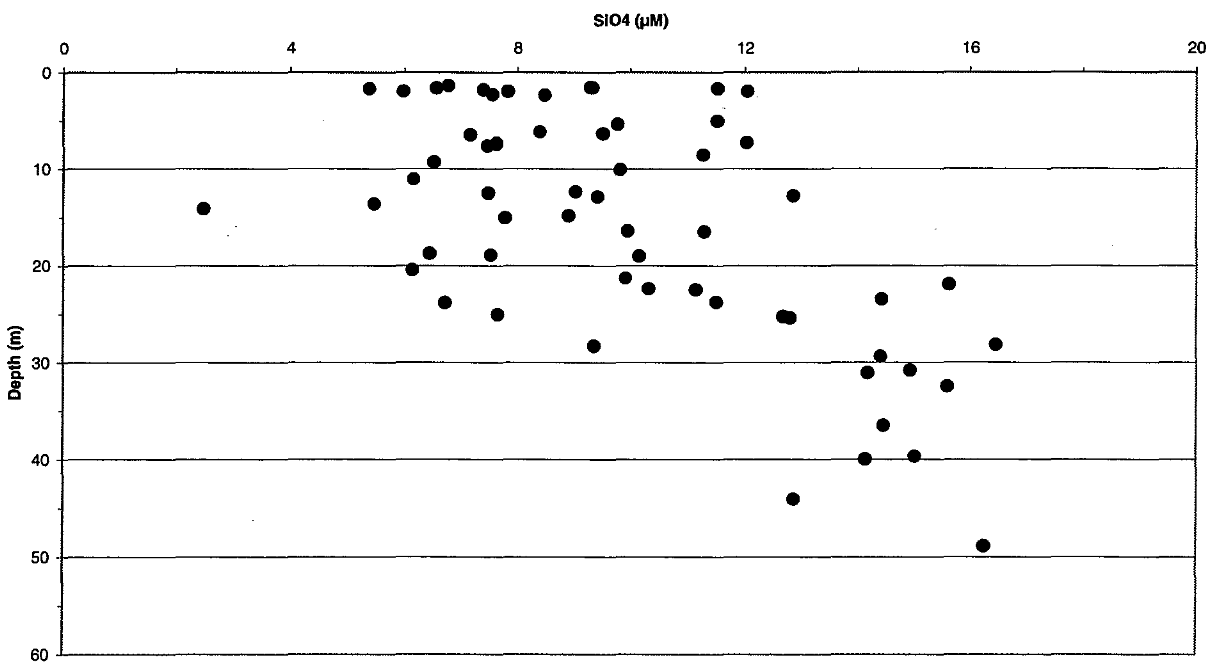
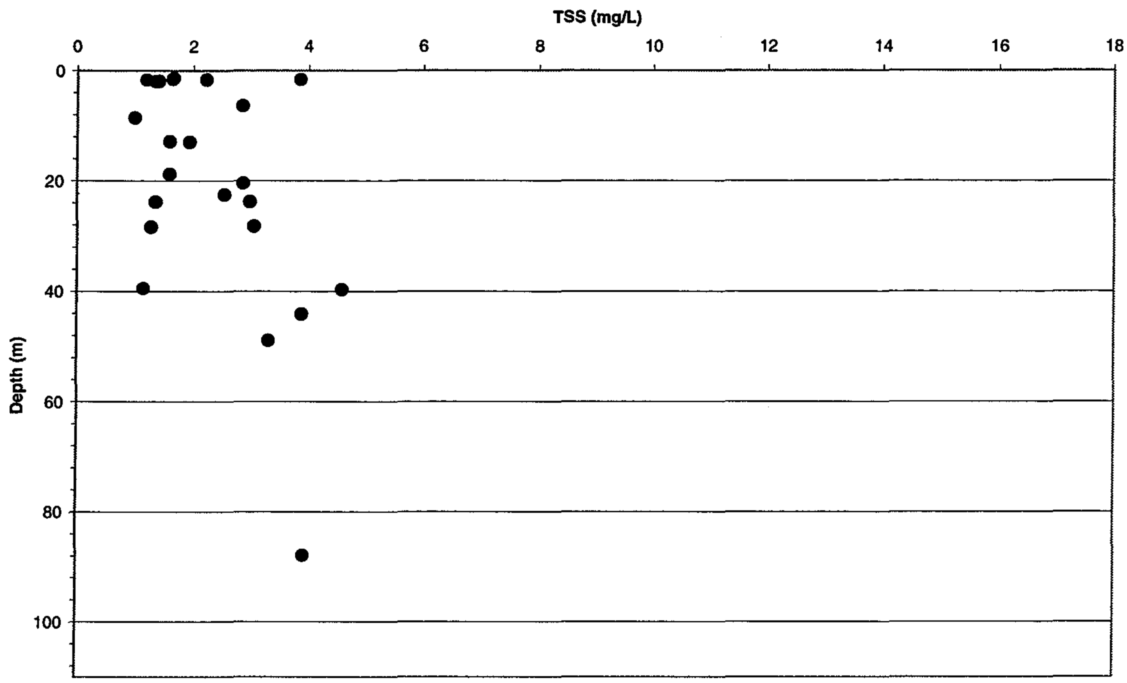


Figure D-93. Depth vs. Nutrient Plots for Nearfield Survey WN98G, (Nov 98)

(a)



(b)

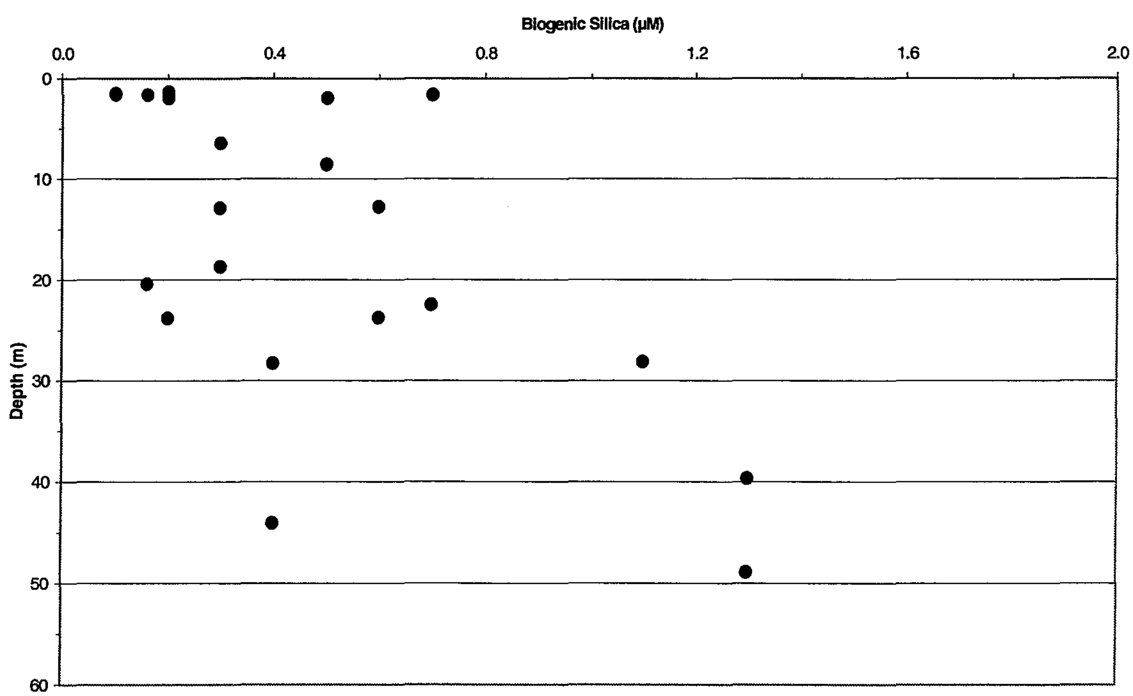


Figure D-94. Depth vs. Nutrient Plots for Nearfield Survey WN98G, (Nov 98)

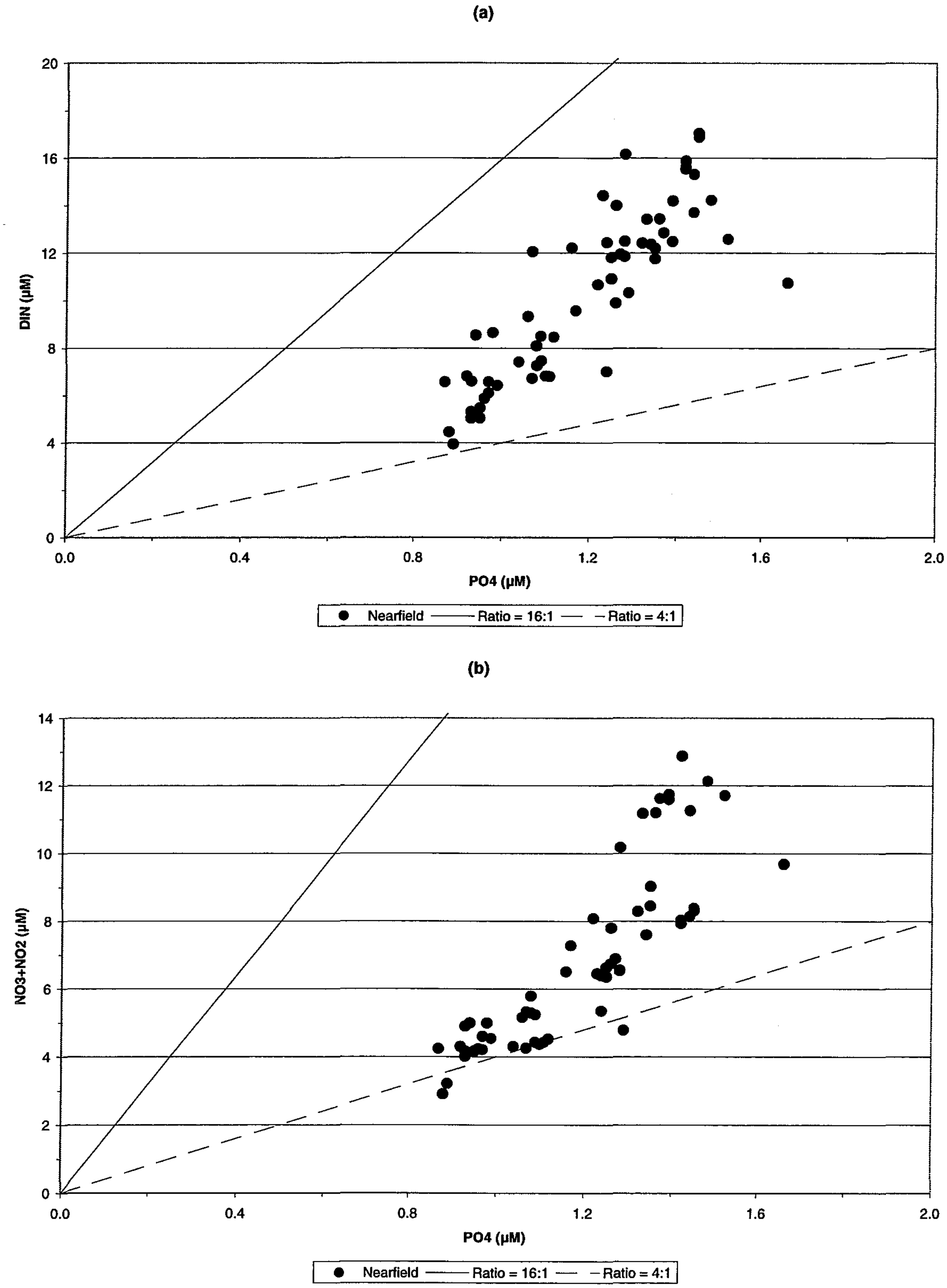


Figure D-95. Nutrient vs. Nutrient Plots for Nearfield Survey WN98G, (Nov 98)

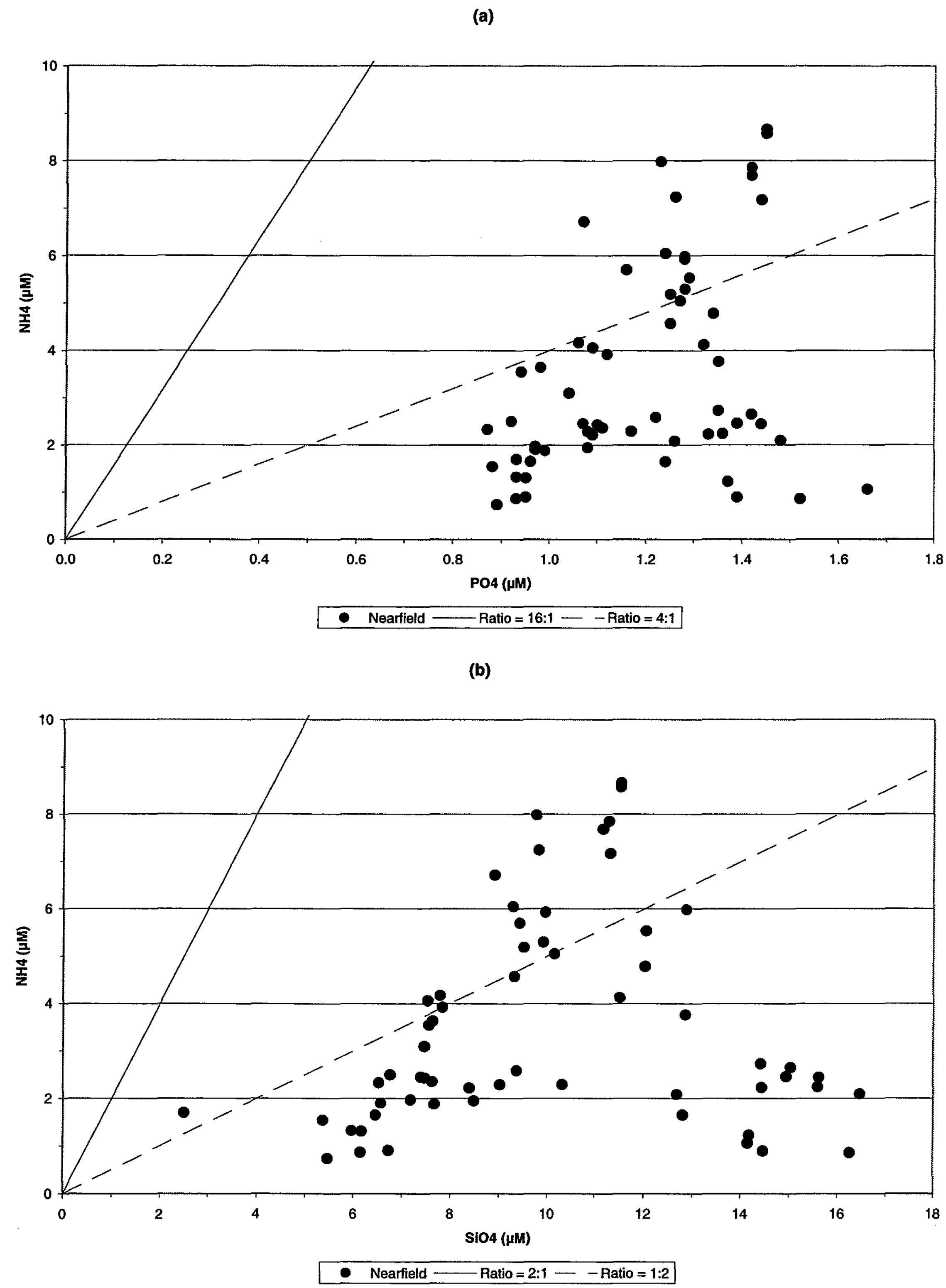
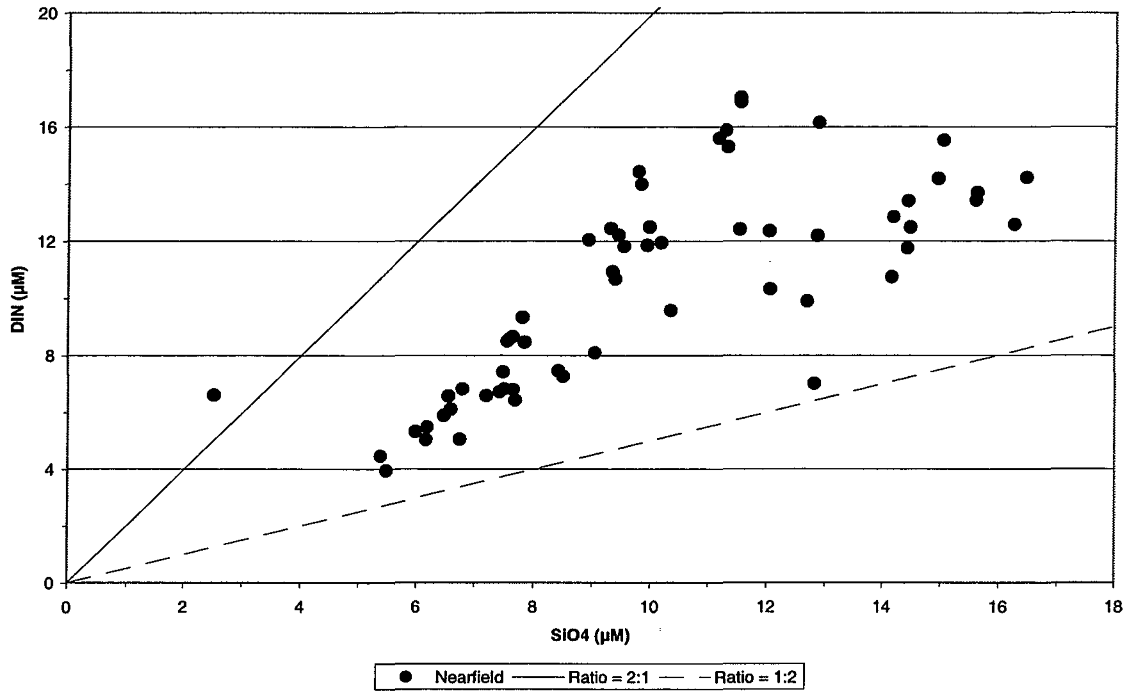


Figure D-96. Nutrient vs. Nutrient Plots for Nearfield Survey WN98G, (Nov 98)

(a)



(b)

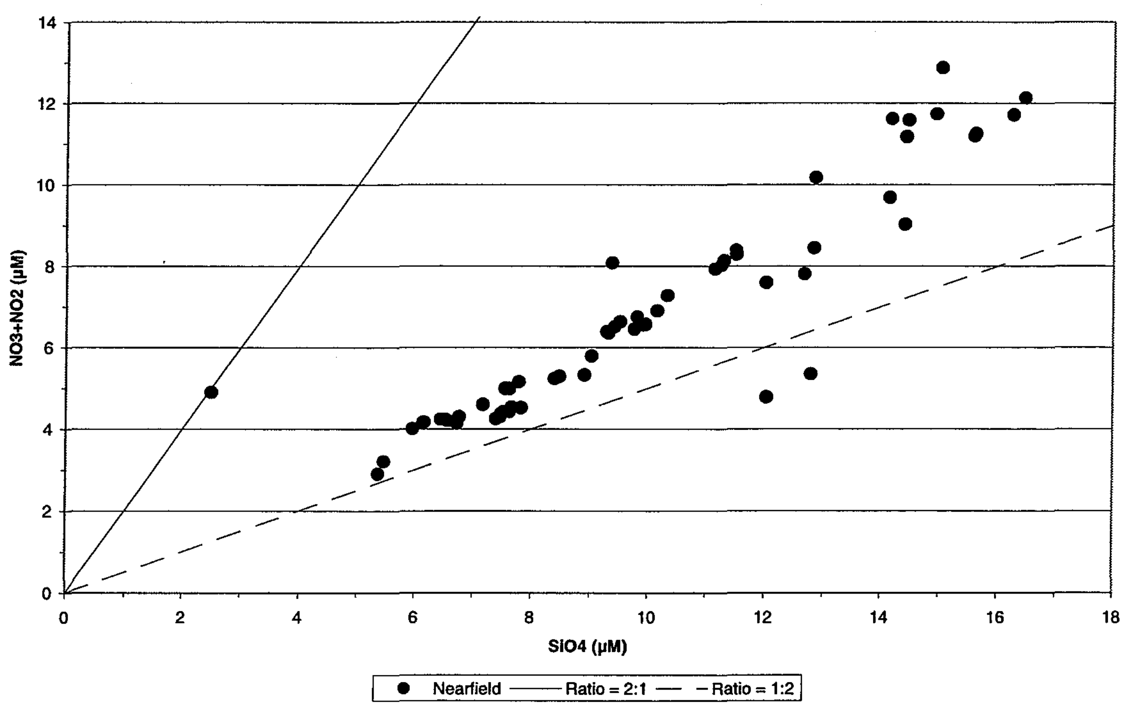
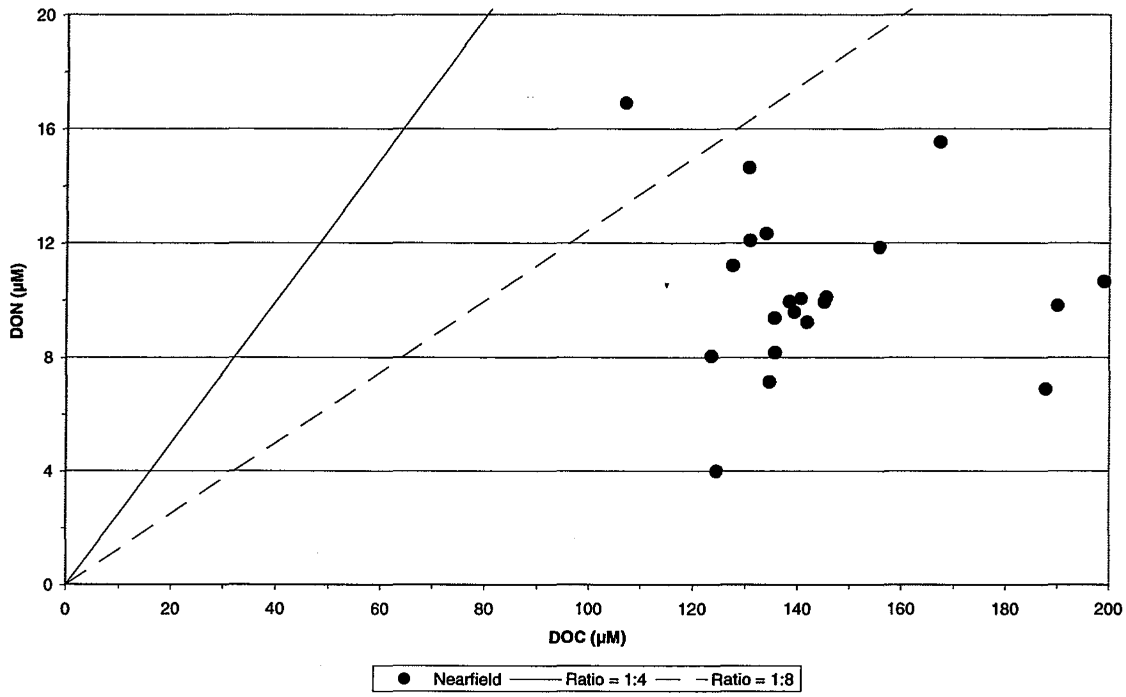


Figure D-97. Nutrient vs. Nutrient Plots for Nearfield Survey WN98G, (Nov 98)

(a)



(b)

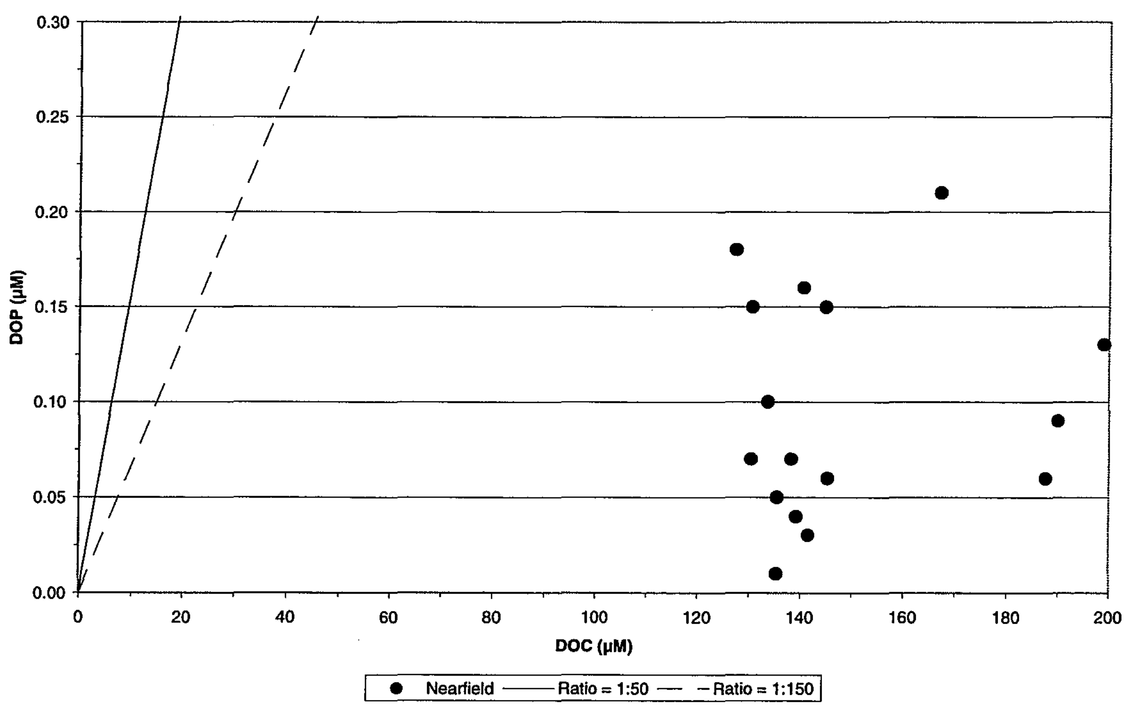
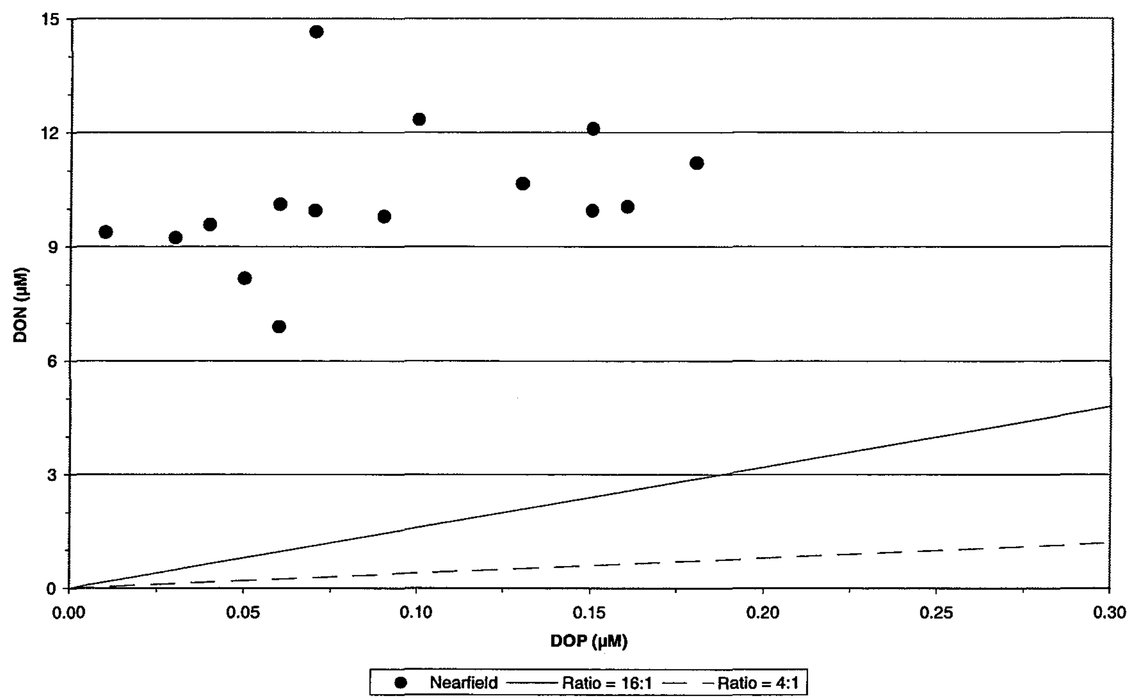


Figure D-98. Nutrient vs. Nutrient Plots for Nearfield Survey WN98G, (Nov 98)

(a)



(b)

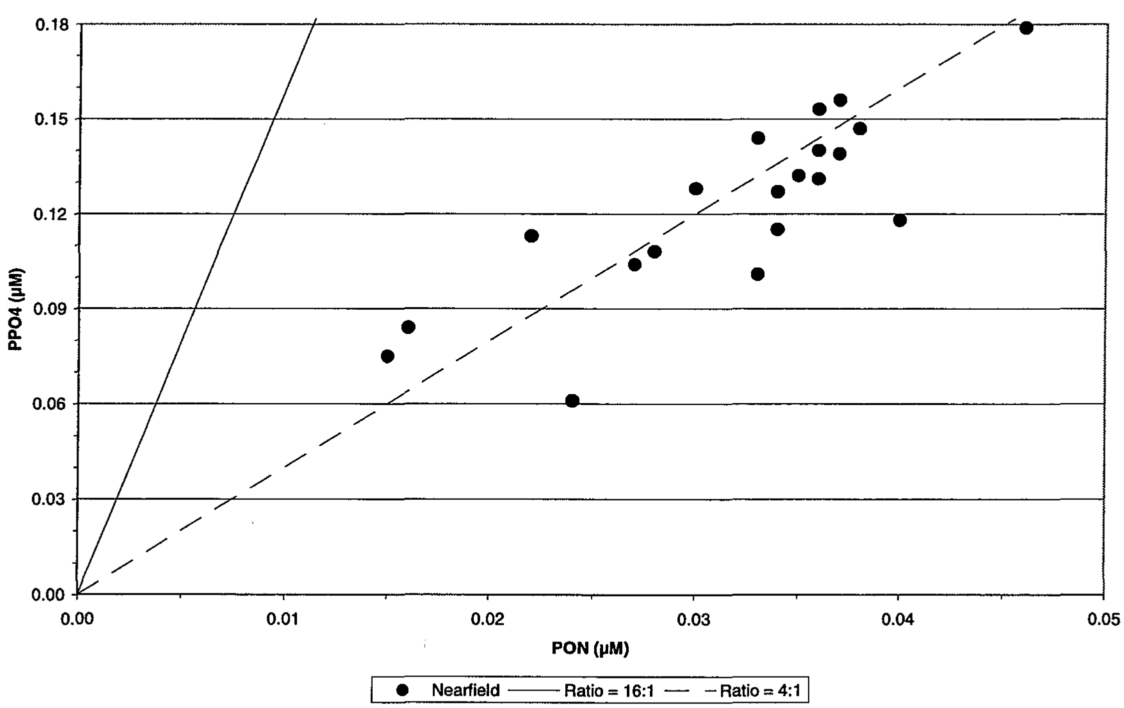
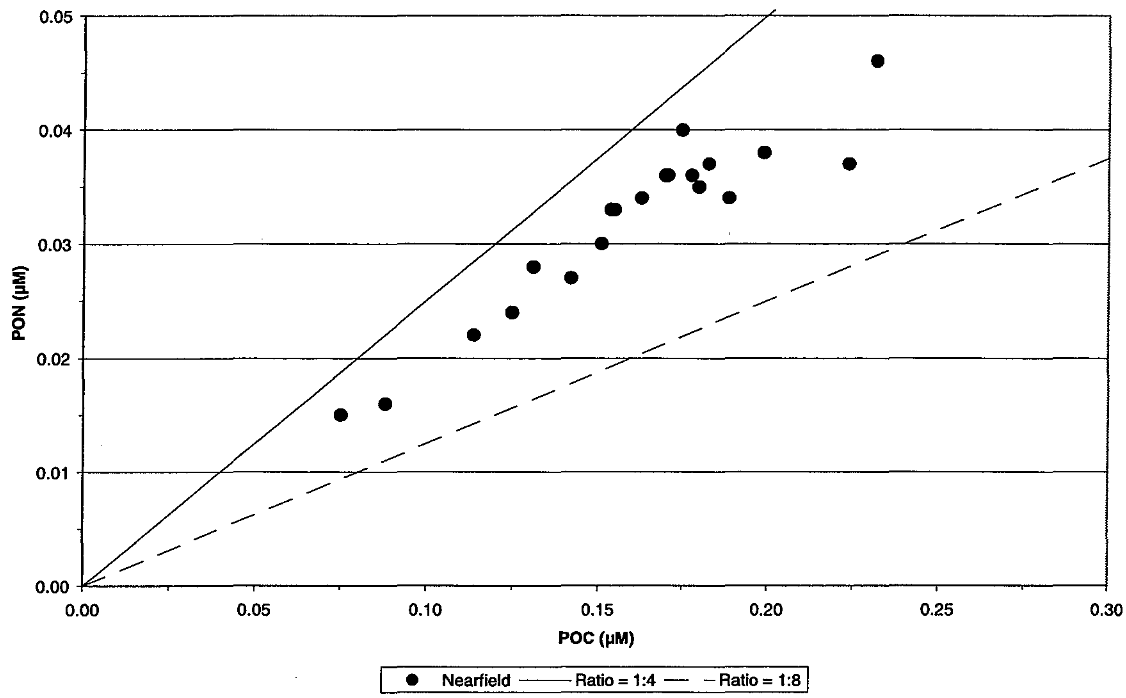


Figure D-99. Nutrient vs. Nutrient Plots for Nearfield Survey WN98G, (Nov 98)

(a)



(b)

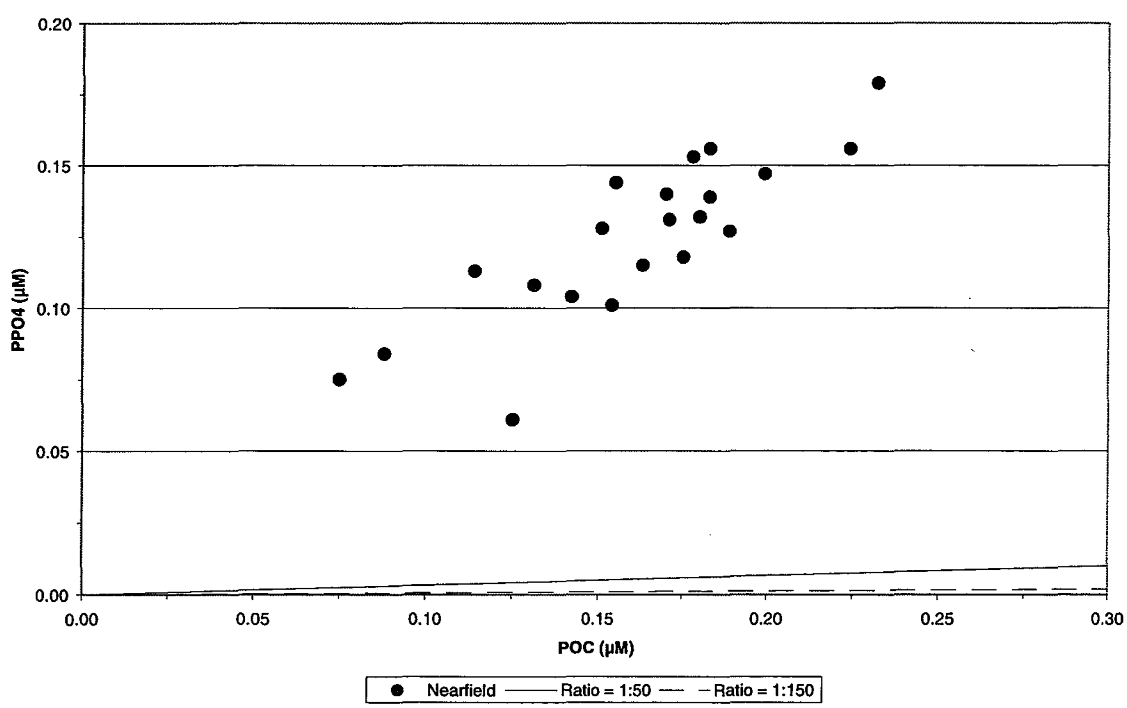
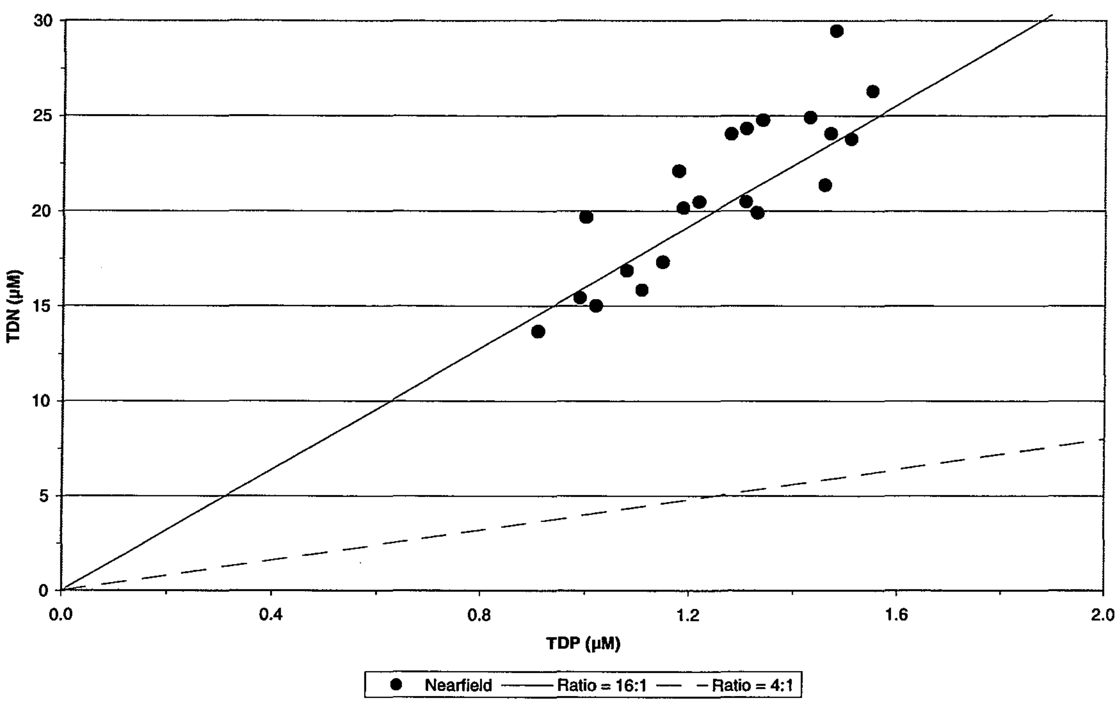


Figure D-100. Nutrient vs. Nutrient Plots for Nearfield Survey WN98G, (Nov 98)

(a)



(b)

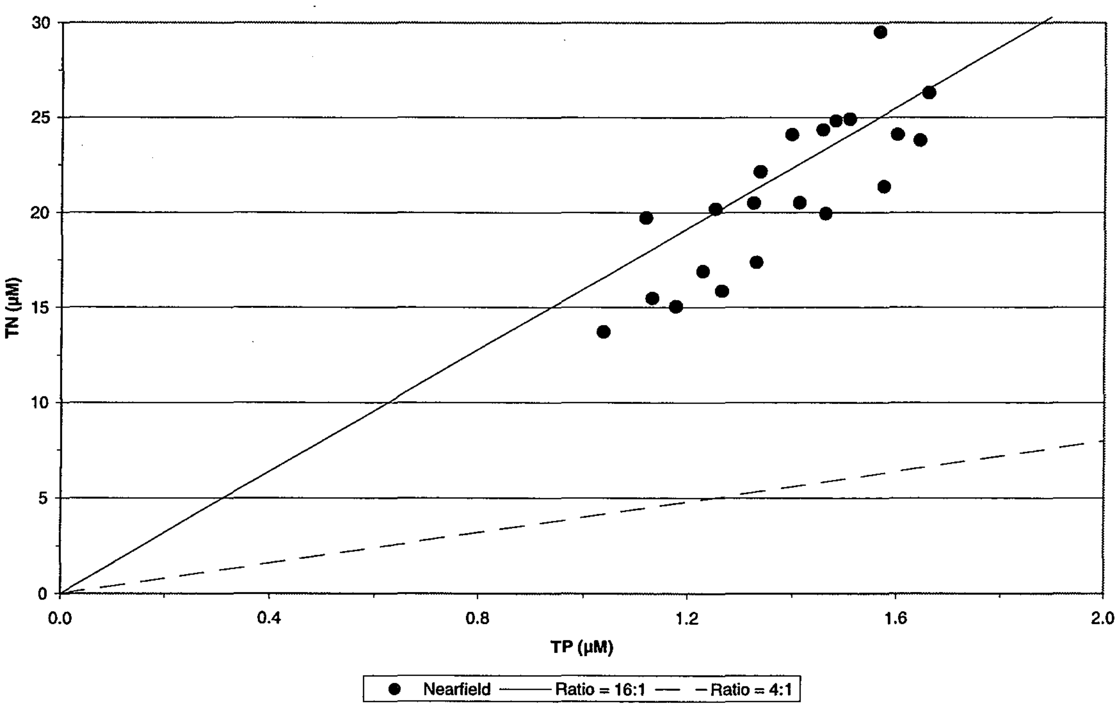
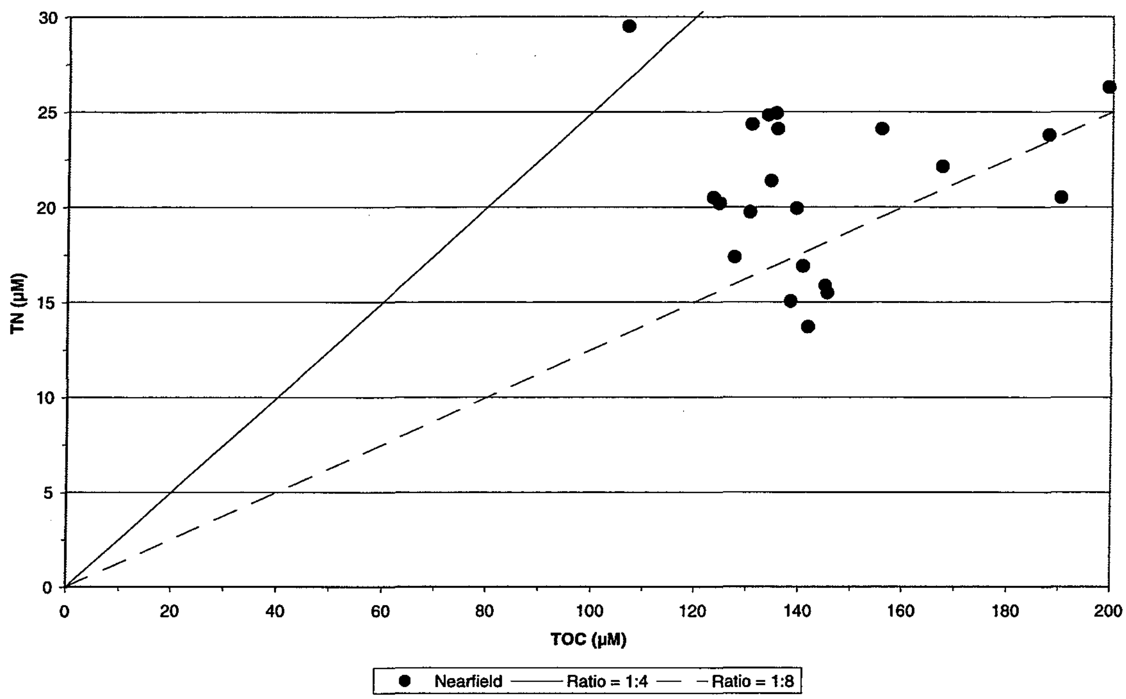


Figure D-101. Nutrient vs. Nutrient Plots for Nearfield Survey WN98G, (Nov 98)

(a)



(b)

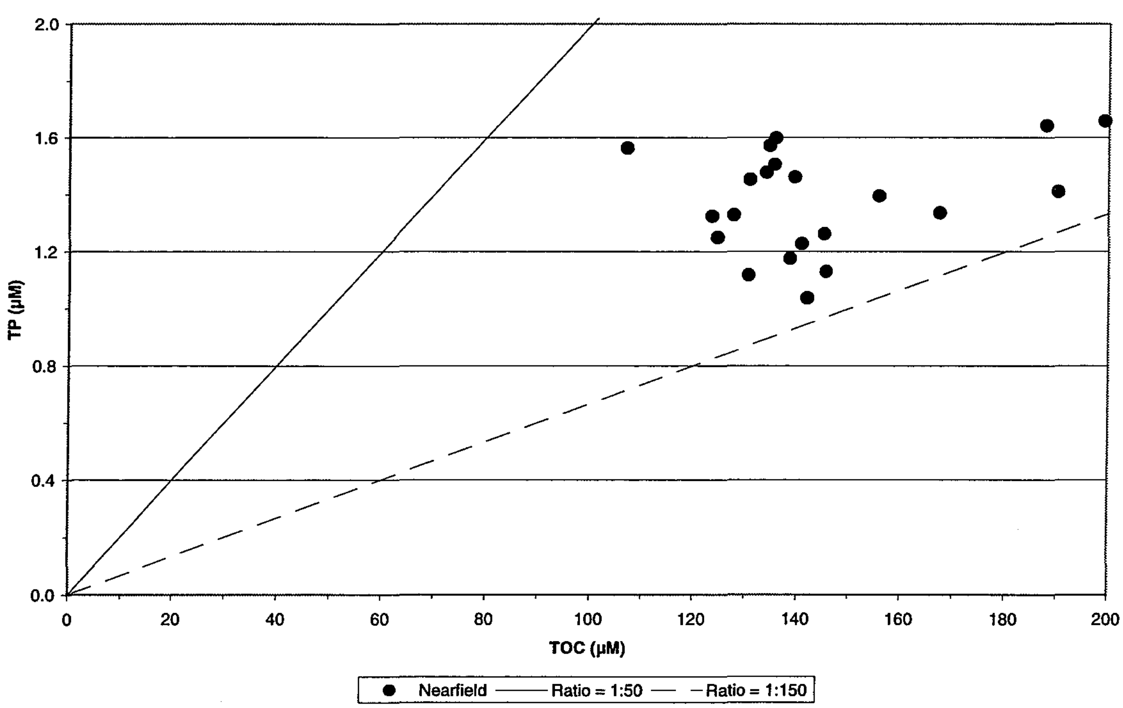


Figure D-102. Nutrient vs. Nutrient Plots for Nearfield Survey WN98G, (Nov 98)

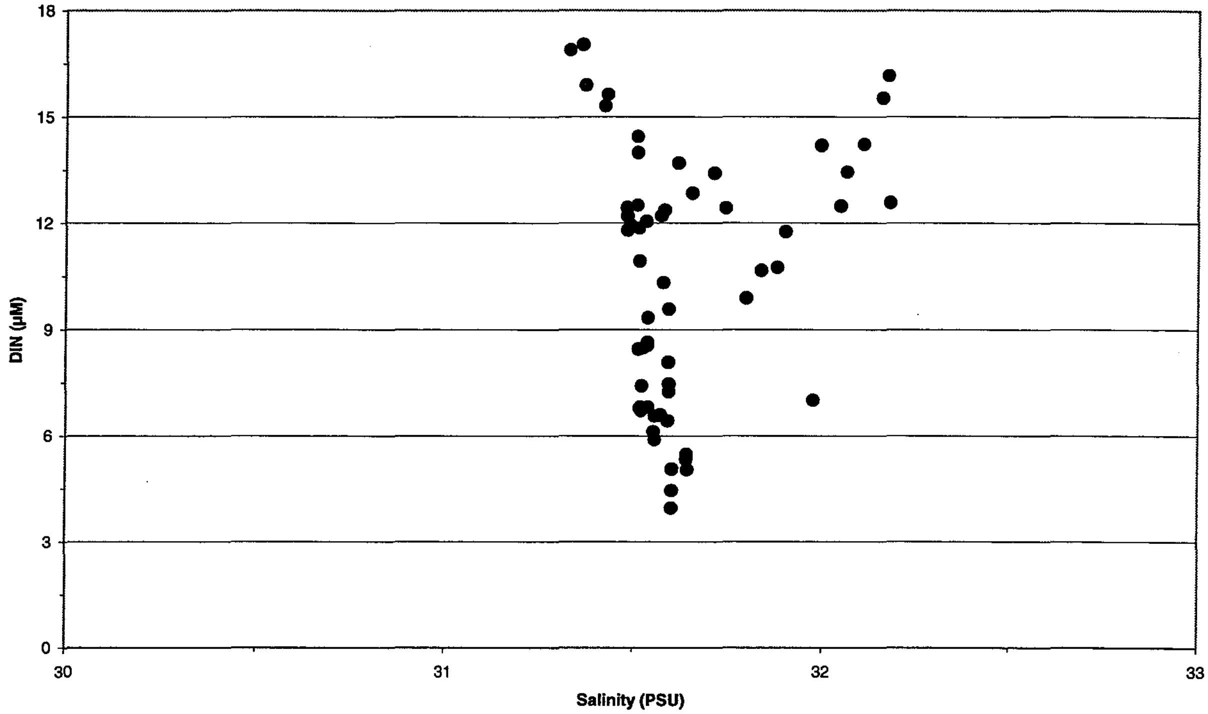
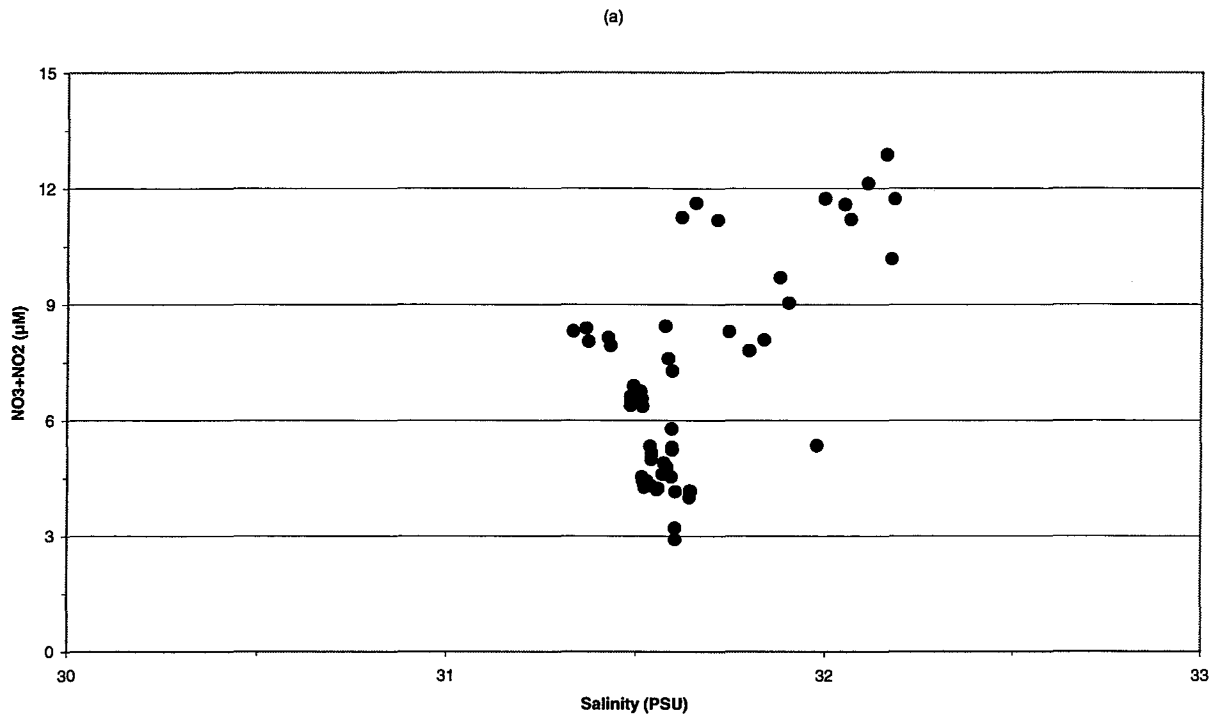


Figure D-103. Nutrient vs. Salinity Plots for Nearfield Survey WN98G, (Nov 98)



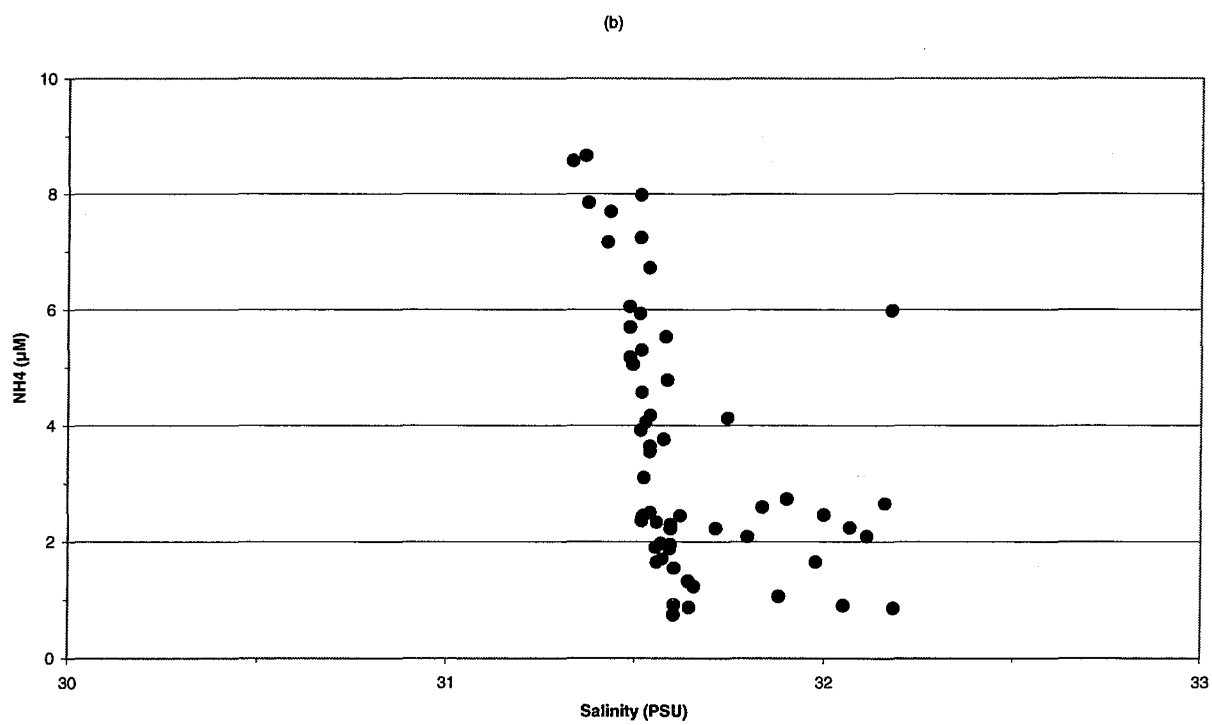
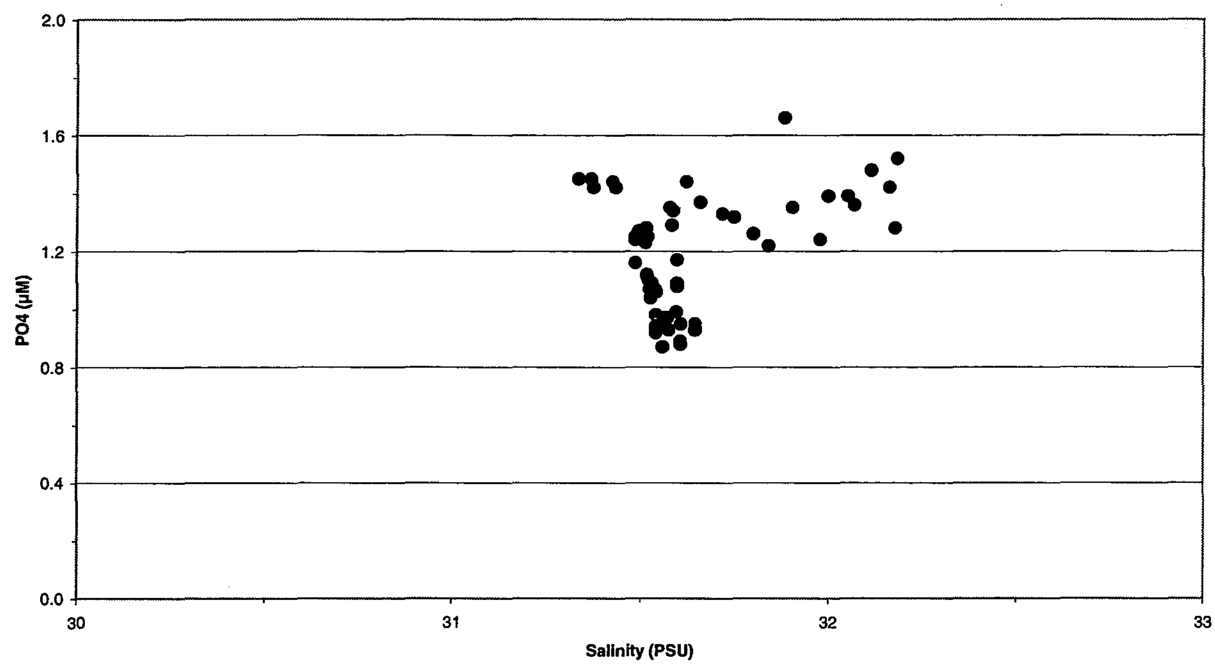


Figure D-104. Nutrient vs. Salinity Plots for Nearfield Survey WN98G, (Nov 98)

(a)



(b)

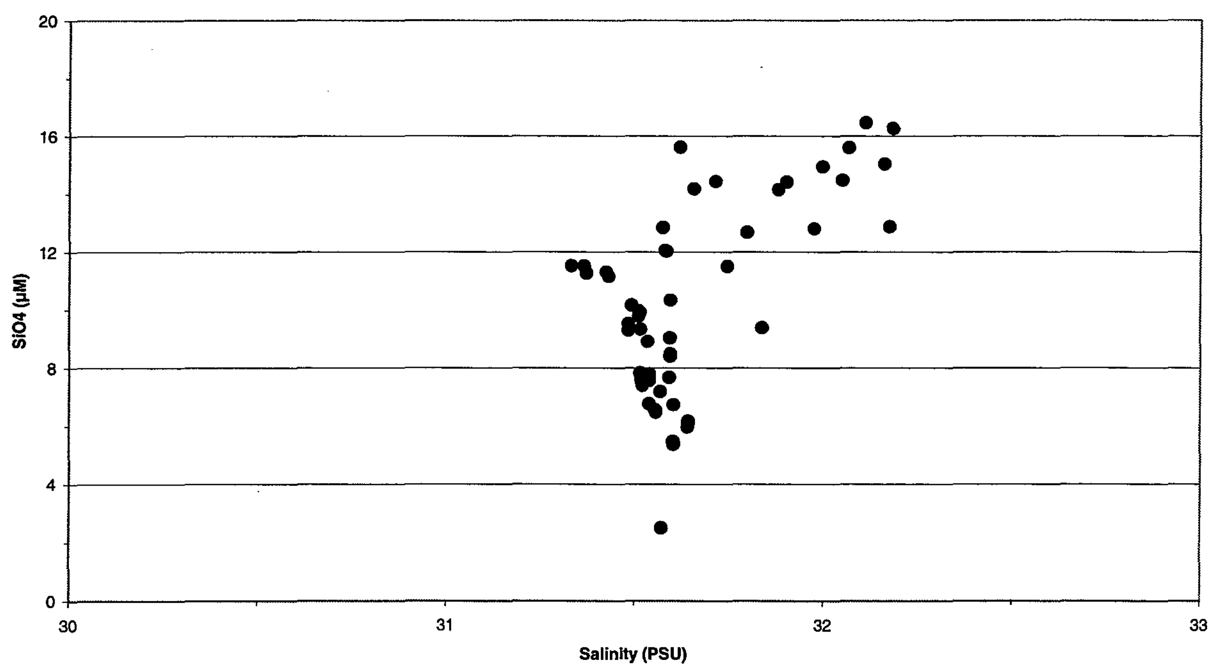


Figure D-105. Nutrient vs. Salinity Plots for Nearfield Survey WN98G, (Nov 98)

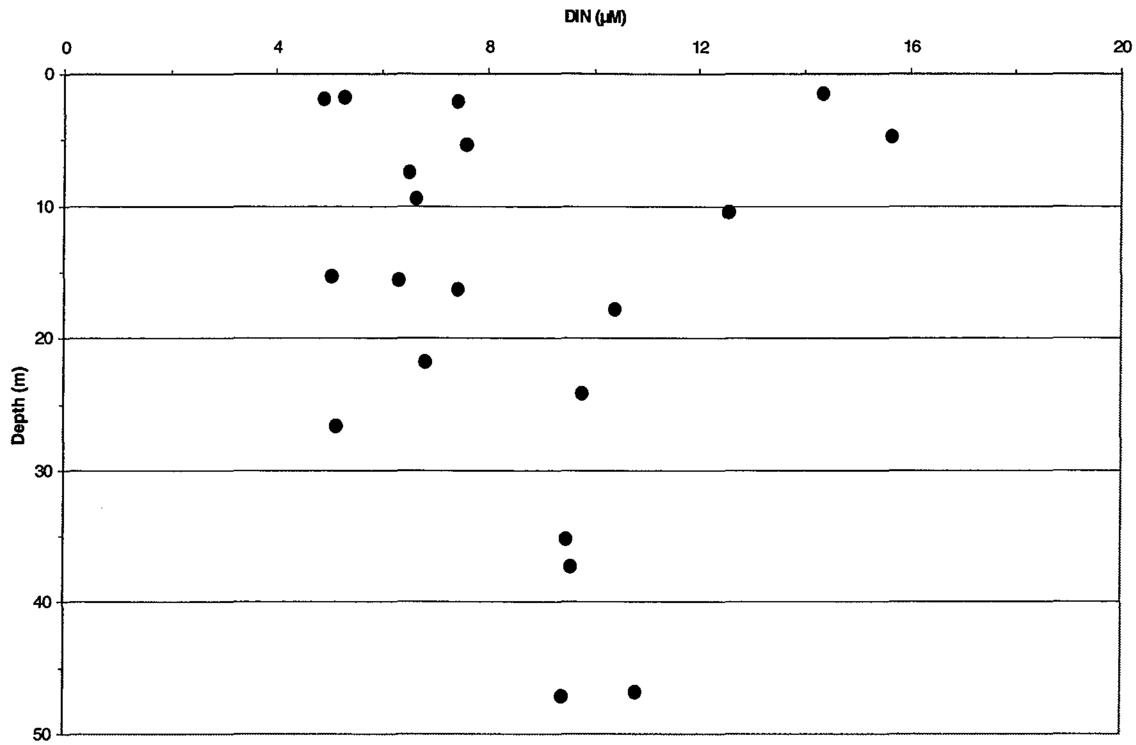


Figure D-106. Depth vs. Nutrient Plots for Nearfield Survey WN98H, (Dec 98)

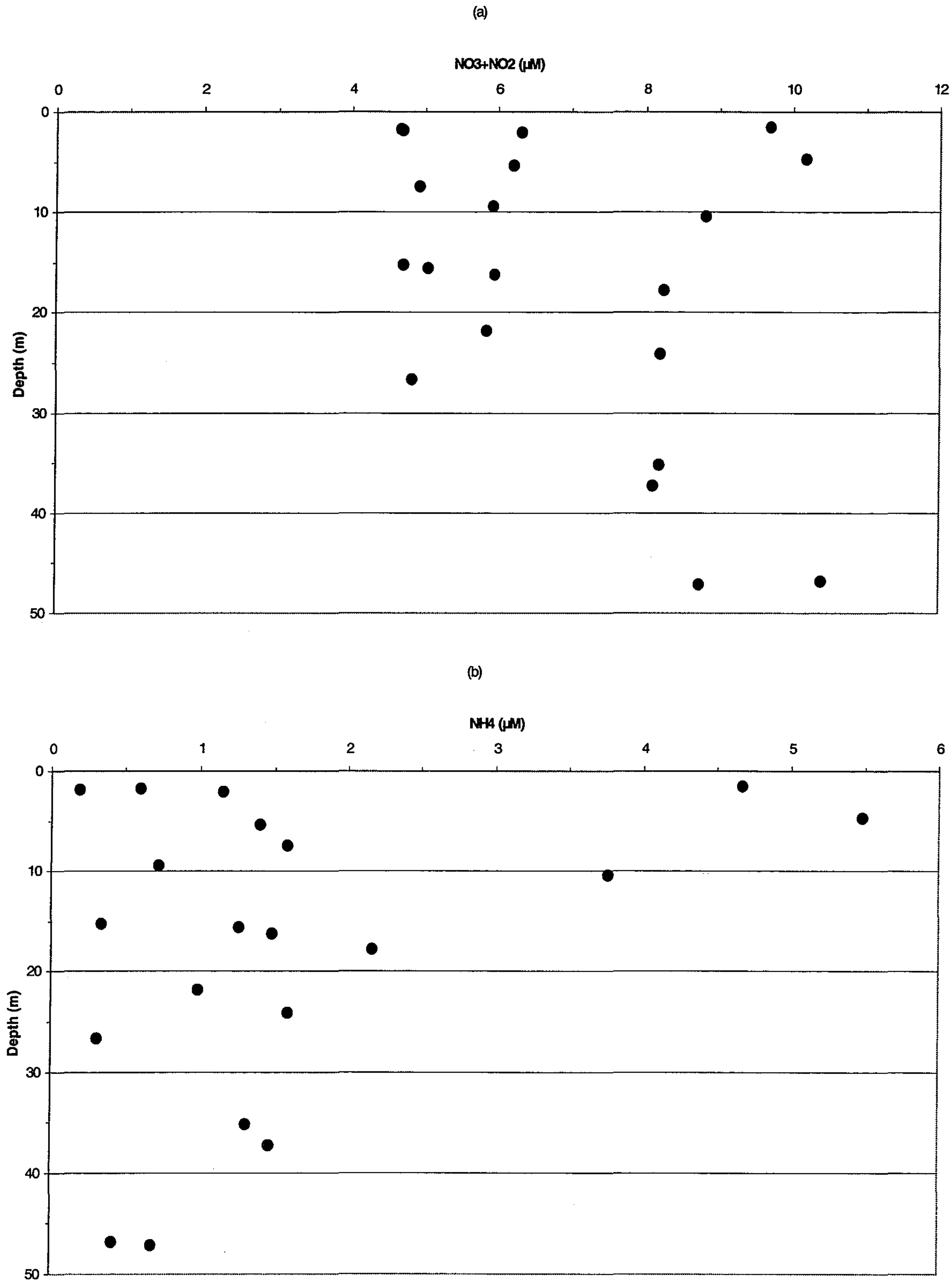
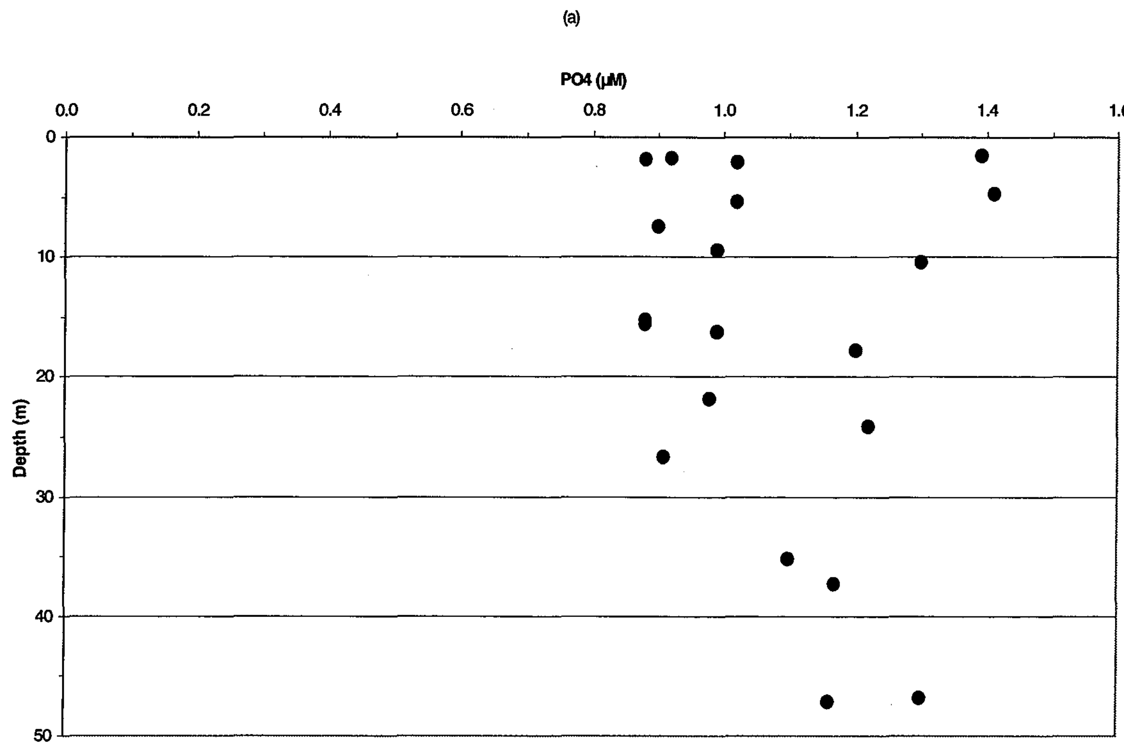


Figure D-107. Depth vs. Nutrient Plots for Nearfield Survey WN98H, (Dec 98)



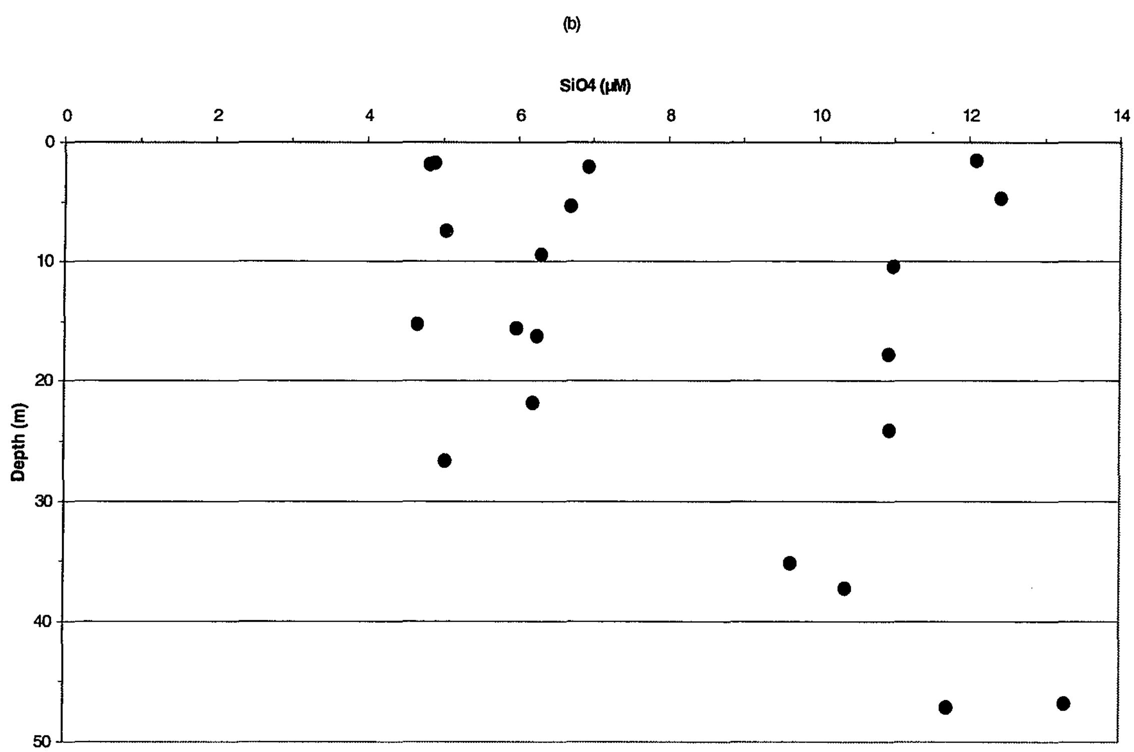
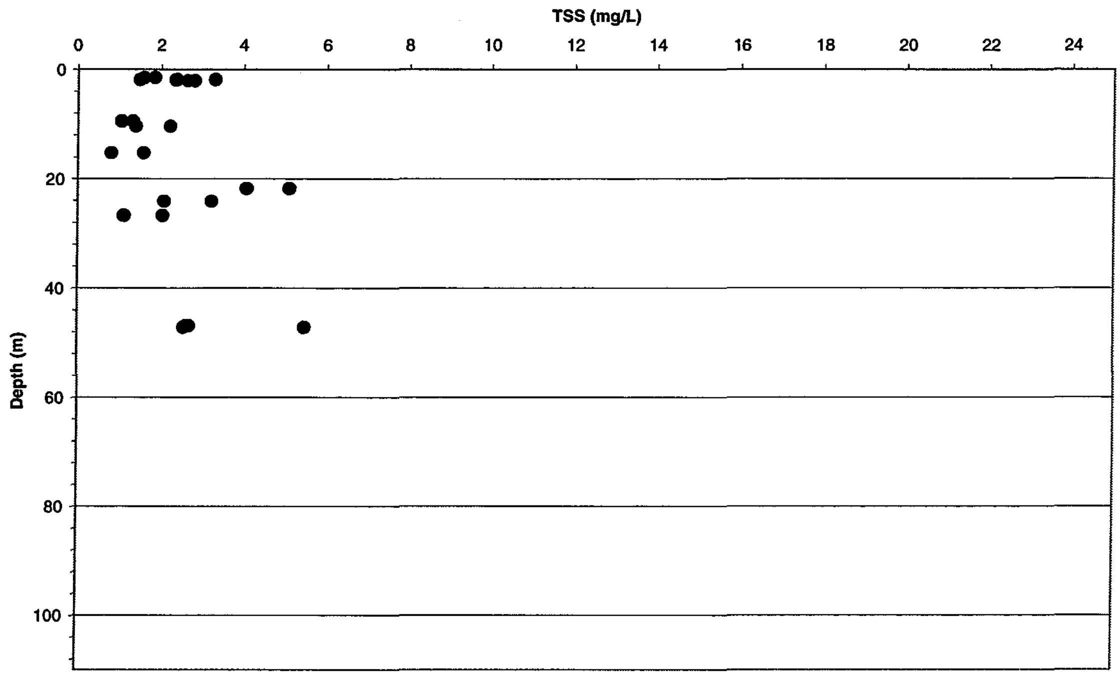


Figure D-108. Depth vs. Nutrient Plots for Nearfield Survey WN98H (Dec 98)

(a)



(b)

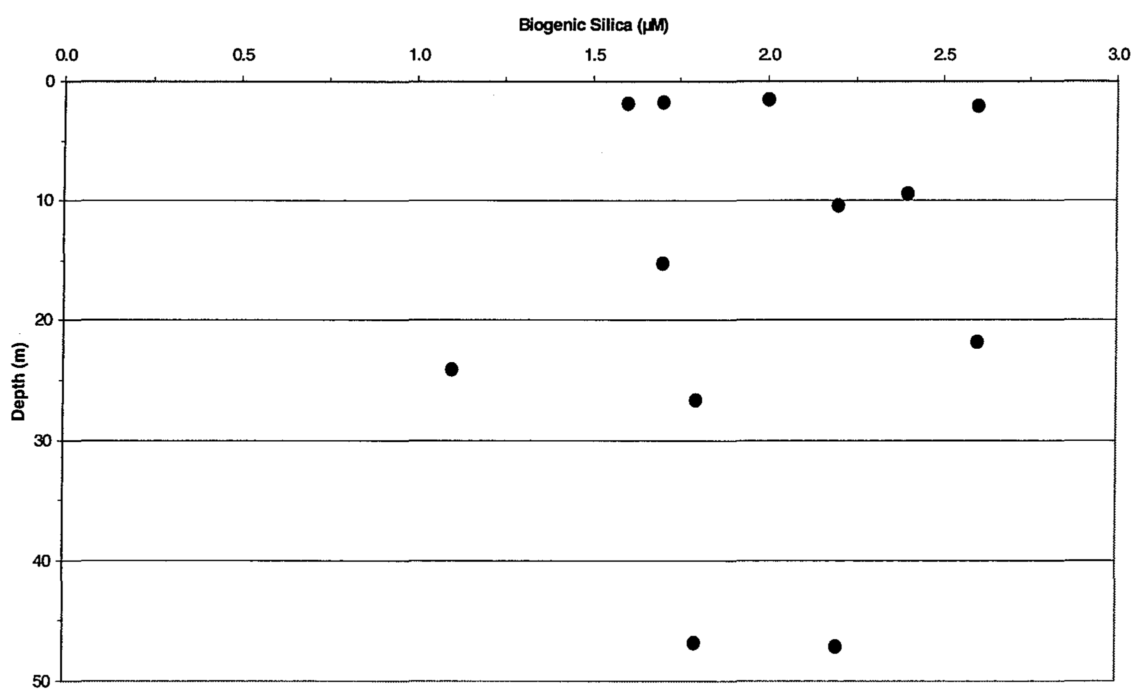
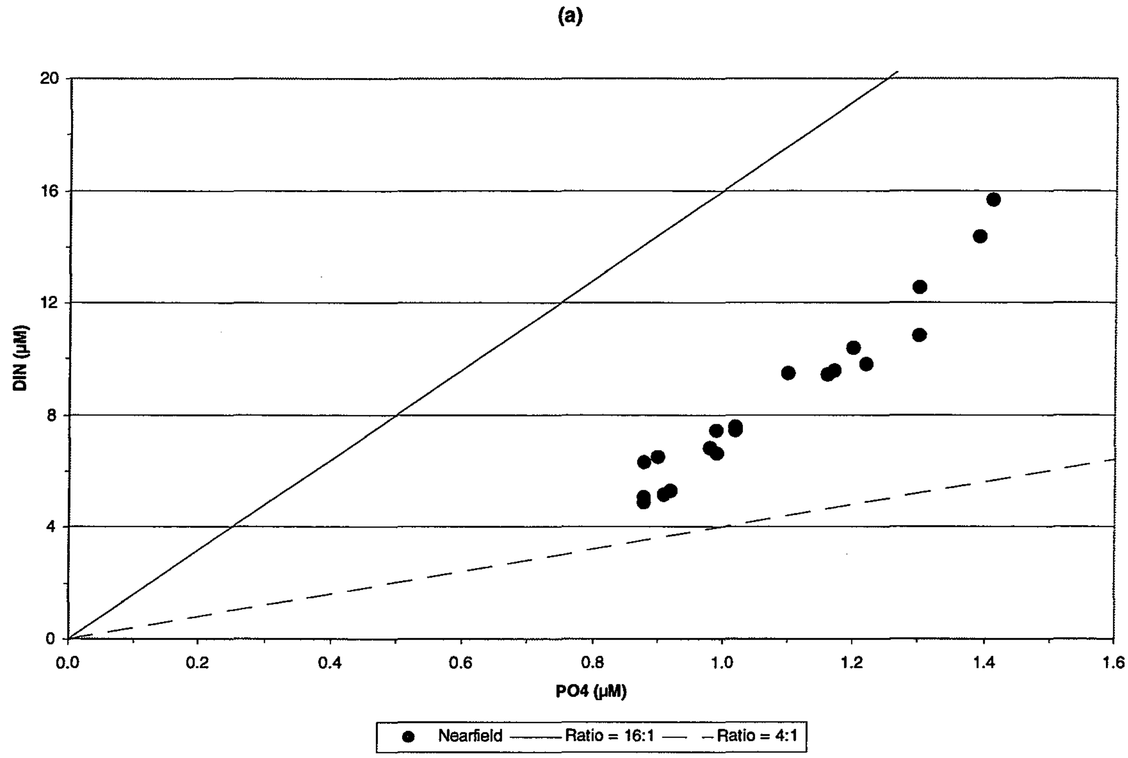


Figure D-109. Depth vs. Nutrient Plots for Nearfield Survey WN98H (Dec 98)



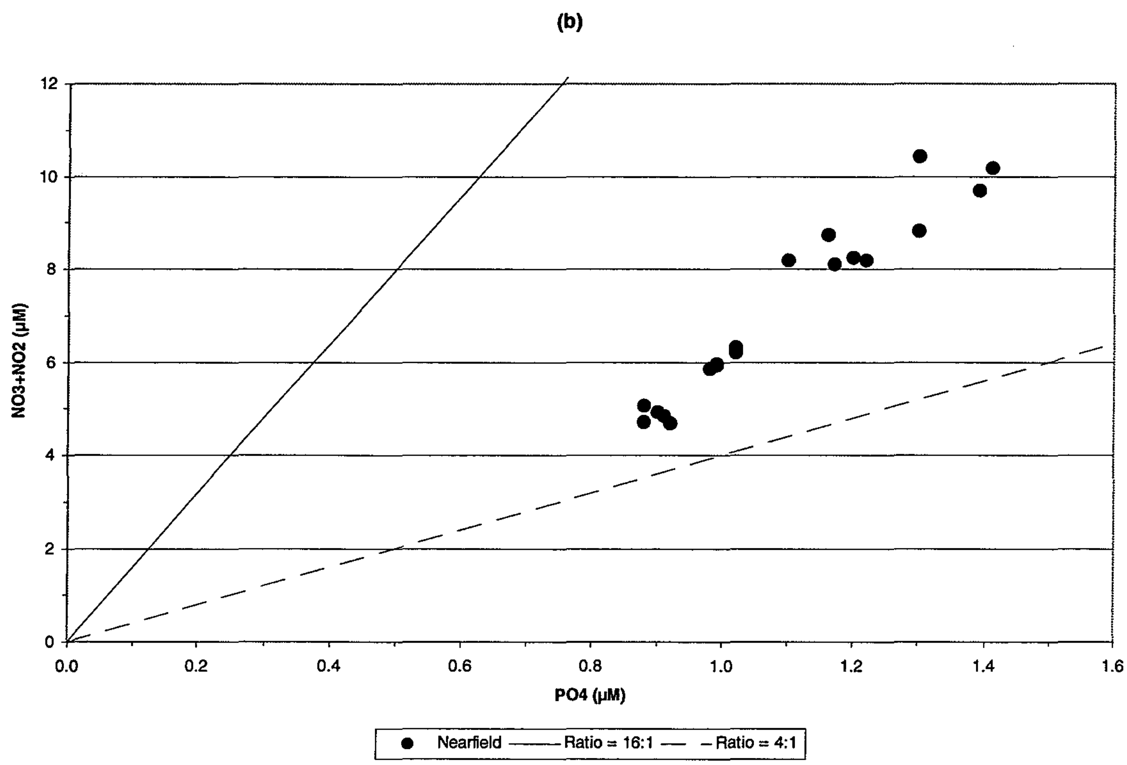
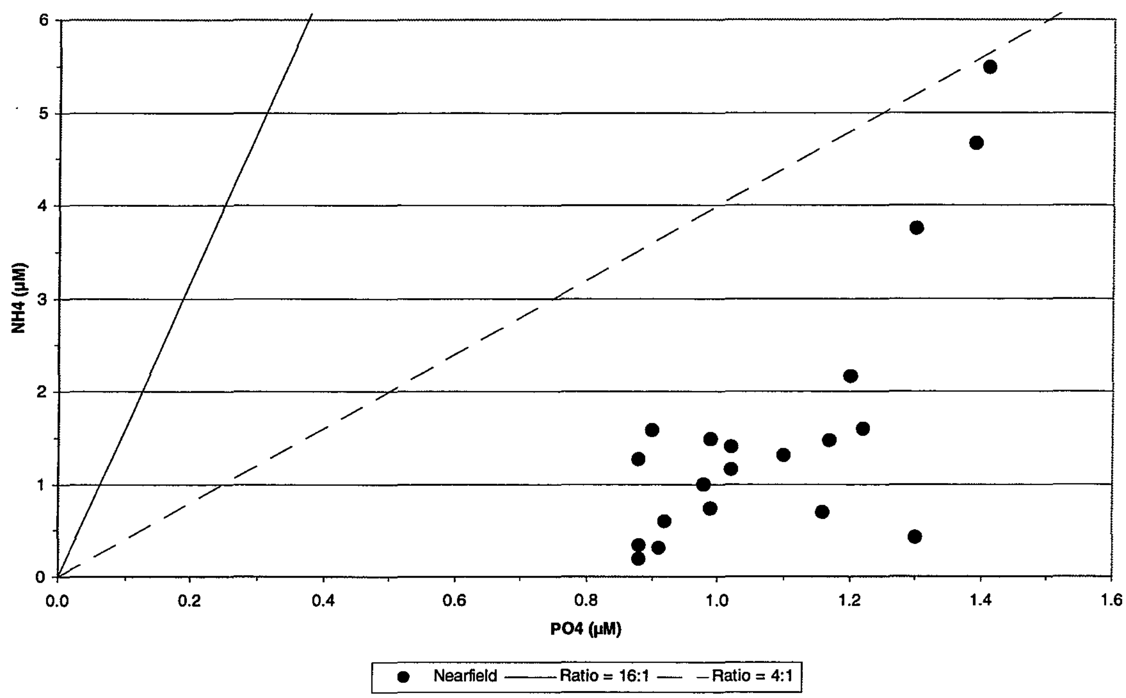


Figure D-110. Nutrient vs. Nutrient Plots for Nearfield Survey WN98H (Dec 98)

(a)



(b)

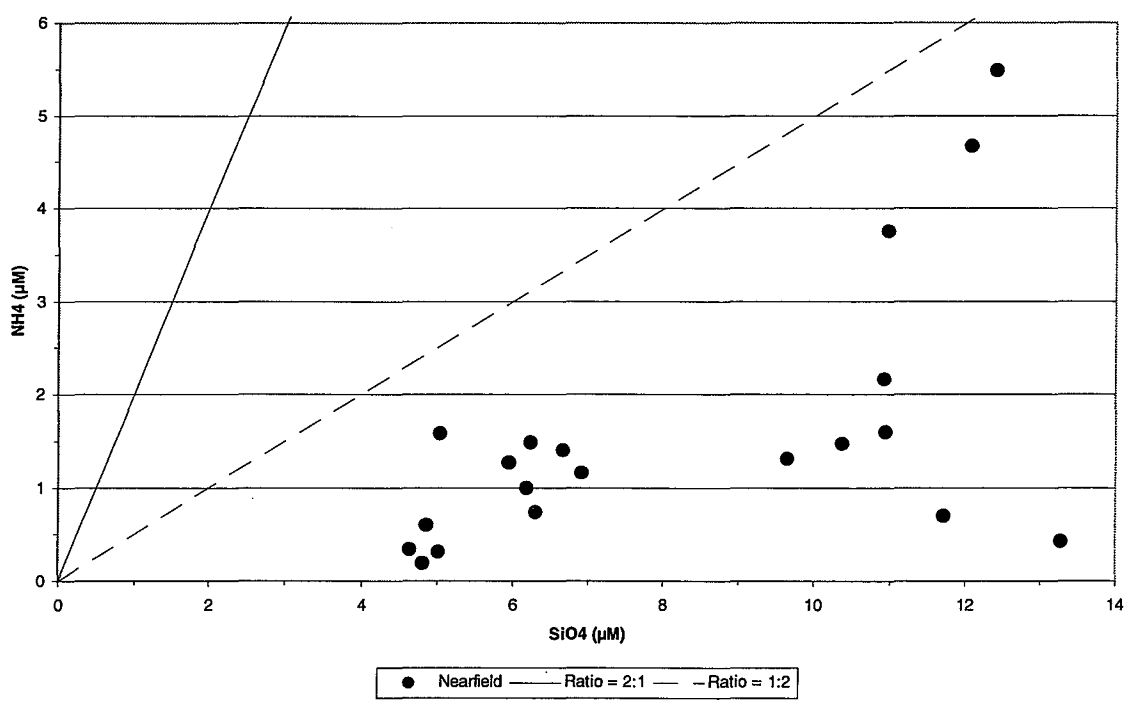
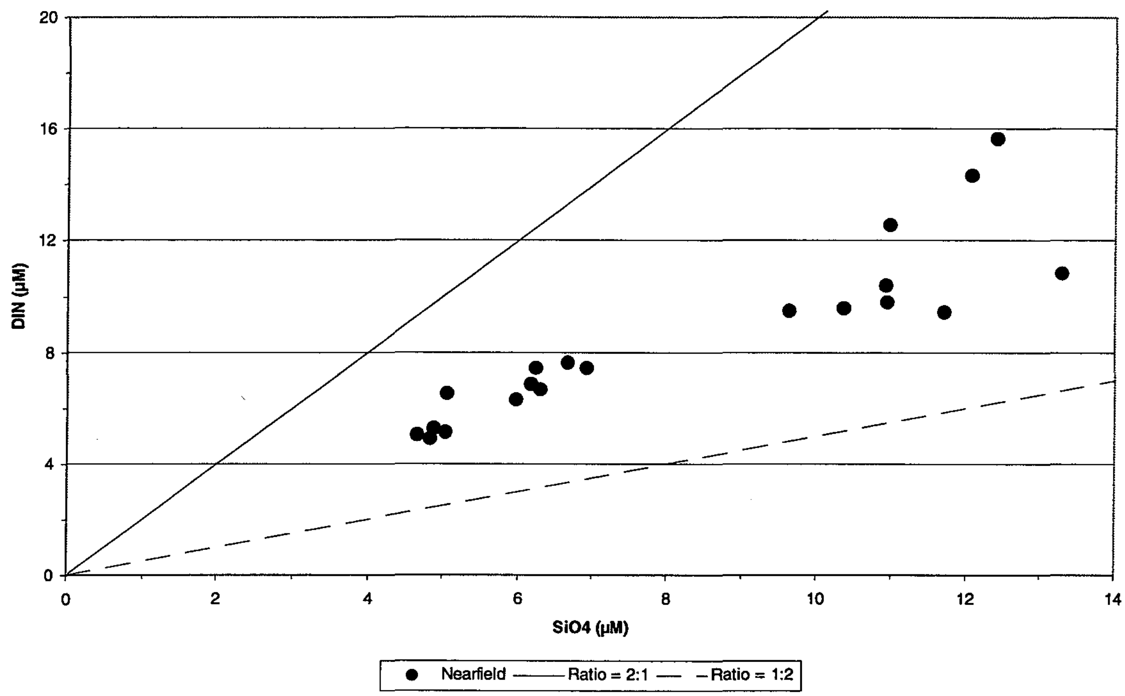


Figure D-111. Nutrient vs. Nutrient Plots for Nearfield Survey WN98H (Dec 98)

(a)



(b)

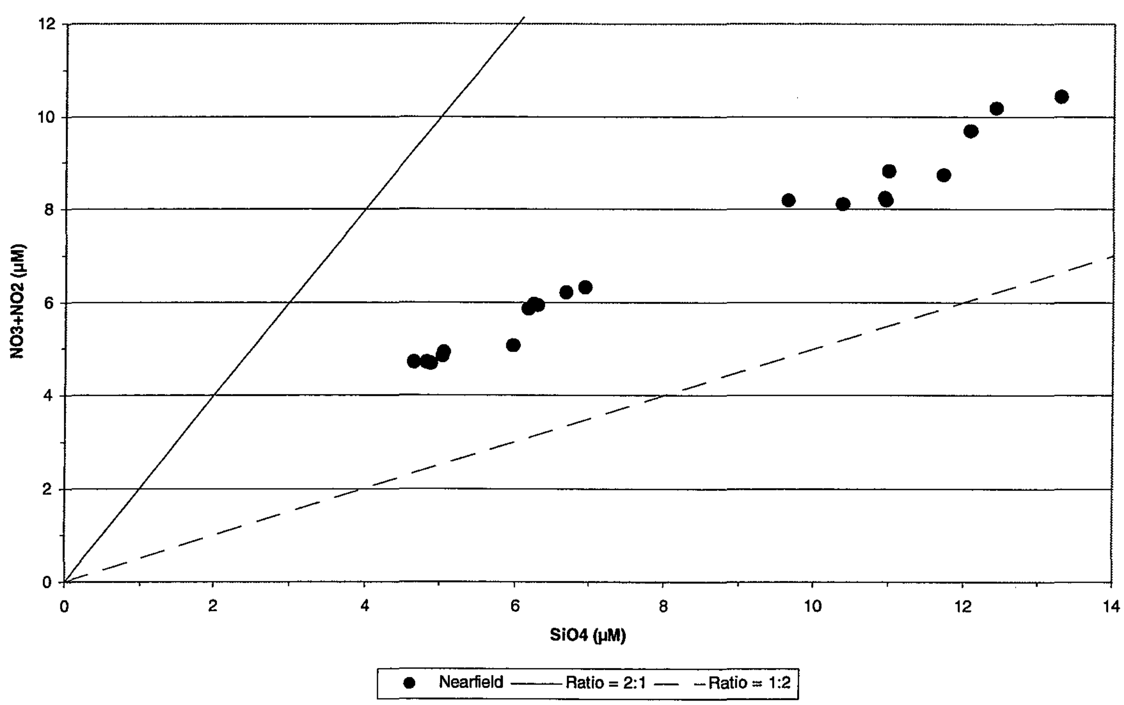
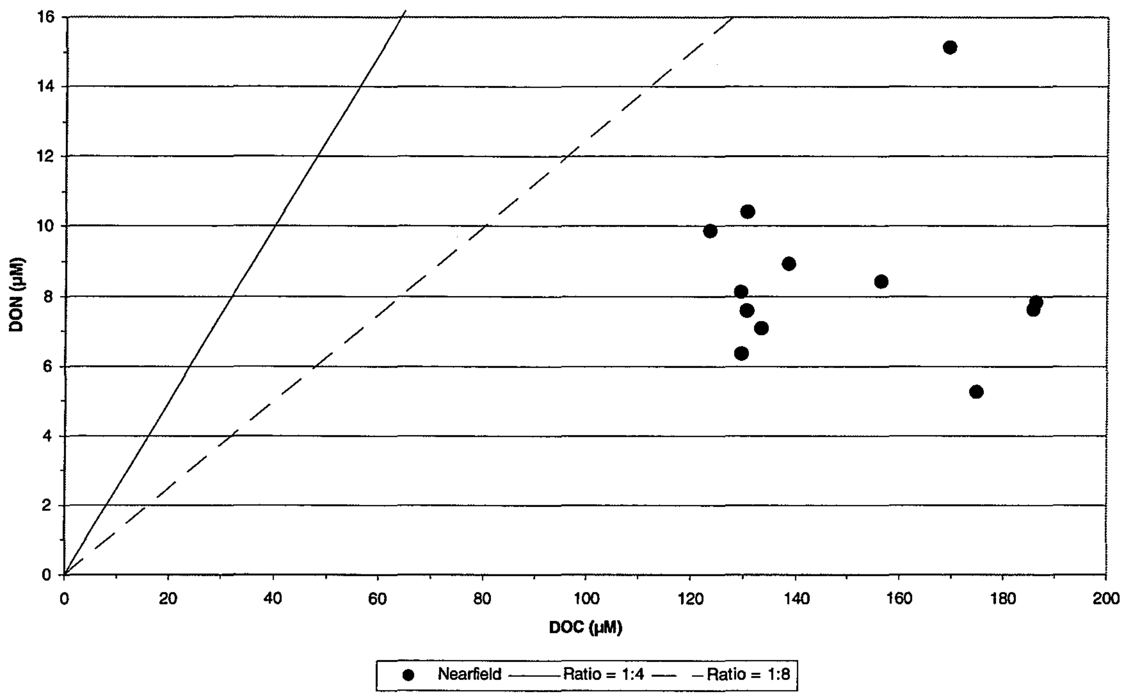


Figure D-112. Nutrient vs. Nutrient Plots for Nearfield Survey WN98H (Dec 98)

(a)



(b)

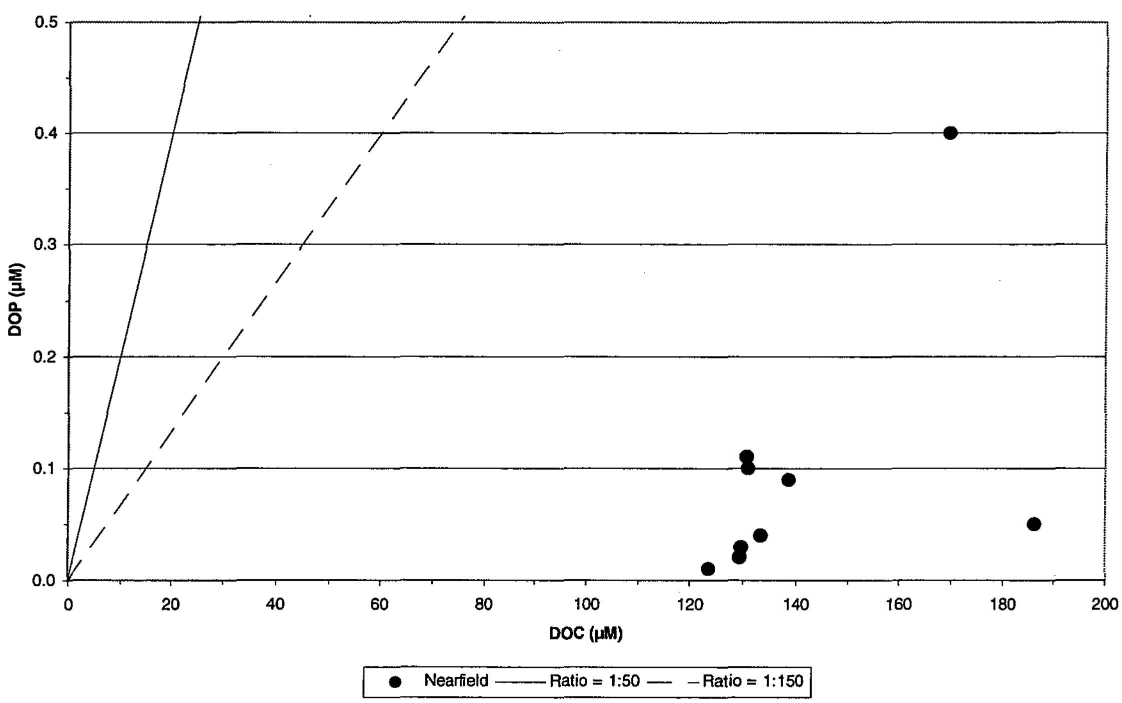
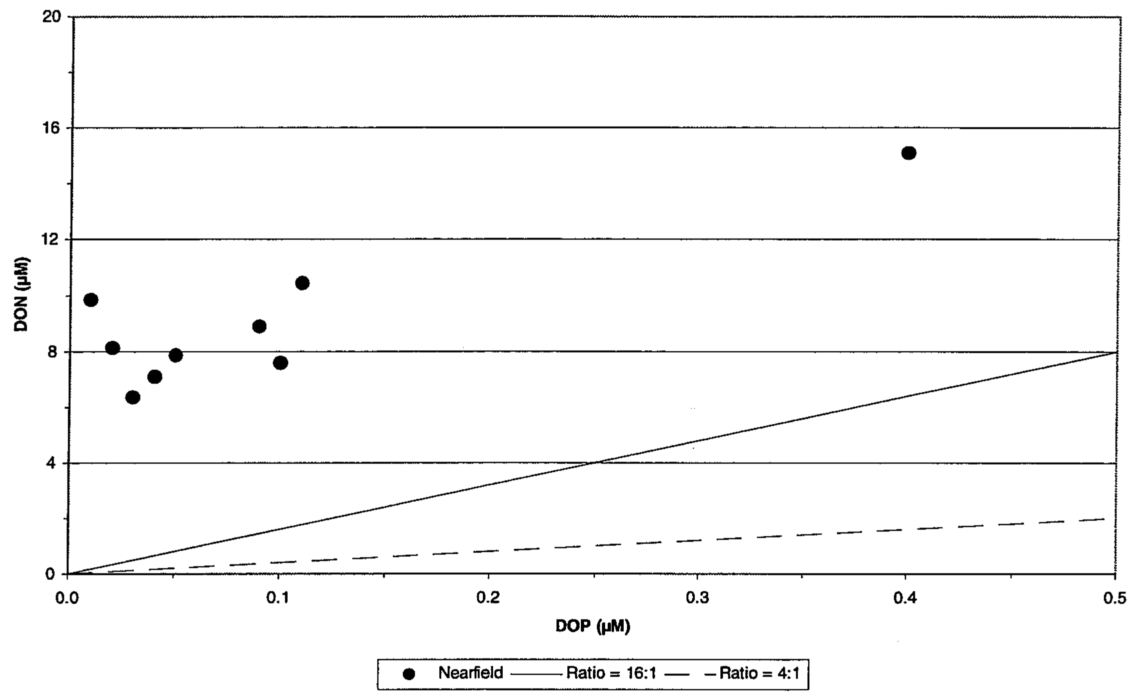


Figure D-113. Nutrient vs. Nutrient Plots for Nearfield Survey WN98H (Dec 98)

(a)



(b)

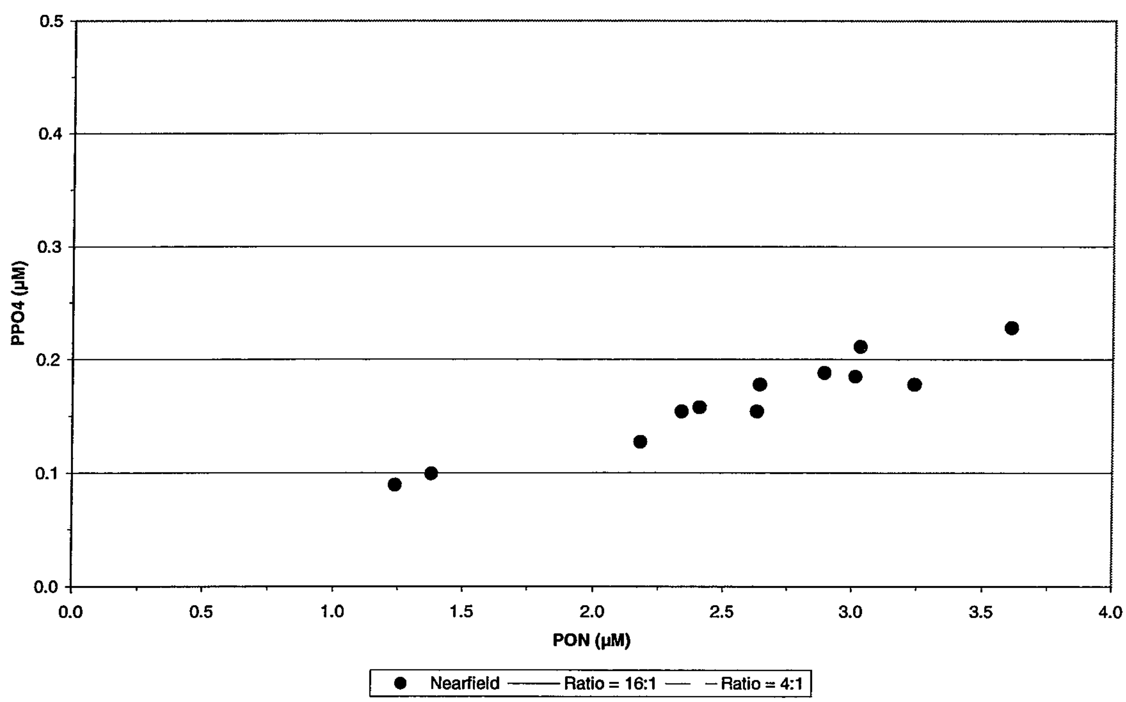
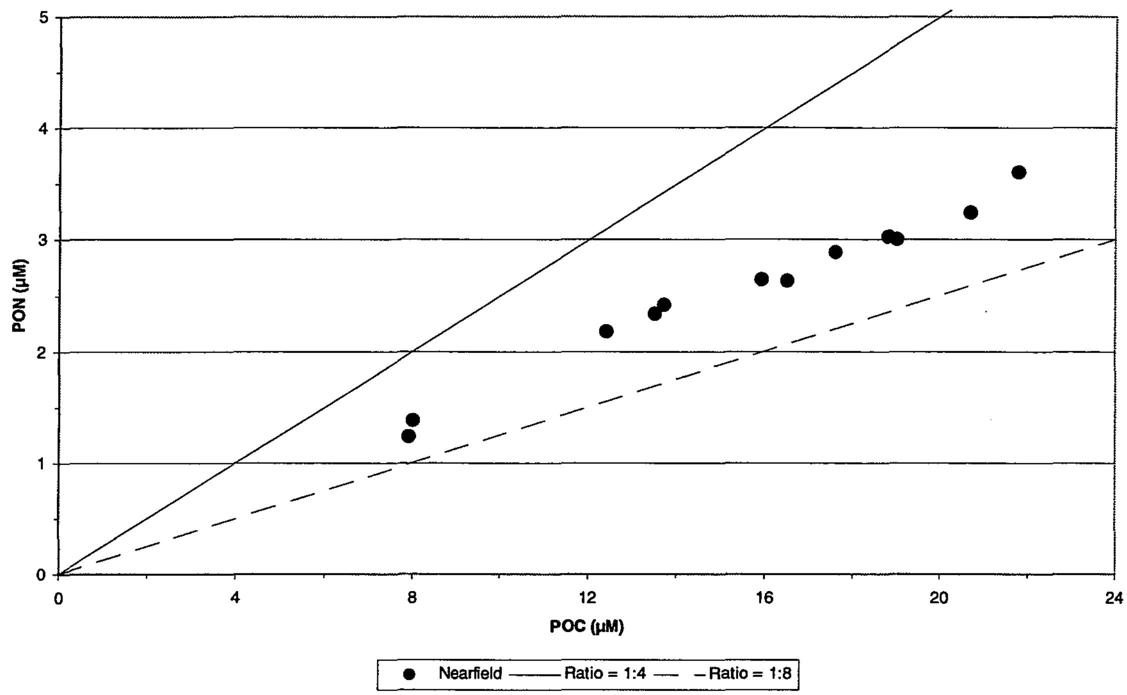


Figure D-114. Nutrient vs. Nutrient Plots for Nearfield Survey WN98H (Dec 98)

(a)



(b)

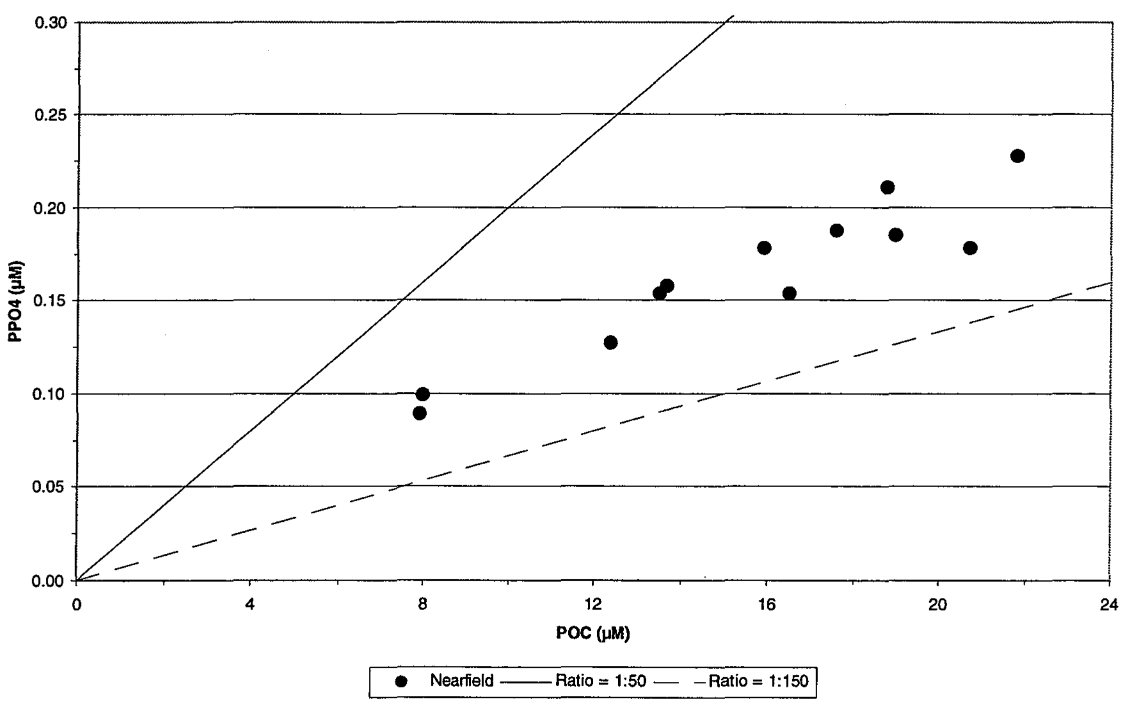


Figure D-115. Nutrient vs. Nutrient Plots for Nearfield Survey WN98H (Dec 98)

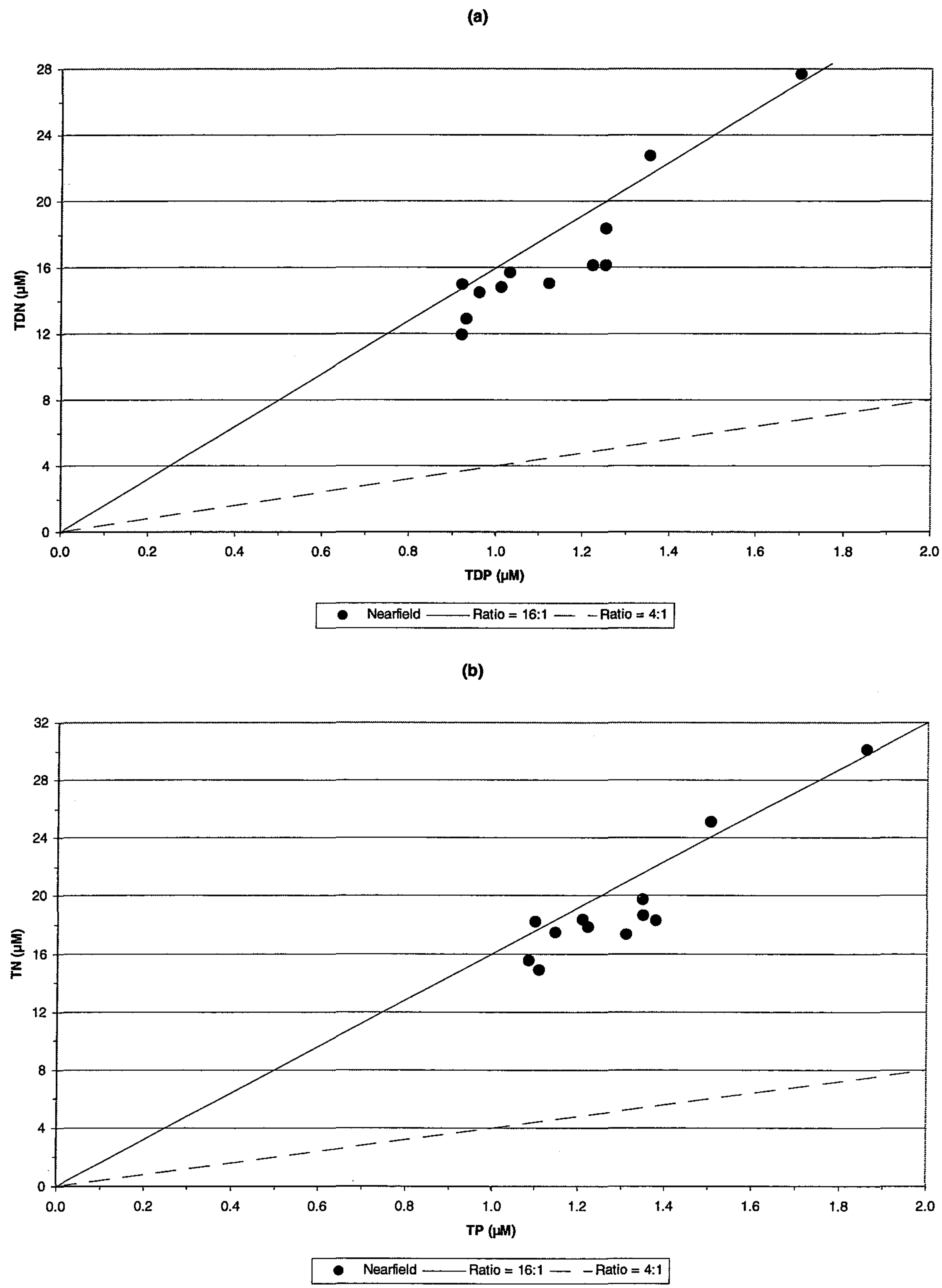
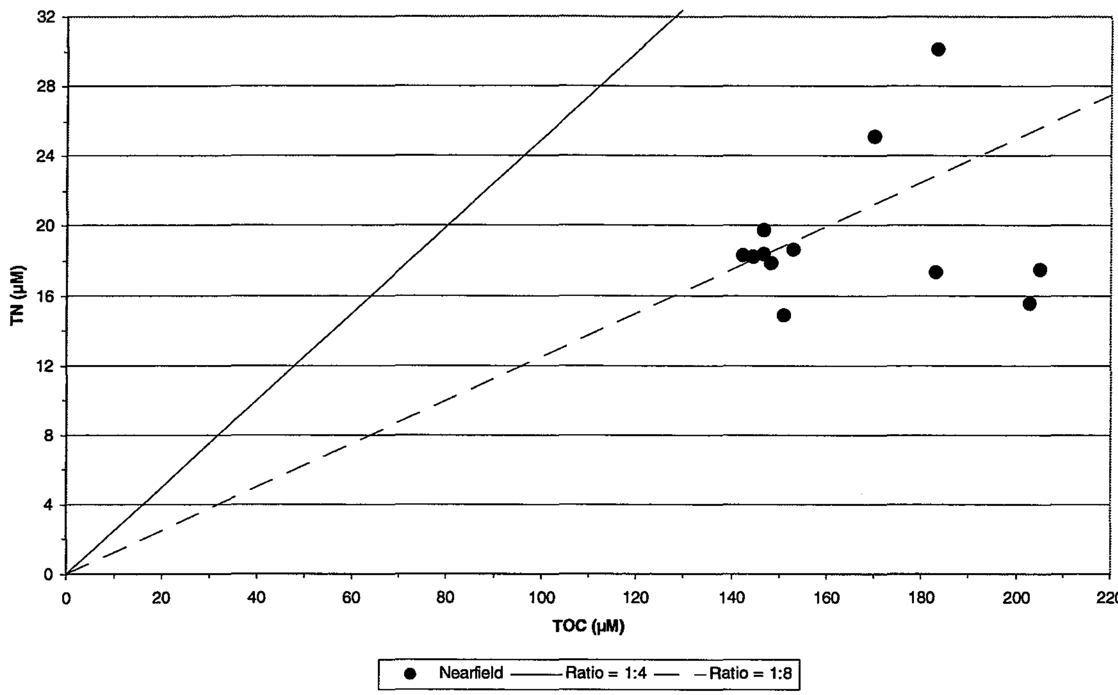


Figure D-116. Nutrient vs. Nutrient Plots for Nearfield Survey WN98H (Dec 98)

(a)



(b)

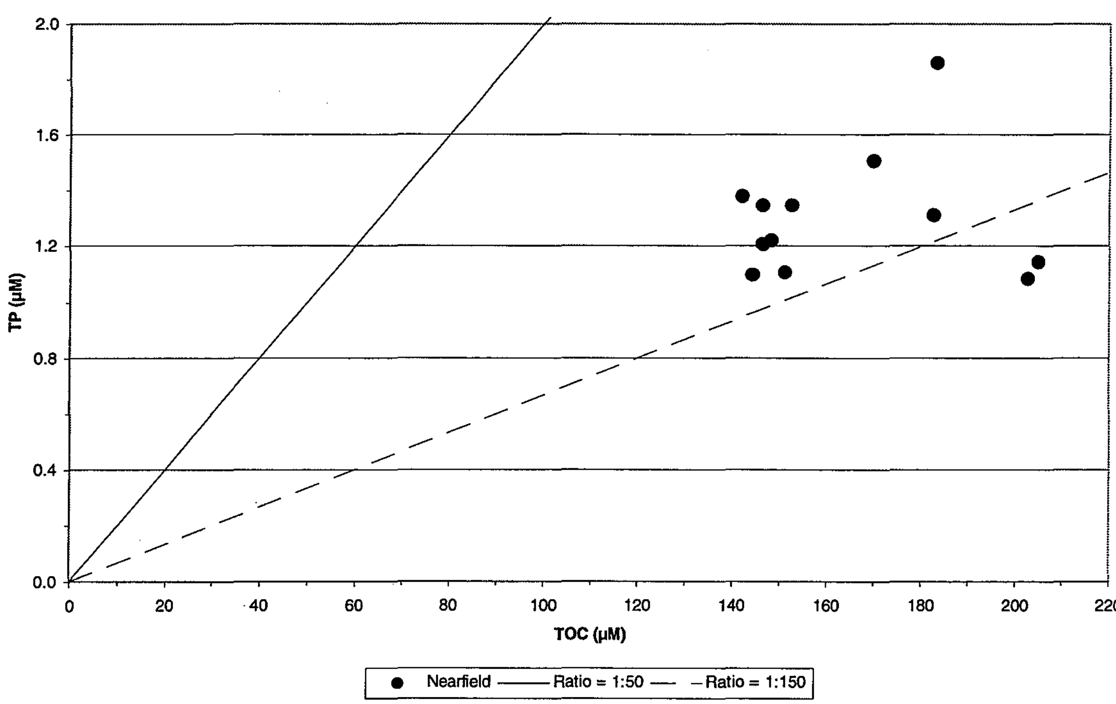


Figure D-117. Nutrient vs. Nutrient Plots for Nearfield Survey WN98H (Dec 98)

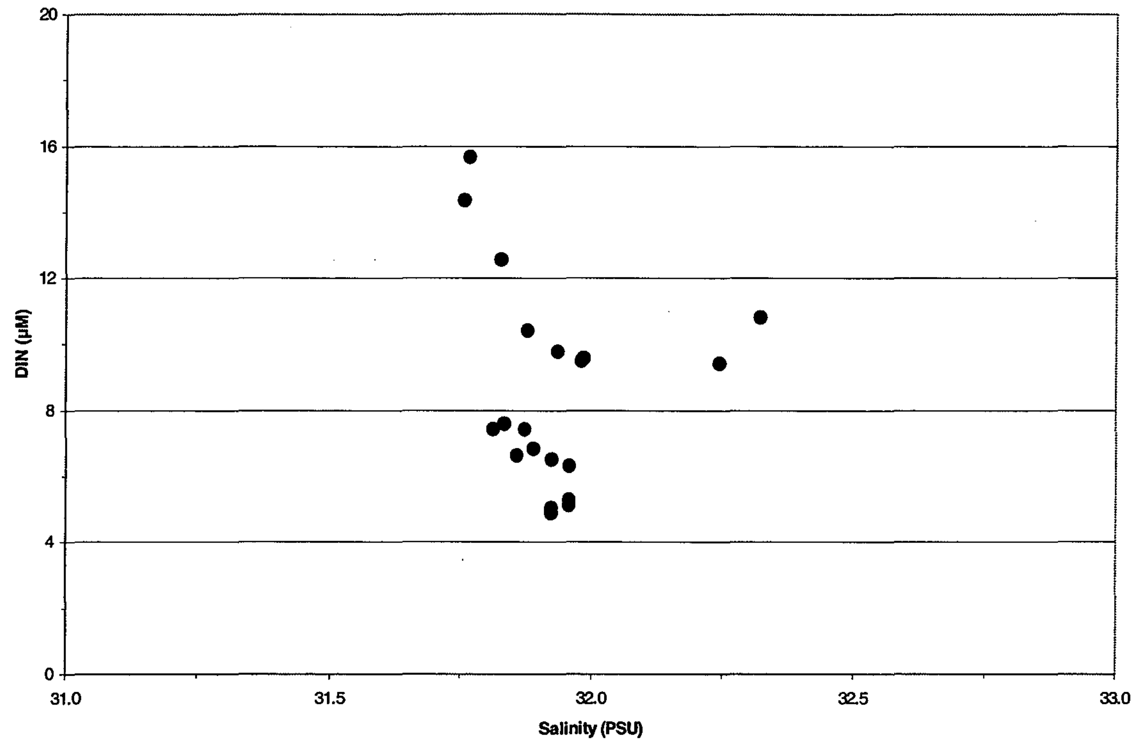
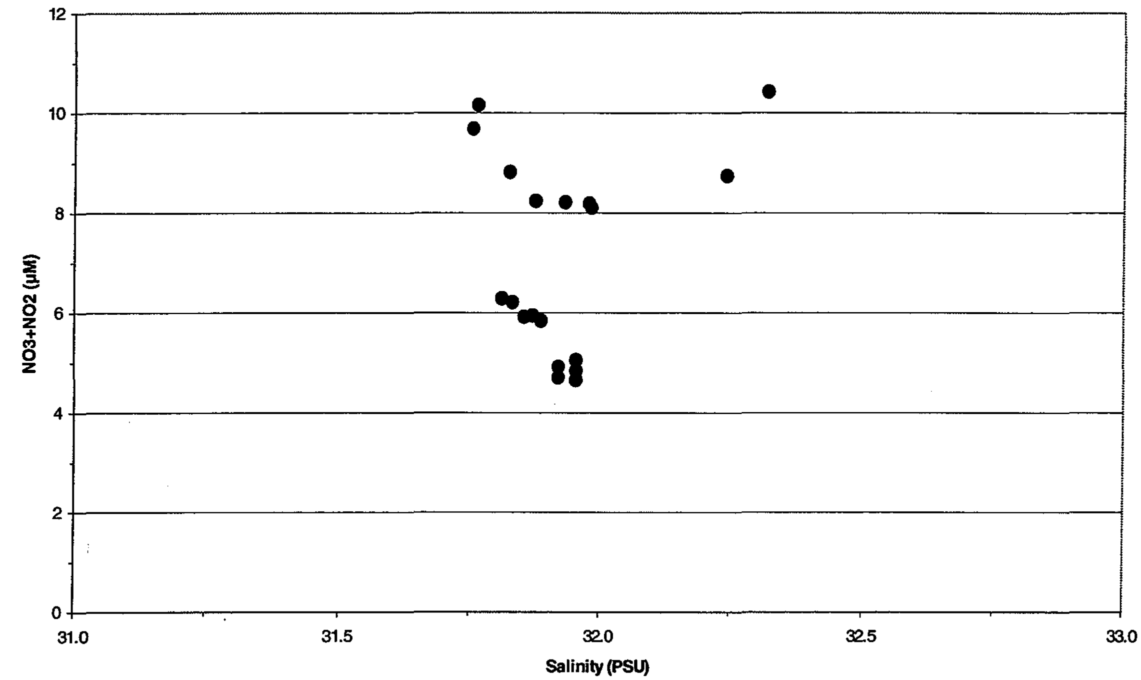


Figure D-118. Nutrient vs. Salinity Plots for Nearfield Survey WN98H (Dec 98)

(a)



(b)

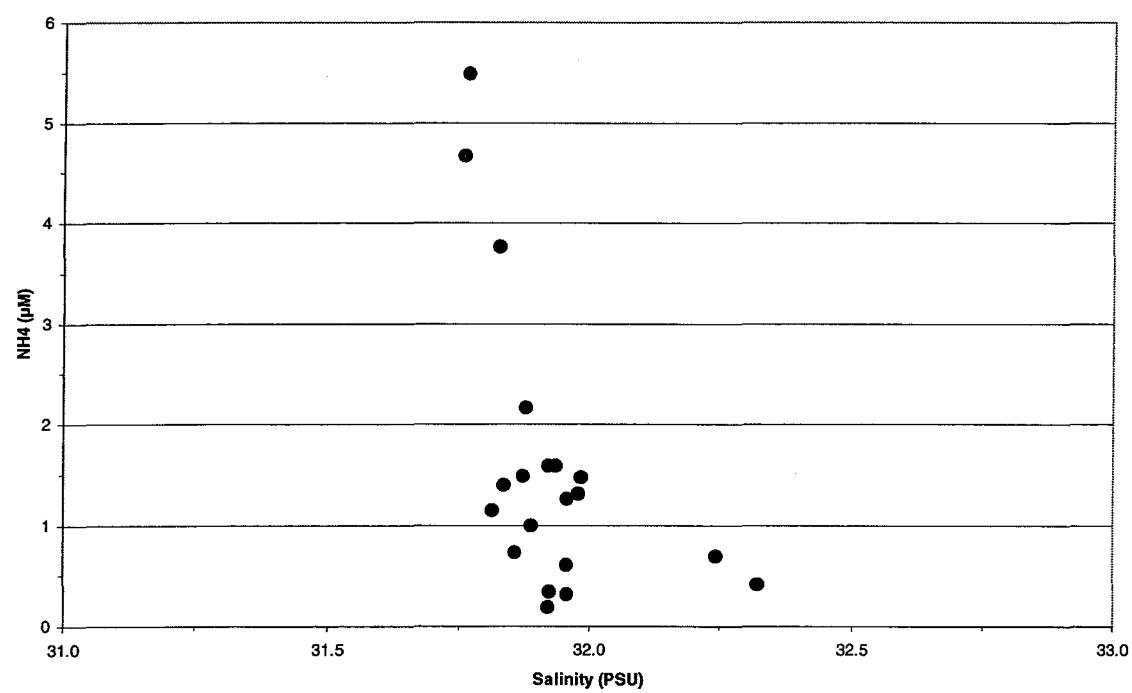
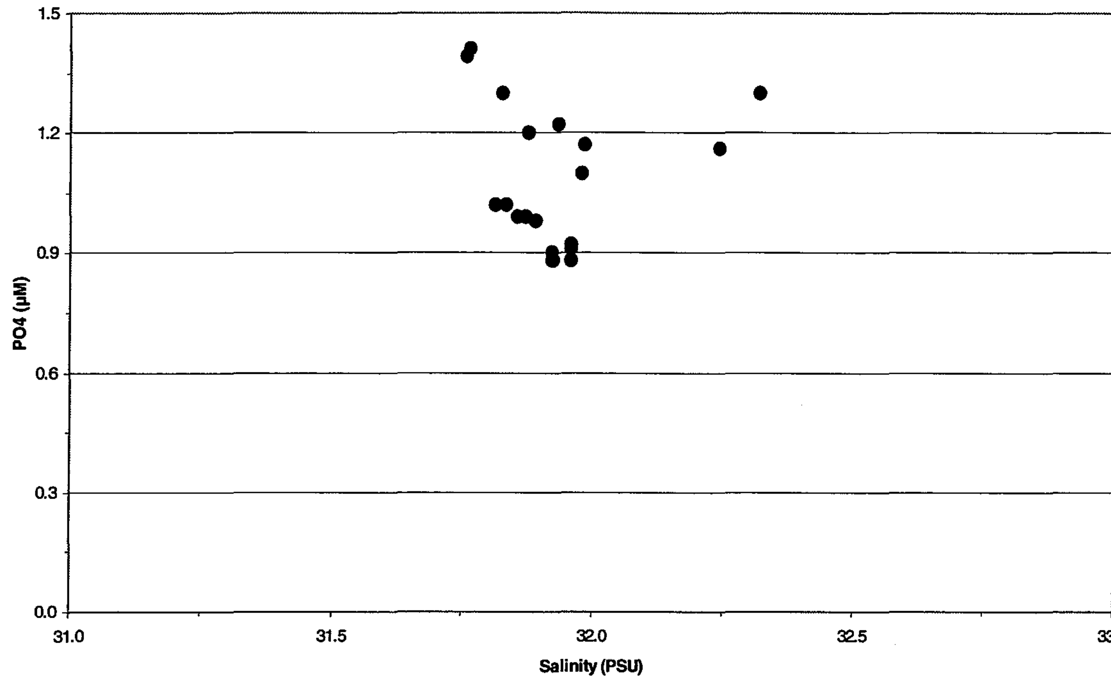


Figure D-119. Nutrient vs. Salinity Plots for Nearfield Survey WN98H (Dec98)

(a)



(b)

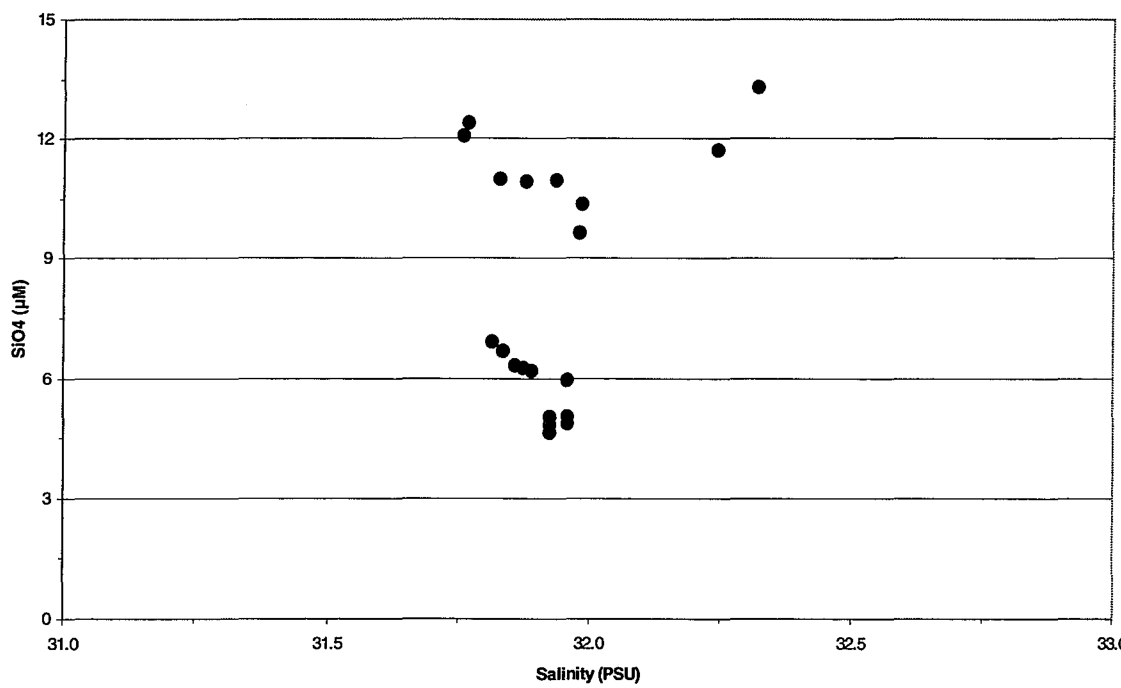


Figure D-120. Nutrient vs. Salinity Plots for Nearfield Survey WN98H (Dec 98)

APPENDIX E

Photosynthesis-Irradiance (P-I) Curves

Photosynthesis-Irradiance (P-I) Curves

Productivity (Prod, mg C m^{-3} hr^{-1}) versus irradiance (Light, μE m^{-2} sec^{-1}) curves for the period August 5th to December 16th, 1998. Comprehensive data are presented for each cruise by station (N04, N18, F23) and by depth (surface, mid-surface, middle, mid-bottom and bottom) Productivity calculations (Appendix A) utilized light attentuation data from a CTD-mounted 4-π sensor and incident light time-series data from a 2-π irradiance sensor located on Deer Island, MA. After collection of the productivity samples, they were transported to the Marine Ecosystems Research Laboratory (MERL) where they were incubated in temperature controlled incubators. Hourly productivity measurements were converted to daily values by fitting the measured hourly rates and light data to one of two P-I models (with or without photoinhibition) Using the fitted parameters, the measured incident light, and the light attenuation data, production rates were calculated for each 15-minute interval over the daylight period (centered from 6 AM to 6 PM), summed for each sampling depth, then integrated over depth to give areal production for each station.

WN98A Station N04

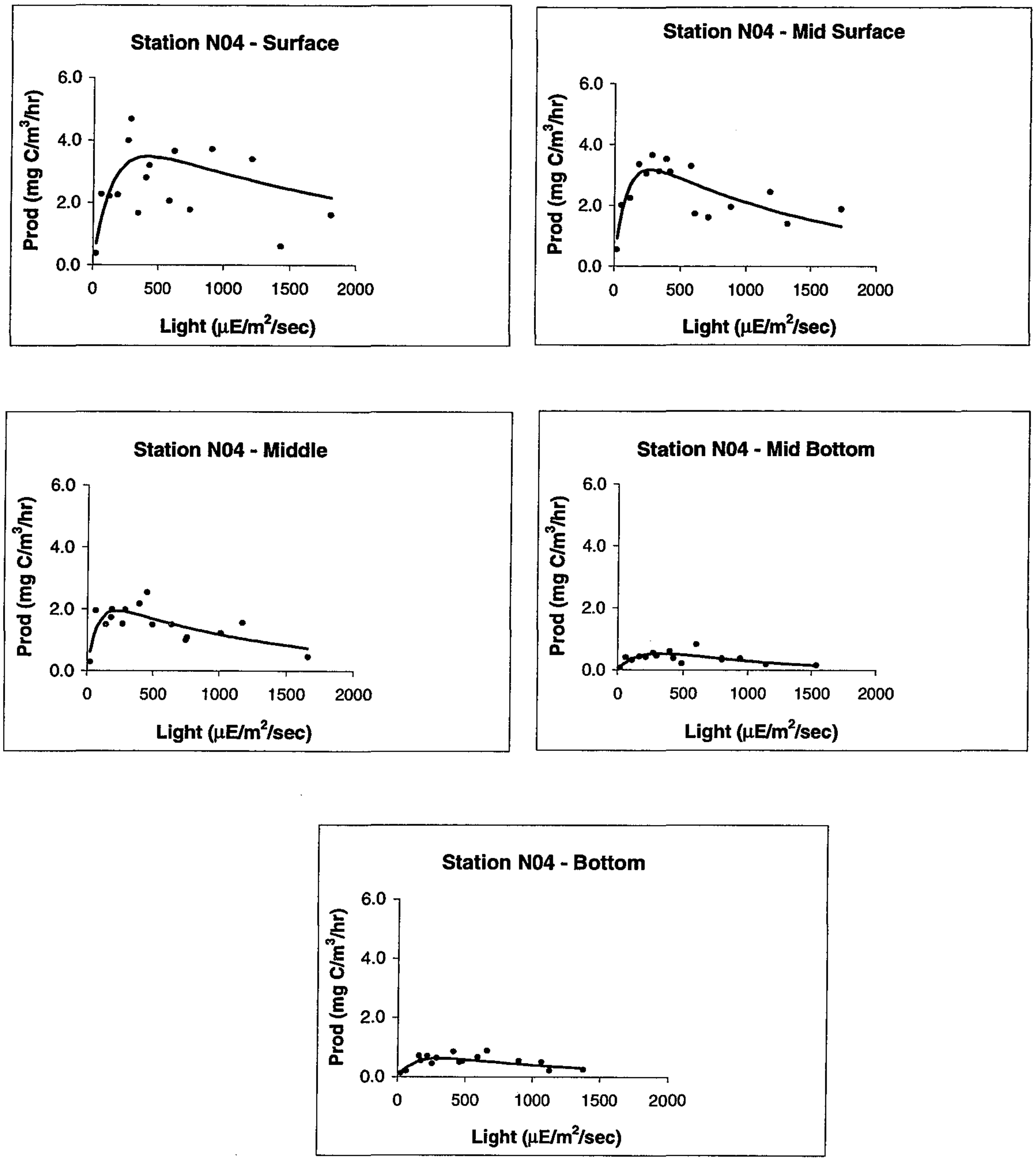


Figure E-1. Photosynthesis-Irradiance (P-I) Curves for Station N04 from Nearfield Survey WN98A (Aug 98)

WN98A Station N18

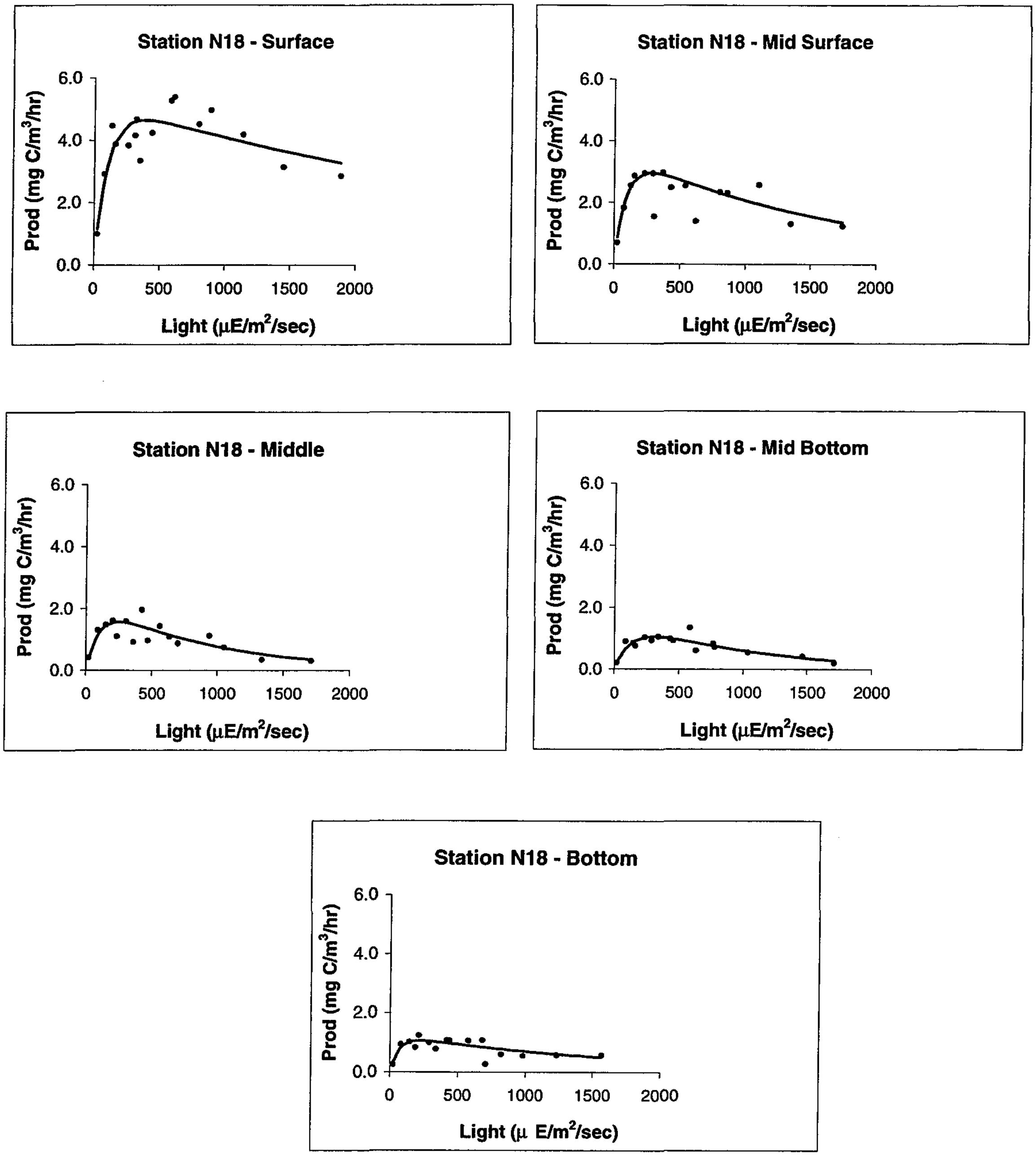


Figure E-2. Photosynthesis-Irradiance (P-I) Curves for Station N18 from Nearfield Survey WN98A (Aug 98)

WF98B Station N04

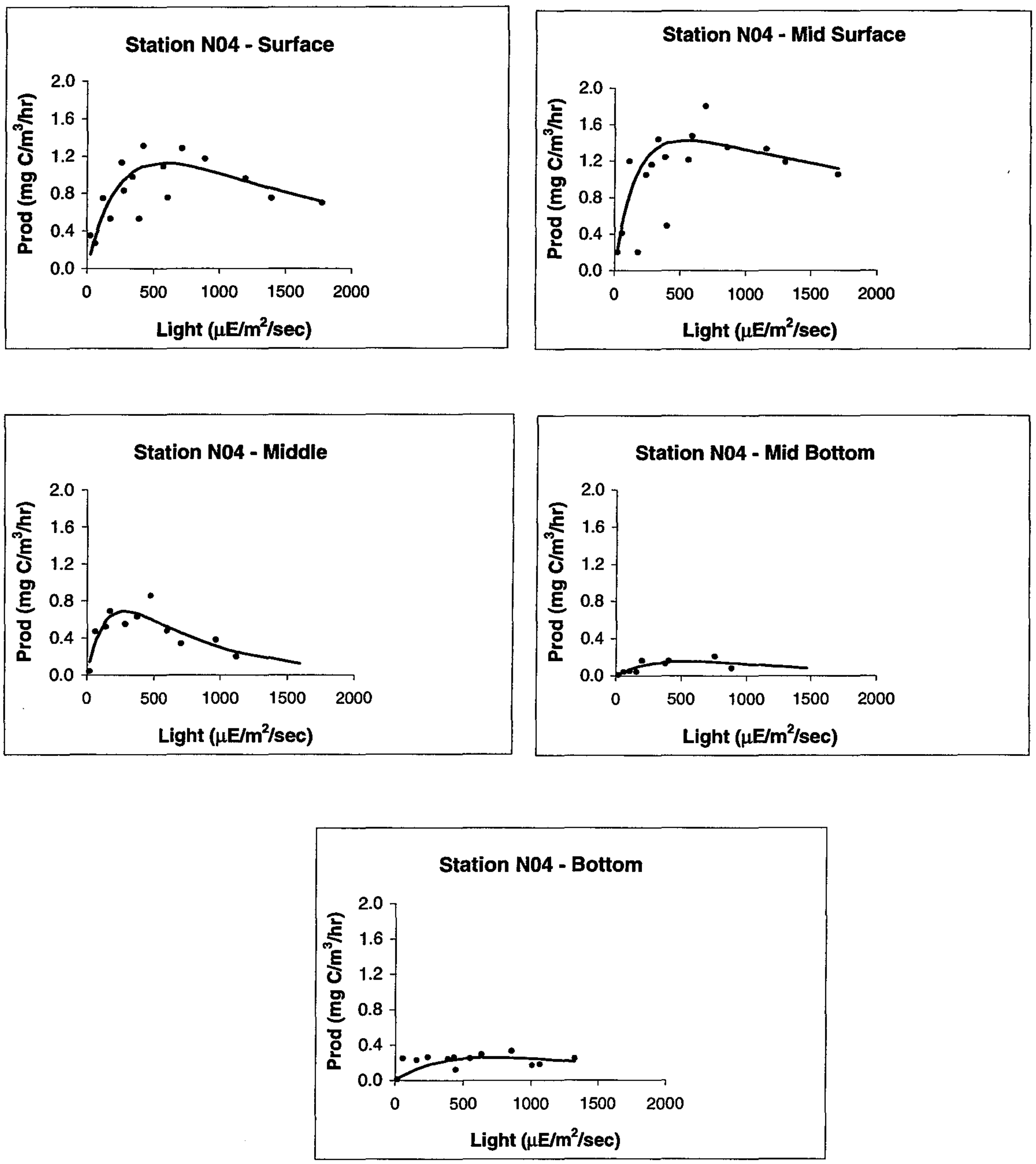


Figure E-3. Photosynthesis-Irradiance (P-I) Curves for Station N04 from Farfield Survey WF98B (Aug 98)

WF98B Station N18

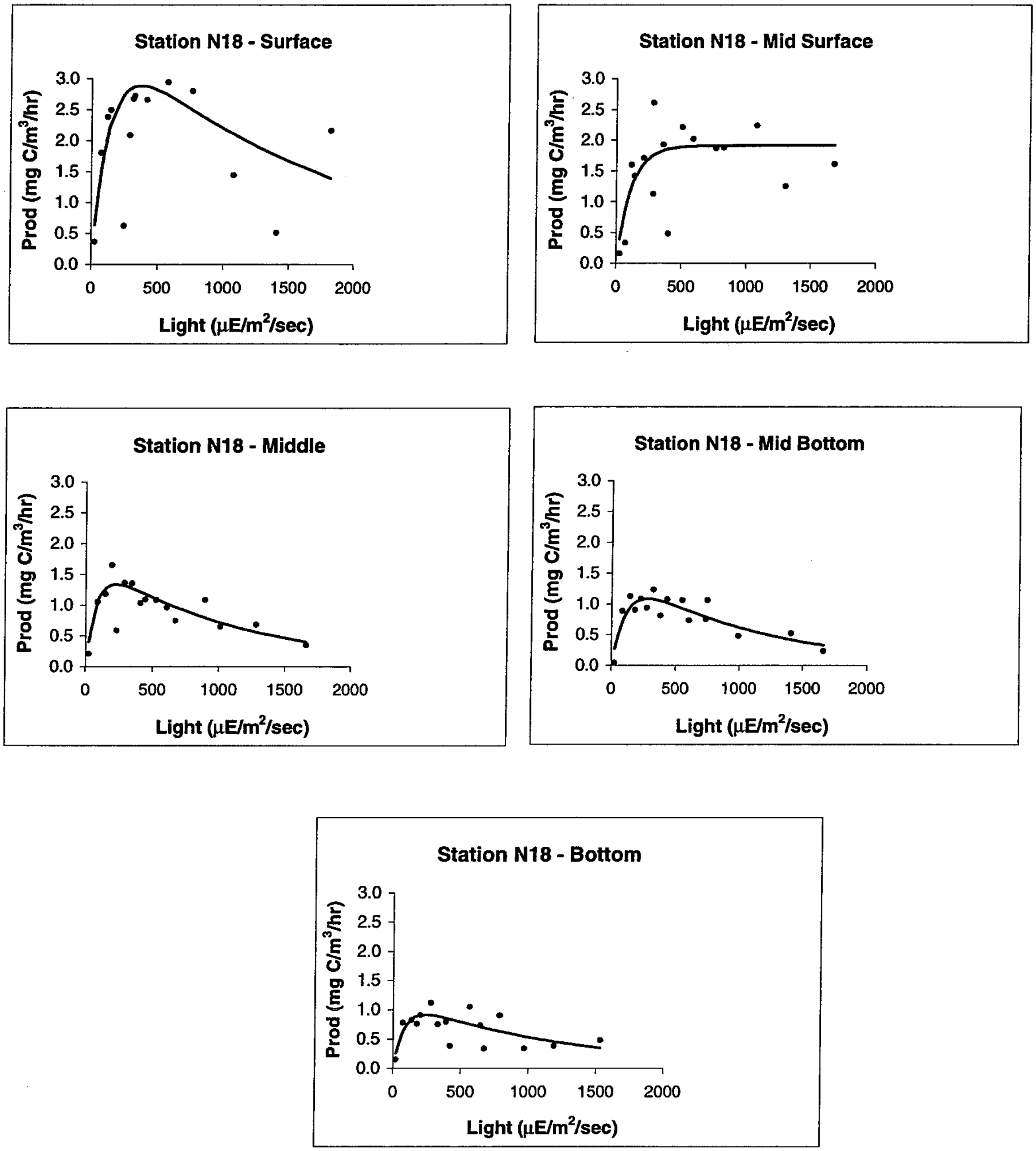


Figure E-4. Photosynthesis-Irradiance (P-I) Curves for Station N18 from Farfield Survey WF98B (Aug 98)

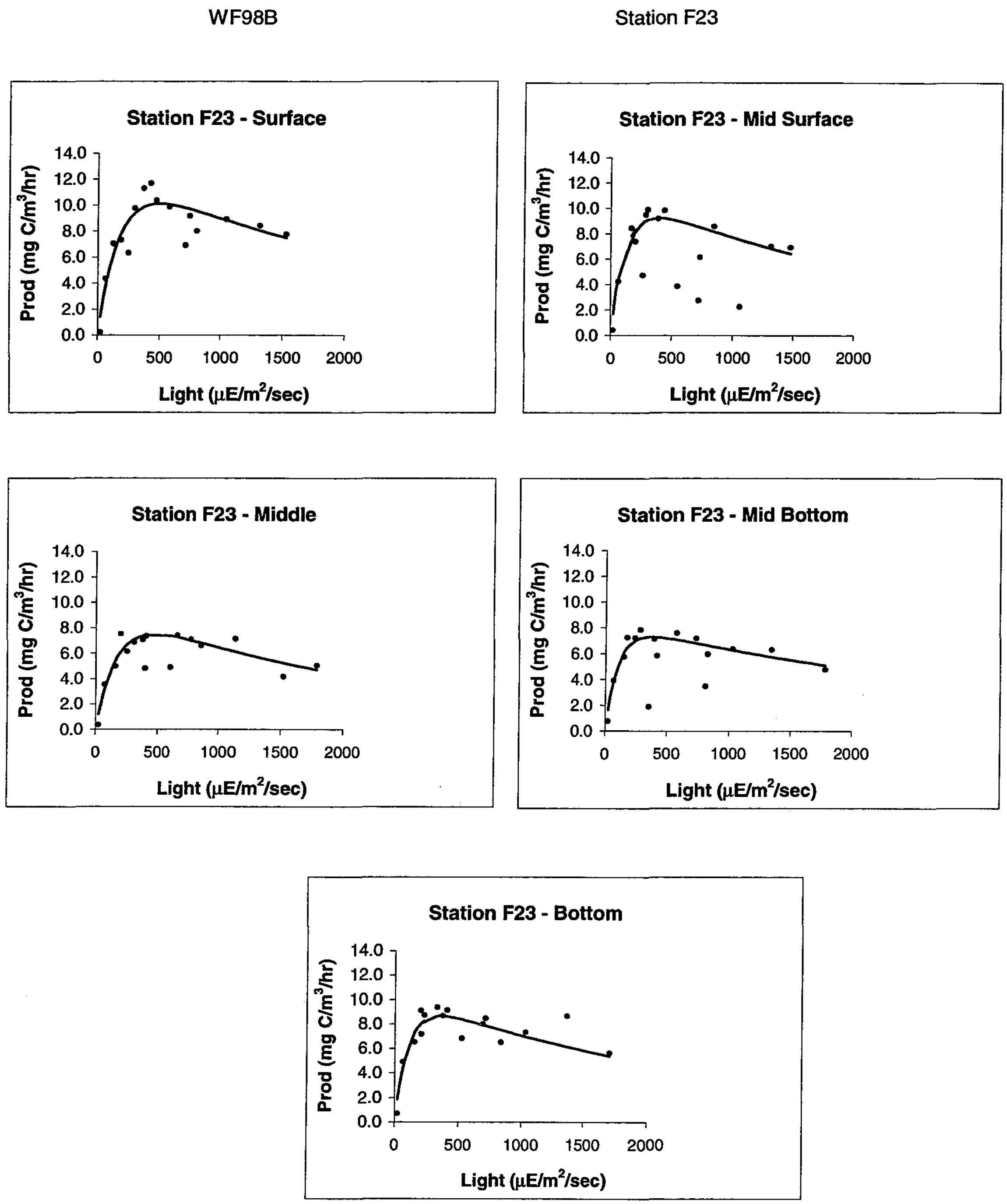
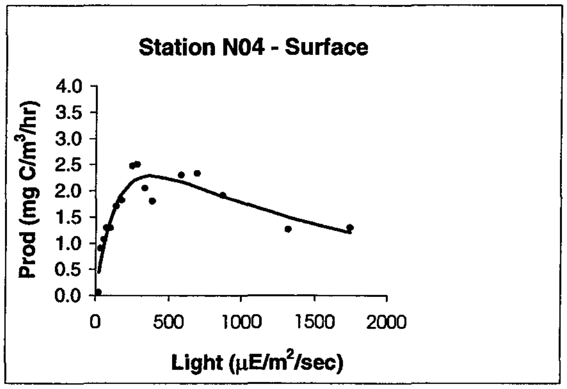
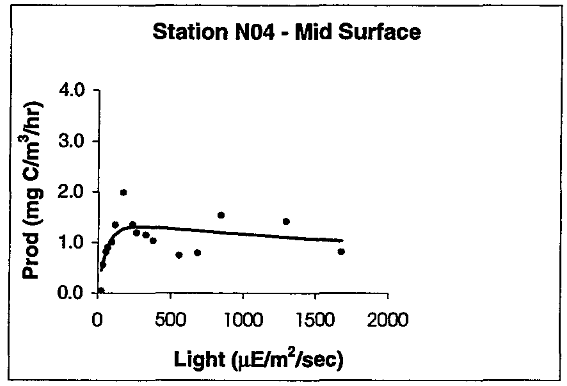
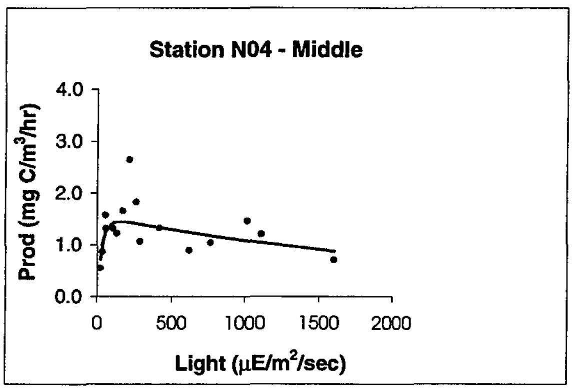


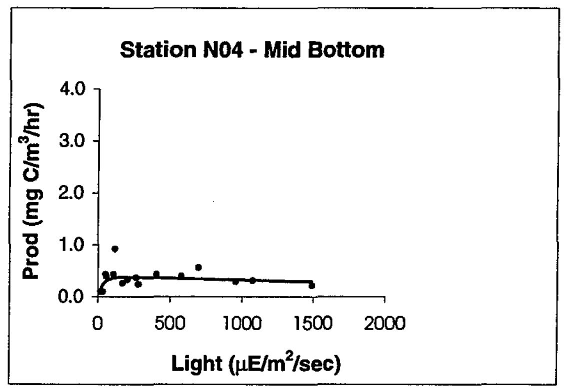
Figure E-5. Photosynthesis-Irradiance (P-I) Curves for Station F23 from Farfield Survey WF98B (Aug 98)

WN98C Station N04









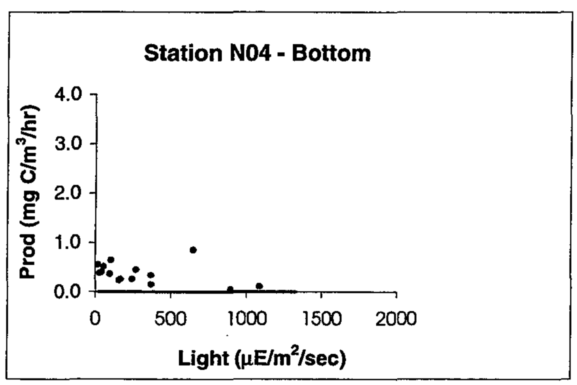


Figure E-6. Photosynthesis-Irradiance (P-I) Curves for Station N04 from Nearfield Survey WN98C (Sept 98)

WN98C Station N18

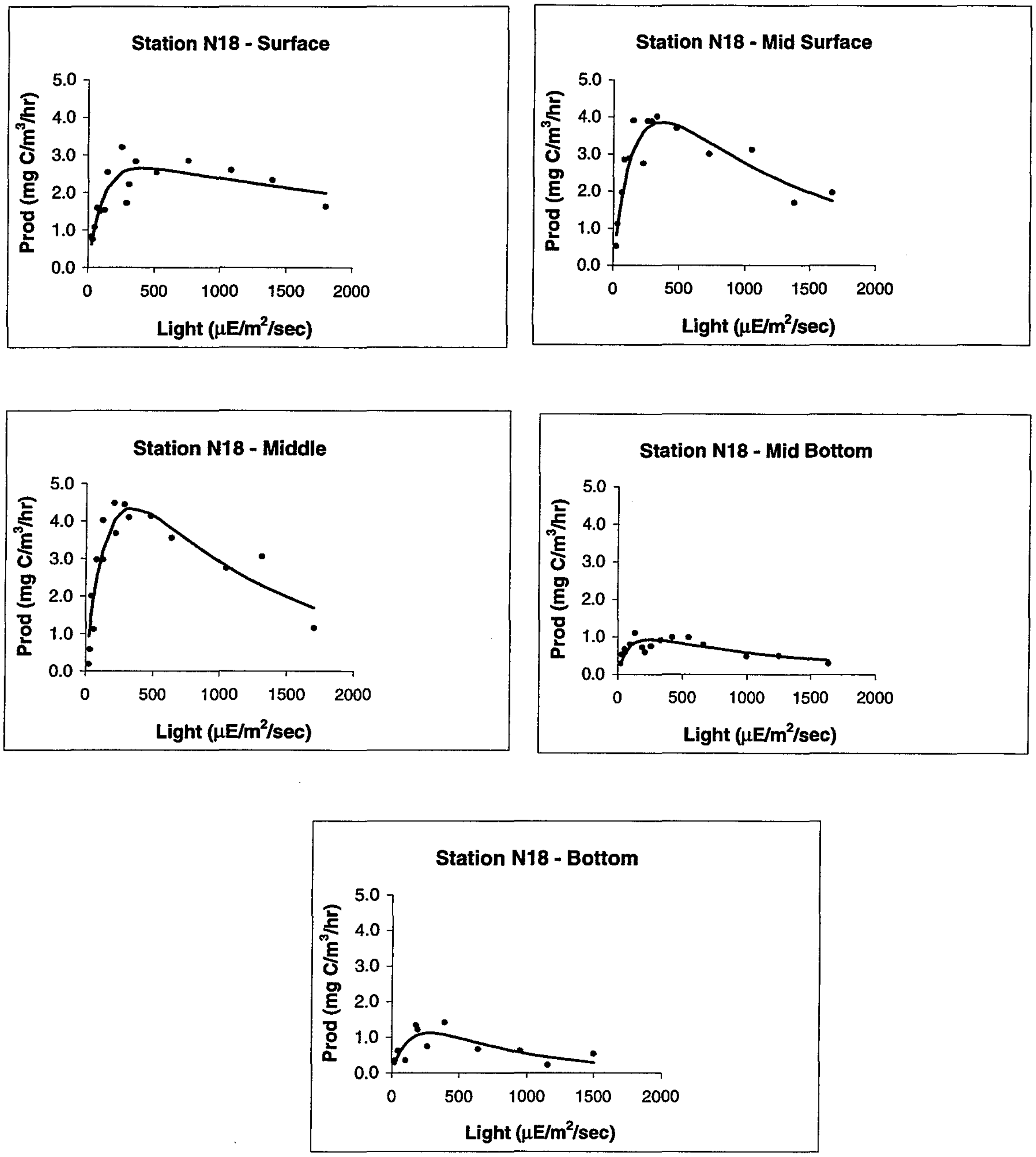
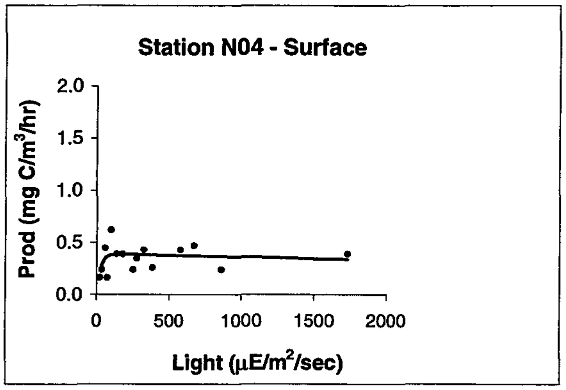
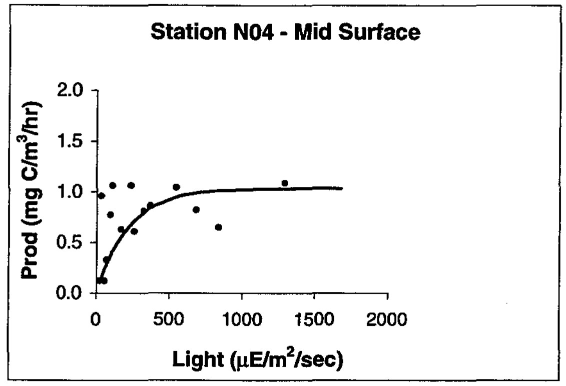


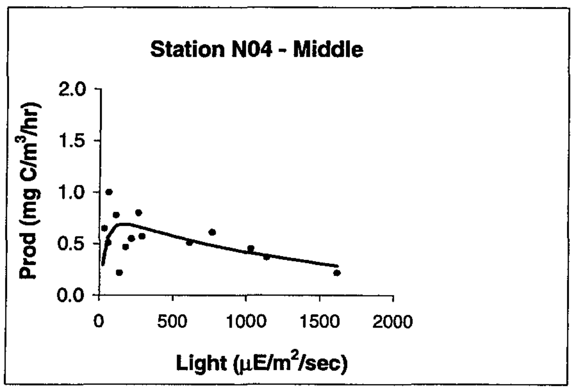
Figure E-7. Photosynthesis-Irradiance (P-I) Curves for Station N18 from Nearfield Survey WN98C (Sept 98)

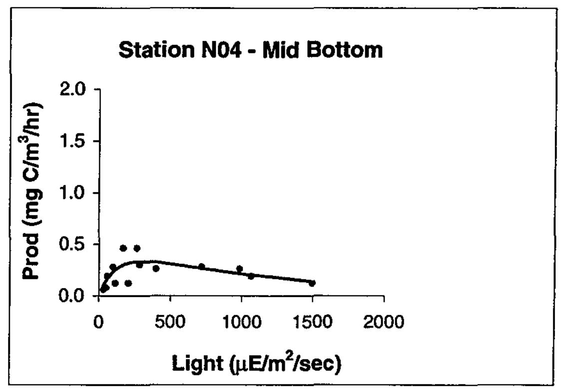
WN98D

Station N04









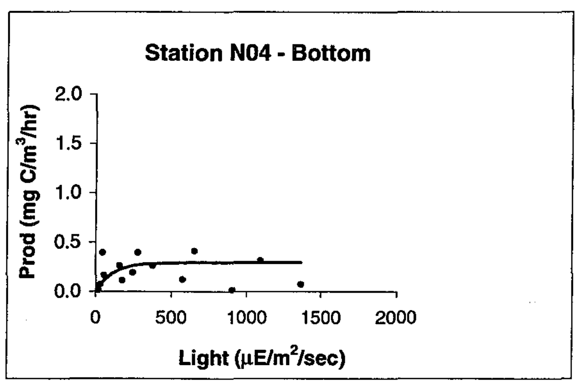


Figure E-8. Photosynthesis-Irradiance (P-I) Curves for Station N04 from Nearfield Survey WN98D (Sept 98)

WN98D Station N18

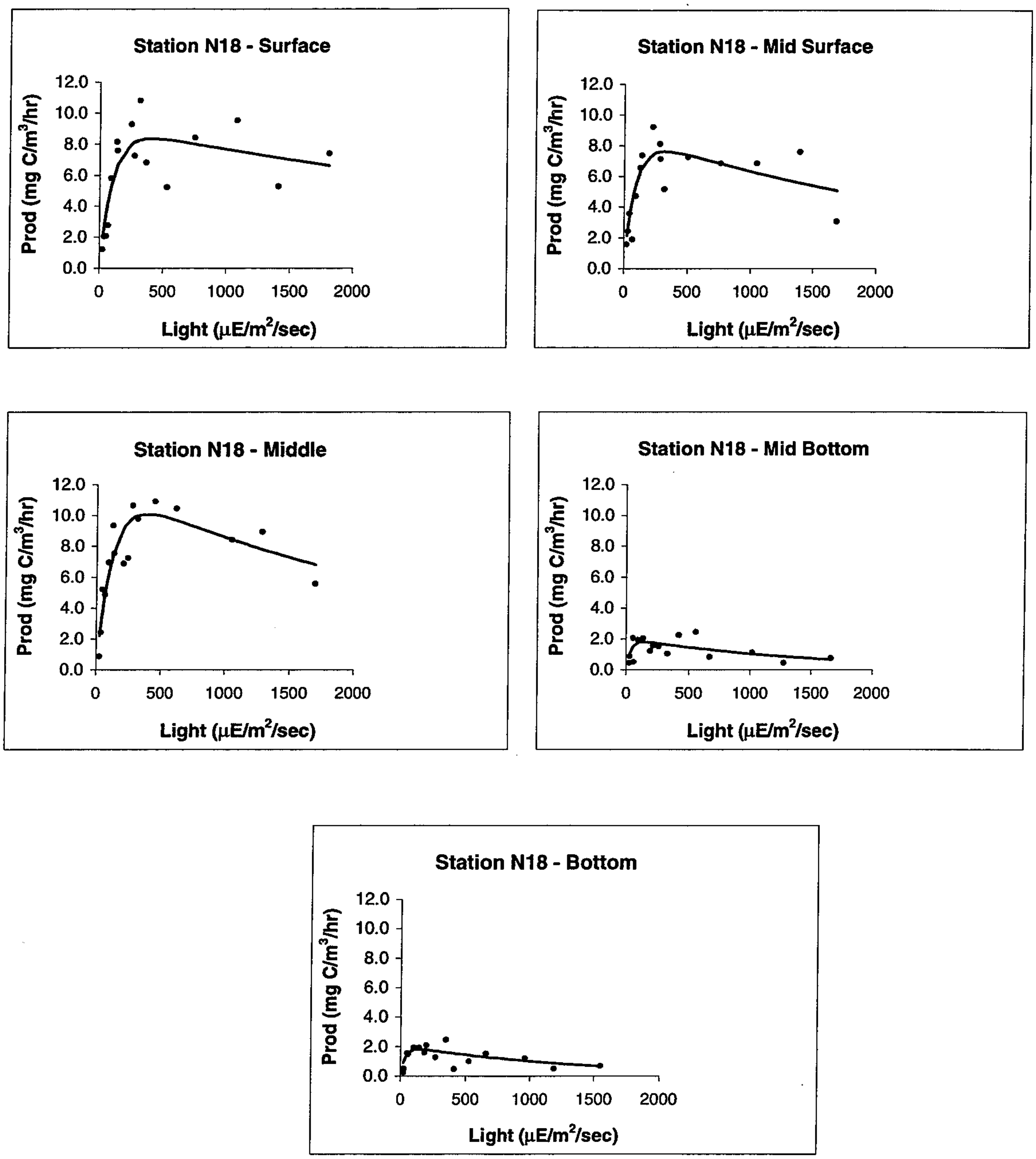
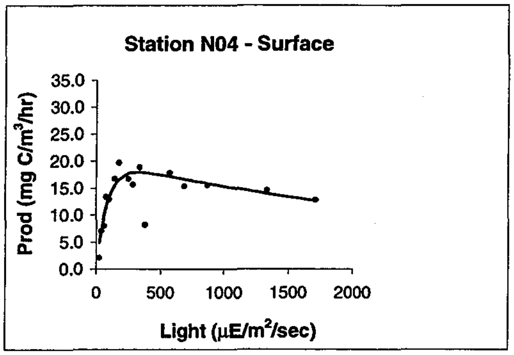
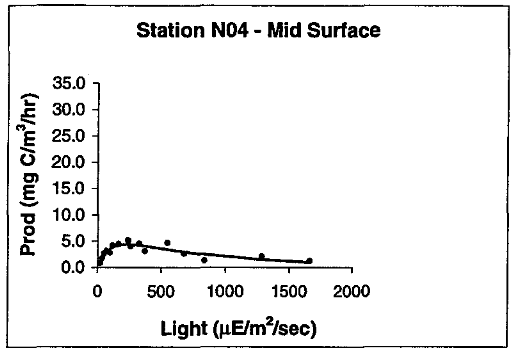
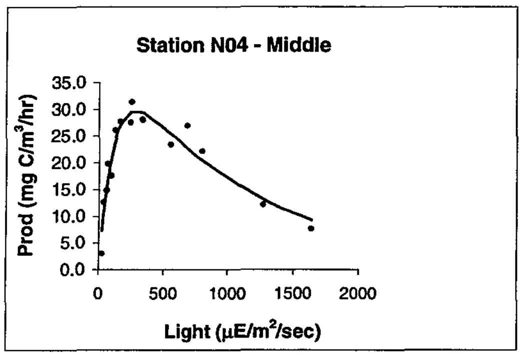


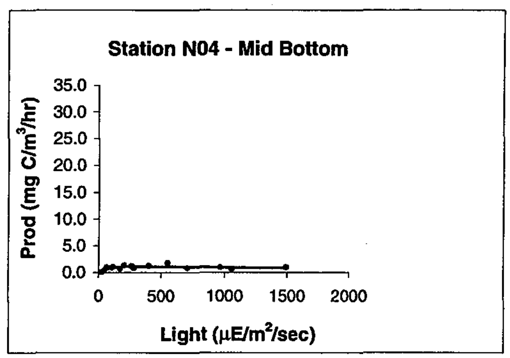
Figure E-9. Photosynthesis-Irradiance (P-I) Curves for Station N18 from Nearfield Survey WN98D (Sept 98)

WF98E Station N04









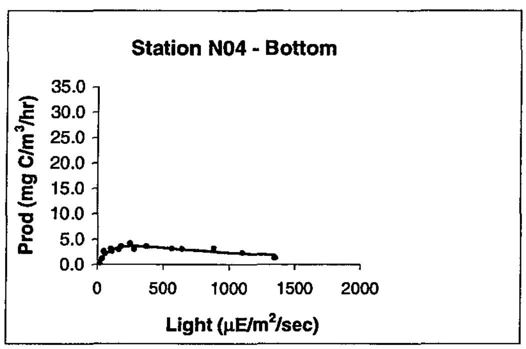


Figure E-10. Photosynthesis-Irradiance (P-I) Curves for Station N04 from Farfield Survey WF98E (Oct 98)

WF98E Station N18

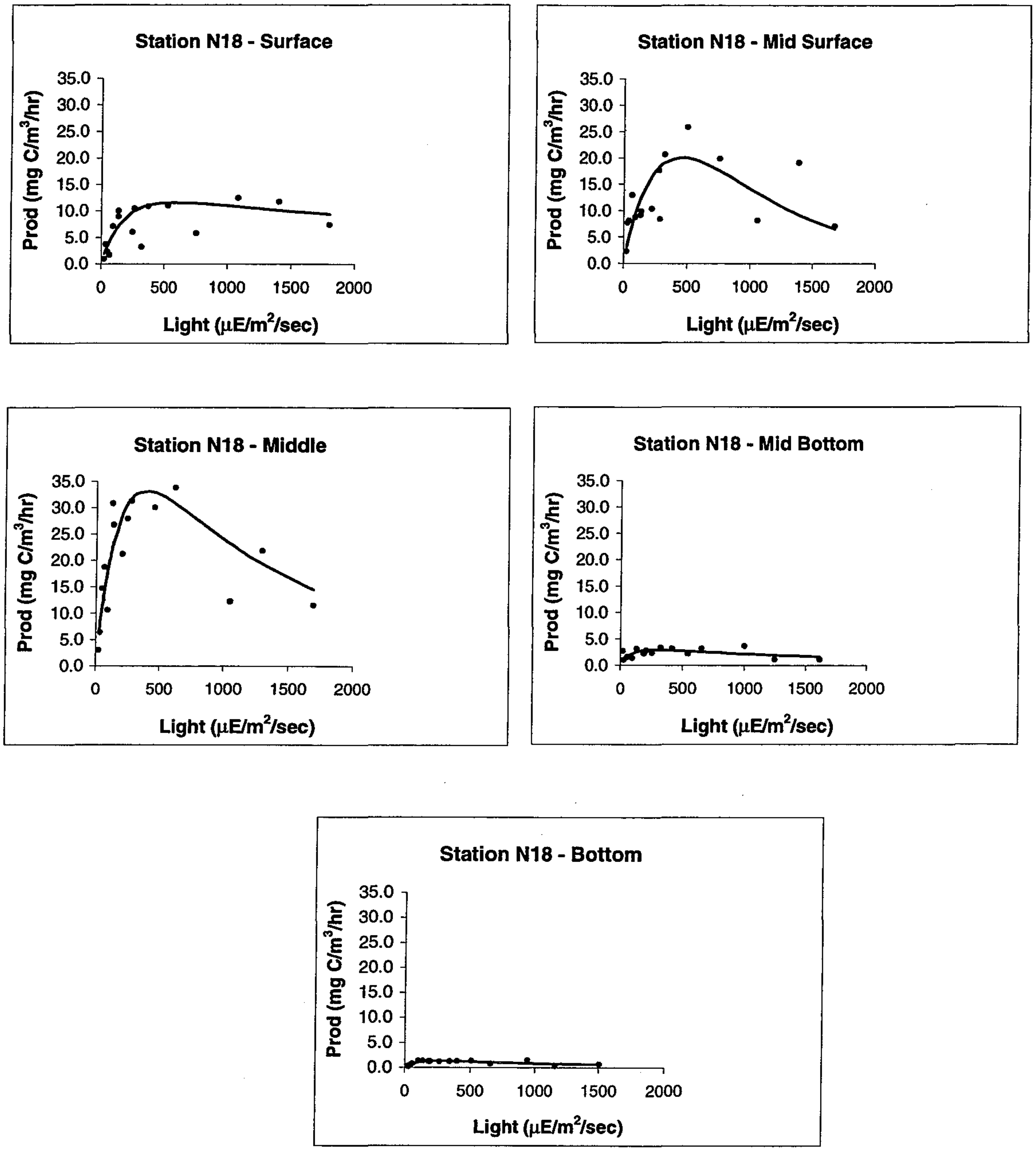


Figure E-11. Photosynthesis-Irradiance (P-I) Curves for Station N18 from Farfield Survey WF98E (Oct 98)

WF98E Station F23

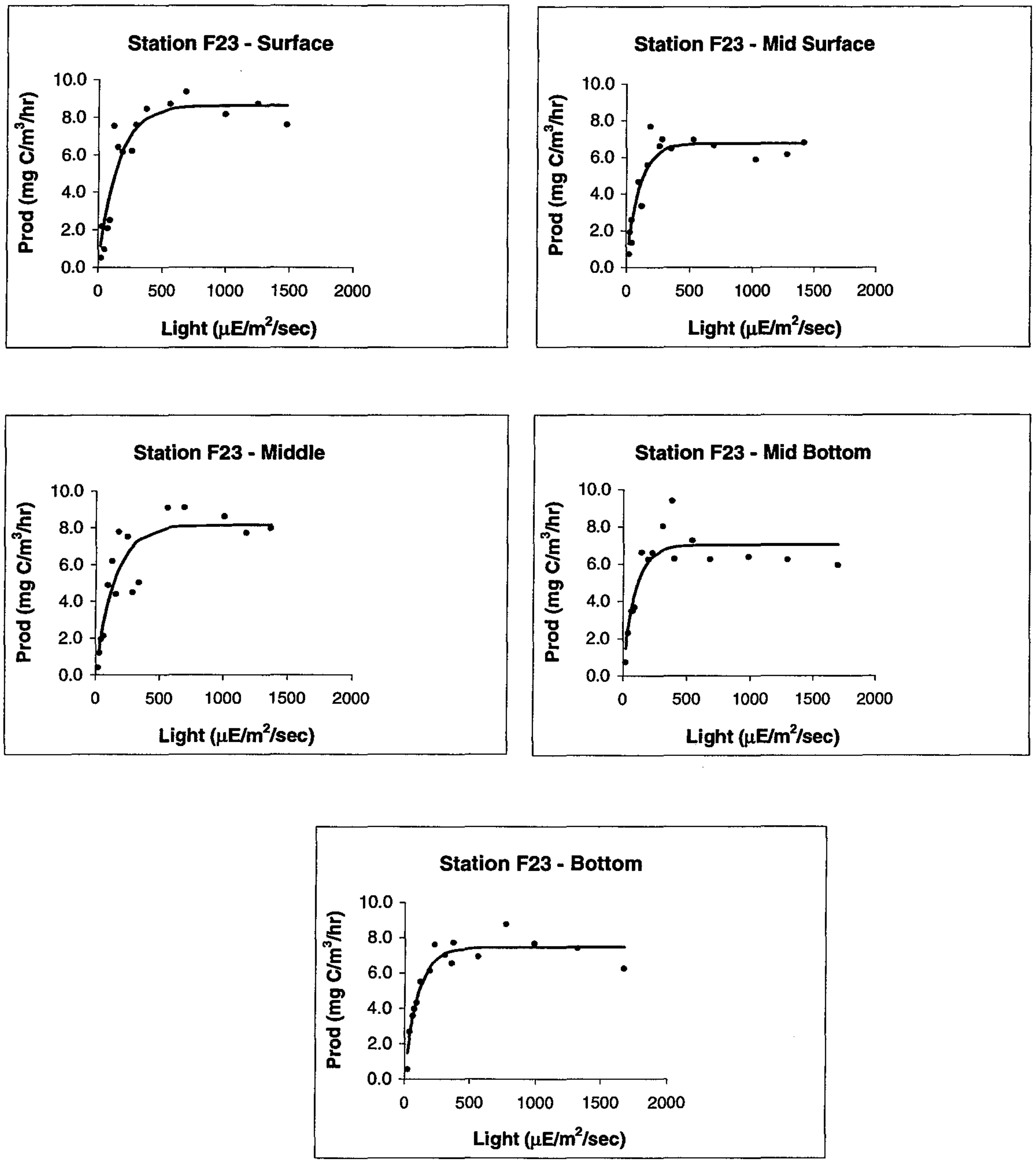


Figure E-12. Photosynthesis-Irradiance (P-I) Curves for Station F23 from Farfield Survey WF98E (Oct 98)

WN98F Station N04

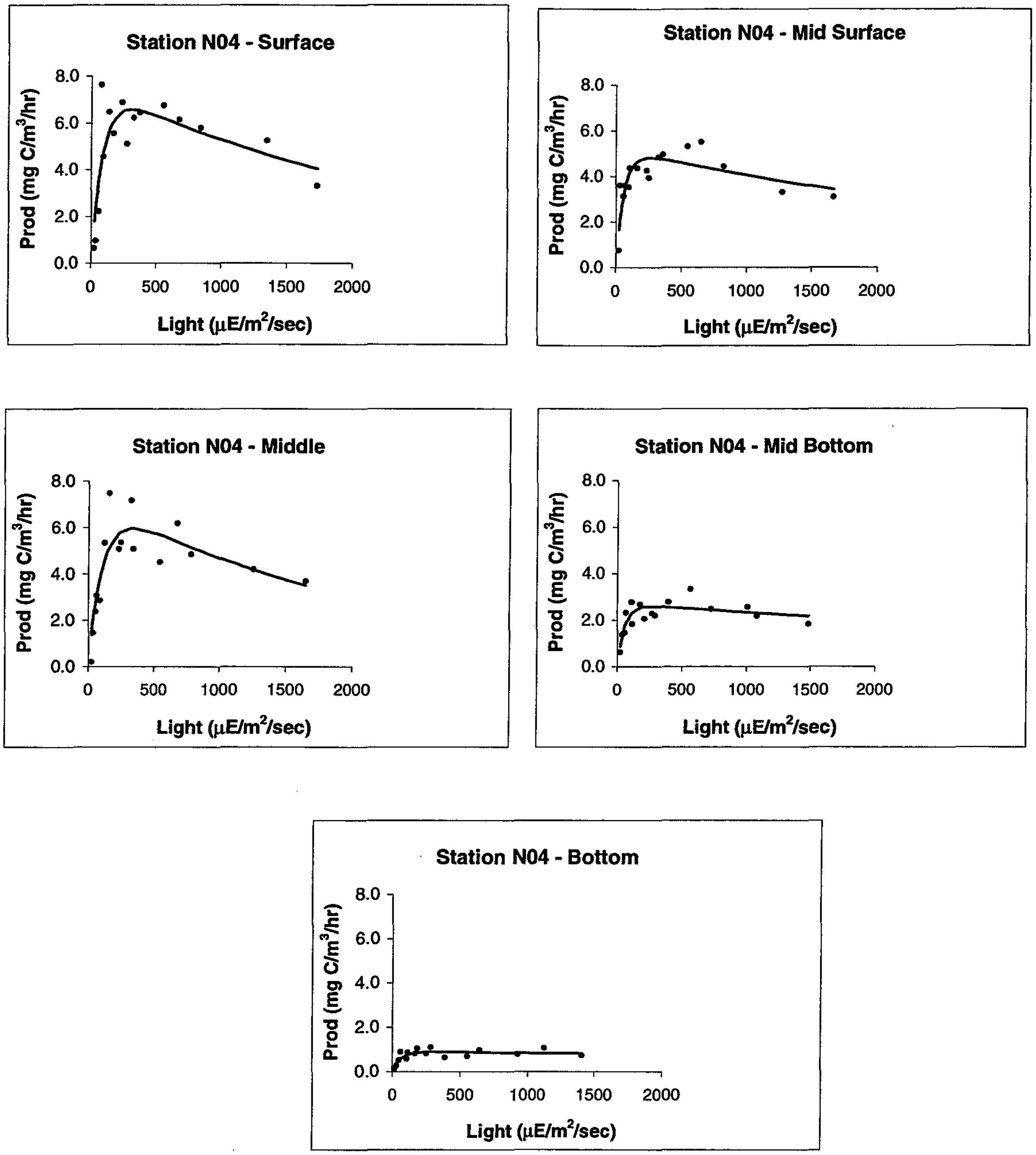


Figure E-13. Photosynthesis-Irradiance (P-I) Curves for Station N04 from Nearfield Survey WN98F (Oct 98)

WN98F Station N18

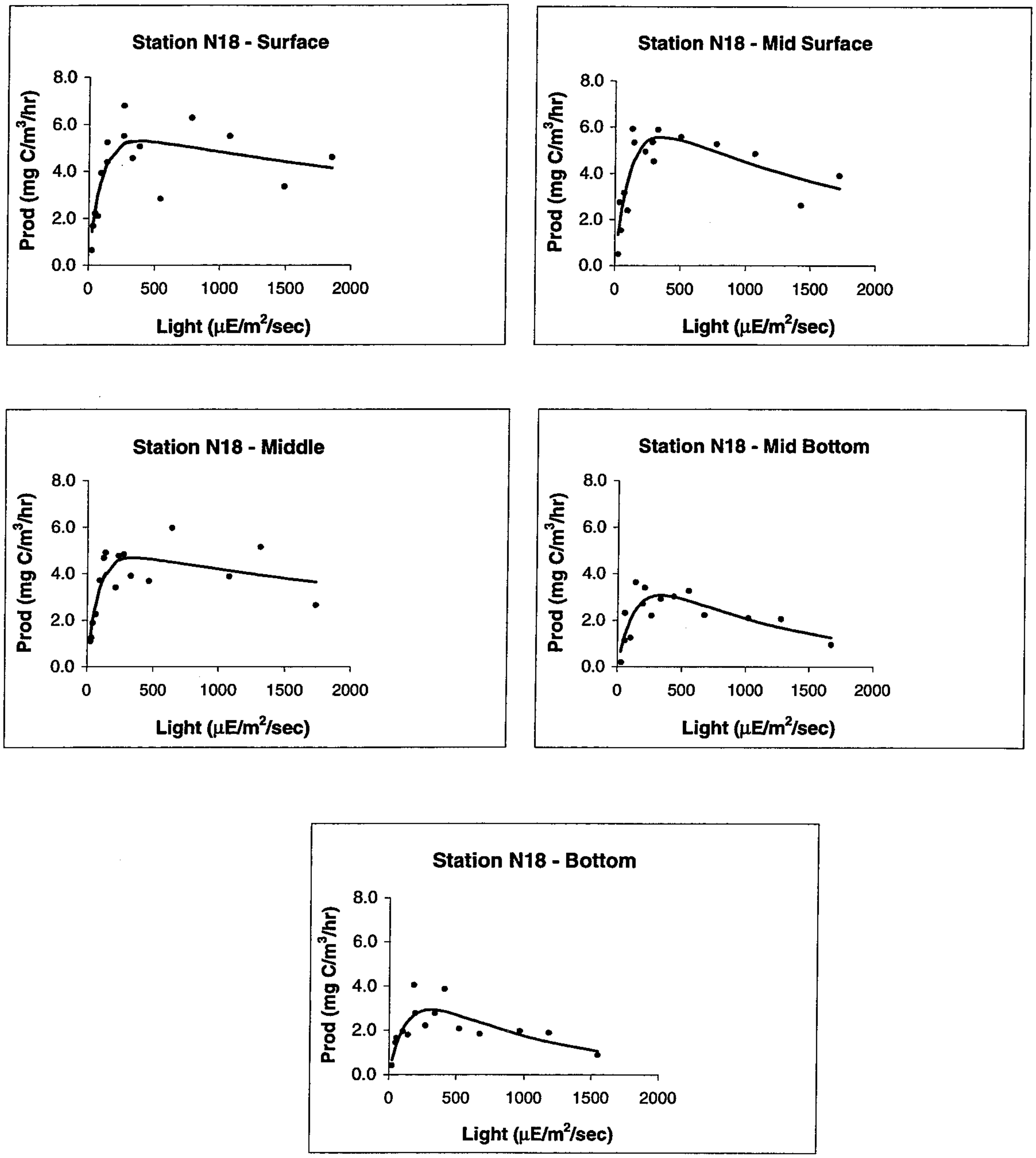


Figure E-14. Photosynthesis-Irradiance (P-I) Curves for Station N18 from Nearfield Survey WN98F (Oct 98)

WN98G **Station N04**

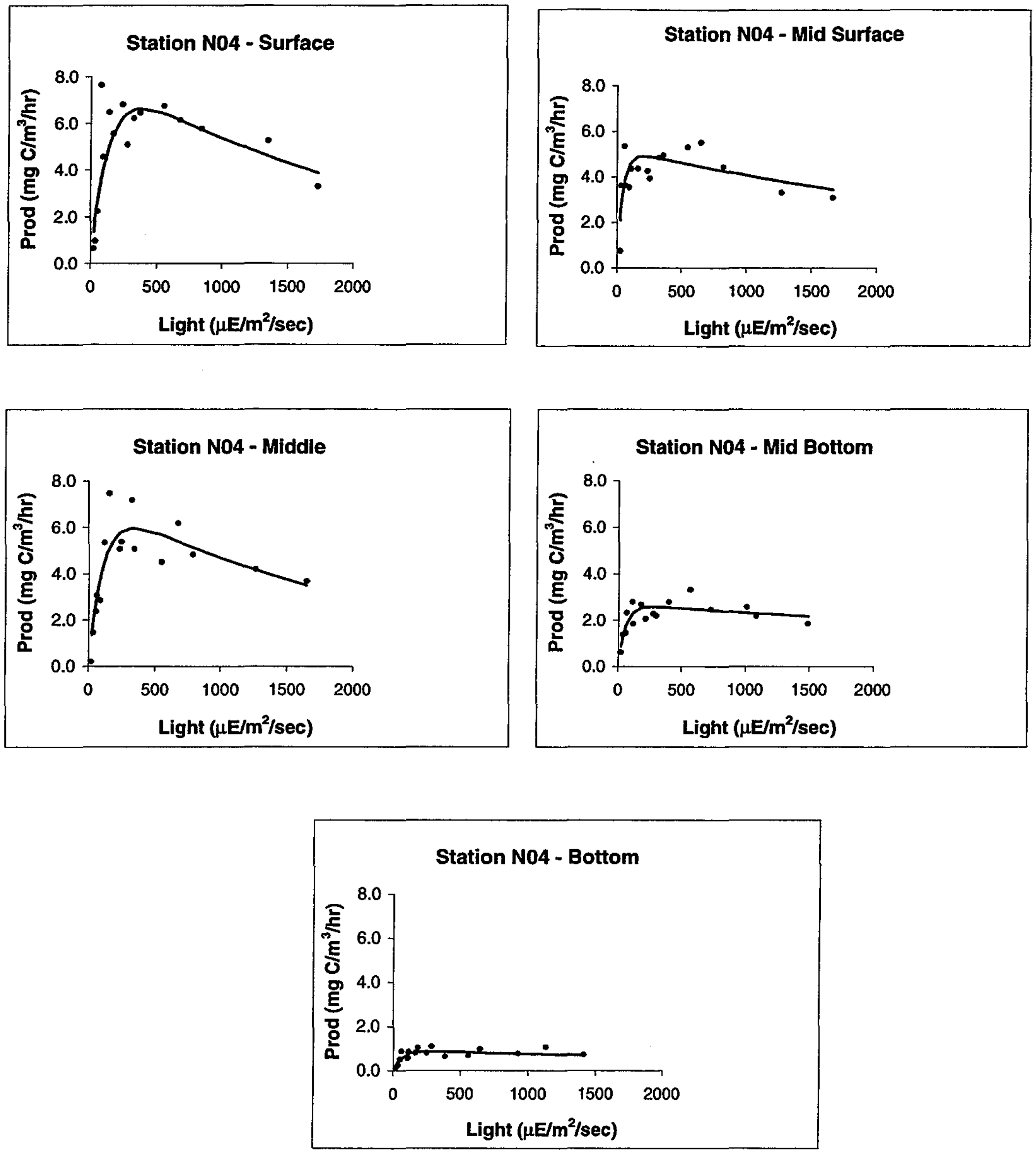


Figure E-15. Photosynthesis-Irradiance (P-I) Curves for Station N04 from Nearfield Survey WN98G (Nov 98)

WN98G **Station N18**

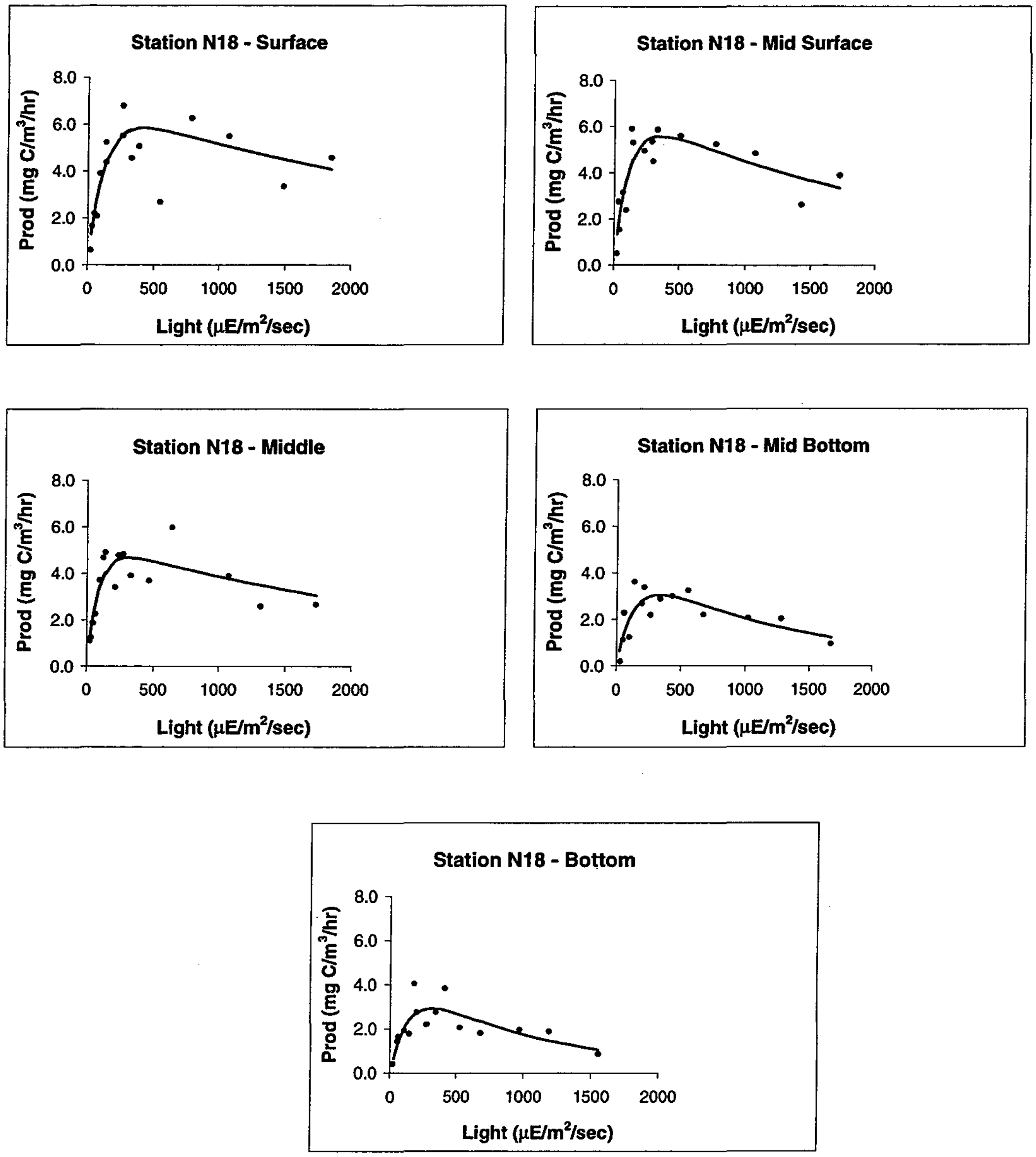
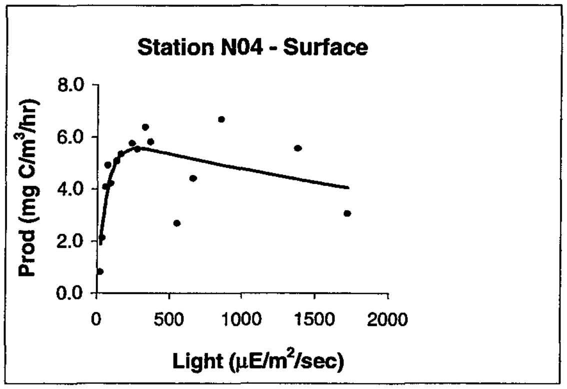
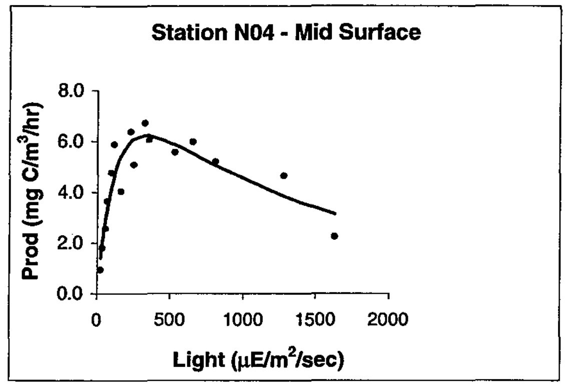


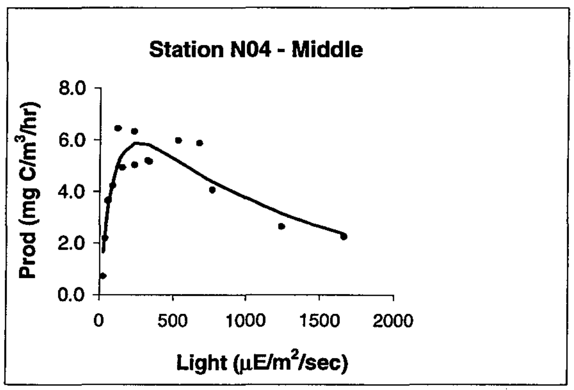
Figure E-16. Photosynthesis-Irradiance (P-I) Curves for Station N18 from Nearfield Survey WN98G (Nov 98)

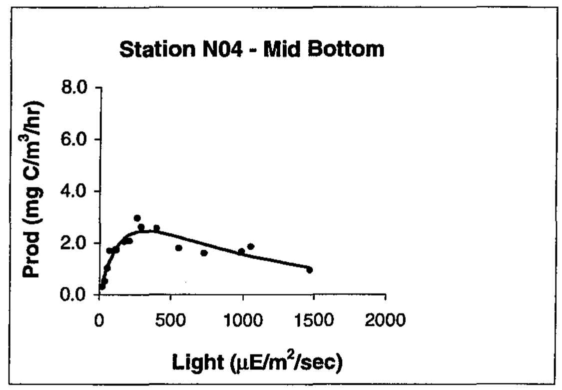
WN98H

Station N04









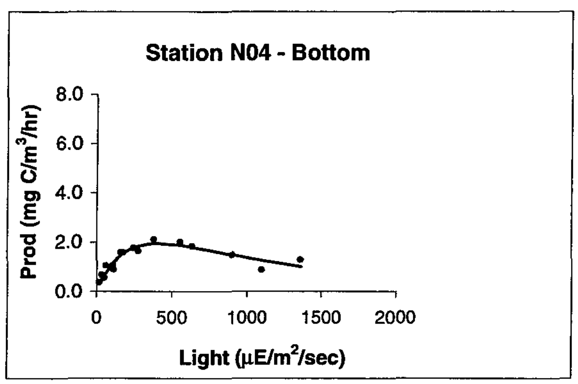


Figure E-17. Photosynthesis-Irradiance (P-I) Curves for Station N04 from Nearfield Survey WN98H (Dec 98)

WN98H Station N18

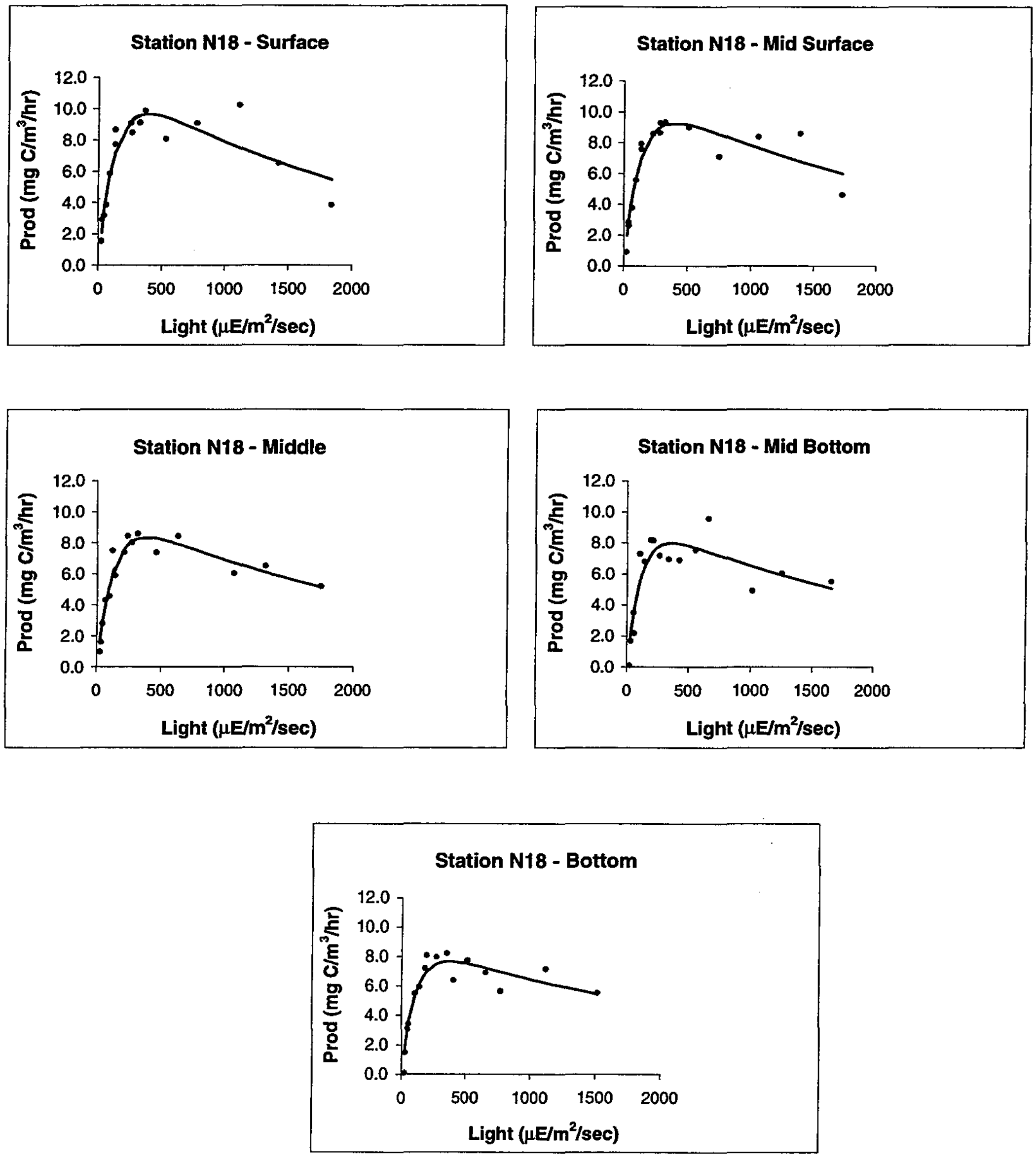


Figure E-18. Photosynthesis-Irradiance (P-I) Curves for Station N18 from Nearfield Survey WN98H (Dec 98)

APPENDIX F

ABUNDANCE OF PREVALENT PHYTOPLANKTON SPECIES IN WHOLE WATER SURFACE AND CHLOROPHYLL-A MAXIMUM SAMPLES

Life Stage and Group Definitions

Life Stage Definitions:

A = ADULT (not sexed)
B = CYST
C = COPEPODITES
F = FEMALE
G = FRAGMENT
J = Juvenile (unspecified stage)
K = Colonial species, not counted individually
L = LARVAE
M = MALE
N = NAUPLII
O = OVA
P = POST LARVAE
R = REGENERATING
S = SPORES
T = TROCHOPHORE
U = UNIDENTIFIED (lumped) not able to identify to stage or gender
V = VELIGER
X = Complex
Y = CYPRIDS
Z = ZOEA
null = no value, used as a place holder for a key field

Group Definitions:

B = BARNACLE
CD = CENTRIC DIATOM
CH = CHLOROPHYTES
CR = CHRYSOPHYTES
C = COPEPOD
CY = CRYTPOPHYTES
CN = CYANOPHYTES
DF = DINOFLAGELLATES
EU = EUGLENOPHYTES
H = HAPTOPHYTES
MF = MICROFLAGELLATES
OZ = OTHER (ZOO)
PD = PENNATE DIATOM
PR = PRASINOPHYTES

Abundance of Prevalent Species (>5% Total Count) in Surface Sample
Whole Water Phytoplankton, Survey WN98A

			N04	N18
LEPTOCYLINDRUS DANICUS	CD	%	28.923	31.885
		E6CELLS/L	0.713	1.094
LEPTOCYLINDRUS MINIMUS	CD	%		16.624
		E6CELLS/L		0.571
PSEUDONITZSCHIA DELICATISSIMA	PD	%		6.872
		E6CELLS/L		0.236
SKELETONEMA COSTATUM	CD	%	15.887	
GREV+CLEVE		E6CELLS/L	0.392	
UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	MF	%	38.627	37.795
		E6CELLS/L	0.952	1.297

Columns are Species, Group and Units.

**Abundance of Prevalent Species (>5% Total Count) in Surface Sample
Whole Water Phytoplankton, Survey WF98B**

			F01	F02	F06	F13	F23	F24	F25
CRYPTOMONAS SP. GROUP 1 LENGTH	CY	%					8.959		5.018
<10 MICRONS		E6CELLS/L					0.471		0.208
GYMNODINIUM SP. GROUP	DF	%							
1 5-20UM W 10-20UM L		E6CELLS/L							
LEPTOCYLINDRUS DANICUS	CD	%	37.801		44.836	63.751	20.042	28.548	25.818
		E6CELLS/L	1.694		1.380	3.070	1.054	1.389	1.072
LEPTOCYLINDRUS MINIMUS	CD	%	31.821	59.734	22.118				
		E6CELLS/L	1.426	3.013	0.681				
PSEUDONITZSCHIA DELICATISSIMA	PD	%			6.005	14.771	31.240	45.006	35.855
		E6CELLS/L			0.185	0.711	1.642	2.189	1.488
PSEUDONITZSCHIA PUNGENS	PD	%							6.400
		E6CELLS/L							0.266
UNID. MICRO-PHYTOFLAG LENGTH	MF	%	25.430	28.789	20.717	15.922	25.096	17.281	22.255
<10 MICRONS		E6CELLS/L	1.139	1.452	0.637	0.767	1.319	0.841	0.924

Columns are Species, Group and Units.

Abundance of Prevalent Species (>5% Total Count) in Surface Sample
Whole Water Phytoplankton, Survey WF98B

			F27	F30	F31	N04	N16	N18
CRYPTOMONAS SP. GROUP 1 LENGTH	CY	%		14.062				
<10 MICRONS		E6CELLS/L		0.643				
GYMNODINIUM SP. GROUP	DF	%				6.705		
1 5-20UM W 10-20UM L		E6CELLS/L				0.124		
LEPTOCYLINDRUS DANICUS	CD	%	62.354	14.524	22.310	46.934	28.520	27.540
		E6CELLS/L	1.331	0.664	0.728	0.866	0.667	0.438
LEPTOCYLINDRUS MINIMUS	CD	%	6.716				22.196	
		E6CELLS/L	0.143				0.519	
PSEUDONITZSCHIA DELICATISSIMA	PD	%		25.616	21.754	7.931	17.422	5.935
		E6CELLS/L		1.171	0.709	0.146	0.408	0.094
PSEUDONITZSCHIA PUNGENS	PD	%			20.088			
		E6CELLS/L			0.655			
UNID. MICRO-PHYTOFLAG LENGTH	MF	%	22.199	34.264	27.494	32.216	23.358	56.220
<10 MICRONS		E6CELLS/L	0.474	1.567	0.897	0.595	0.546	0.894

Columns are Species, Group and Units.

Abundance of Prevalent Species (>5% Total Count) in Surface Sample
Whole Water Phytoplankton, Survey WN98C

			N04	N18
GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	DF	%	10.612	5.879
		E6CELLS/L	0.178	0.130
LEPTOCYLINDRUS MINIMUS	CD	%	20.845	28.976
		E6CELLS/L	0.349	0.638
PSEUDONITZSCHIA DELICATISSIMA	PD	%		7.758
		E6CELLS/L		0.171
UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	MF	%	55.145	44.653
		E6CELLS/L	0.924	0.984

Columns are Species, Group and Units.

Abundance of Prevalent Species (>5% Total Count) in Surface Sample
Whole Water Phytoplankton, Survey WN98D

			N04	N18
CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	CD	%		11.276
		E6CELLS/L		0.263
CHAETOCEROS DIDYMUS	CD	%		13.350
		E6CELLS/L		0.311
LEPTOCYLINDRUS DANICUS	CD	%		6.610
		E6CELLS/L		0.154
SKELETONEMA COSTATUM GREV+CLEVE	CD	%		8.831
		E6CELLS/L		0.206
UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	MF	%	92.774	47.048
		E6CELLS/L	0.541	1.098

Columns are Species, Group and Units.

Abundance of Prevalent Species (>5% Total Count) in Surface Sample
Whole Water Phytoplankton, Survey WF98E

			F01	F02	F06	F13	F23	F24	F25
CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	CD	%					9.820	14.570	
		E6CELLS/L					0.142	0.163	
CHAETOCEROS COMPRESSUS	CD	%							
		E6CELLS/L							
CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	CY	%					17.719	12.277	6.234
		E6CELLS/L					0.256	0.138	0.047
EUCAMPIA ZODIACUS	CD	%			17.790	14.219			21.579
		E6CELLS/L			0.118	0.131			0.162
LEPTOCYLINDRUS DANICUS	CD	%	5.347					5.523	
		E6CELLS/L	0.042					0.062	
PSEUDONITZSCHIA PUNGENS	PD	%	8.040	6.050	7.380	6.156			
		E6CELLS/L	0.063	0.027	0.049	0.057			
SKELETONEMA COSTATUM GREV+CLEVE	CD	%				8.172	5.010	12.394	
		E6CELLS/L				0.075	0.072	0.139	
UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	MF	%	60.388	71.246	59.747	51.392	59.136	45.465	53.610
		E6CELLS/L	0.476	0.324	0.395	0.475	0.854	0.509	0.402

Columns are Species, Group and Units.

Abundance of Prevalent Species (>5% Total Count) in Surface Sample Whole Water Phytoplankton, Survey WF98E

			F27	F30	F31	N04	N16	N18
CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	CD	%	7.092	7.239				
		E6CELLS/L	0.036	0.094				
CHAETOCEROS COMPRESSUS	CD	%				12.217		14.300
		E6CELLS/L				0.176		0.136
CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	CY	%	10.047	27.265	9.356			
		E6CELLS/L	0.051	0.355	0.048			
EUCAMPIA ZODIACUS	CD	%	7.967		6.686	16.379	8.826	15.571
		E6CELLS/L	0.041		0.035	0.236	0.218	0.148
LEPTOCYLINDRUS DANICUS	CD	%						6.356
		E6CELLS/L						0.060
PSEUDONITZSCHIA PUNGENS	PD	%						5.720
		E6CELLS/L						0.054
SKELETONEMA COSTATUM GREV+CLEVE	CD	%			5.547	7.096	39.725	6.832
		E6CELLS/L			0.029	0.102	0.981	0.065
UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	MF	%	55.557	55.013	70.757	43.811	28.607	30.869
		E6CELLS/L	0.284	0.717	0.366	0.632	0.706	0.293

Columns are Species, Group and Units.

Abundance of Prevalent Species (>5% Total Count) in Surface Sample
Whole Water Phytoplankton, Survey WN98F

			N04	N18
CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	CY	%	8.343	17.997
		E6CELLS/L	0.056	0.126
EUCAMPIA ZODIACUS	CD	%	11.452	10.733
		E6CELLS/L	0.076	0.075
GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	DF	%	12.360	5.142
		E6CELLS/L	0.082	0.036
LEPTOCYLINDRUS DANICUS	CD	%	5.398	
		E6CELLS/L	0.036	
UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	MF	%	53.610	51.653
		E6CELLS/L	0.357	0.361

Columns are Species, Group and Units.

Abundance of Prevalent Species (>5% Total Count) in Surface Sample
Whole Water Phytoplankton, Survey WN98G

			N04	N18
CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	CY	%	26.003	5.058
		E6CELLS/L	0.183	0.019
RHIZOSOLENIA DELICATULA	CD	%	11.920	18.857
		E6CELLS/L	0.084	0.070
UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	MF	%	54.059	70.913
		E6CELLS/L	0.380	0.263

Columns are Species, Group and Units.

Abundance of Prevalent Species (>5% Total Count) in Surface Sample
Whole Water Phytoplankton, Survey WN98H

			N04	N18
CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	CD	%	5.580	
		E6CELLS/L	0.036	
CHAETOCEROS COMPRESSUS	CD	%		7.209
		E6CELLS/L		0.051
CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	CD	%		10.813
		E6CELLS/L		0.077
PSEUDONITZSCHIA DELICATISSIMA	PD	%	13.802	12.616
		E6CELLS/L	0.089	0.090
PSEUDONITZSCHIA PUNGENS	PD	%	12.282	5.632
		E6CELLS/L	0.079	0.040
UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	MF	%	43.628	46.481
		E6CELLS/L	0.281	0.330

Columns are Species, Group and Units.

Abundance of Prevalent Species (>5% Total Count) in Chlorophyll a Maximum Sample Whole Water Phytoplankton, Survey WN98A

			N04	N18
LEPTOCYLINDRUS DANICUS	CD	%		14.778
		E6CELLS/L		0.222
LEPTOCYLINDRUS MINIMUS	CD	%		13.497
		E6CELLS/L		0.203
SKELETONEMA COSTATUM GREV+CLEVE	CD	%	10.282	
		E6CELLS/L	0.171	
UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	MF	%	67.325	53.090
		E6CELLS/L	1.122	0.797

Columns are Species, Group and Units.

Abundance of Prevalent Species (>5% Total Count) in Chlorophyll a Maximum Sample Whole Water Phytoplankton, Survey WF98B

			F01	F02	F06	F13	F23
CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	CY	%					10.477
		E6CELLS/L					0.444
GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	DF	%					
		E6CELLS/L					
LEPTOCYLINDRUS DANICUS	CD	%	25.866	39.371	40.502	36.019	21.880
		E6CELLS/L	0.552	1.096	0.468	0.742	0.927
LEPTOCYLINDRUS MINIMUS	CD	%	5.088	8.026			
		E6CELLS/L	0.109	0.223			
PSEUDONITZSCHIA DELICATISSIMA	PD	%				13.152	27.511
		E6CELLS/L				0.271	1.165
PSEUDONITZSCHIA PUNGENS	PD	%					
		E6CELLS/L					
UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	MF	%	55.972	40.998	38.411	43.790	26.798
		E6CELLS/L	1.195	1.141	0.444	0.902	1.135

Columns are Species, Group and Units.

Abundance of Prevalent Species (>5% Total Count) in Chlorophyll a Maximum Sample Whole Water Phytoplankton, Survey WF98B

			F24	F25	F27	F30	F31
CRYPTOMONAS SP. GROUP 1 LENGTH	CY	%				7.955	
<10 MICRONS		E6CELLS/L				0.382	
GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	DF	%					
		E6CELLS/L					
LEPTOCYLINDRUS DANICUS	CD	%	29.852	27.586	35.950	11.655	25.753
		E6CELLS/L	0.987	1.253	0.296	0.559	0.816
LEPTOCYLINDRUS MINIMUS	CD	%					
		E6CELLS/L					
PSEUDONITZSCHIA DELICATISSIMA	PD	%	28.939	37.091		25.900	27.437
		E6CELLS/L	0.957	1.685		1.243	0.870
PSEUDONITZSCHIA PUNGENS	PD	%	12.233				11.094
		E6CELLS/L	0.405				0.352
UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	MF	%	23.370	22.401	44.754	38.912	28.823
		E6CELLS/L	0.773	1.017	0.368	1.867	0.914

Columns are Species, Group and Units.

Abundance of Prevalent Species (>5% Total Count) in Chlorophyll a Maximum SampleWhole Water Phytoplankton, Survey WF98B

			N04	N16	N18
CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	CY	%			
		E6CELLS/L			
GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	DF	%	6.885		
		E6CELLS/L	0.021		
LEPTOCYLINDRUS DANICUS	CD	%	9.754	8.200	48.073
		E6CELLS/L	0.03	0.124	1.940
LEPTOCYLINDRUS MINIMUS	CD	%		35.400	
		E6CELLS/L		0.534	
PSEUDONITZSCHIA DELICATISSIMA	PD	%		7.800	14.705
		E6CELLS/L		0.118	0.593
PSEUDONITZSCHIA PUNGENS	PD	%			
		E6CELLS/L			
UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	MF	%	57.541	33.400	29.652
		E6CELLS/L	0.177	0.504	1.197

Columns are Species, Group and Units.

**Abundance of Prevalent Species (>5% Total Count) in Chlorophyll a Maximum Sample
Whole Water Phytoplankton, Survey WN98C**

			N04	N18
CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	CD	%		6.712
		E6CELLS/L		0.057
LEPTOCYLINDRUS MINIMUS	CD	%		5.071
		E6CELLS/L		0.043
UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	MF	%	85.487	69.950
		E6CELLS/L	0.465	0.599

Columns are Species, Group and Units.

**Abundance of Prevalent Species (>5% Total Count) in Chlorophyll a Maximum Sample
Whole Water Phytoplankton, Survey WN98D**

			N04	N18
CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	CD	%	7.192	5.635
		E6CELLS/L	0.039	0.115
CHAETOCEROS DIDYMUS	CD	%		12.604
		E6CELLS/L		0.257
LEPTOCYLINDRUS DANICUS	CD	%		8.956
		E6CELLS/L		0.183
LEPTOCYLINDRUS MINIMUS	CD	%		6.228
		E6CELLS/L		0.127
SKELETONEMA COSTATUM GREV+CLEVE	CD	%		12.604
		E6CELLS/L		0.257
UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	MF	%	80.214	40.927
		E6CELLS/L	0.438	0.835

Columns are Species, Group and Units.

Abundance of Prevalent Species (>5% Total Count) in Chlorophyll a Maximum Sample Whole Water Phytoplankton, Survey WF98E

			F01	F02	F06	F13	F23
CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	CD	%	13.883			8.516	5.678
		E6CELLS/L	0.142			0.112	0.082
CHAETOCEROS COMPRESSUS	CD	%			6.153		
		E6CELLS/L			0.053		
CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	CY	%					19.979
		E6CELLS/L					0.287
EUCAMPIA ZODIACUS	CD	%			17.631	13.905	
		E6CELLS/L			0.151	0.183	
LEPTOCYLINDRUS DANICUS	CD	%					
		E6CELLS/L					
PSEUDONITZSCHIA PUNGENS	PD	%		12.467	7.346	5.573	
		E6CELLS/L		0.039	0.063	0.073	
SKELETONEMA COSTATUM GREV+CLEVE	CD	%				12.641	
		E6CELLS/L				0.166	
THALASSIOSIRA SP. GROUP 1 DIAM <20 MICRONS	CD	%					
	CD	E6CELLS/L					
UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	MF	%	57.820	62.426	55.913	43.730	58.675
		E6CELLS/L	0.590	0.196	0.478	0.575	0.844

Columns are Species, Group and Units.

Abundance of Prevalent Species (>5% Total Count) in Chlorophyll a Maximum Sample Whole Water Phytoplankton, Survey WF98E

			F24	F25	F27	F30
CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	CD	%	8.879			8.775
		E6CELLS/L	0.018			0.117
CHAETOCEROS COMPRESSUS	CD	%				
		E6CELLS/L				
CRYPTOMONAS SP. GROUP 1 LENGTH S <10 MICRON	CY	%	11.498	8.367		23.093
		E6CELLS/L	0.024	0.073		0.308
EUCAMPIA ZODIACUS	CD	%		24.369	25.582	
		E6CELLS/L		0.213	0.085	
LEPTOCYLINDRUS DANICUS	CD	%	7.267		5.561	
		E6CELLS/L	0.015		0.018	
PSEUDONITZSCHIA PUNGENS	PD	%				
		E6CELLS/L				
SKELETONEMA COSTATUM GREV+CLEVE	CD	%	26.452			
		E6CELLS/L	0.055			
THALASSIOSIRA SP. GROUP 1 DIAM S <20 MICRON	CD	%	5.668			
		E6CELLS/L	0.012			
UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	MF	%	32.457	49.157	53.372	58.424
		E6CELLS/L	0.067	0.431	0.177	0.780

Columns are Species, Group and Units.

Abundance of Prevalent Species (>5% Total Count) in Chlorophyll a Maximum Sample Whole Water Phytoplankton, Survey WF98E

			F31	N04	N16	N18
CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	CD	%		5.657	12.833	13.024
		E6CELLS/L		0.159	0.247	0.239
CHAETOCEROS COMPRESSUS	CD	%				
		E6CELLS/L				
CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	CY	%	12.975		5.833	
		E6CELLS/L	0.089		0.112	
EUCAMPIA ZODIACUS	CD	%	7.567		12.980	5.679
		E6CELLS/L	0.052		0.250	0.104
LEPTOCYLINDRUS DANICUS	CD	%		16.889		5.268
		E6CELLS/L		0.473		0.097
PSEUDONITZSCHIA PUNGENS	PD	%				
		E6CELLS/L				
SKELETONEMA COSTATUM GREV+CLEVE	CD	%	6.422	34.815	21.717	25.105
		E6CELLS/L	0.044	0.976	0.418	0.460
THALASSIOSIRA SP. GROUP 1 DIAM <20 MICRONS	CD	%		5.879		
		E6CELLS/L		0.165		
UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	MF	%	65.771	25.976	27.165	33.466
		E6CELLS/L	0.453	0.728	0.522	0.614

Columns are Species, Group and Units.

**Abundance of Prevalent Species (>5% Total Count) in Chlorophyll a Maximum Sample
Whole Water Phytoplankton, Survey WN98F**

			N04	N18
CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	CY	%	7.869	12.633
		E6CELLS/L	0.071	0.108
EUCAMPIA ZODIACUS	CD	%	8.570	7.117
		E6CELLS/L	0.078	0.061
GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	DF	%		8.302
		E6CELLS/L		0.071
LEPTOCYLINDRUS DANICUS	CD	%	7.856	6.351
		E6CELLS/L	0.071	0.054
UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	MF	%	60.094	60.280
		E6CELLS/L	0.544	0.515

Columns are Species, Group and Units.

**Abundance of Prevalent Species (>5% Total Count) in Chlorophyll a Maximum Sample
Whole Water Phytoplankton, Survey WN98G**

			N04	N18
CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	CY	%	22.382	8.975
		E6CELLS/L	0.082	0.031
RHIZOSOLENIA DELICATULA	CD	%	16.141	21.156
		E6CELLS/L	0.059	0.073
UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	MF	%	54.710	62.489
		E6CELLS/L	0.200	0.216

Columns are Species, Group and Units.

Abundance of Prevalent Species (>5% Total Count) in Chlorophyll a Maximum Sample Whole Water Phytoplankton, Survey WN98H

			N04	N18
CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	CD	%	5.933	6.978
		E6CELLS/L	0.036	0.065
CHAETOCEROS COMPRESSUS	CD	%		5.574
		E6CELLS/L		0.052
CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	CD	%		8.709
		E6CELLS/L		0.082
PSEUDONITZSCHIA DELICATISSIMA	PD	%	15.753	8.709
		E6CELLS/L	0.095	0.082
PSEUDONITZSCHIA PUNGENS	PD	%	13.464	7.316
		E6CELLS/L	0.082	0.068
UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	MF	%	44.771	49.896
		E6CELLS/L	0.271	0.467

Columns are Species, Group and Units.

APPENDIX G

ABUNDANCE OF PREVALENT PHYTOPLANKTON SPECIES IN SCREENED WATER SURFACE AND CHLOROPHYLL-A MAXIMUM SAMPLES

Abundance of Prevalent Species (>5% Total Count) in Surface Sample Screened Phytoplankton, Survey WN98A

			N04	N18
CERATIUM FUSUS	DF	%	23.7	22.7
		CELLS/L	1067.0	769.6
CERATIUM TRIPOS	DF	%	44.5	32.9
		CELLS/L	2002.0	1112.8
DINOPHYSIS NORVEGICA	DF	%		6.5
		CELLS/L		218.4
DISTEPHANUS SPECULUM	CR	%	7.0	
		CELLS/L	313.5	
PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	DF	%	9.6	7.5
		CELLS/L	430.4	254.8
PROTOPERIDINIUM TROCHOIDIUM	DF	%		22.1
		CELLS/L		748.8

Columns are Species, Group and Units.

Abundance of Prevalent Species (>5% Total Count) in Surface Sample
Screened Phytoplankton, Survey WF98B

			F01	F02	F06	F13	F23	F24	F25
ATHECATE DINOFLAGELLATE	DF	%		14.0					5.1
		CELLS/L		432.0					115.5
CERATIUM FUSUS	DF	%	29.8	6.2	31.4	16.4	21.4	30.6	26.6
		CELLS/L	869.0	192.0	655.4	364.0	205.2	407.9	605.0
CERATIUM LINEATUM	DF	%	5.8	21.5			7.3		
		CELLS/L	170.5	666.0			70.2		
CERATIUM MACROCEROS	DF	%							
		CELLS/L							
CERATIUM SPP.	DF	%					5.1	6.3	
		CELLS/L					48.6	84.5	
CERATIUM TRIPOS	DF	%	34.5	35.1	38.3	32.5	26.5	31.3	24.4
		CELLS/L	1006.5	1086.0	800.4	721.0	253.8	416.0	555.5
DINOPHYSIS NORVEGICA	DF	%							
		CELLS/L							
PROTOPERIDINIUM PALLIDUM	DF	%							
		CELLS/L							
PROTOPERIDINIUM SP. GROUP 2	DF	%	6.8	6.9	9.9	9.8	14.4		10.4
31-75W 41-80L		CELLS/L	198.0	213.0	205.9	217.0	137.7		236.5
PYROCYSTIS LUNULA	DF	%							
		CELLS/L							
SCRIPPSIELLA TROCHOIDEA	DF	%	5.5	5.6		16.1	14.0	11.6	15.7
		CELLS/L	159.5	174.0		357.0	133.7	154.4	357.5
THECATE DINOFLAGELLATE SPP.	DF	%							
		CELLS/L							

Columns are Species, Group and Units.

Abundance of Prevalent Species (>5% Total Count) in Surface Sample
Screened Phytoplankton, Survey WF98B

			F27	F30	F31	N04	N16	N18
ATHECATE DINOFLAGELLATE	DF	%	17.3			9.3		
		CELLS/L	49.0			53.7		
CERATIUM FUSUS	DF	%		28.5	21.3	20.4	22.2	
		CELLS/L		378.2	328.6	118.4	506.0	
CERATIUM LINEATUM	DF	%		11.4				
		CELLS/L		151.9				
CERATIUM MACROCEROS	DF	%				6.4		
		CELLS/L				37.0		
CERATIUM SPP.	DF	%						
		CELLS/L						
CERATIUM TRIPOS	DF	%	22.2	31.3	31.8	25.6	53.2	17.7
		CELLS/L	63.0	415.4	489.8	148.0	1215.5	264.0
DINOPHYSIS NORVEGICA	DF	%				8.9		
		CELLS/L				51.8		
PROTOPERIDINIUM PALLIDUM	DF	%	5.6					
		CELLS/L	15.8					
PROTOPERIDINIUM SP. GROUP 2	DF	%	14.8		15.3		9.6	5.9
31-75W 41-80L		CELLS/L	42.0		235.6		220.0	88.0
PYROCYSTIS LUNULA	DF	%						6.6
		CELLS/L						99.0
SCRIPPSIELLA TROCHOIDEA	DF	%	9.9	12.6	11.3	6.4		53.0
		CELLS/L	28.0	167.4	173.6	37.0		792.0
THECATE DINOFLAGELLATE SPP.	DF	%				5.1		
		CELLS/L				29.6		

Columns are Species, Group and Units.

Abundance of Prevalent Species (>5% Total Count) in Surface Sample
Screened Phytoplankton, Survey WN98C

			N04	N18
ATHECATE DINOFLAGELLATE	DF	%		6.8
		CELLS/L		31.2
CERATIUM FUSUS	DF	%	8.3	
		CELLS/L	60.0	
CERATIUM LONGIPES	DF	%	8.3	
		CELLS/L	60.0	
CERATIUM TRIPOS	DF	%	51.6	26.2
		CELLS/L	375.0	119.6
PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	DF	%		10.3
		CELLS/L		46.8
PYROCYSTIS LUNULA	DF	%		11.1
		CELLS/L		50.7
SCRIPPSIELLA TROCHOIDEA	DF	%	11.7	21.7
		CELLS/L	85.0	98.8
THECATE DINOFLAGELLATE SPP.	DF	%		5.4
		CELLS/L		24.7

Columns are Species, Group and Units.

**Abundance of Prevalent Species (>5% Total Count) in Surface Sample
Screened Phytoplankton, Survey WN98D**

			N04	N18
ATHECATE DINOFLAGELLATE	DF	%	28.9	6.3
		CELLS/L	39.0	54.0
CERATIUM FUSUS	DF	%	6.0	
		CELLS/L	8.1	
CERATIUM MACROCEROS	DF	%	22.9	
		CELLS/L	30.9	
CERATIUM TRIPOS	DF	%	6.0	19.7
		CELLS/L	8.1	168.0
PROROCENTRUM GRACILE	DF	%		9.2
		CELLS/L		78.0
PROTOPERIDINIUM SP. GROUP 2 31-75W 41-	DF	%		31.0
		CELLS/L		264.0
SCRIPPSIELLA TROCHOIDEA	DF	%	24.1	
		CELLS/L	32.5	
THECATE DINOFLAGELLATE SPP.	DF	%		5.6
		CELLS/L		48.0

Columns are Species, Group and Units.

Abundance of Prevalent Species (>5% Total Count) in Surface Sample Screened Phytoplankton, Survey WF98E

			F01	F02	F06	F13	F23	F24	F25
AMPHIDINIUM SPP.	DF	%				7.7			
		CELLS/L				31.0			
ATHECATE DINOFLAGELLATE	DF	%				12.4	11.8	16.2	
		CELLS/L				49.6	7.3	19.5	
CERATIUM FUSUS	DF	%	56.6	28.7	67.0	27.8	23.5		51.7
		CELLS/L	695.0	263.2	563.2	111.6	14.6		634.8
CERATIUM LINEATUM	DF	%							
		CELLS/L							
CERATIUM LONGIPES	DF	%		34.8					
		CELLS/L		319.2					
CERATIUM MACROCEROS	DF	%				13.9	5.9		
		CELLS/L				55.8	3.7		
CERATIUM TRIPOS	DF	%	13.4	18.3	17.0		11.8		12.4
		CELLS/L	165.0	168.0	142.4		7.3		151.8
DINOPHYSIS NORVEGICA	DF	%					23.5		
		CELLS/L					14.6		
GYMNODINIUM SP. GROUP	DF	%							
2 21-40UM W 21-50UM L		CELLS/L							
MESODINIUM RUBRUM	DF	%							
		CELLS/L							
PROROCENTRUM MICANS	DF	%	6.8				8.8	52.9	6.0
		CELLS/L	83.8				5.5	63.9	73.6
PROTOPERIDINIUM SP. GROUP	DF	%				7.7	11.8		
2 31-75W 41-80L		CELLS/L				31.0	7.3		
SCRIPPSIELLA TROCHOIDEA	DF	%	6.9			6.2		13.2	
		CELLS/L	85.0			24.8		16.0	
THECATE DINOFLAGELLATE SPP.	DF	%						5.9	
		CELLS/L						7.1	

Columns are Species, Group and Units.

Abundance of Prevalent Species (>5% Total Count) in Surface Sample
Screened Phytoplankton, Survey WF98E

			F27	F30	F31	N04	N16	N18
AMPHIDINIUM SPP.	DF	%	5.8					
		CELLS/L	22.4					
ATHECATE DINOFLAGELLATE	DF	%	11.3	19.4			11.0	
		CELLS/L	43.4	12.3			80.8	
CERATIUM FUSUS	DF	%	11.6	5.6	42.9	20.8	31.1	30.7
		CELLS/L	44.8	3.5	170.0	140.4	229.5	191.4
CERATIUM LINEATUM	DF	%	11.6					
		CELLS/L	44.8					
CERATIUM LONGIPES	DF	%						
		CELLS/L						
CERATIUM MACROCEROS	DF	%					9.2	
		CELLS/L					68.0	
CERATIUM TRIPOS	DF	%	5.8		14.5	46.4	5.8	32.6
		CELLS/L	22.4		57.5	313.2	42.5	203.0
DINOPHYSIS NORVEGICA	DF	%		22.2				
		CELLS/L		14.0				
GYMNODINIUM SP. GROUP	DF	%	7.3				5.5	
2 21-40UM W 21-50UM L		CELLS/L	28.0				40.4	
MESODINIUM RUBRUM	DF	%	7.3	5.6				
		CELLS/L	28.0	3.5				
PROROCENTRUM MICANS	DF	%	8.7	44.4	10.1			
		CELLS/L	33.6	28.0	40.0			
PROTOPERIDINIUM SP. GROUP	DF	%	16.0		11.4	16.8	11.2	8.4
2 31-75W 41-80L		CELLS/L	61.6		45.0	113.4	82.9	52.2
SCRIPPSIELLA TROCHOIDEA	DF	%	11.6				11.5	
		CELLS/L	44.8				85.0	
THECATE DINOFLAGELLATE SPP.	DF	%						
		CELLS/L						

Columns are Species, Group and Units.

**Abundance of Prevalent Species (>5% Total Count) in Surface Sample
Screened Phytoplankton, Survey WN98F**

			N04	N18
CERATIUM FUSUS	DF	%	44.4	26.5
		CELLS/L	723.2	362.5
CERATIUM LINEATUM	DF	%		7.0
		CELLS/L		95.0
CERATIUM MACROCEROS	DF	%	6.3	
		CELLS/L	102.4	
CERATIUM TRIPOS	DF	%	16.5	23.7
		CELLS/L	268.8	323.8
PROROCENTRUM MICANS	DF	%	14.1	26.0
		CELLS/L	230.4	355.0
PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	DF	%	5.5	
		CELLS/L	89.6	

Columns are Species, Group and Units.

**Abundance of Prevalent Species (>5% Total Count) in Surface Sample
Screened Phytoplankton, Survey WN98G**

			N04	N18
CERATIUM FUSUS	DF	%	46.5	40.1
		CELLS/L	1366.3	365.8
CERATIUM MACROCEROS	DF	%	6.3	10.7
		CELLS/L	185.0	97.6
CERATIUM TRIPOS	DF	%	26.4	24.4
		CELLS/L	775.0	223.2
PROROCENTRUM MICANS	DF	%	14.8	5.4
		CELLS/L	435.0	49.6

Columns are Species, Group and Units.

**Abundance of Prevalent Species (>5% Total Count) in Surface Sample
Screened Phytoplankton, Survey WN98H**

			N04	N18
CERATIUM FUSUS	DF	%	23.1	28.1
		CELLS/L	570.0	705.0
CERATIUM LINEATUM	DF	%		5.4
		CELLS/L		135.0
CERATIUM MACROCEROS	DF	%		5.2
		CELLS/L		130.0
CERATIUM TRIPOS	DF	%	26.9	30.5
		CELLS/L	664.5	765.0
DICTYOCHA FIBULA	CR	%	5.8	
		CELLS/L	144.0	
PROROCENTRUM MICANS	DF	%	28.9	22.7
		CELLS/L	714.0	570.0

Columns are Species, Group and Units.

Abundance of Prevalent Species (>5 % Total Count) in Chlorophyll a Maximum Sample Screened Phytoplankton, Survey WN98A

			N04	N18
CERATIUM FUSUS	DF	%	9.6	16.2
		CELLS/L	647.6	353.6
CERATIUM TRIPOS	DF	%	39.6	46.2
		CELLS/L	2668.2	1008.8
DISTEPHANUS SPECULUM	CR	%	41.8	16.9
		CELLS/L	2815.0	369.2
PROTOPERIDINIUM TROCHOIDIUM	DF	%		8.6
		CELLS/L		187.2

Columns are Species, Groups, and Units.

Abundance of Prevalent Species (>5% Total Count) in Chlorophyll a Maximum Sample Screened Phytoplankton, Survey WF98B

			F01	F02	F06	F13	F23	F24	F25
ATHECATE DINOFLAGELLATE	DF	%							5.6
		CELLS/L							148.5
CERATIUM FUSUS	DF	%	44.0	5.5	42.8	28.1	23.9	26.0	18.9
		CELLS/L	2639.0	124.6	1982.5	648.0	197.6	138.0	496.8
CERATIUM LINEATUM	DF	%		12.9			8.2		
		CELLS/L		291.5			67.6		
CERATIUM LONGIPES	DF	%		6.0				10.2	
		CELLS/L		135.2				54.0	
CERATIUM TRIPOS	DF	%	42.0	58.6	46.2	23.9	40.3	31.6	23.6
		CELLS/L	2523.0	1325.0	2138.5	552.0	332.8	168.0	621.0
DISTEPHANUS SPECULUM	CR	%							
		CELLS/L							
GYRODINIUM SP. GROUP 1 5-20UM W 10-20UM L	DF	%						5.9	
		CELLS/L						31.5	
PROROCENTRUM GRACILE	DF	%							
		CELLS/L							
PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	DF	%		6.9		14.0	6.3		13.5
		CELLS/L		156.4		324.0	52.0		356.4
SCRIPPSIELLA TROCHOIDEA	DF	%				12.7	7.5		21.5
		CELLS/L				294.0	62.4		567.0

Columns are Species, Groups, and Units.

Abundance of Prevalent Species (>5% Total Count) in Chlorophyll a Maximum Sample Screened Phytoplankton, Survey WF98B

			F27	F30	F31	N04	N16	N18
ATHECATE DINOFLAGELLATE	DF	%						
		CELLS/L						
CERATIUM FUSUS	DF	%	31.9	27.0	35.2	37.5	28.0	
		CELLS/L	2864.4	396.9	480.0	540.0	765.6	
CERATIUM LINEATUM	DF	%		11.5	6.1			
		CELLS/L		168.5	83.2			
CERATIUM LONGIPES	DF	%					6.2	8.8
		CELLS/L					168.2	49.6
CERATIUM TRIPOS	DF	%	52.2	33.9	29.5	44.6	53.1	29.6
		CELLS/L	4695.6	497.7	403.2	642.6	1451.5	167.4
DISTEPHANUS SPECULUM	CR	%						9.9
		CELLS/L						55.8
GYRODINIUM SP. GROUP 1 5-20UM W 10-20UM L	DF	%						
		CELLS/L						
PROROCENTRUM GRACILE	DF	%						6.6
		CELLS/L						37.2
PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	DF	%			9.4			
		CELLS/L			128.0			
SCRIPPSIELLA TROCHOIDEA	DF	%		11.6	5.2			32.9
		CELLS/L		170.1	70.4			186.0

Columns are Species, Groups, and Units.

**bundance of Prevalent Species (>5% Total Count) in Chlorophyll a Maximum Samp
Screened Phytoplankton, Survey WN98C**

			N04	N18
CERATIUM FUSUS	DF	%	12.7	5.1
		CELLS/L	46.8	85.0
CERATIUM LONGIPES	DF	%	47.9	19.9
		CELLS/L	176.8	335.0
CERATIUM TRIPOS	DF	%	25.4	54.4
		CELLS/L	93.6	915.0
PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	DF	%		7.5
		CELLS/L		126.3

Columns are Species, Groups, and Units.

Abundance of Prevalent Species (>5% Total Count) in Chlorophyll a Maximum Sample Screened Phytoplankton, Survey WN98D

			N04	N18
ATHECATE DINOFLAGELLATE	DF	%		9.1
		CELLS/L		60.0
CERATIUM FUSUS	DF	%		7.6
		CELLS/L		50.0
CERATIUM LONGIPES	DF	%	6.5	
		CELLS/L	19.8	
CERATIUM TRIPOS	DF	%	66.7	25.0
		CELLS/L	204.6	165.0
DINOPHYSIS NORVEGICA	DF	%	6.5	
		CELLS/L	19.8	
PROROCENTRUM GRACILE	DF	%		6.1
		CELLS/L		40.0
PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	DF	%		20.5
		CELLS/L		135.0
PYROCYSTIS LUNULA	DF	%	5.9	6.8
		CELLS/L	18.2	45.0
THECATE DINOFLAGELLATE SPP.	DF	%		6.1
		CELLS/L		40.0

Columns are Species, Groups, and Units.

**Abundance of Prevalent Species (>5% Total Count) in Chlorophyll a Maximum Sample
Screened Phytoplankton, Survey WF98E**

			F01	F02	F06	F13	F23	F24	F25
AMPHIDINIUM SPP.	DF	%							
		CELLS/L							
ATHECATE DINOFLAGELLATE	DF	%					5.2		
		CELLS/L					6.0		
CERATIUM FUSUS	DF	%	44.2	79.8	57.8	43.8	5.2	35.6	
		CELLS/L	215.6	1548.0	1026.0	596.3	6.0	80.0	
CERATIUM LINEATUM	DF	%							59.2
		CELLS/L							378.2
CERATIUM MACROCEROS	DF	%				5.4			
		CELLS/L				73.7			
CERATIUM TRIPOS	DF	%	26.1	11.8	20.4	17.7	6.5	15.6	12.6
		CELLS/L	127.4	228.0	361.8	241.2	7.5	35.0	80.6
DINOPHYSIS NORVEGICA	DF	%							
		CELLS/L							
DISTEPHANUS SPECULUM	CR	%	8.0				10.4		
		CELLS/L	39.2				12.0		
GYMNODINIUM SP. GROUP 2 21-40UM W 21-50UM L	DF	%					5.2	8.9	
		CELLS/L					6.0	20.0	
PROROCENTRUM MICANS	DF	%					22.1	24.4	
		CELLS/L					25.5	55.0	
PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	DF	%	14.1		6.4	13.8	36.4		
		CELLS/L	68.6		113.4	187.6	42.0		
PYROCYSTIS LUNULA	DF	%							
		CELLS/L							
SCRIPPSIELLA TROCHOIDEA	DF	%				8.9			
		CELLS/L				120.6			
THECATE DINOFLAGELLATE SPP.	DF	%					6.5		
		CELLS/L					7.5		

Columns are Species, Groups, and Units.

Abundance of Prevalent Species (>5% Total Count) in Chlorophyll a Maximum Sample
Screened Phytoplankton, Survey WF98E

			F27	F30	F31	N04	N16	N18
AMPHIDINIUM SPP.	DF	%	15.6					
		CELLS/L	23.8					
ATHECATE DINOFLAGELLATE	DF	%	6.6			6.6	6.9	12.4
		CELLS/L	10.0			58.5	75.0	56.0
CERATIUM FUSUS	DF	%	9.8	16.3	62.6	7.4	22.1	22.3
		CELLS/L	15.0	10.4	168.0	66.0	240.0	100.8
CERATIUM LINEATUM	DF	%						
		CELLS/L						
CERATIUM MACROCEROS	DF	%						8.7
		CELLS/L						39.2
CERATIUM TRIPOS	DF	%	9.8	6.1	6.7	6.7	5.5	7.7
		CELLS/L	15.0	3.9	18.0	60.0	60.0	35.0
DINOPHYSIS NORVEGICA	DF	%		14.3				
		CELLS/L		9.1				
DISTEPHANUS SPECULUM	CR	%						
		CELLS/L						
GYMNODINIUM SP. GROUP 2 21-40UM W 21-50UM L	DF	%						
		CELLS/L						
PROROCENTRUM MICANS	DF	%		57.1	8.9	6.1	9.7	9.9
		CELLS/L		36.4	24.0	54.0	105.0	44.8
PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	DF	%	26.2		11.2	17.5	31.8	7.4
		CELLS/L	40.0		30.0	156.0	345.0	33.6
PYROCYSTIS LUNULA	DF	%	6.6					
		CELLS/L	10.0					
SCRIPPSIELLA TROCHOIDEA	DF	%				37.0	9.0	14.9
		CELLS/L				330.0	97.5	67.2
THECATE DINOFLAGELLATE SPP.	DF	%						
		CELLS/L						

Columns are Species, Groups, and Units.

Abundance of Prevalent Species (>5% Total Count) in Chlorophyll a Maximum Sample
Screened Phytoplankton, Survey WN98F

			N04	N18
CERATIUM FUSUS	DF	%	35.8	38.3
		CELLS/L	576.0	795.0
CERATIUM MACROCEROS	DF	%	6.8	
		CELLS/L	108.8	
CERATIUM TRIPOS	DF	%	24.3	26.6
		CELLS/L	390.4	551.3
PROROCENTRUM MICANS	DF	%	13.1	15.9
		CELLS/L	211.2	330.0

Columns are Species, Groups, and Units.

Abundance of Prevalent Species (>5% Total Count) in Chlorophyll a Maximum Sample
Screened Phytoplankton, Survey WN98G

			N04	N18
CERATIUM FUSUS	DF	%	50.3	38.3
		CELLS/L	882.0	237.8
CERATIUM MACROCEROS	DF	%		10.5
		CELLS/L		65.3
CERATIUM TRIPOS	DF	%	24.3	23.6
		CELLS/L	426.0	146.5
PROROCENTRUM MICANS	DF	%	15.5	9.1
		CELLS/L	271.5	56.6

Columns are Species, Groups, and Units.

Abundance of Prevalent Species (>5% Total Count) in Chlorophyll a Maximum Sample Screened Phytoplankton, Survey WN98H

			N04	N18
CERATIUM FUSUS	DF	%	32.8	33.2
		CELLS/L	1576.8	1442.1
CERATIUM MACROCEROS	DF	%		7.1
		CELLS/L		307.8
CERATIUM TRIPOS	DF	%	19.6	22.2
		CELLS/L	943.2	963.3
PROROCENTRUM MICANS	DF	%	30.2	26.1
		CELLS/L	1454.4	1134.3

Columns are Species, Groups, and Units.

APPENDIX H

ABUNDANCE OF PREVALENT SPECIES IN ZOOPLANKTON TOW SAMPLES

Abundance of Prevalent Species (>5% Total Count)
Zooplankton, Survey WN98A

				N04	N18
BIVALVIA SPP.	V	OZ	%	6	8
			ind/m3	3536	2552
COPEPOD SPP.	N	C	%	40	37
			ind/m3	23371	12549
EVADNE NORDMANNI	null	OZ	%		6
			ind/m3		2092
GASTROPODA SPP.	V	OZ	%	8	10
			ind/m3	4920	3305
OITHONA SIMILIS CLAUS	C	C	%	10	10
			ind/m3	6073	3514
PSEUDOCALANUS NEWMANI	C	C	%	8	7
			ind/m3	4689	2301
TEMORA LONGICORNIS	M	C	%	6	
			ind/m3	3690	

Columns are Species, Life Stage, Group, and Units

Abundance of Prevalent Species (>5% Total Count)
Zooplankton, Survey WF98B

				F01	F02	F06	F13	F23
ACARTIA TONSA	C	C	%					22
			ind/m3					15825
BIVALVIA SPP.	V	OZ	%	25	15	6	17	
			ind/m3	15787	6288	1734	7582	
COPEPOD SPP.	N	C	%	31	36	27	33	34
			ind/m3	18987	15001	7432	14966	24762
EVADNE NORDMANNI	null	OZ	%		7	6		
			ind/m3		2874	1652		
GASTROPODA SPP.	V	OZ	%	6			9	
			ind/m3	3627			4135	
MICROSETELLA NORVEGICA	null	C	%	9		6	7	
			ind/m3	5440		1734	3151	
OIKOPLEURA DIOICA	null	OZ	%		8	13		
			ind/m3		3503	3634		
OITHONA SIMILIS CLAUS	C	C	%		6	10		
			ind/m3		2515	2643		
OITHONA SIMILIS CLAUS	F	C	%			9		
			ind/m3			2395		
POLYCHAETE SPP.	L	OZ	%					14
			ind/m3					10054
PSEUDOCALANUS NEWMANI	C	C	%				6	
			ind/m3				2462	
TEMORA LONGICORNIS	C	C	%	13	13			
			ind/m3	8320	5389			

Columns are Species, Life Stage, Group, and Units

Abundance of Prevalent Species (>5% Total Count)
Zooplankton, Survey WF98B

				F24	F25	F27	F30	F31
ACARTIA TONSA	C	C	%				22	
			ind/m3				10574	
BIVALVIA SPP.	V	OZ	%	11		6		
			ind/m3	3277		2665		
COPEPOD SPP.	N	C	%	41	49	42	36	45
			ind/m3	12493	19520	20059	17475	19149
EVADNE NORDMANNI	null	OZ	%		9			10
			ind/m3		3440			4403
GASTROPODA SPP.	V	OZ	%	6		6		
			ind/m3	1741		2876		
MICROSETELLA NORVEGICA	null	C	%					
			ind/m3					
OIKOPLEURA DIOICA	null	OZ	%			12		
			ind/m3			5962		
OITHONA SIMILIS CLAUS	C	C	%	7	6	12		7
			ind/m3	2048	2400	5821		3072
OITHONA SIMILIS CLAUS	F	C	%		5			
			ind/m3		2160			
POLYCHAETE SPP.	L	OZ	%				29	
			ind/m3				13913	
PSEUDOCALANUS NEWMANI	C	C	%	6				7
			ind/m3	1843				2765
TEMORA LONGICORNIS	C	C	%	7	7	6		
			ind/m3	2150	2960	3086		

Columns are Species, Life Stage, Group, and Units

Abundance of Prevalent Species (>5% Total Count)
Zooplankton, Survey WF98B

				N04	N16	N18
ACARTIA TONSA	C	C	%			
			ind/m3			
BIVALVIA SPP.	V	OZ	%			8
			ind/m3			3025
COPEPOD SPP.	N	C	%	27	61	21
			ind/m3	8231	39759	8262
EVADNE NORDMANNI	null	OZ	%			
			ind/m3			
GASTROPODA SPP.	V	OZ	%	10	6	18
			ind/m3	2981	3793	7098
MICROSETELLA NORVEGICA	null	C	%			
			ind/m3			
OIKOPLEURA DIOICA	null	OZ	%	6		
			ind/m3	1685		
OITHONA SIMILIS CLAUS	C	C	%	24	7	15
			ind/m3	7194	4804	6167
OITHONA SIMILIS CLAUS	F	C	%			
			ind/m3			
POLYCHAETE SPP.	L	OZ	%			
			ind/m3			
PSEUDOCALANUS NEWMANI	C	C	%			
			ind/m3			
TEMORA LONGICORNIS	C	C	%	9		10
			ind/m3	2852		4073

Columns are Species, Life Stage, Group, and Units

Abundance of Prevalent Species (>5% Total Count)
Zooplankton, Survey WN98C

				N04	N18
COPEPOD SPP.	N	C	%	22	31
			ind/m3	2663	4332
GASTROPODA SPP.	V	OZ	%	10	
			ind/m3	1172	
OIKOPLEURA DIOICA	null	OZ	%		10
			ind/m3		1411
OITHONA SIMILIS CLAUS	C	C	%	28	15
			ind/m3	3302	2044
OITHONA SIMILIS CLAUS	F	C	%	7	10
			ind/m3	781	1411
PSEUDOCALANUS NEWMANI	C	C	%		9
			ind/m3		1217
TEMORA LONGICORNIS	C	C	%	5	8
			ind/m3	604	1168

Columns are Species, Life Stage, Group, and Units

Abundance of Prevalent Species (>5% Total Count)
Zooplankton, Survey WN98D

				N04	N18
CENTROPAGES SPP.	C	C	%		6
			ind/m3		2705
COPEPOD SPP.	N	C	%	20	35
			ind/m3	5050	16102
MICROSETELLA NORVEGICA	null	C	%	7	
			ind/m3	1787	
OIKOPLEURA DIOICA	null	OZ	%	6	6
			ind/m3	1398	2642
OITHONA SIMILIS CLAUS	C	C	%	34	20
			ind/m3	8430	9309
OITHONA SIMILIS CLAUS	F	C	%	9	9
			ind/m3	2214	3900
PSEUDOCALANUS NEWMANI	C	C	%	7	
			ind/m3	1826	

Columns are Species, Life Stage, Group, and Units

Abundance of Prevalent Species (>5% Total Count)
Zooplankton, Survey WF98E

				F01	F02	F06	F13	F23
ACARTIA HUDSONICA	C	C	%					9
			ind/m3					2259
BIVALVIA SPP.	V	OZ	%					
			ind/m3					
CENTROPAGES HAMATUS	M	C	%					5
			ind/m3					1318
CENTROPAGES SPP.	C	C	%					
			ind/m3					
COPEPOD SPP.	N	C	%	39	34	36	37	28
			ind/m3	6185	5932	12923	10300	7341
EURYTEMORA HERDMANI	C	C	%					10
			ind/m3					2729
MICROSETELLA NORVEGICA	null	C	%					
			ind/m3					
OIKOPLEURA DIOICA	null	OZ	%		7	11	10	
			ind/m3		1278	4062	2900	
OITHONA SIMILIS CLAUS	C	C	%	27	30	29	13	
			ind/m3	4252	5157	10338	3500	
OITHONA SIMILIS CLAUS	F	C	%		9			
			ind/m3		1552			
POLYCHAETE SPP.	L	OZ	%			6	9	6
			ind/m3			2338	2600	1600
PSEUDOCALANUS NEWMANI	C	C	%					
			ind/m3					
TEMORA LONGICORNIS	C	C	%					6
			ind/m3					1694
THALIACEA (SALPS)	null	OZ	%	15	8	5		
			ind/m3	2405	1415	1969		

Columns are Species, Life Stage, Group, and Units

Abundance of Prevalent Species (>5% Total Count)
Zooplankton, Survey WF98E

				F24	F25	F27	F30	F31
ACARTIA HUDSONICA	C	C	%				31	
			ind/m3				25985	
BIVALVIA SPP.	V	OZ	%	11	10			17
			ind/m3	6153	3052			5473
CENTROPAGES HAMATUS	M	C	%					
			ind/m3					
CENTROPAGES SPP.	C	C	%		11			7
			ind/m3		3348			2207
COPEPOD SPP.	N	C	%	31	27	61	43	24
			ind/m3	16975	7975	16103	35609	7945
EURYTEMORA HERDMANI	C	C	%					
			ind/m3					
MICROSETELLA NORVEGICA	null	C	%					6
			ind/m3					1942
OIKOPLEURA DIOICA	null	OZ	%		7	9		
			ind/m3		2166	2365		
OITHONA SIMILIS CLAUS	C	C	%	8	13	19		13
			ind/m3	4450	3742	4992		4326
OITHONA SIMILIS CLAUS	F	C	%		6			7
			ind/m3		1772			2383
POLYCHAETE SPP.	L	OZ	%					
			ind/m3					
PSEUDOCALANUS NEWMANI	C	C	%	6				
			ind/m3	3296				
TEMORA LONGICORNIS	C	C	%	10				
			ind/m3	5439				
THALIACEA (SALPS)	null	OZ	%					
			ind/m3					

Columns are Species, Life Stage, Group, and Units

Abundance of Prevalent Species (>5% Total Count)
Zooplankton, Survey WF98E

				N04	N16	N18
ACARTIA HUDSONICA	C	C	%			
			ind/m3			
BIVALVIA SPP.	V	OZ	%	6		13
			ind/m3	2506		7564
CENTROPAGES HAMATUS	M	C	%			
			ind/m3			
CENTROPAGES SPP.	C	C	%			
			ind/m3			
COPEPOD SPP.	N	C	%	44	45	38
			ind/m3	17338	15984	22691
EURYTEMORA HERDMANI	C	C	%			
			ind/m3			
MICROSETELLA NORVEGICA	null	C	%			
			ind/m3			
OIKOPLEURA DIOICA	null	OZ	%	8		9
			ind/m3	2980		5382
OITHONA SIMILIS CLAUS	C	C	%	18	17	12
			ind/m3	7314	6036	6982
OITHONA SIMILIS CLAUS	F	C	%	6		
			ind/m3	2303		
POLYCHAETE SPP.	L	OZ	%			
			ind/m3			
PSEUDOCALANUS NEWMANI	C	C	%			
			ind/m3			
TEMORA LONGICORNIS	C	C	%		8	
			ind/m3		2955	
THALIACEA (SALPS)	null	OZ	%			
			ind/m3			

Columns are Species, Life Stage, Group, and Units

Abundance of Prevalent Species (>5% Total Count)
Zooplankton, Survey WN98F

				N04	N18
BIVALVIA SPP.	V	OZ	%	53	36
			ind/m3	40899	13916
COPEPOD SPP.	N	C	%	31	38
			ind/m3	23866	14903
GASTROPODA SPP.	V	OZ	%		6
			ind/m3		2389
OITHONA SIMILIS CLAUS	C	C	%		6
			ind/m3		2233

Columns are Species, Life Stage, Group, and Units

Abundance of Prevalent Species (>5% Total Count)
Zooplankton, Survey WN98G

				N04	N18
BIVALVIA SPP.	V	OZ	%	72	73
			ind/m3	44477	48658
CENTROPAGES SPP.	C	C	%	5	
			ind/m3	3361	
COPEPOD SPP.	N	C	%	9	8
			ind/m3	5342	5436
MICROSETELLA NORVEGICA	null	C	%		6
			ind/m3		3901
OITHONA SIMILIS CLAUS	C	C	%	7	6
			ind/m3	4502	3814

Columns are Species, Life Stage, Group, and Units

Abundance of Prevalent Species (>5% Total Count)
Zooplankton, Survey WN98H

				N04	N18
BIVALVIA SPP.	V	OZ	%	34	28
			ind/m3	20514	13274
COPEPOD SPP.	N	C	%	21	31
			ind/m3	12821	14696
GASTROPODA SPP.	V	OZ	%	16	12
			ind/m3	9573	5689
OITHONA SIMILIS CLAUS	C	C	%	14	18
			ind/m3	8548	8533

Columns are Species, Life Stage, Group, and Units

APPENDIX I

Satellite Images of Chlorophyll a Concentrations and Temperature

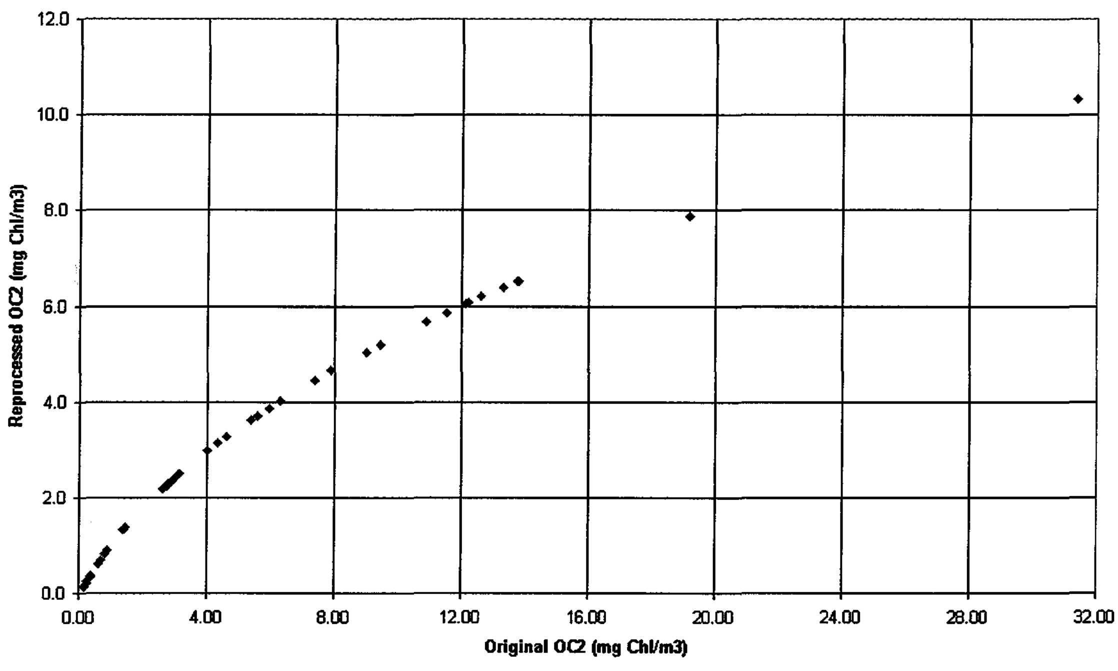
Satellite Image Chlorophyll Concentration Calibration Correction

During analysis of the August 1998 satellite images, it was determined that the chlorophyll a concentrations reported on the satellite images were incorrect. Since this discovery NOAA supplied the figure below that shows the correlation of the actual chlorophyll a concentrations to the original chlorophyll a data reported on the enclosed images. The graph shows that values:

- <~2 mg Chl/m3 are equivalent to the reported concentrations
- ~2 mg Chl/m3 to ~16 mg Chl/m3 are incorrect by a multiplier of ~2 (e.g., original values of 12.00 mg Chl/m3 are actually concentrations of 6.00 mg Chl/m3)
- ~16 mg Chl/m3 and greater are incorrect by a multiplier of ~3 (e.g., original values of 31.00 mg Chl/m3 are actually concentrations of 10.50 mg Chl/m3)

The remaining satellite images from September through December 1998 are correct as shown.

Old Oc2 vs Reprocessed OC2 (OC2)



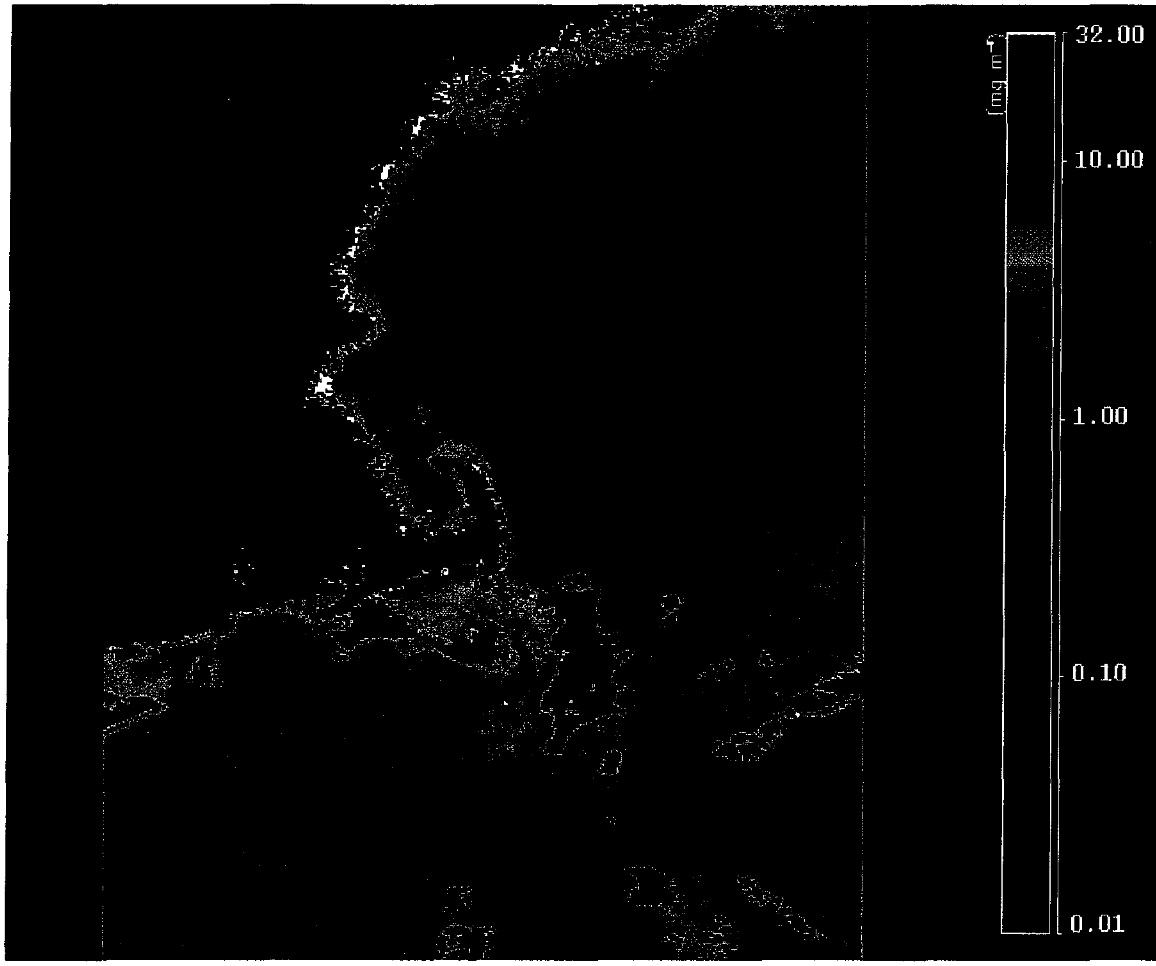


Figure I-1. Chlorophyll a Concentrations from August 9, 1998.

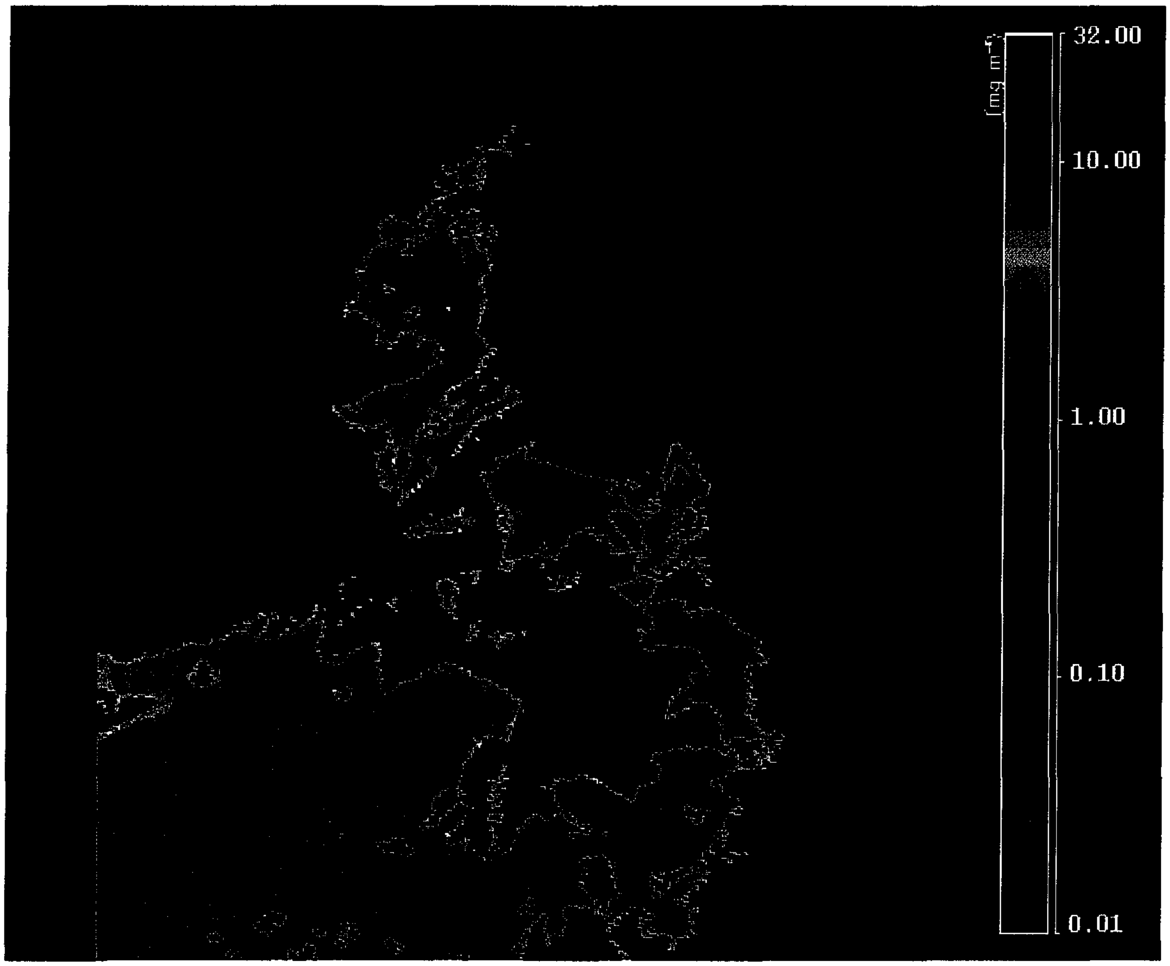


Figure I-2. Chlorophyll a Concentrations from August 18, 1998.

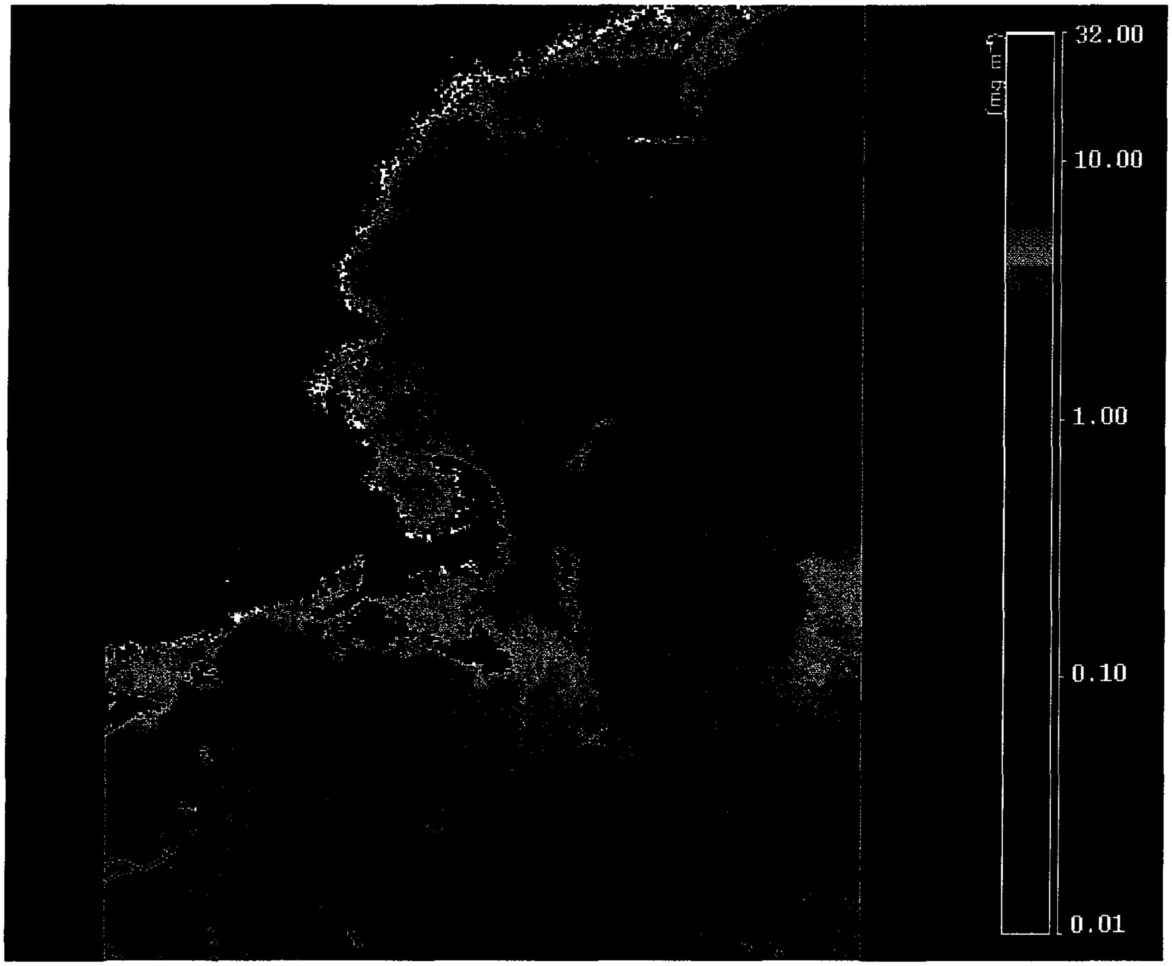


Figure I-3. Chlorophyll a Concentrations from August 20, 1998.

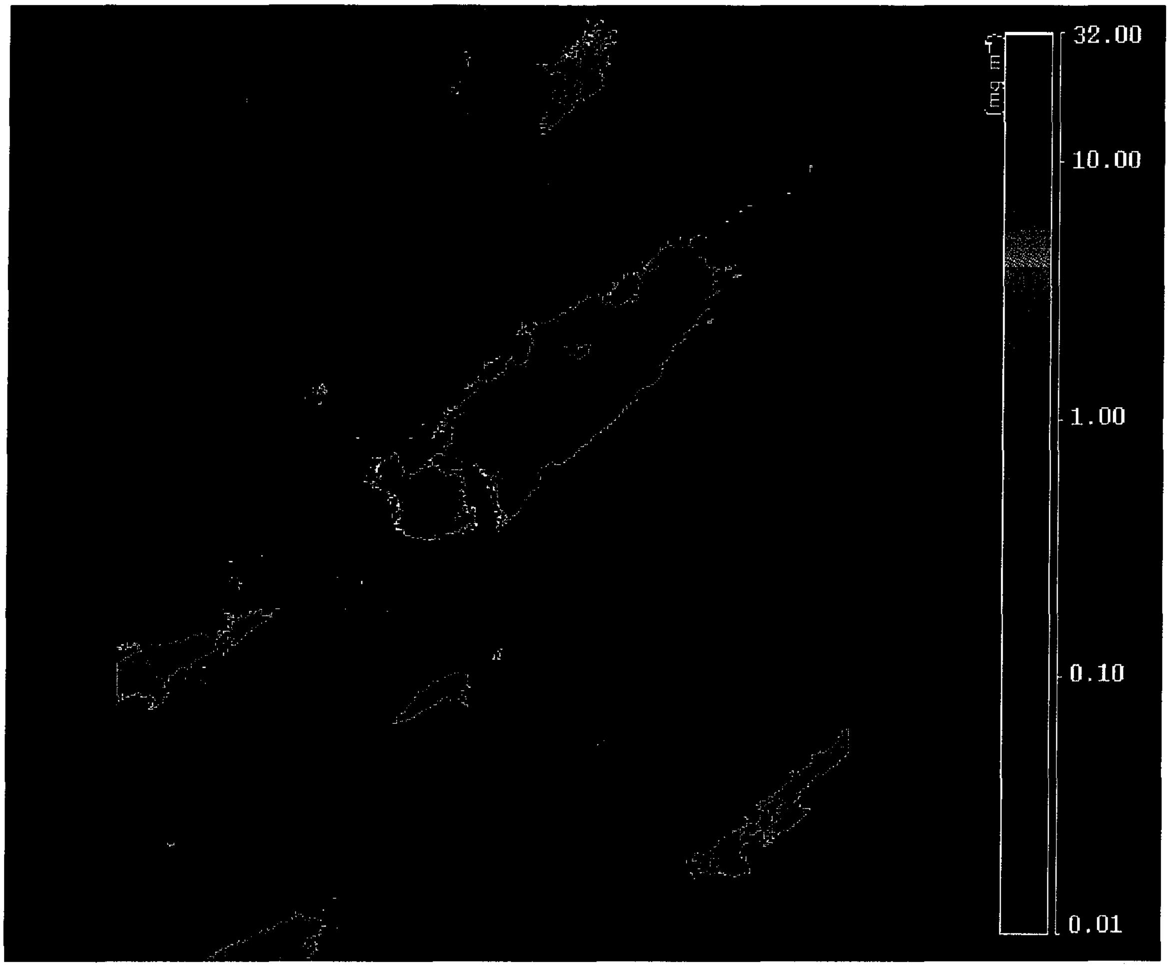


Figure I-4. Chlorophyll a Concentration from August 24, 1998.

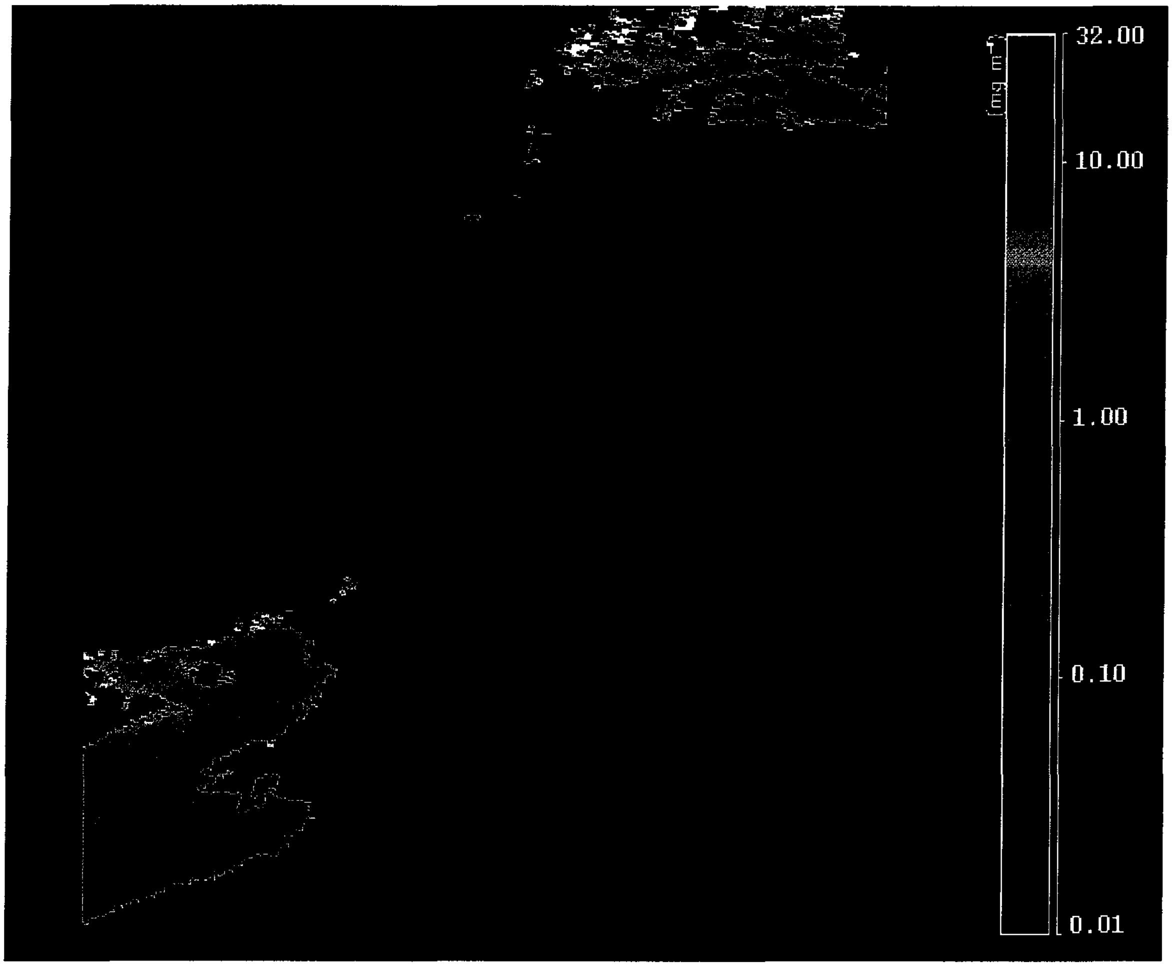


Figure I-5. Chlorophyll a Concentrations from August 25, 1998.

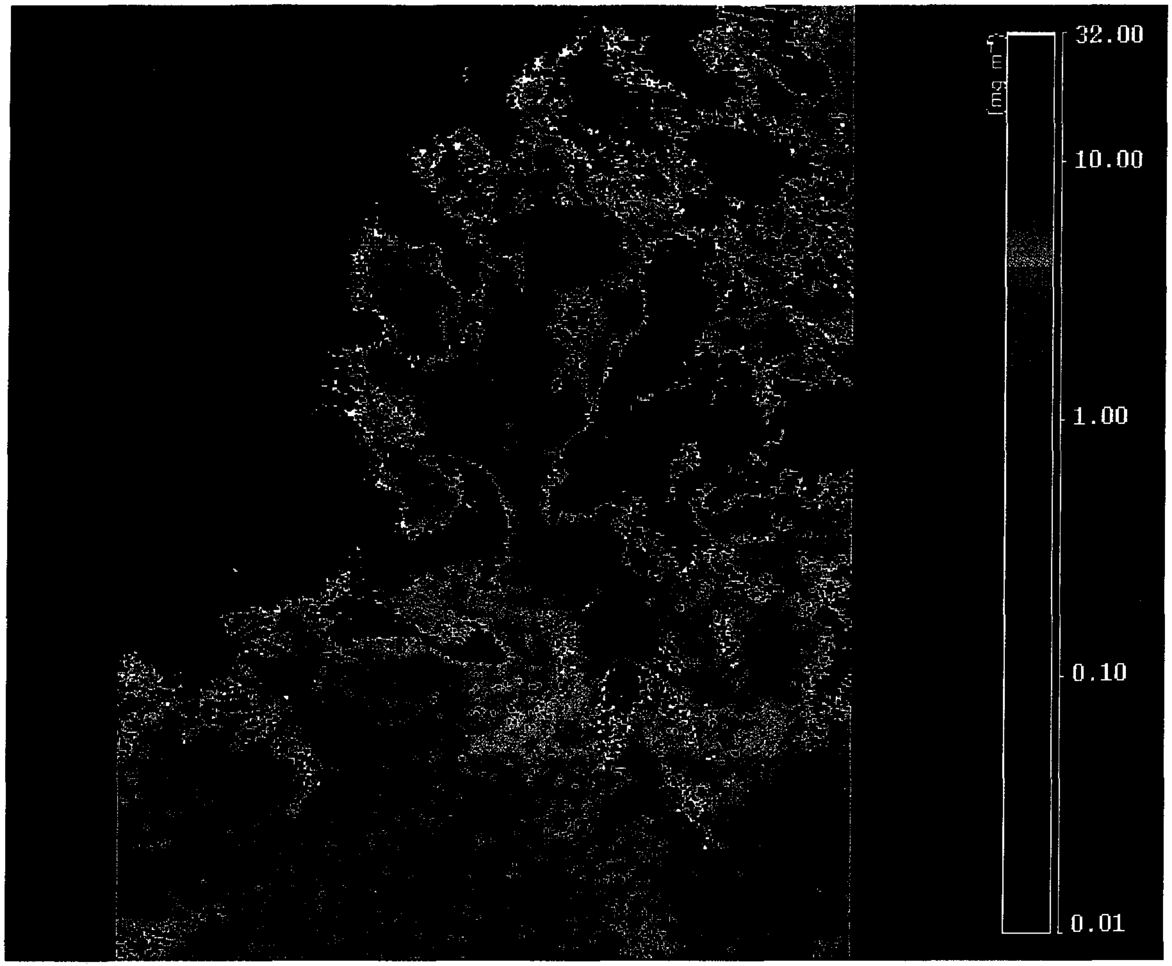


Figure I-6. Chlorophyll a Concentration from September 24, 1998.

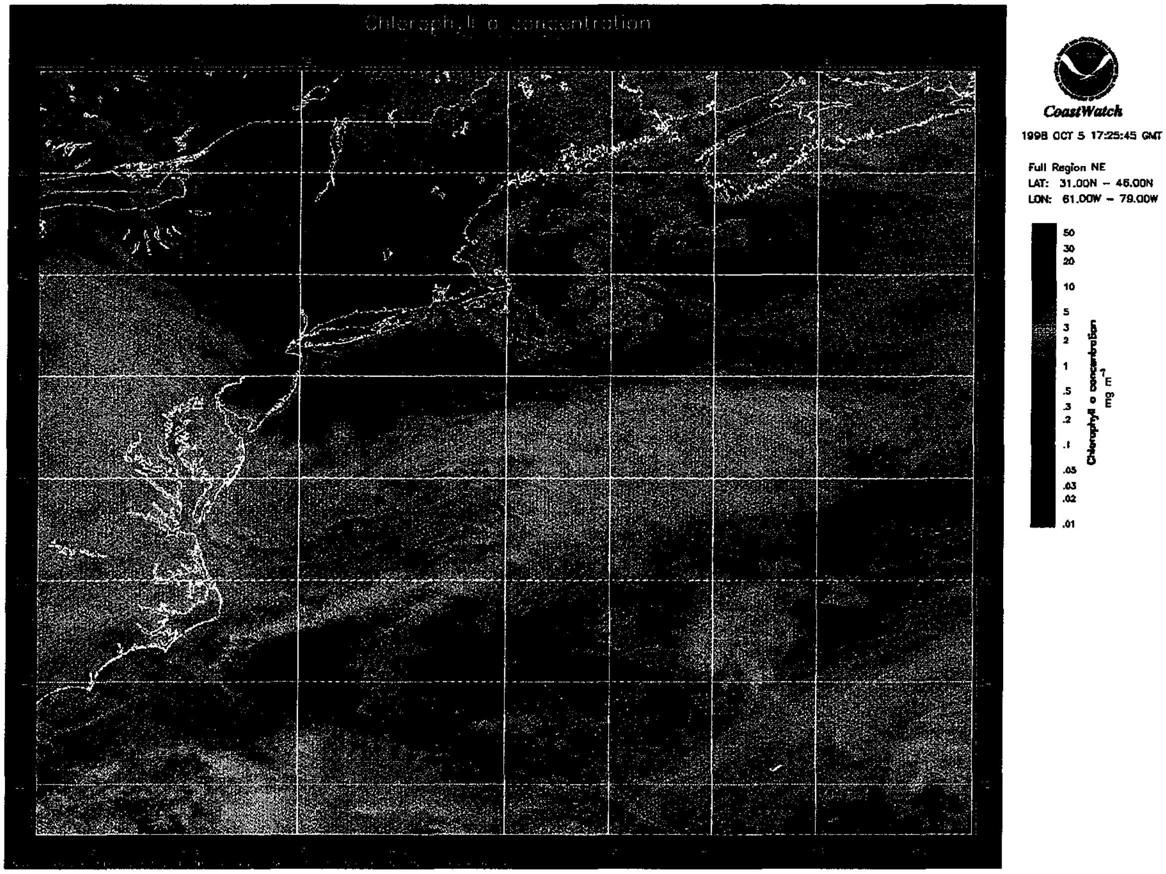


Figure I-7. Chlorophyll a Concentration from October 5, 1998.

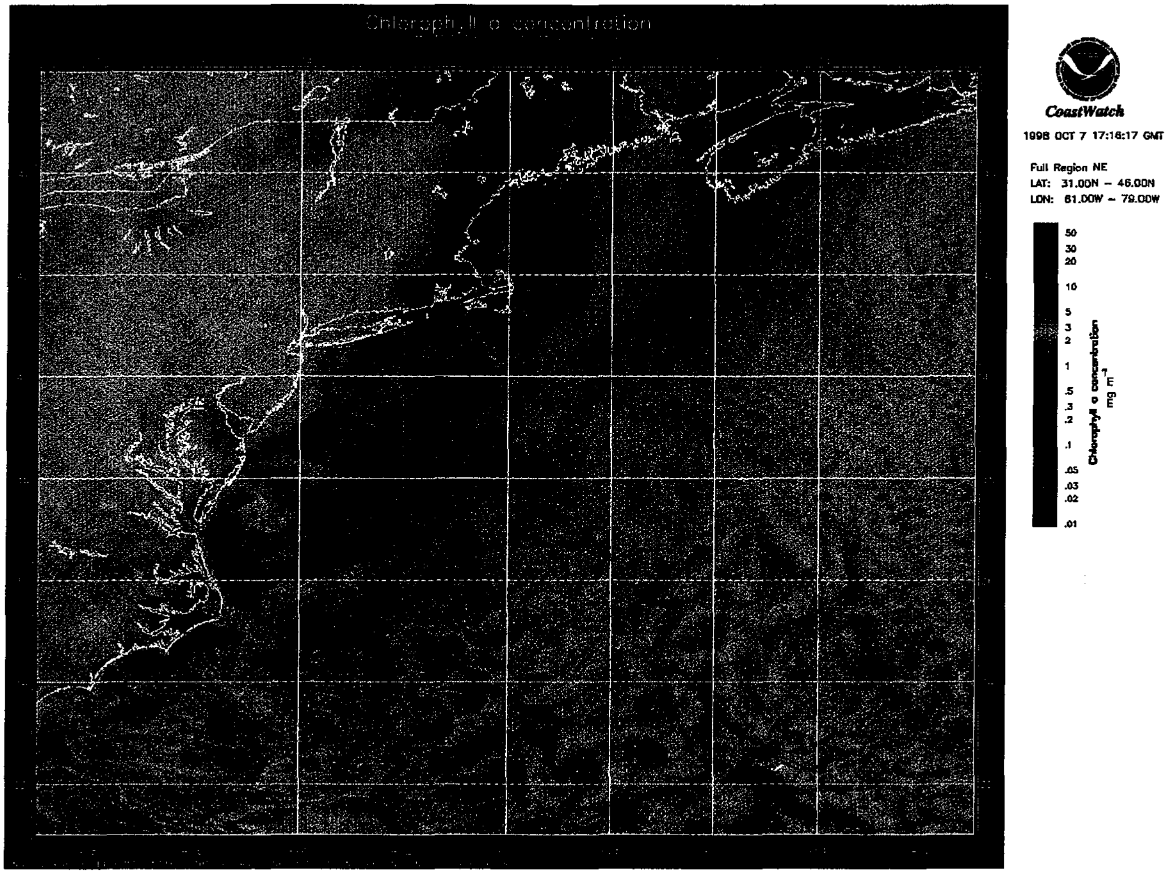


Figure I-8. Chlorophyll a Concentration from October 7, 1998.

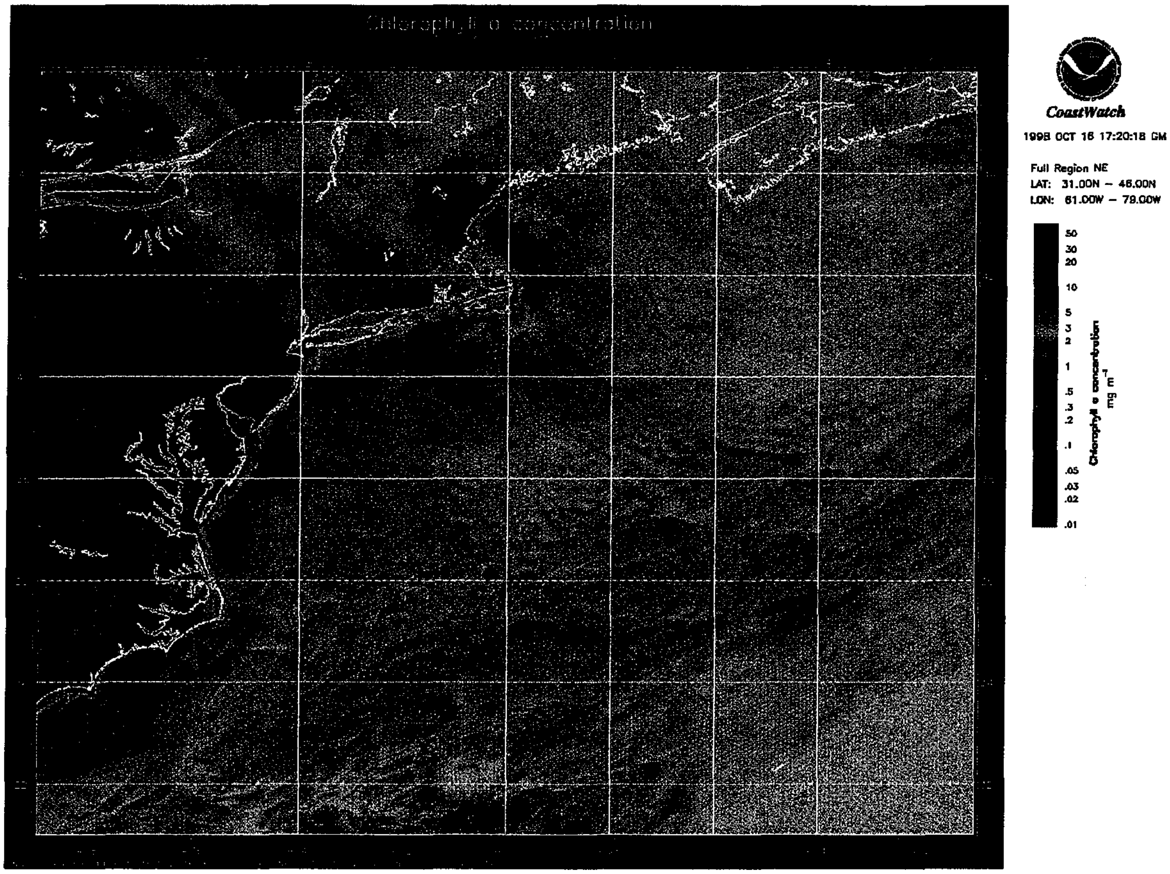


Figure I-9. Chlorophyll a Concentration from October 16, 1998.

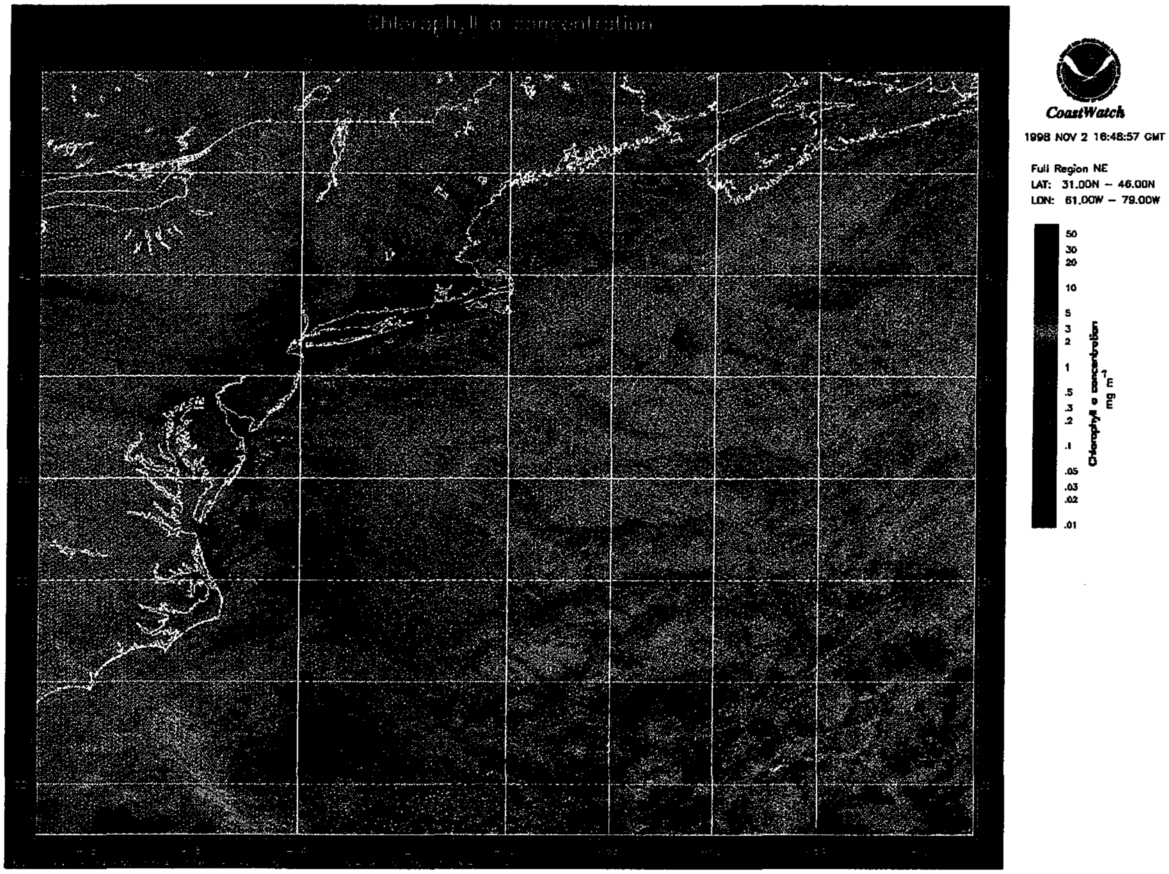


Figure I-10. Chlorophyll a concentrations from November 2, 1998.

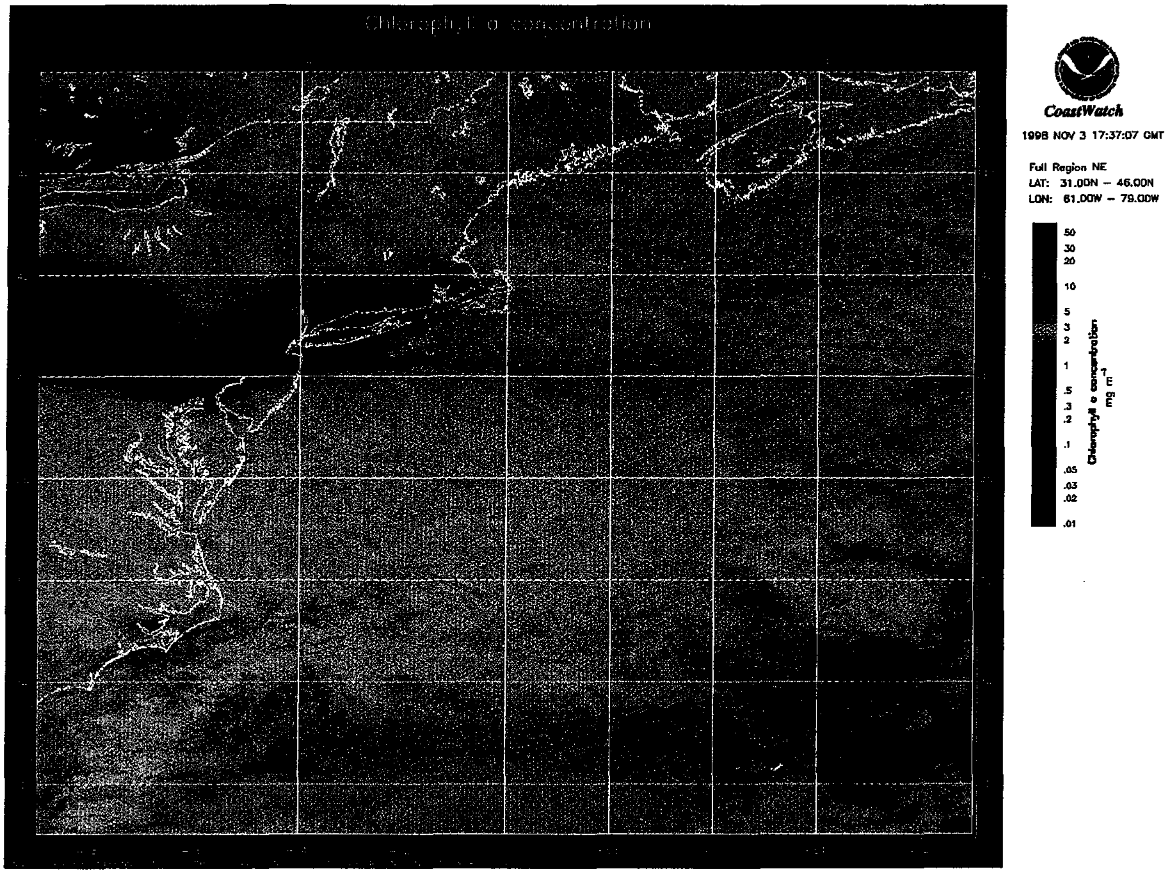


Figure I-11. Chlorophyll a concentrations from November 3, 1998.

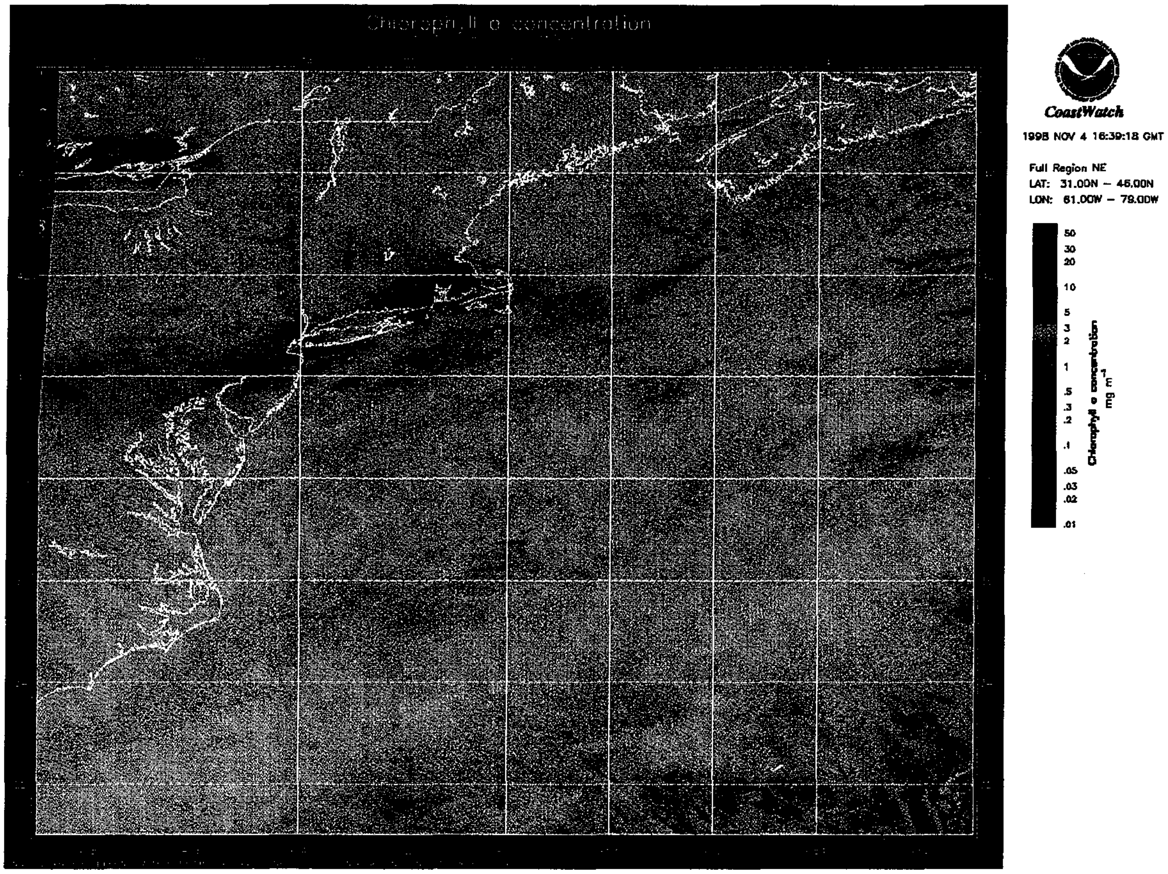


Figure I-12. Chlorophyll a concentrations from November 4, 1998.

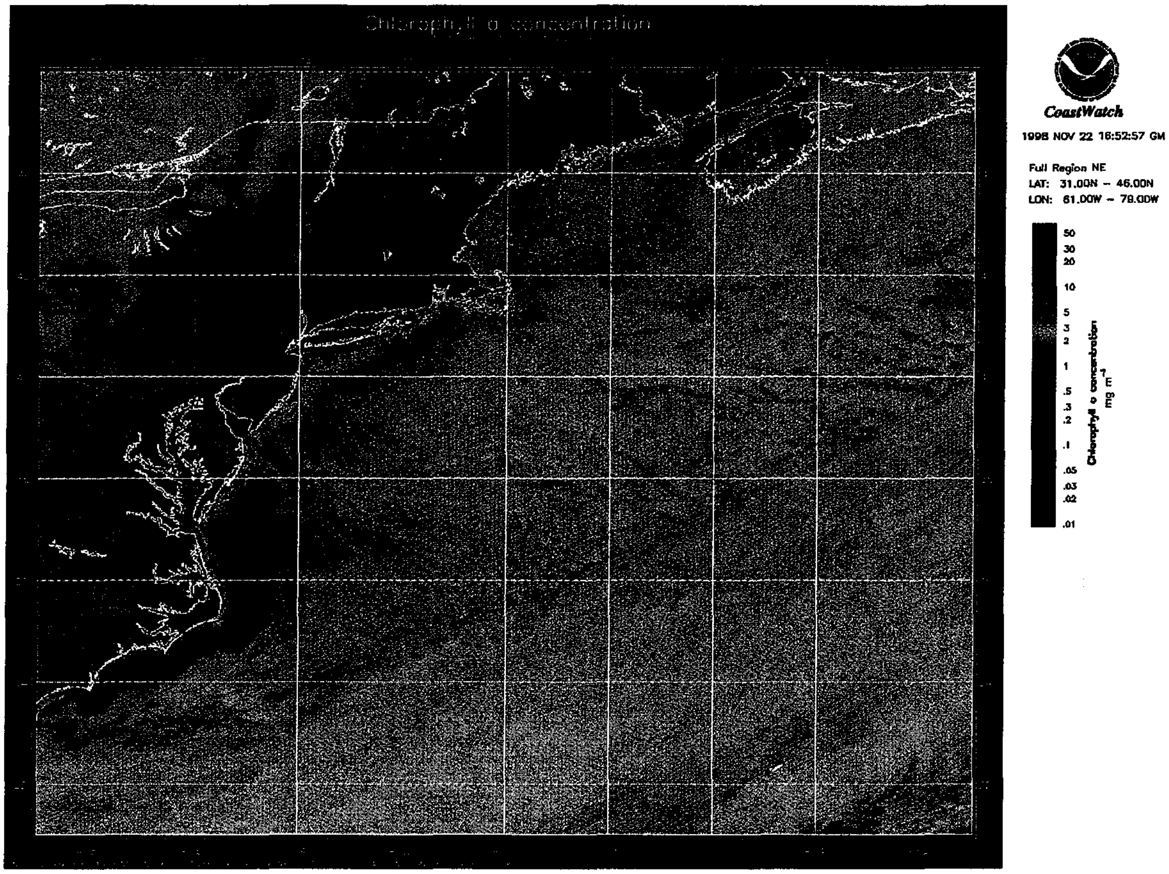


Figure I-13. Chlorophyll a concentrations from November 22, 1998.

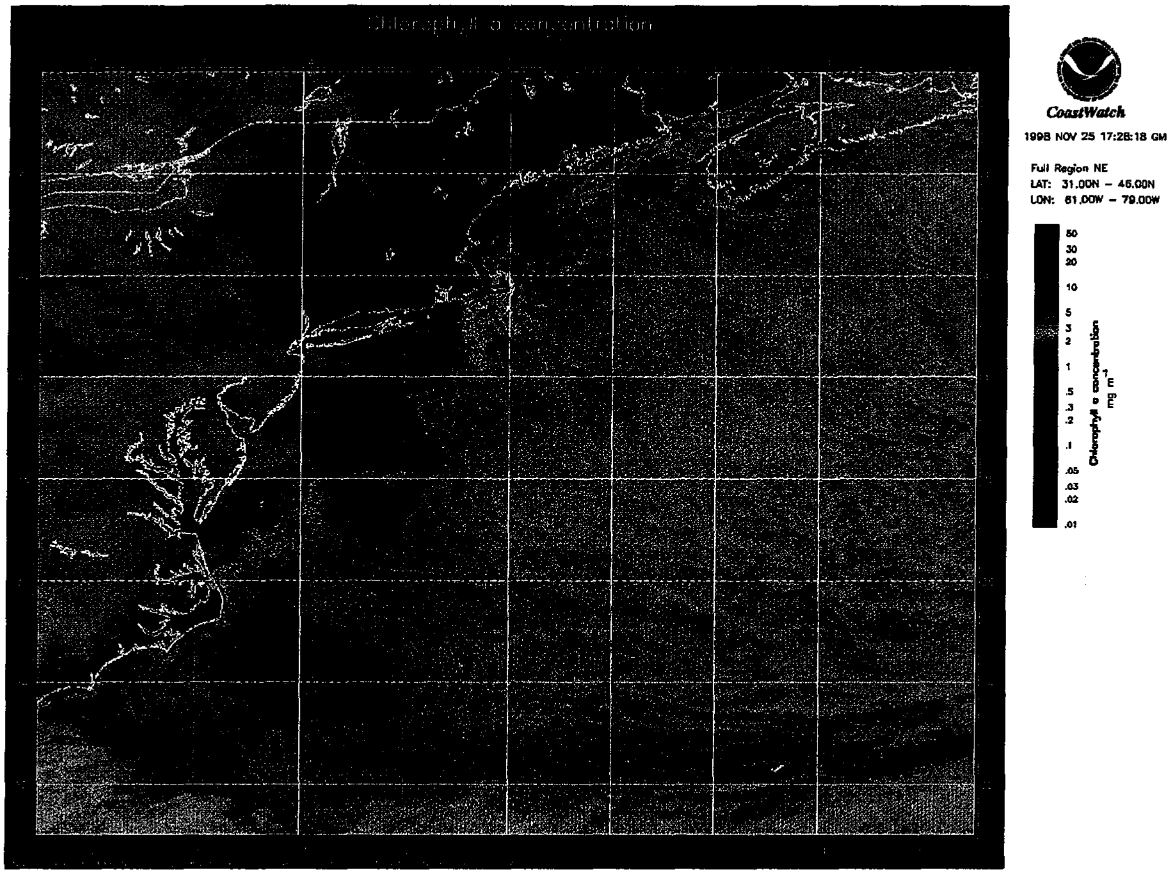


Figure I-14. Chlorophyll a concentrations from November 25, 1998.

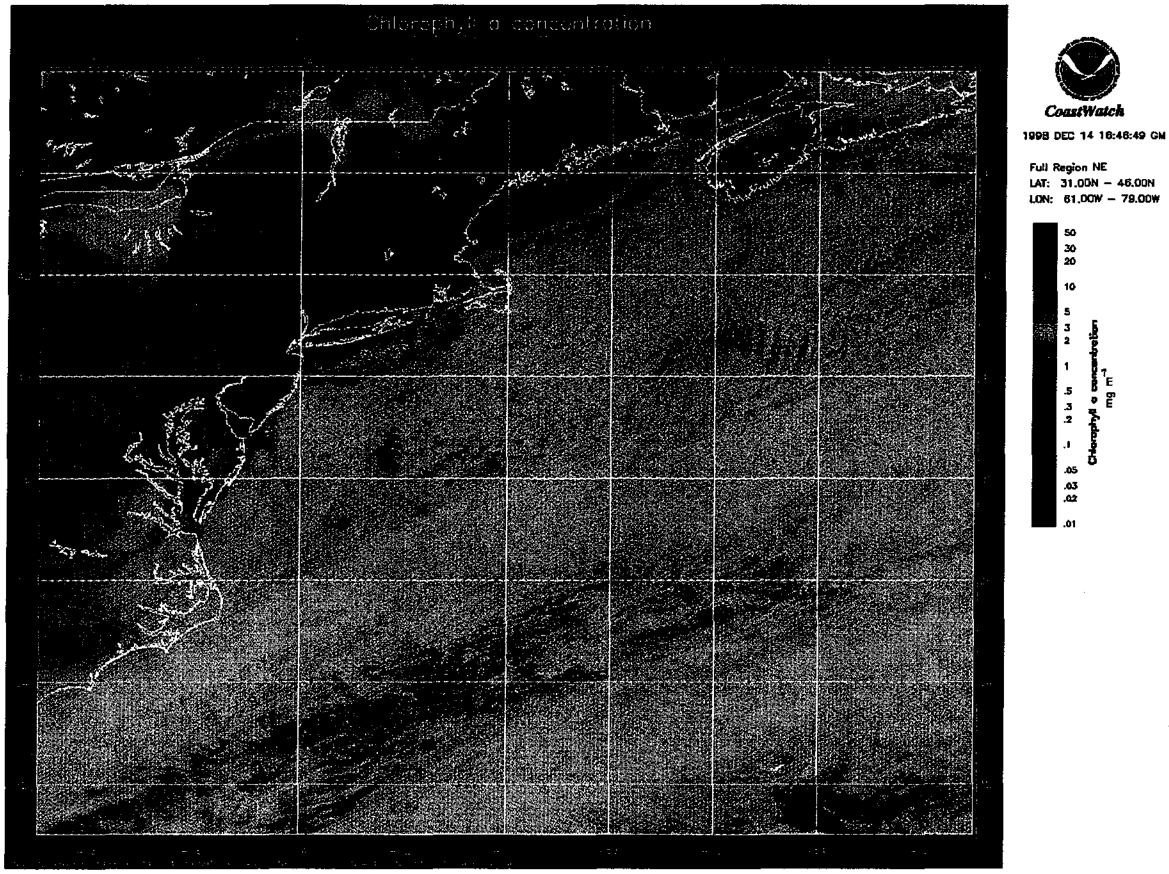


Figure I-15. Chlorophyll a concentrations from December 14, 1998.

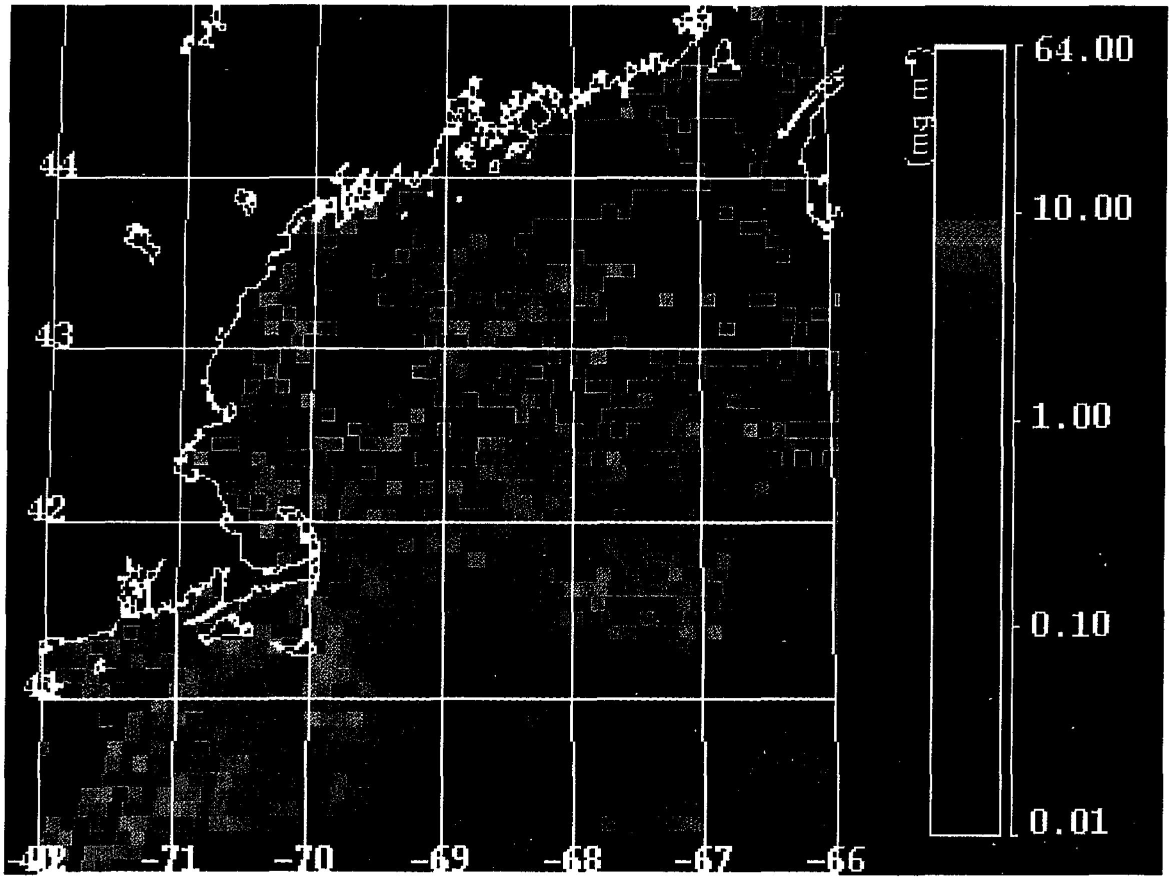


Figure I-16. Average Chlorophyll a concentration from December 3, 1998 to December 10, 1998.

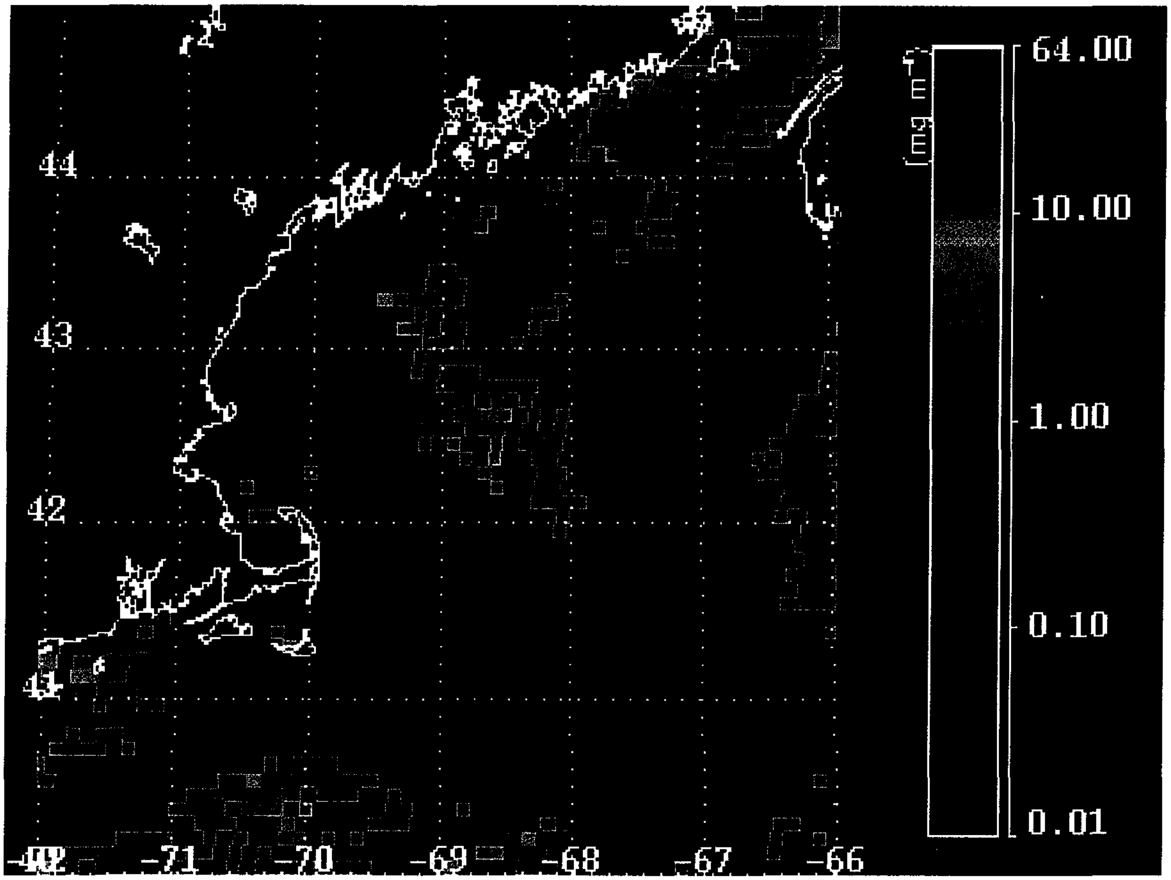


Figure I-17. Average Chlorophyll a concentration from December 11, 1998 to December 18, 1998.

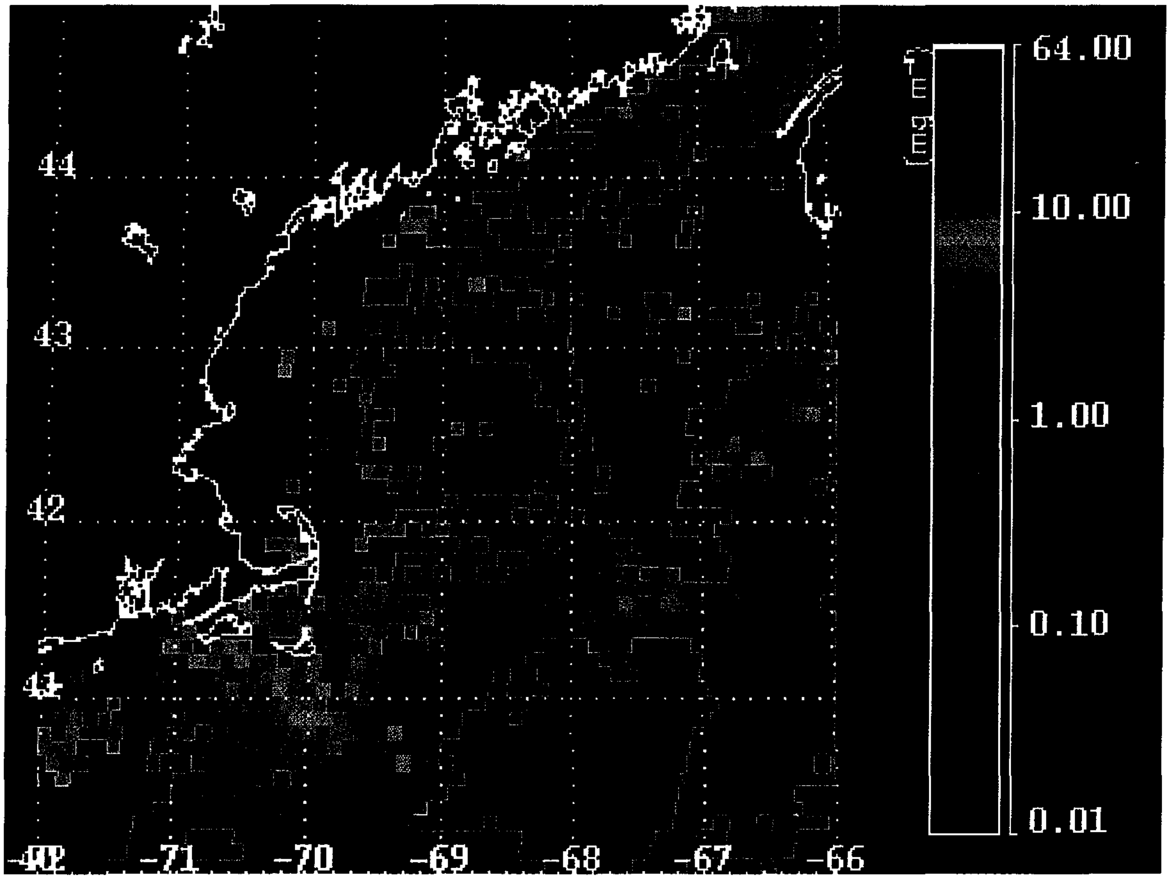


Figure I-18. Average Chlorophyll a concentration from December 19, 1998 to December 26, 1998.

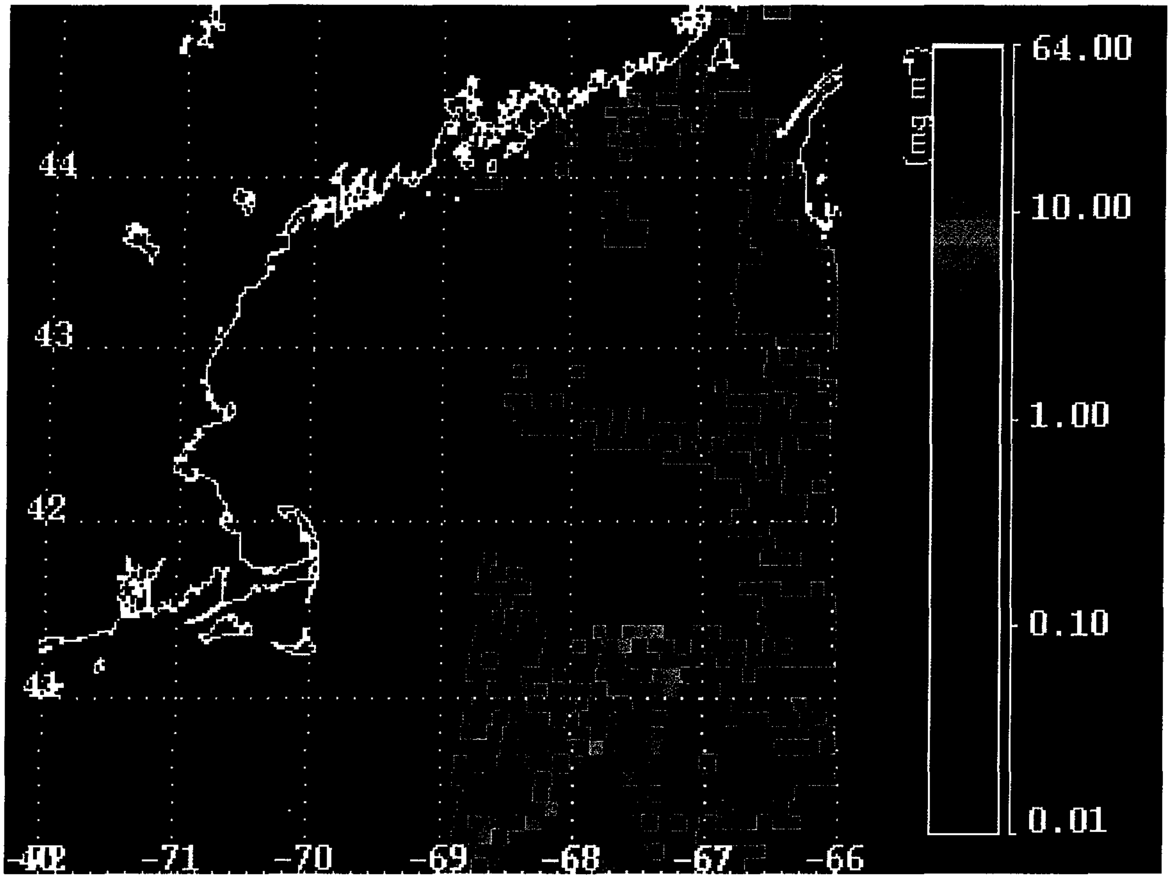


Figure I-19. Average Chlorophyll a concentration from December 27, 1998 to December 31, 1998.

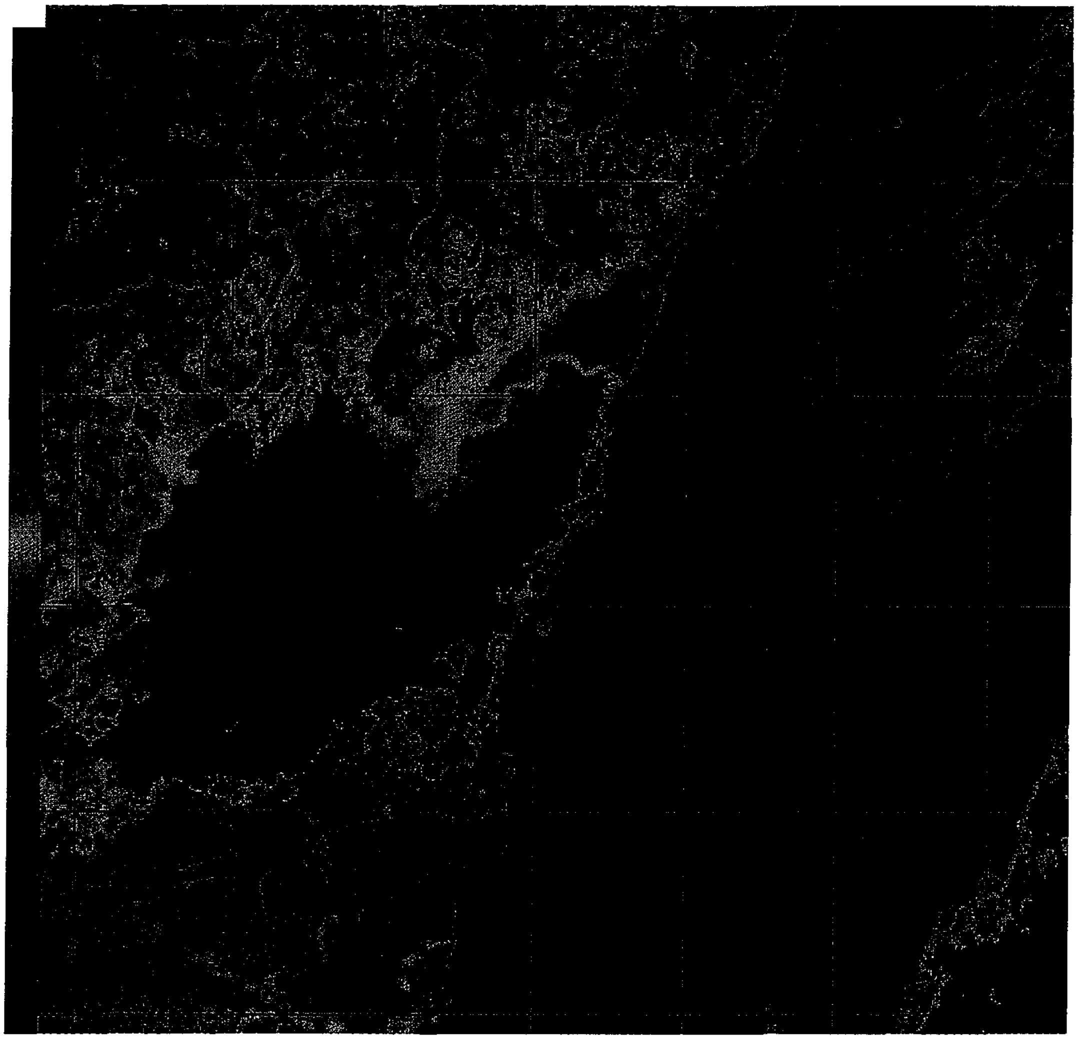


Figure I-20. Sea Surface Temperature from August 19, 1998.

Figure I-21. Sea Surface Temperature from August 20, 1998.

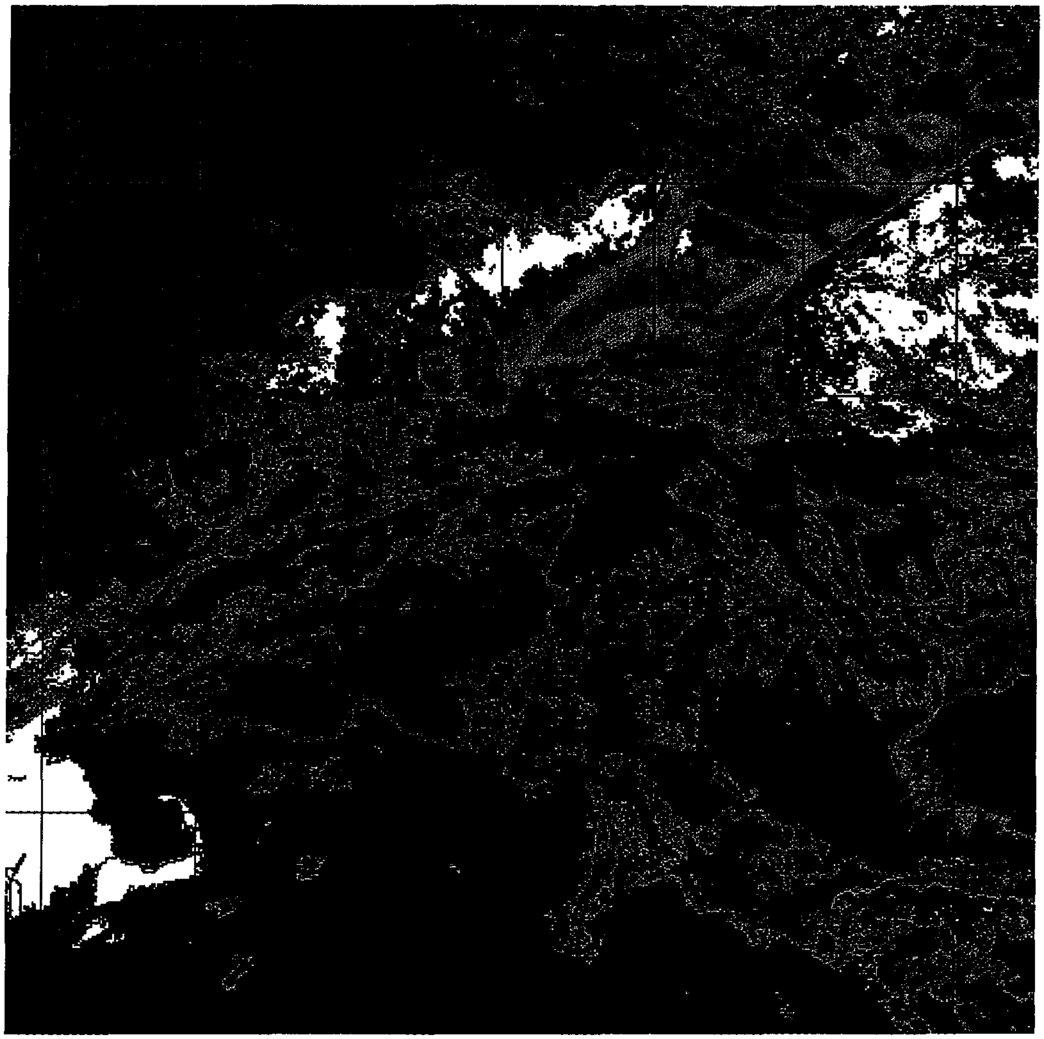


Figure I-22. Sea Surface Temperature from August 25, 1998.

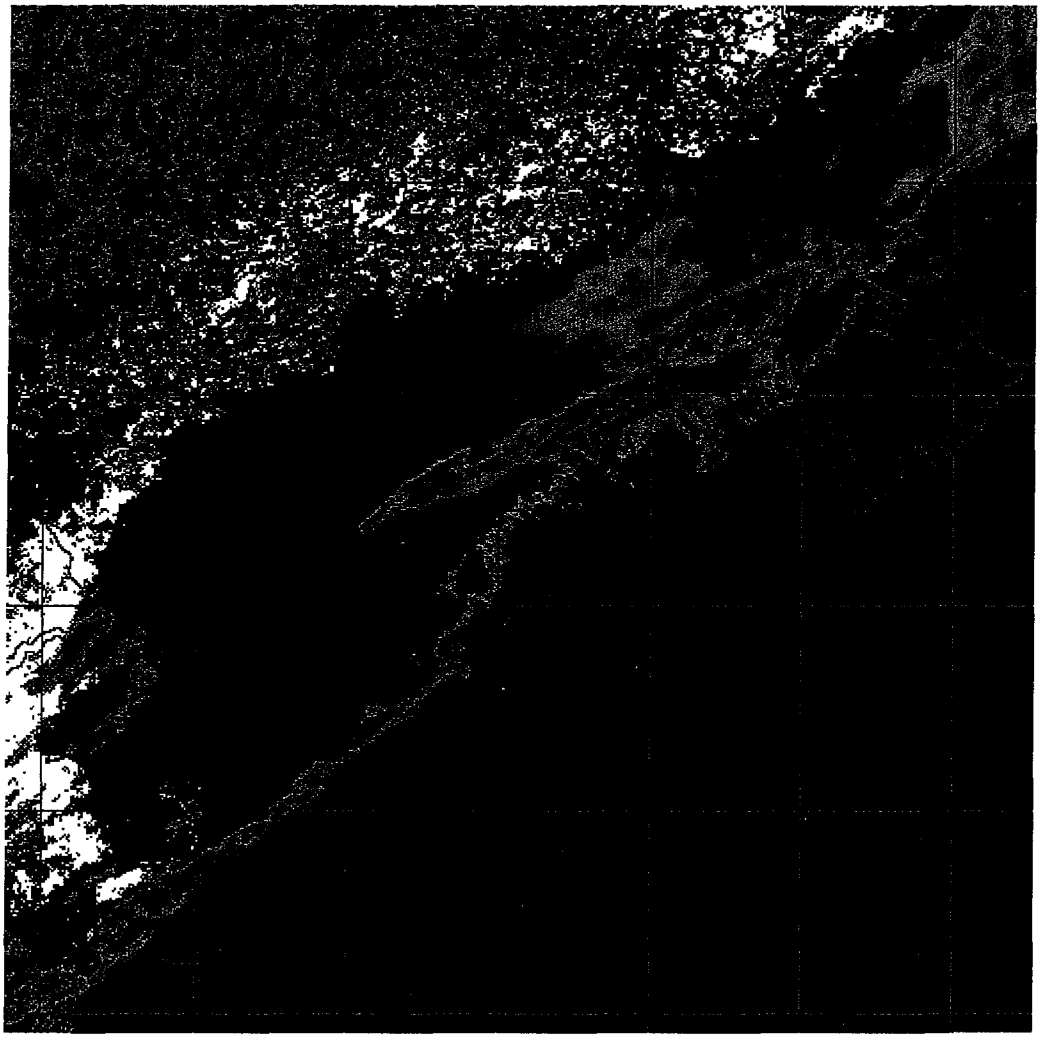


Figure I-23. Sea Surface Temperature from September 4, 1998.

Figure I-24. Sea Surface Temperature from September 24, 1998.

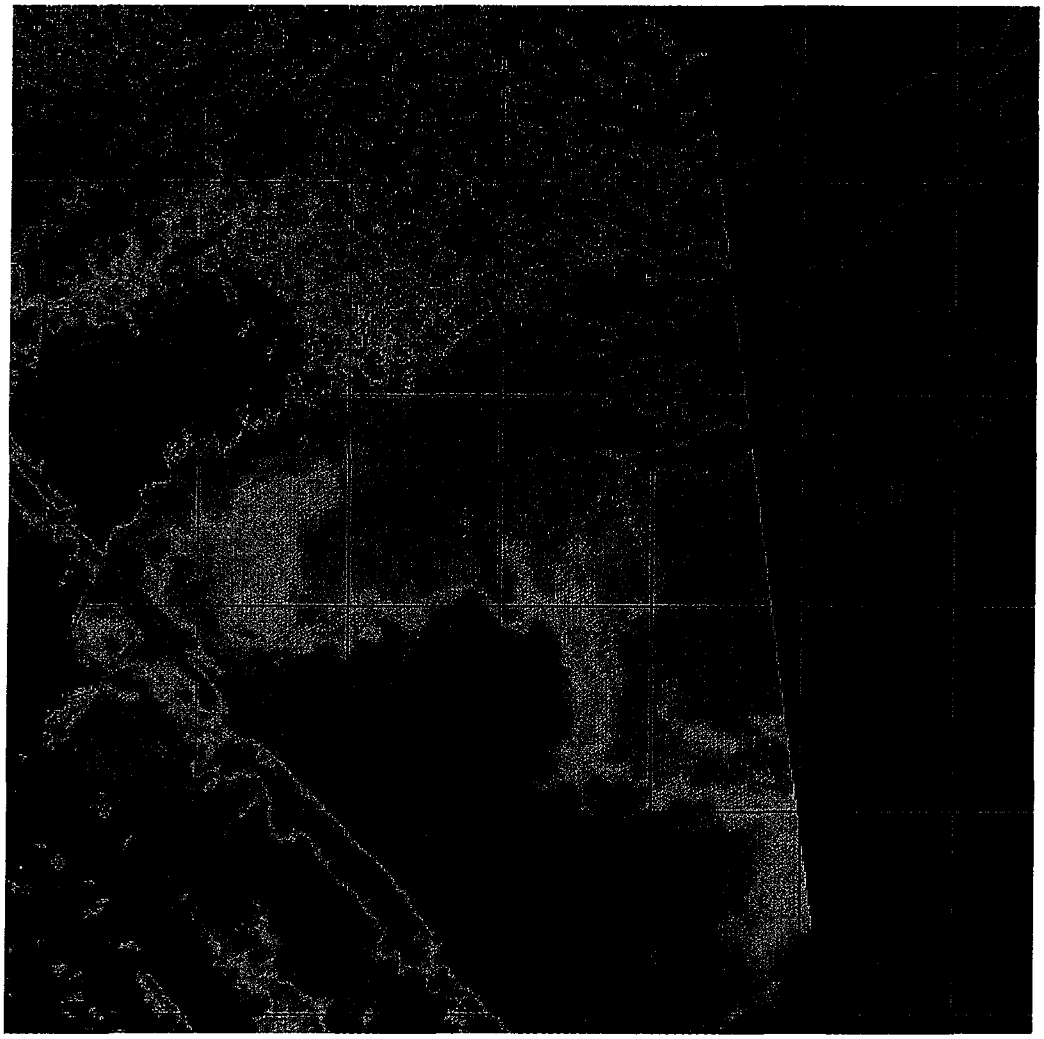


Figure I-25. Sea Surface Temperature from October 5, 1998.

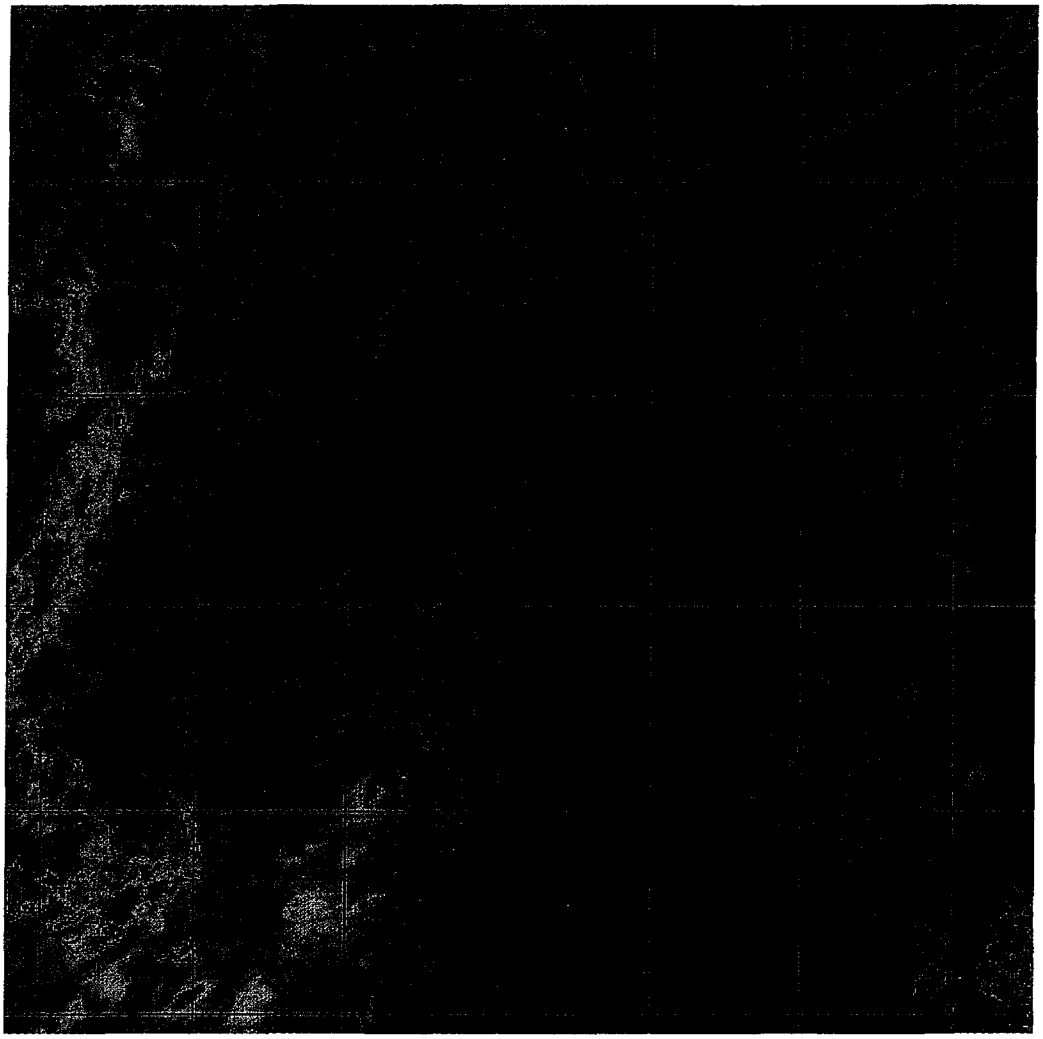


Figure I-26. Sea surface temperature from October 7, 1998.

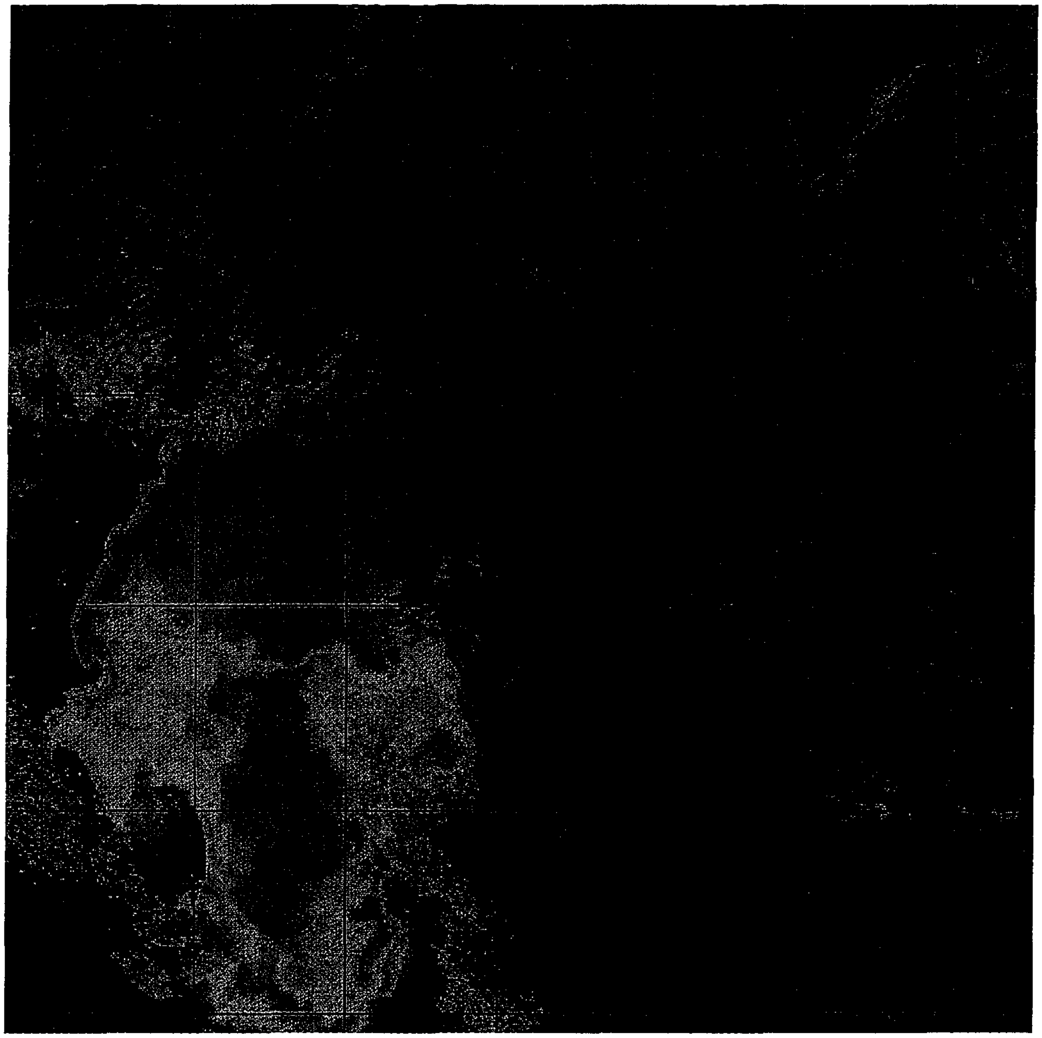


Figure I-27. Sea surface temperature from October 16, 1998.

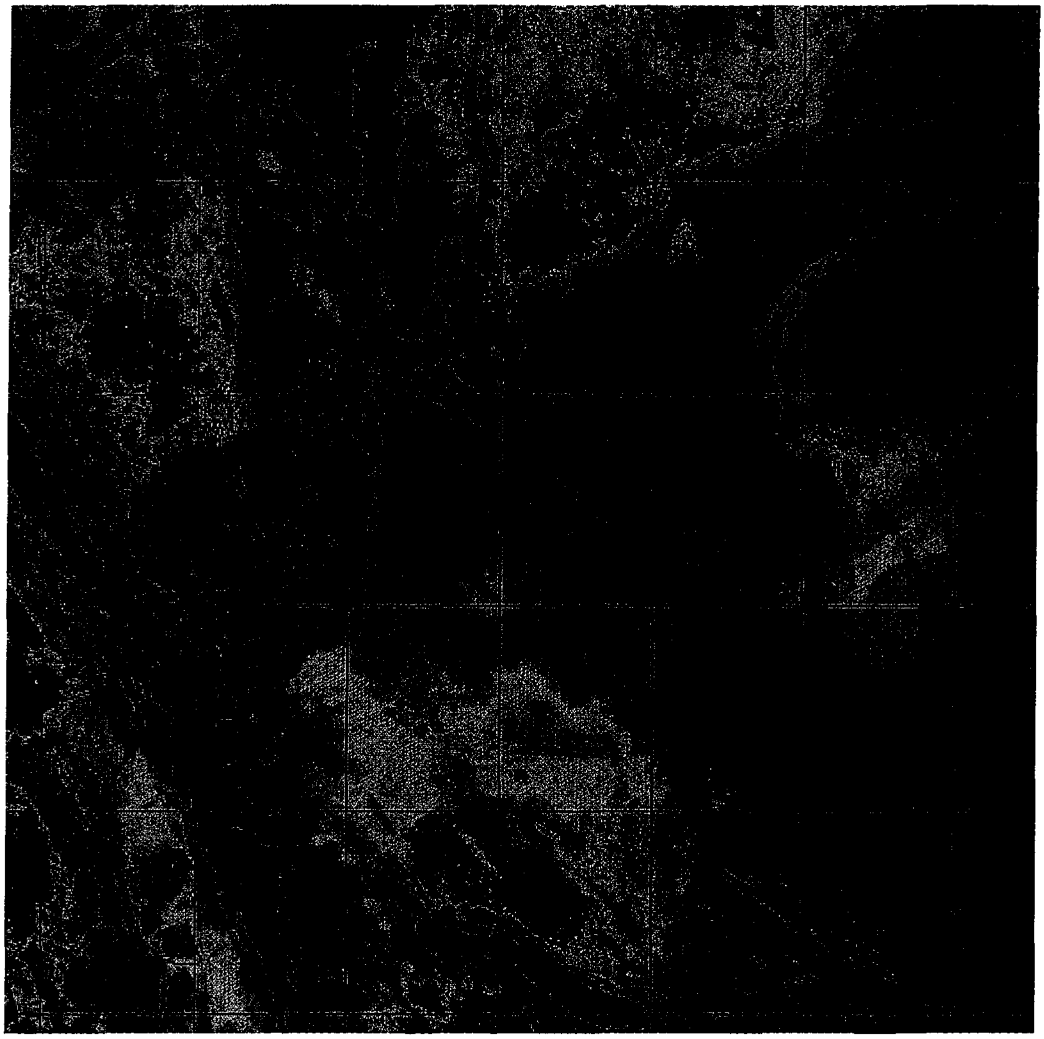


Figure I-28. Sea surface temperature from October 17, 1998.

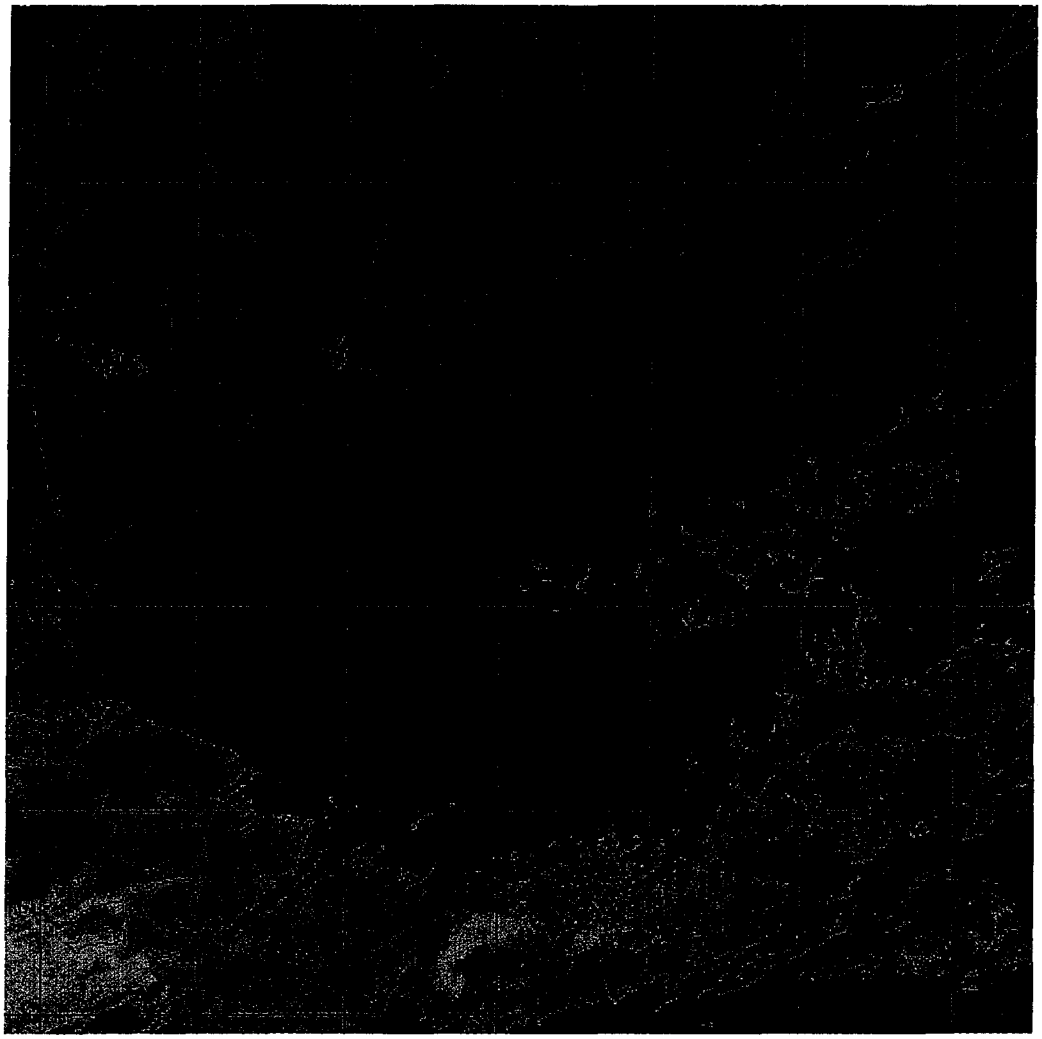


Figure I-29. Sea surface temperature from November 4, 1998.

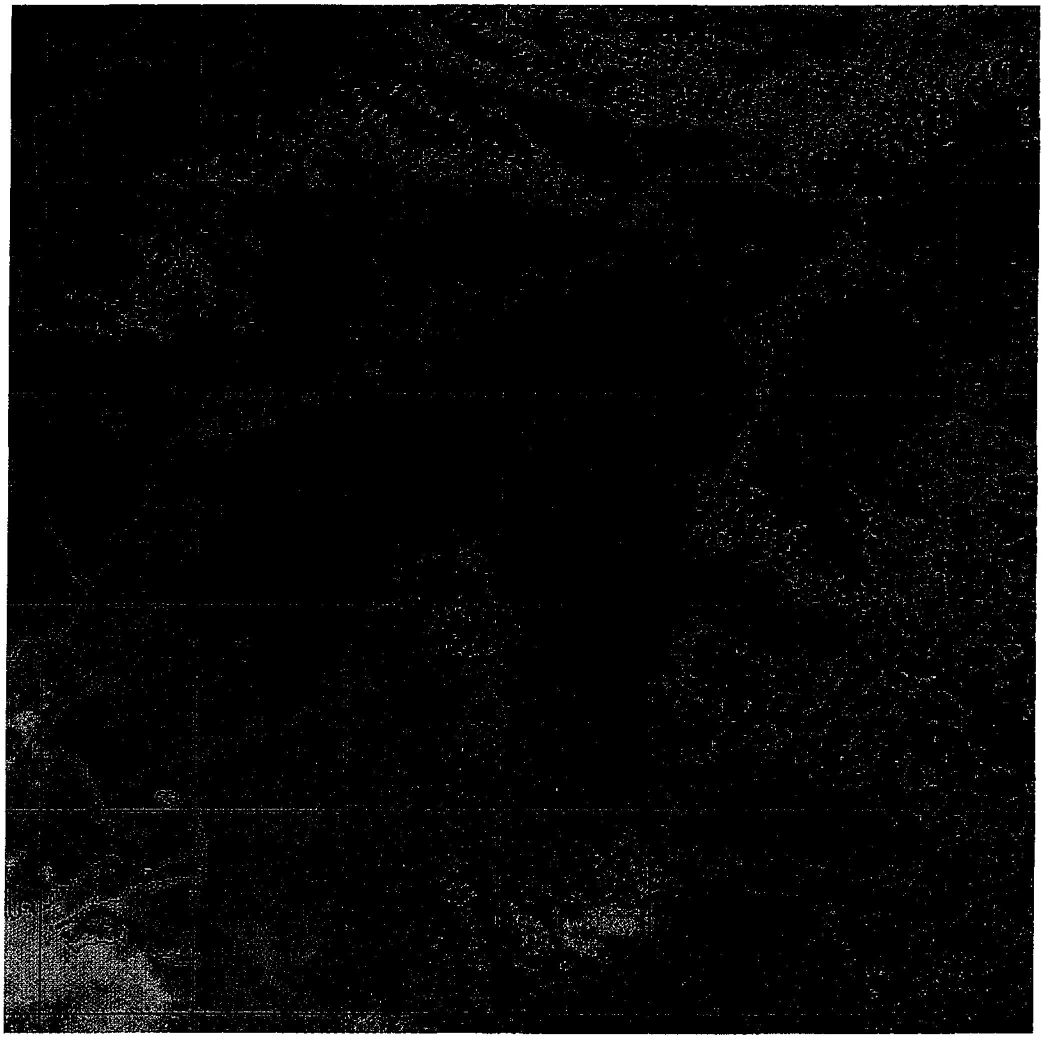


Figure I-30. Sea surface temperature from November 5, 1998.

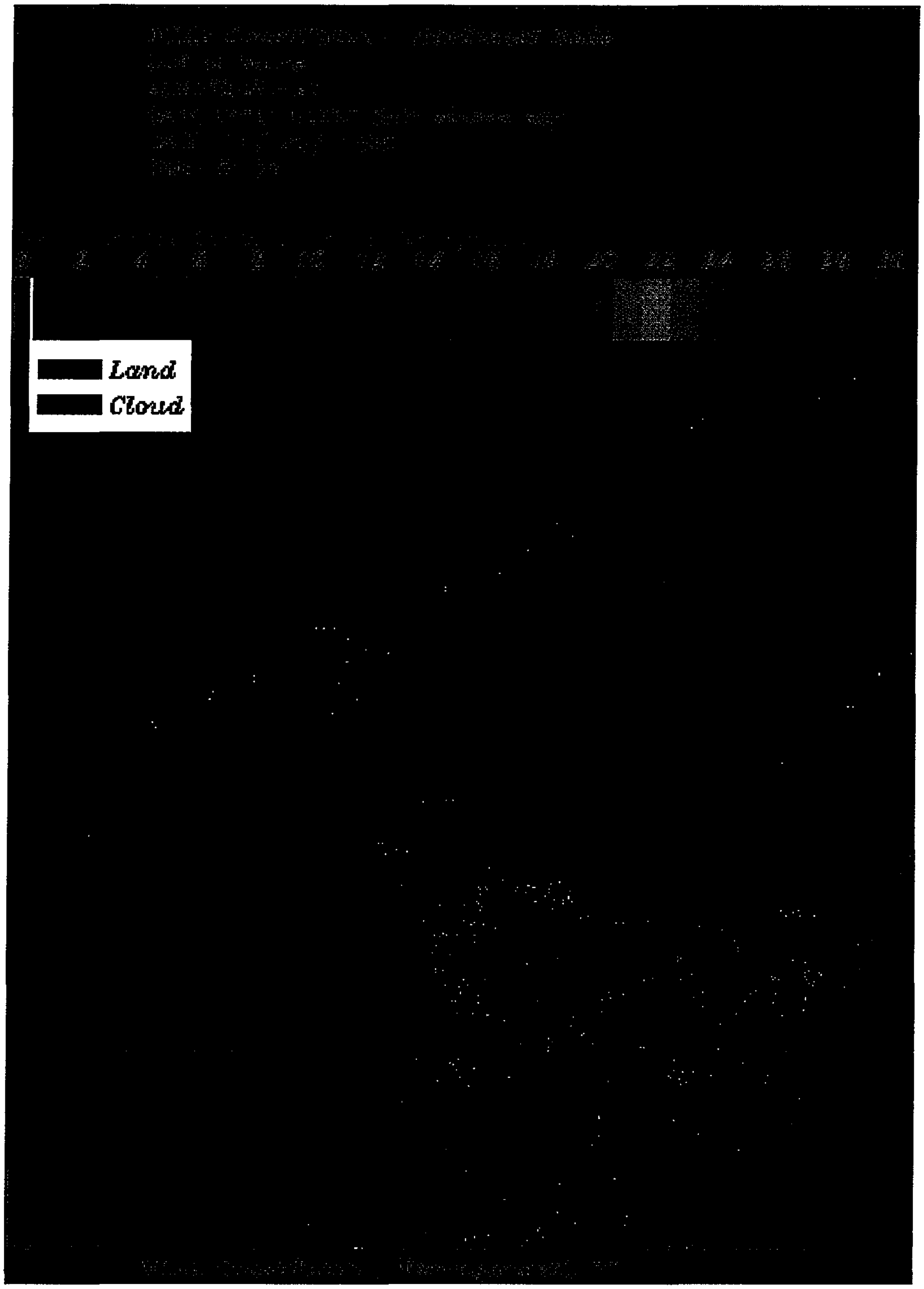


Figure I-31. Sea surface temperature from November 25, 1998.

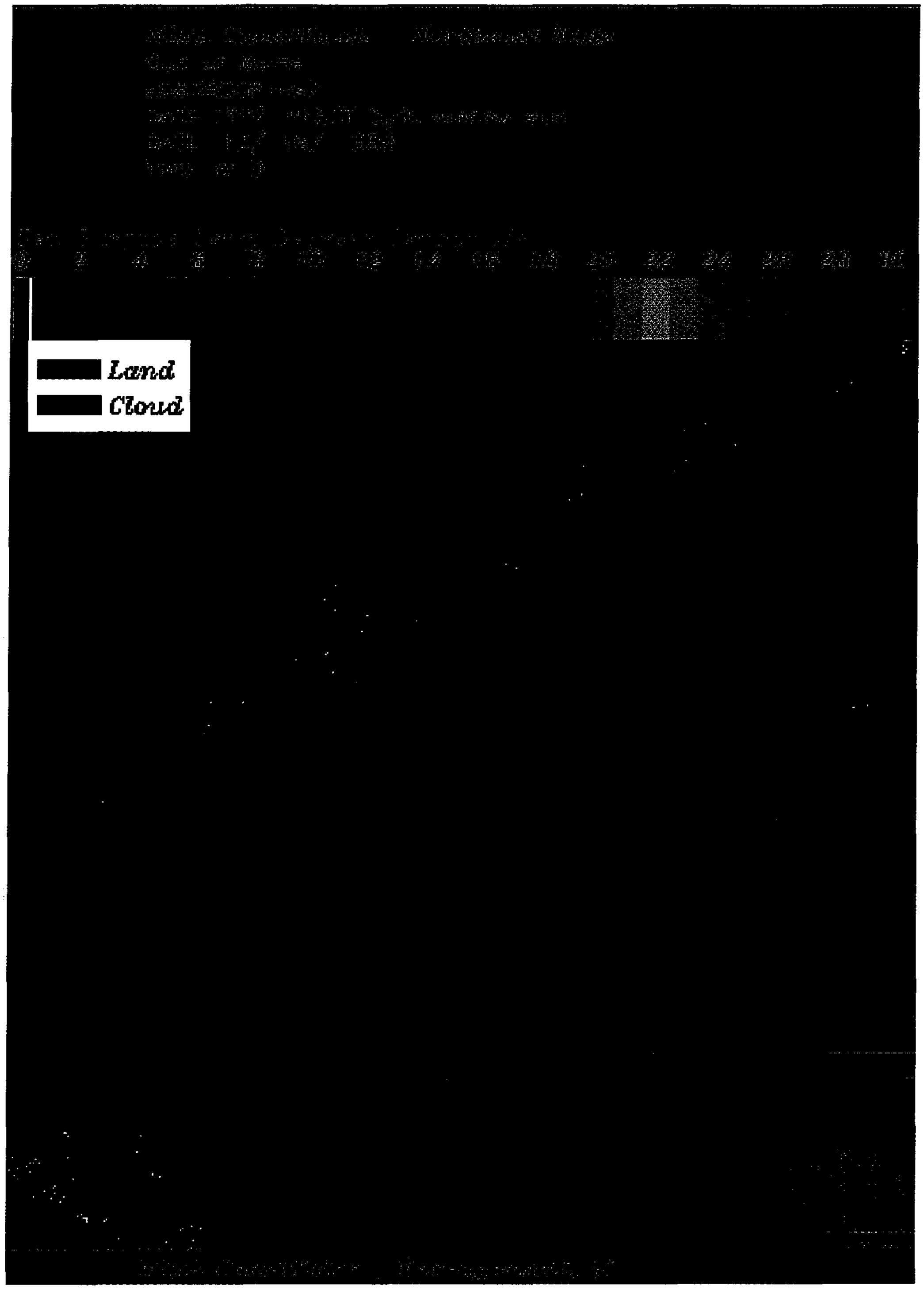


Figure I-32. Sea surface temperature from December 16, 1998.

APPENDIX J

Secchi Disk Data

Survey ID	Station ID	Station Arrival Date and Time	Secchi Disk Depth (m)	Qualifier
WF98B	F01	8/18/98 9:45 AM	5.5	v
WF98B	F02	8/18/98 12:56 PM	5.5	v
WF98B	F03	8/18/98 8:45 AM	7.75	v
WF98B	F06	8/18/98 5:27 PM	6.5	v
WF98B	F07	8/18/98 4:55 PM	6.5	v
WF98B	F12	8/20/98 12:23 PM	6	v
WF98B	F13	8/20/98 3:20 PM	5.5	v
WF98B	F14	8/20/98 3:52 PM	4.25	v
WF98B	F15	8/20/98 2:38 PM	6.5	v
WF98B	F16	8/20/98 2:08 PM	6	v
WF98B	F17	8/20/98 1:39 PM	6	v
WF98B	F18	8/21/98 8:03 AM	5.5	v
WF98B	F19	8/21/98 10:07 AM	7.5	v
WF98B	F22	8/21/98 9:30 AM	6.5	v
WF98B	F23	8/24/98 6:53 AM	2.5	v
WF98B	F24	8/20/98 8:09 AM	4	v
WF98B	F25	8/21/98 1:23 PM	3.75	v
WF98B	F26	8/20/98 9:59 AM	7.5	v
WF98B	F27	8/20/98 10:47 AM	8.5	v
WF98B	F28	8/20/98 11:40 AM	7.25	v
WF98B	F29	8/18/98 3:44 PM	5.75	v
WF98B	F30	8/21/98 6:48 AM	3.5	v
WF98B	F31	8/20/98 6:48 AM	4	v
WF98B	N16	8/21/98 10:44 AM	5.5	v
WF98E	F01	10/5/98 8:09 AM	7.5	v
WF98E	F02	10/5/98 12:26 PM	12	v
WF98E	F03	10/5/98 7:22 AM	7.25	v
WF98E	F05	10/5/98 3:06 PM	9.5	v
WF98E	F06	10/5/98 3:32 PM	8.25	v
WF98E	F07	10/5/98 4:16 PM	6.25	v
WF98E	F10	10/5/98 4:54 PM		e
WF98E	F12	10/16/98 11:38 AM	9.75	v
WF98E	F13	10/5/98 5:24 PM		e
WF98E	F14	10/16/98 9:15 AM	6.25	v
WF98E	F15	10/16/98 9:48 AM	8.75	v
WF98E	F16	10/16/98 10:20 AM	9.5	v
WF98E	F17	10/16/98 10:53 AM	9.5	v
WF98E	F18	10/16/98 4:36 PM		e
WF98E	F19	10/16/98 3:33 PM	7.75	v
WF98E	F22	10/17/98 3:10 PM	8.25	v
WF98E	F23	10/7/98 8:29 AM	3.25	v
WF98E	F24	10/8/98 8:35 AM	2.75	v
WF98E	F26	10/16/98 2:10 PM	6.25	v
WF98E	F27	10/16/98 1:12 PM	11.5	v

Survey ID	Station ID	Station Arrival Date and Time	Secchi Disk Depth (m)	Qualifier
WF98E	F28	10/16/98 12:18 PM	9.25	v
WF98E	F29	10/5/98 11:10 AM	10.75	v
WF98E	F30	10/8/98 7:33 AM	2	v
WF98E	F31	10/16/98 7:39 AM	3.5	v
WF98E	N13	10/7/98 9:16 AM	4.75	v
WF98E	N16	10/8/98 10:33 AM	3.75	v
WF98E	N20	10/8/98 09:31 AM	3.5	v

e- Results not reported, value given is null.
v- Arithmetic mean

APPENDIX K

Estimated Carbon Equivalence Data

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WF98B	F01	WF98B04CSW1	16.39	8/17/98	AMYLAX TRIACANTHA	23.37
WF98B	F01	WF98B04CSW1	16.39	8/17/98	ATHECATE DINOFLAGELLATE	NA
WF98B	F01	WF98B04CSW1	16.39	8/17/98	CERATIUM FUSUS	7807.80
WF98B	F01	WF98B04CSW1	16.39	8/17/98	CERATIUM LINEATUM	399.30
WF98B	F01	WF98B04CSW1	16.39	8/17/98	CERATIUM LONGIPES	2338.58
WF98B	F01	WF98B04CSW1	16.39	8/17/98	CERATIUM SPP.	22.61
WF98B	F01	WF98B04CSW1	16.39	8/17/98	CERATIUM TRIPOS	19127.72
WF98B	F01	WF98B04CSW1	16.39	8/17/98	DINOPHYSIS NORVEGICA	NA
WF98B	F01	WF98B04CSW1	16.39	8/17/98	DISTEPHANUS SPECULUM	27.86
WF98B	F01	WF98B04CSW1	16.39	8/17/98	GYRODINIUM SP. GROUP 1 5-20UM W 10-20UM L	0.31
WF98B	F01	WF98B04CSW1	16.39	8/17/98	PROTOPERIDINIUM BIPES	12.10
WF98B	F01	WF98B04CSW1	16.39	8/17/98	PROTOPERIDINIUM BREVIPES	12.36
WF98B	F01	WF98B04CSW1	16.39	8/17/98	PROTOPERIDINIUM DIVERGENS	95.81
WF98B	F01	WF98B04CSW1	16.39	8/17/98	PROTOPERIDINIUM PENTAGONUM	145.39
WF98B	F01	WF98B04CSW1	16.39	8/17/98	PROTOPERIDINIUM SP. GROUP 1 10-30W 10-40L	2.27
WF98B	F01	WF98B04CSW1	16.39	8/17/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	96.23
WF98B	F01	WF98B04CSW1	16.39	8/17/98	PROTOPERIDINIUM SP. GROUP 3 76-150W 81-150L	1103.21
WF98B	F01	WF98B04CSW1	16.39	8/17/98	SCRIPPSIELLA TROCHOIDEA	8.16
WF98B	F01	WF98B04CSW1	16.39	8/17/98	THECATE DINOFLAGELLATE SPP.	NA
WF98B	F01	WF98B04CWW1	16.39	8/17/98	CALYCOMONAS WULFFII	22.73
WF98B	F01	WF98B04CWW1	16.39	8/17/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	100.35
WF98B	F01	WF98B04CWW1	16.39	8/17/98	CENTRIC DIATOM SP. GROUP 2 DIAM 10-30 MICRONS	143.91
WF98B	F01	WF98B04CWW1	16.39	8/17/98	CERATIUM FUSUS	17863.22
WF98B	F01	WF98B04CWW1	16.39	8/17/98	CERATIUM TRIPOS	57217.20
WF98B	F01	WF98B04CWW1	16.39	8/17/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	1194.73
WF98B	F01	WF98B04CWW1	16.39	8/17/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	39.06
WF98B	F01	WF98B04CWW1	16.39	8/17/98	CYLINDROTHECA CLOSTERIUM	1385.23
WF98B	F01	WF98B04CWW1	16.39	8/17/98	DICTYOCHA SPECULUM	NA
WF98B	F01	WF98B04CWW1	16.39	8/17/98	GUINARDIA FLACCIDA	398778.57
WF98B	F01	WF98B04CWW1	16.39	8/17/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	1619.95
WF98B	F01	WF98B04CWW1	16.39	8/17/98	GYMNODINIUM SP. GROUP 2 21-40UM W 21-50UM L	5981.51
WF98B	F01	WF98B04CWW1	16.39	8/17/98	GYRODINIUM SP. GROUP 1 5-20UM W 10-20UM L	971.97
WF98B	F01	WF98B04CWW1	16.39	8/17/98	LEPTOCYLINDRUS DANICUS	100752.43
WF98B	F01	WF98B04CWW1	16.39	8/17/98	LEPTOCYLINDRUS MINIMUS	1891.05
WF98B	F01	WF98B04CWW1	16.39	8/17/98	PENNATE DIATOM SP. GROUP 2 10-30 MICRONS LENGTH	98.99
WF98B	F01	WF98B04CWW1	16.39	8/17/98	PROBOSCIA ALATA	4113.43
WF98B	F01	WF98B04CWW1	16.39	8/17/98	PROTOPERIDINIUM BIPES	262.38
WF98B	F01	WF98B04CWW1	16.39	8/17/98	PROTOPERIDINIUM SP. GROUP 1 10-30W 10-40L	788.75
WF98B	F01	WF98B04CWW1	16.39	8/17/98	PSEUDONITZSCHIA DELICATISSIMA	316.08
WF98B	F01	WF98B04CWW1	16.39	8/17/98	PSEUDONITZSCHIA PUNGENS	3741.11
WF98B	F01	WF98B04CWW1	16.39	8/17/98	PYRAMIMONAS SP. GROUP 1 10-20 MICRONS LENGTH	NA
WF98B	F01	WF98B04CWW1	16.39	8/17/98	RHIZOSOLENIA DELICATULA	2048.68
WF98B	F01	WF98B04CWW1	16.39	8/17/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	24878.16
WF98B	F01	WF98B04CWW1	16.39	8/17/98	UNID. MICRO-PHYTOFLAG LENGTH >10 MICRONS	1141.15

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WF98B	F01	WF98B04FSW1	1.61	8/17/98	ATHECATE DINOFLAGELLATE	NA
WF98B	F01	WF98B04FSW1	1.61	8/17/98	CERATIUM FUSUS	2571.04
WF98B	F01	WF98B04FSW1	1.61	8/17/98	CERATIUM LINEATUM	326.06
WF98B	F01	WF98B04FSW1	1.61	8/17/98	CERATIUM LONGIPES	540.88
WF98B	F01	WF98B04FSW1	1.61	8/17/98	CERATIUM MACROCEROS	44.46
WF98B	F01	WF98B04FSW1	1.61	8/17/98	CERATIUM TRIPOS	7630.62
WF98B	F01	WF98B04FSW1	1.61	8/17/98	DINOPHYSIS NORVEGICA	NA
WF98B	F01	WF98B04FSW1	1.61	8/17/98	GONYAULAX SPP.	2.07
WF98B	F01	WF98B04FSW1	1.61	8/17/98	GYRODINIUM SP. GROUP 1 5-20UM W 10-20UM L	1.03
WF98B	F01	WF98B04FSW1	1.61	8/17/98	MESODINIUM RUBRUM	NA
WF98B	F01	WF98B04FSW1	1.61	8/17/98	PROTOPERIDINIUM BIPES	8.60
WF98B	F01	WF98B04FSW1	1.61	8/17/98	PROTOPERIDINIUM BREVIPES	37.12
WF98B	F01	WF98B04FSW1	1.61	8/17/98	PROTOPERIDINIUM DEPRESSUM	265.39
WF98B	F01	WF98B04FSW1	1.61	8/17/98	PROTOPERIDINIUM DIVERGENS	227.14
WF98B	F01	WF98B04FSW1	1.61	8/17/98	PROTOPERIDINIUM PALLIDUM	22.03
WF98B	F01	WF98B04FSW1	1.61	8/17/98	PROTOPERIDINIUM PENTAGONUM	45.96
WF98B	F01	WF98B04FSW1	1.61	8/17/98	PROTOPERIDINIUM SP. GROUP 1 10-30W 10-40L	17.24
WF98B	F01	WF98B04FSW1	1.61	8/17/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	1095.08
WF98B	F01	WF98B04FSW1	1.61	8/17/98	PROTOPERIDINIUM SP. GROUP 3 76-150W 81-150L	448.35
WF98B	F01	WF98B04FSW1	1.61	8/17/98	SCRIPPSIELLA TROCHOIDEA	112.17
WF98B	F01	WF98B04FSW1	1.61	8/17/98	THECATE DINOFLAGELLATE SPP.	NA
WF98B	F01	WF98B04FWW1	1.61	8/17/98	CALYCOMONAS WULFFII	23.19
WF98B	F01	WF98B04FWW1	1.61	8/17/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	127.94
WF98B	F01	WF98B04FWW1	1.61	8/17/98	CERATIUM FUSUS	6832.68
WF98B	F01	WF98B04FWW1	1.61	8/17/98	CERATIUM TRIPOS	11672.31
WF98B	F01	WF98B04FWW1	1.61	8/17/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	261.13
WF98B	F01	WF98B04FWW1	1.61	8/17/98	CHOANOFLAGELLATE SPP.	62.79
WF98B	F01	WF98B04FWW1	1.61	8/17/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	139.46
WF98B	F01	WF98B04FWW1	1.61	8/17/98	CYLINDROTHECA CLOSTERIUM	1883.91
WF98B	F01	WF98B04FWW1	1.61	8/17/98	DINOPHYSIS NORVEGICA	NA
WF98B	F01	WF98B04FWW1	1.61	8/17/98	EUTREPTIA/EUTREPTIELLA SPP.	NA
WF98B	F01	WF98B04FWW1	1.61	8/17/98	GUINARDIA FLACCIDA	70535.40
WF98B	F01	WF98B04FWW1	1.61	8/17/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	1982.82
WF98B	F01	WF98B04FWW1	1.61	8/17/98	GYMNODINIUM SP. GROUP 2 21-40UM W 21-50UM L	18303.41
WF98B	F01	WF98B04FWW1	1.61	8/17/98	LEPTOCYLINDRUS DANICUS	308864.02
WF98B	F01	WF98B04FWW1	1.61	8/17/98	LEPTOCYLINDRUS MINIMUS	24807.41
WF98B	F01	WF98B04FWW1	1.61	8/17/98	PROBOSCIA ALATA	2097.85
WF98B	F01	WF98B04FWW1	1.61	8/17/98	PROTOPERIDINIUM BIPES	1605.82
WF98B	F01	WF98B04FWW1	1.61	8/17/98	PROTOPERIDINIUM SP. GROUP 1 10-30W 10-40L	2413.64
WF98B	F01	WF98B04FWW1	1.61	8/17/98	PSEUDONITZSCHIA DELICATISSIMA	338.51
WF98B	F01	WF98B04FWW1	1.61	8/17/98	PSEUDONITZSCHIA PUNGENS	657.48
WF98B	F01	WF98B04FWW1	1.61	8/17/98	RHIZOSOLENIA SETIGERA	2153.10
WF98B	F01	WF98B04FWW1	1.61	8/17/98	SCRIPPSIELLA TROCHOIDEA	2165.45
WF98B	F01	WF98B04FWW1	1.61	8/17/98	SKELETONEMA COSTATUM GREV+CLEVE	838.96
WF98B	F01	WF98B04FWW1	1.61	8/17/98	THALASSIONEMA NITZSCHIOIDES	64.23

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WF98B	F01	WF98B04FWW1	1.61	8/17/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	23709.64
WF98B	F01	WF98B04FWW1	1.61	8/17/98	UNID. MICRO-PHYTOFLAG LENGTH >10 MICRONS	3879.91
WF98B	F02	WF98B058SW1	16.64	8/17/98	AMYLAX TRIACANTHA	27.18
WF98B	F02	WF98B058SW1	16.64	8/17/98	ATHECATE DINOFLAGELLATE	NA
WF98B	F02	WF98B058SW1	16.64	8/17/98	CERATIUM FUSUS	368.50
WF98B	F02	WF98B058SW1	16.64	8/17/98	CERATIUM LINEATUM	557.46
WF98B	F02	WF98B058SW1	16.64	8/17/98	CERATIUM LONGIPES	1329.09
WF98B	F02	WF98B058SW1	16.64	8/17/98	CERATIUM SPP.	165.27
WF98B	F02	WF98B058SW1	16.64	8/17/98	CERATIUM TRIPOS	10045.28
WF98B	F02	WF98B058SW1	16.64	8/17/98	DINOPHYSIS ACUMINATA	3.51
WF98B	F02	WF98B058SW1	16.64	8/17/98	DINOPHYSIS NORVEGICA	NA
WF98B	F02	WF98B058SW1	16.64	8/17/98	DISTEPHANUS SPECULUM	7.64
WF98B	F02	WF98B058SW1	16.64	8/17/98	GYMNODINIUM SP.GROUP 5 20-30 MICRONS	NA
WF98B	F02	WF98B058SW1	16.64	8/17/98	GYRODINIUM SP. GROUP 1 5-20UM W 10-20UM L	0.71
WF98B	F02	WF98B058SW1	16.64	8/17/98	PROTOPERIDINIUM DIVERGENS	43.78
WF98B	F02	WF98B058SW1	16.64	8/17/98	PROTOPERIDINIUM PALLIDUM	169.80
WF98B	F02	WF98B058SW1	16.64	8/17/98	PROTOPERIDINIUM SP. GROUP 1 10-30W 10-40L	6.23
WF98B	F02	WF98B058SW1	16.64	8/17/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	864.72
WF98B	F02	WF98B058SW1	16.64	8/17/98	PROTOPERIDINIUM SP. GROUP 3 76-150W 81-150L	360.04
WF98B	F02	WF98B058SW1	16.64	8/17/98	SCRIPPSIELLA TROCHOIDEA	16.77
WF98B	F02	WF98B058SW1	16.64	8/17/98	THECATE DINOFLAGELLATE SPP.	NA
WF98B	F02	WF98B058WW1	16.64	8/17/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	301.05
WF98B	F02	WF98B058WW1	16.64	8/17/98	CENTRIC DIATOM SP. GROUP 2 DIAM 10-30 MICRONS	107.93
WF98B	F02	WF98B058WW1	16.64	8/17/98	CERATIUM FUSUS	26795.48
WF98B	F02	WF98B058WW1	16.64	8/17/98	CERATIUM LINEATUM	5773.28
WF98B	F02	WF98B058WW1	16.64	8/17/98	CERATIUM TRIPOS	68662.29
WF98B	F02	WF98B058WW1	16.64	8/17/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	3072.23
WF98B	F02	WF98B058WW1	16.64	8/17/98	CORETHRON CRIOPHILUM	2303.45
WF98B	F02	WF98B058WW1	16.64	8/17/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	78.13
WF98B	F02	WF98B058WW1	16.64	8/17/98	CYLINDROTHECA CLOSTERIUM	346.30
WF98B	F02	WF98B058WW1	16.64	8/17/98	DICTYOCHA SPECULUM	NA
WF98B	F02	WF98B058WW1	16.64	8/17/98	GUINARDIA FLACCIDA	152138.83
WF98B	F02	WF98B058WW1	16.64	8/17/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	4211.87
WF98B	F02	WF98B058WW1	16.64	8/17/98	GYRODINIUM SP. GROUP 1 5-20UM W 10-20UM L	323.99
WF98B	F02	WF98B058WW1	16.64	8/17/98	GYRODINIUM SP. GROUP 2 21-40UM W 21-50UM L	1495.38
WF98B	F02	WF98B058WW1	16.64	8/17/98	GYRODINIUM SPIRALE	131630.79
WF98B	F02	WF98B058WW1	16.64	8/17/98	LEPTOCYLINDRUS DANICUS	199853.19
WF98B	F02	WF98B058WW1	16.64	8/17/98	LEPTOCYLINDRUS MINIMUS	3887.16
WF98B	F02	WF98B058WW1	16.64	8/17/98	PENNATE DIATOM SP. GROUP 2 10-30 MICRONS LENGTH	296.97
WF98B	F02	WF98B058WW1	16.64	8/17/98	PROBOSCIA ALATA	2056.72
WF98B	F02	WF98B058WW1	16.64	8/17/98	PROROCENTRUM MINIMUM	116.20
WF98B	F02	WF98B058WW1	16.64	8/17/98	PROTOPERIDINIUM BIPES	787.15
WF98B	F02	WF98B058WW1	16.64	8/17/98	PROTOPERIDINIUM DEPRESSUM	36416.93
WF98B	F02	WF98B058WW1	16.64	8/17/98	PROTOPERIDINIUM SP. GROUP 1 10-30W 10-40L	1183.13
WF98B	F02	WF98B058WW1	16.64	8/17/98	PSEUDONITZSCHIA DELICATISSIMA	932.42

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WF98B	F02	WF98B058WW1	16.64	8/17/98	PSEUDONITZSCHIA PUNGENS	758.33
WF98B	F02	WF98B058WW1	16.64	8/17/98	RHIZOSOLENIA DELICATULA	1024.34
WF98B	F02	WF98B058WW1	16.64	8/17/98	RHIZOSOLENIA FRAGILISSIMA	1002.55
WF98B	F02	WF98B058WW1	16.64	8/17/98	RHIZOSOLENIA HEBETATA	NA
WF98B	F02	WF98B058WW1	16.64	8/17/98	RHIZOSOLENIA SETIGERA	1055.44
WF98B	F02	WF98B058WW1	16.64	8/17/98	SKELETONEMA COSTATUM GREV+CLEVE	519.50
WF98B	F02	WF98B058WW1	16.64	8/17/98	THALASSIONEMA NITZSCHIOIDES	31.49
WF98B	F02	WF98B058WW1	16.64	8/17/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	23747.34
WF98B	F02	WF98B058WW1	16.64	8/17/98	UNID. MICRO-PHYTOFLAG LENGTH >10 MICRONS	4184.22
WF98B	F02	WF98B05ASW1	1.44	8/17/98	AMYLAX TRIACANTHA	2.20
WF98B	F02	WF98B05ASW1	1.44	8/17/98	ATHECATE DINOFLAGELLATE	NA
WF98B	F02	WF98B05ASW1	1.44	8/17/98	CERATIUM FUSUS	568.06
WF98B	F02	WF98B05ASW1	1.44	8/17/98	CERATIUM LINEATUM	1273.64
WF98B	F02	WF98B05ASW1	1.44	8/17/98	CERATIUM LONGIPES	236.02
WF98B	F02	WF98B05ASW1	1.44	8/17/98	CERATIUM SPP.	15.59
WF98B	F02	WF98B05ASW1	1.44	8/17/98	CERATIUM TRIPOS	8233.34
WF98B	F02	WF98B05ASW1	1.44	8/17/98	DINOPHYSIS NORVEGICA	NA
WF98B	F02	WF98B05ASW1	1.44	8/17/98	DINOPHYSIS SPP.	22.07
WF98B	F02	WF98B05ASW1	1.44	8/17/98	DISTEPHANUS SPECULUM	0.36
WF98B	F02	WF98B05ASW1	1.44	8/17/98	GYMNODINIUM SP.GROUP 5 20-30 MICRONS	NA
WF98B	F02	WF98B05ASW1	1.44	8/17/98	MESODINIUM RUBRUM	NA
WF98B	F02	WF98B05ASW1	1.44	8/17/98	PROTOPERIDINIUM DIVERGENS	161.06
WF98B	F02	WF98B05ASW1	1.44	8/17/98	PROTOPERIDINIUM PALLIDUM	24.03
WF98B	F02	WF98B05ASW1	1.44	8/17/98	PROTOPERIDINIUM SP. GROUP 1 10-30W 10-40L	9.41
WF98B	F02	WF98B05ASW1	1.44	8/17/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	1178.04
WF98B	F02	WF98B05ASW1	1.44	8/17/98	PROTOPERIDINIUM SP. GROUP 3 76-150W 81-150L	692.90
WF98B	F02	WF98B05ASW1	1.44	8/17/98	SCRIPPSIELLA TROCHOIDEA	122.36
WF98B	F02	WF98B05ASW1	1.44	8/17/98	THECATE DINOFLAGELLATE SPP.	NA
WF98B	F02	WF98B05AWW1	1.44	8/17/98	AMPHIDINIUM SPP.	154.66
WF98B	F02	WF98B05AWW1	1.44	8/17/98	CALYCOMONAS WULFFII	68.20
WF98B	F02	WF98B05AWW1	1.44	8/17/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	75.26
WF98B	F02	WF98B05AWW1	1.44	8/17/98	CERATIUM FUSUS	6698.71
WF98B	F02	WF98B05AWW1	1.44	8/17/98	CERATIUM LINEATUM	2886.57
WF98B	F02	WF98B05AWW1	1.44	8/17/98	CERATIUM TRIPOS	11443.44
WF98B	F02	WF98B05AWW1	1.44	8/17/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	512.03
WF98B	F02	WF98B05AWW1	1.44	8/17/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	449.24
WF98B	F02	WF98B05AWW1	1.44	8/17/98	CYLINDROTHECA CLOSTERIUM	1385.23
WF98B	F02	WF98B05AWW1	1.44	8/17/98	DICTYOCHA SPECULUM	NA
WF98B	F02	WF98B05AWW1	1.44	8/17/98	DINOPHYSIS NORVEGICA	NA
WF98B	F02	WF98B05AWW1	1.44	8/17/98	GUINARDIA FLACCIDA	86440.44
WF98B	F02	WF98B05AWW1	1.44	8/17/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	6155.81
WF98B	F02	WF98B05AWW1	1.44	8/17/98	GYMNODINIUM SP. GROUP 2 21-40UM W 21-50UM L	10467.64
WF98B	F02	WF98B05AWW1	1.44	8/17/98	GYRODINIUM SP. GROUP 1 5-20UM W 10-20UM L	323.99
WF98B	F02	WF98B05AWW1	1.44	8/17/98	GYRODINIUM SP. GROUP 2 21-40UM W 21-50UM L	1495.38
WF98B	F02	WF98B05AWW1	1.44	8/17/98	GYRODINIUM SPIRALE	6581.38

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WF98B	F02	WF98B05AWW1	1.44	8/17/98	HETEROCAPSA TRIQUETRA	2282.06
WF98B	F02	WF98B05AWW1	1.44	8/17/98	LEPTOCYLINDRUS DANICUS	7157.28
WF98B	F02	WF98B05AWW1	1.44	8/17/98	LEPTOCYLINDRUS MINIMUS	52424.08
WF98B	F02	WF98B05AWW1	1.44	8/17/98	PENNATE DIATOM SP. GROUP 2 10-30 MICRONS LENGTH	49.49
WF98B	F02	WF98B05AWW1	1.44	8/17/98	PROBOSCIA ALATA	16453.72
WF98B	F02	WF98B05AWW1	1.44	8/17/98	PROTOPERIDINIUM SP. GROUP 1 10-30W 10-40L	2957.83
WF98B	F02	WF98B05AWW1	1.44	8/17/98	PSEUDONITZSCHIA DELICATISSIMA	4867.64
WF98B	F02	WF98B05AWW1	1.44	8/17/98	PYROCYSTIS LUNULA	NA
WF98B	F02	WF98B05AWW1	1.44	8/17/98	SCRIPPSIELLA TROCHOIDEA	1592.21
WF98B	F02	WF98B05AWW1	1.44	8/17/98	SKELETONEMA COSTATUM GREV+CLEVE	1269.88
WF98B	F02	WF98B05AWW1	1.44	8/17/98	THALASSIONEMA NITZSCHIOIDES	94.46
WF98B	F02	WF98B05AWW1	1.44	8/17/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	30218.17
WF98B	F02	WF98B05AWW1	1.44	8/17/98	UNID. MICRO-PHYTOFLAG LENGTH >10 MICRONS	3043.07
WF98B	F06	WF98B08ESW1	11.45	8/17/98	CERATIUM FUSUS	5865.46
WF98B	F06	WF98B08ESW1	11.45	8/17/98	CERATIUM LINEATUM	211.32
WF98B	F06	WF98B08ESW1	11.45	8/17/98	CERATIUM LONGIPES	191.77
WF98B	F06	WF98B08ESW1	11.45	8/17/98	CERATIUM TRIPOS	16212.70
WF98B	F06	WF98B08ESW1	11.45	8/17/98	DINOPHYSIS ACUMINATA	4.30
WF98B	F06	WF98B08ESW1	11.45	8/17/98	DINOPHYSIS NORVEGICA	NA
WF98B	F06	WF98B08ESW1	11.45	8/17/98	DISTEPHANUS SPECULUM	15.61
WF98B	F06	WF98B08ESW1	11.45	8/17/98	GYRODINIUM SP. GROUP 1 5-20UM W 10-20UM L	0.52
WF98B	F06	WF98B08ESW1	11.45	8/17/98	MESODINIUM RUBRUM	NA
WF98B	F06	WF98B08ESW1	11.45	8/17/98	PROTOPERIDINIUM BIPES	1.69
WF98B	F06	WF98B08ESW1	11.45	8/17/98	PROTOPERIDINIUM DEPRESSUM	627.29
WF98B	F06	WF98B08ESW1	11.45	8/17/98	PROTOPERIDINIUM PENTAGONUM	488.82
WF98B	F06	WF98B08ESW1	11.45	8/17/98	PROTOPERIDINIUM SP. GROUP 1 10-30W 10-40L	11.46
WF98B	F06	WF98B08ESW1	11.45	8/17/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	503.29
WF98B	F06	WF98B08ESW1	11.45	8/17/98	PROTOPERIDINIUM SP. GROUP 3 76-150W 81-150L	618.18
WF98B	F06	WF98B08ESW1	11.45	8/17/98	SCRIPPSIELLA TROCHOIDEA	54.85
WF98B	F06	WF98B08ESW1	11.45	8/17/98	THECATE DINOFLAGELLATE SPP.	NA
WF98B	F06	WF98B08EWW1	11.45	8/17/98	AMPHIDINIUM SPP.	618.64
WF98B	F06	WF98B08EWW1	11.45	8/17/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	326.13
WF98B	F06	WF98B08EWW1	11.45	8/17/98	CENTRIC DIATOM SP. GROUP 2 DIAM 10-30 MICRONS	107.93
WF98B	F06	WF98B08EWW1	11.45	8/17/98	CERATAULINA PELAGICA	179.86
WF98B	F06	WF98B08EWW1	11.45	8/17/98	CERATIUM FUSUS	4019.23
WF98B	F06	WF98B08EWW1	11.45	8/17/98	CERATIUM LONGIPES	4453.19
WF98B	F06	WF98B08EWW1	11.45	8/17/98	CERATIUM TRIPOS	14876.47
WF98B	F06	WF98B08EWW1	11.45	8/17/98	CHAETOCEROS COMPRESSUS	9288.24
WF98B	F06	WF98B08EWW1	11.45	8/17/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	921.65
WF98B	F06	WF98B08EWW1	11.45	8/17/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	58.60
WF98B	F06	WF98B08EWW1	11.45	8/17/98	CYLINDROTHECA CLOSTERIUM	46.17
WF98B	F06	WF98B08EWW1	11.45	8/17/98	DICTYOCHA SPECULUM	NA
WF98B	F06	WF98B08EWW1	11.45	8/17/98	DINOPHYSIS NORVEGICA	NA
WF98B	F06	WF98B08EWW1	11.45	8/17/98	EUCAMPIA ZODIACUS	133.41
WF98B	F06	WF98B08EWW1	11.45	8/17/98	GUINARDIA FLACCIDA	60854.07

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WF98B	F06	WF98B08EWW1	11.45	8/17/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	1295.96
WF98B	F06	WF98B08EWW1	11.45	8/17/98	GYMNODINIUM SP. GROUP 2 21-40UM W 21-50UM L	299.08
WF98B	F06	WF98B08EWW1	11.45	8/17/98	GYRODINIUM SPIRALE	5265.11
WF98B	F06	WF98B08EWW1	11.45	8/17/98	LEPTOCYLINDRUS DANICUS	85336.76
WF98B	F06	WF98B08EWW1	11.45	8/17/98	LEPTOCYLINDRUS MINIMUS	998.05
WF98B	F06	WF98B08EWW1	11.45	8/17/98	PENNATE DIATOM SP. GROUP 2 10-30 MICRONS LENGTH	98.99
WF98B	F06	WF98B08EWW1	11.45	8/17/98	PLEUROSIGMA SPP.	254.03
WF98B	F06	WF98B08EWW1	11.45	8/17/98	PROBOSCIA ALATA	8227.06
WF98B	F06	WF98B08EWW1	11.45	8/17/98	PROTOPERIDINIUM SP. GROUP 1 10-30W 10-40L	236.63
WF98B	F06	WF98B08EWW1	11.45	8/17/98	PSEUDONITZSCHIA DELICATISSIMA	568.94
WF98B	F06	WF98B08EWW1	11.45	8/17/98	PSEUDONITZSCHIA PUNGENS	439.83
WF98B	F06	WF98B08EWW1	11.45	8/17/98	RHIZOSOLENIA DELICATULA	648.75
WF98B	F06	WF98B08EWW1	11.45	8/17/98	SCRIPPSIELLA TROCHOIDEA	212.29
WF98B	F06	WF98B08EWW1	11.45	8/17/98	SKELETONEMA COSTATUM GREV+CLEVE	346.33
WF98B	F06	WF98B08EWW1	11.45	8/17/98	THALASSIONEMA NITZSCHIOIDES	12.59
WF98B	F06	WF98B08EWW1	11.45	8/17/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	9235.08
WF98B	F06	WF98B090SW1	1.38	8/17/98	ATHECATE DINOFLAGELLATE	NA
WF98B	F06	WF98B090SW1	1.38	8/17/98	CERATIUM FUSUS	1939.08
WF98B	F06	WF98B090SW1	1.38	8/17/98	CERATIUM LINEATUM	99.83
WF98B	F06	WF98B090SW1	1.38	8/17/98	CERATIUM LONGIPES	171.12
WF98B	F06	WF98B090SW1	1.38	8/17/98	CERATIUM MACROCEROS	102.29
WF98B	F06	WF98B090SW1	1.38	8/17/98	CERATIUM TRIPOS	6068.10
WF98B	F06	WF98B090SW1	1.38	8/17/98	DINOPHYSIS ACUMINATA	0.55
WF98B	F06	WF98B090SW1	1.38	8/17/98	DINOPHYSIS NORVEGICA	NA
WF98B	F06	WF98B090SW1	1.38	8/17/98	GYRODINIUM SP. GROUP 1 5-20UM W 10-20UM L	1.09
WF98B	F06	WF98B090SW1	1.38	8/17/98	KATODINIUM ROTUNDATUM	0.03
WF98B	F06	WF98B090SW1	1.38	8/17/98	MESODINIUM RUBRUM	NA
WF98B	F06	WF98B090SW1	1.38	8/17/98	PROTOPERIDINIUM BREVIPES	45.33
WF98B	F06	WF98B090SW1	1.38	8/17/98	PROTOPERIDINIUM DEPRESSUM	629.70
WF98B	F06	WF98B090SW1	1.38	8/17/98	PROTOPERIDINIUM SP. GROUP 1 10-30W 10-40L	50.01
WF98B	F06	WF98B090SW1	1.38	8/17/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	1138.77
WF98B	F06	WF98B090SW1	1.38	8/17/98	PROTOPERIDINIUM SP. GROUP 3 76-150W 81-150L	788.01
WF98B	F06	WF98B090SW1	1.38	8/17/98	SCRIPPSIELLA TROCHOIDEA	23.45
WF98B	F06	WF98B090SW1	1.38	8/17/98	THECATE DINOFLAGELLATE SPP.	NA
WF98B	F06	WF98B090WW1	1.38	8/17/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	230.30
WF98B	F06	WF98B090WW1	1.38	8/17/98	CERATIUM FUSUS	4555.12
WF98B	F06	WF98B090WW1	1.38	8/17/98	CERATIUM LINEATUM	1177.72
WF98B	F06	WF98B090WW1	1.38	8/17/98	CERATIUM MACROCEROS	905.06
WF98B	F06	WF98B090WW1	1.38	8/17/98	CERATIUM TRIPOS	7003.39
WF98B	F06	WF98B090WW1	1.38	8/17/98	CHAETOCEROS DIDYMUS	22.92
WF98B	F06	WF98B090WW1	1.38	8/17/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	104.45
WF98B	F06	WF98B090WW1	1.38	8/17/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	99.62
WF98B	F06	WF98B090WW1	1.38	8/17/98	CYLINDROTHECA CLOSTERIUM	141.29
WF98B	F06	WF98B090WW1	1.38	8/17/98	GUINARDIA FLACCIDA	62071.15
WF98B	F06	WF98B090WW1	1.38	8/17/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	8261.75

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WF98B	F06	WF98B090WW1	1.38	8/17/98	GYMNODINIUM SP. GROUP 2 21-40UM W 21-50UM L	6101.14
WF98B	F06	WF98B090WW1	1.38	8/17/98	GYRODINIUM SP. GROUP 2 21-40UM W 21-50UM L	2440.45
WF98B	F06	WF98B090WW1	1.38	8/17/98	GYRODINIUM SPIRALE	10740.81
WF98B	F06	WF98B090WW1	1.38	8/17/98	LEPTOCYLINDRUS DANICUS	251583.78
WF98B	F06	WF98B090WW1	1.38	8/17/98	LEPTOCYLINDRUS MINIMUS	11841.12
WF98B	F06	WF98B090WW1	1.38	8/17/98	PLEUROSIGMA SPP.	259.11
WF98B	F06	WF98B090WW1	1.38	8/17/98	PROBOSCIA ALATA	25174.80
WF98B	F06	WF98B090WW1	1.38	8/17/98	PROTOPERIDINIUM SP. GROUP 1 10-30W 10-40L	482.72
WF98B	F06	WF98B090WW1	1.38	8/17/98	PSEUDONITZSCHIA DELICATISSIMA	3868.83
WF98B	F06	WF98B090WW1	1.38	8/17/98	PSEUDONITZSCHIA PUNGENS	634.27
WF98B	F06	WF98B090WW1	1.38	8/17/98	PYROCYSTIS LUNULA	NA
WF98B	F06	WF98B090WW1	1.38	8/17/98	RHIZOSOLENIA DELICATULA	557.24
WF98B	F06	WF98B090WW1	1.38	8/17/98	SCRIPPSIELLA TROCHOIDEA	216.54
WF98B	F06	WF98B090WW1	1.38	8/17/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	13264.58
WF98B	F06	WF98B090WW1	1.38	8/17/98	UNID. MICRO-PHYTOFLAG LENGTH >10 MICRONS	3103.93
WF98B	F13	WF98B169SW1	7.85	8/19/98	ATHECATE DINOFLAGELLATE	NA
WF98B	F13	WF98B169SW1	7.85	8/19/98	CERATIUM FUSUS	1917.19
WF98B	F13	WF98B169SW1	7.85	8/19/98	CERATIUM LINEATUM	126.22
WF98B	F13	WF98B169SW1	7.85	8/19/98	CERATIUM LONGIPES	531.05
WF98B	F13	WF98B169SW1	7.85	8/19/98	CERATIUM TRIPOS	4184.90
WF98B	F13	WF98B169SW1	7.85	8/19/98	DICTYOCHA FIBULA	0.63
WF98B	F13	WF98B169SW1	7.85	8/19/98	DINOPHYSIS ACUMINATA	6.24
WF98B	F13	WF98B169SW1	7.85	8/19/98	DINOPHYSIS NORVEGICA	NA
WF98B	F13	WF98B169SW1	7.85	8/19/98	GYRODINIUM SP. GROUP 1 5-20UM W 10-20UM L	0.16
WF98B	F13	WF98B169SW1	7.85	8/19/98	MESODINIUM RUBRUM	NA
WF98B	F13	WF98B169SW1	7.85	8/19/98	PROROCENTRUM GRACILE	0.81
WF98B	F13	WF98B169SW1	7.85	8/19/98	PROTOPERIDINIUM BIPES	9.39
WF98B	F13	WF98B169SW1	7.85	8/19/98	PROTOPERIDINIUM BREVIPES	25.58
WF98B	F13	WF98B169SW1	7.85	8/19/98	PROTOPERIDINIUM CONICUM	357.28
WF98B	F13	WF98B169SW1	7.85	8/19/98	PROTOPERIDINIUM PENTAGONUM	902.44
WF98B	F13	WF98B169SW1	7.85	8/19/98	PROTOPERIDINIUM PYRIFORME	NA
WF98B	F13	WF98B169SW1	7.85	8/19/98	PROTOPERIDINIUM SP. GROUP 1 10-30W 10-40L	2.35
WF98B	F13	WF98B169SW1	7.85	8/19/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	1791.95
WF98B	F13	WF98B169SW1	7.85	8/19/98	PYROCYSTIS LUNULA	NA
WF98B	F13	WF98B169SW1	7.85	8/19/98	SCRIPPSIELLA TROCHOIDEA	206.75
WF98B	F13	WF98B169SW1	7.85	8/19/98	THECATE DINOFLAGELLATE SPP.	NA
WF98B	F13	WF98B169WW1	7.85	8/19/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	127.94
WF98B	F13	WF98B169WW1	7.85	8/19/98	CERATIUM FUSUS	911.02
WF98B	F13	WF98B169WW1	7.85	8/19/98	CERATIUM TRIPOS	2334.46
WF98B	F13	WF98B169WW1	7.85	8/19/98	CHAETOCEROS DIDYMUS	22.92
WF98B	F13	WF98B169WW1	7.85	8/19/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	159.38
WF98B	F13	WF98B169WW1	7.85	8/19/98	CYLINDROTHECA CLOSTERIUM	141.29
WF98B	F13	WF98B169WW1	7.85	8/19/98	DINOPHYSIS NORVEGICA	NA
WF98B	F13	WF98B169WW1	7.85	8/19/98	GUINARDIA FLACCIDA	60660.44
WF98B	F13	WF98B169WW1	7.85	8/19/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	1321.88
WF98B	F13	WF98B169WW1	7.85	8/19/98	GYMNODINIUM SP. GROUP 2 21-40UM W 21-50UM L	610.11

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WF98B	F13	WF98B169WW1	7.85	8/19/98	GYRODINIUM SPIRALE	8055.61
WF98B	F13	WF98B169WW1	7.85	8/19/98	HETEROCAPSA TRIQUETRA	116.38
WF98B	F13	WF98B169WW1	7.85	8/19/98	LEPTOCYLINDRUS DANICUS	135338.60
WF98B	F13	WF98B169WW1	7.85	8/19/98	PROBOSCIA ALATA	8391.60
WF98B	F13	WF98B169WW1	7.85	8/19/98	PROTOPERIDINIUM BIPES	160.58
WF98B	F13	WF98B169WW1	7.85	8/19/98	PROTOPERIDINIUM SP. GROUP 1 10-30W 10-40L	482.72
WF98B	F13	WF98B169WW1	7.85	8/19/98	PSEUDONITZSCHIA DELICATISSIMA	5674.28
WF98B	F13	WF98B169WW1	7.85	8/19/98	PSEUDONITZSCHIA PUNGENS	417.69
WF98B	F13	WF98B169WW1	7.85	8/19/98	RHIZOSOLENIA DELICATULA	9751.94
WF98B	F13	WF98B169WW1	7.85	8/19/98	SCRIPPSIELLA TROCHOIDEA	649.62
WF98B	F13	WF98B169WW1	7.85	8/19/98	SKELETONEMA COSTATUM GREV+CLEVE	294.38
WF98B	F13	WF98B169WW1	7.85	8/19/98	THALASSIOSIRA SP. GROUP 2 DIAM >20 MICRONS	325.72
WF98B	F13	WF98B169WW1	7.85	8/19/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	18775.48
WF98B	F13	WF98B16BSW1	1.9	8/19/98	AMYLAX TRIACANTHA	2.56
WF98B	F13	WF98B16BSW1	1.9	8/19/98	ATHECATE DINOFLAGELLATE	NA
WF98B	F13	WF98B16BSW1	1.9	8/19/98	CERATIUM FUSUS	1076.94
WF98B	F13	WF98B16BSW1	1.9	8/19/98	CERATIUM LINEATUM	200.80
WF98B	F13	WF98B16BSW1	1.9	8/19/98	CERATIUM LONGIPES	275.36
WF98B	F13	WF98B16BSW1	1.9	8/19/98	CERATIUM MACROCEROS	61.72
WF98B	F13	WF98B16BSW1	1.9	8/19/98	CERATIUM TRIPOS	5466.15
WF98B	F13	WF98B16BSW1	1.9	8/19/98	DINOPHYSIS ACUMINATA	8.60
WF98B	F13	WF98B16BSW1	1.9	8/19/98	DINOPHYSIS NORVEGICA	NA
WF98B	F13	WF98B16BSW1	1.9	8/19/98	GYMNODINIUM SP.GROUP 5 20-30 MICRONS	NA
WF98B	F13	WF98B16BSW1	1.9	8/19/98	PROROCENTRUM GRACILE	5.06
WF98B	F13	WF98B16BSW1	1.9	8/19/98	PROTOPERIDINIUM CONICUM	303.15
WF98B	F13	WF98B16BSW1	1.9	8/19/98	PROTOPERIDINIUM DIVERGENS	14.45
WF98B	F13	WF98B16BSW1	1.9	8/19/98	PROTOPERIDINIUM PENTAGONUM	643.41
WF98B	F13	WF98B16BSW1	1.9	8/19/98	PROTOPERIDINIUM PYRIFORME	NA
WF98B	F13	WF98B16BSW1	1.9	8/19/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	1200.16
WF98B	F13	WF98B16BSW1	1.9	8/19/98	PYROCYSTIS LUNULA	NA
WF98B	F13	WF98B16BSW1	1.9	8/19/98	SCRIPPSIELLA TROCHOIDEA	251.05
WF98B	F13	WF98B16BSW1	1.9	8/19/98	THECATE DINOFLAGELLATE SPP.	NA
WF98B	F13	WF98B16BWW1	1.9	8/19/98	AMPHIDINIUM SPP.	63.10
WF98B	F13	WF98B16BWW1	1.9	8/19/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	179.12
WF98B	F13	WF98B16BWW1	1.9	8/19/98	CENTRIC DIATOM SP. GROUP 2 DIAM 10-30 MICRONS	44.04
WF98B	F13	WF98B16BWW1	1.9	8/19/98	CERATIUM FUSUS	1822.05
WF98B	F13	WF98B16BWW1	1.9	8/19/98	CERATIUM MACROCEROS	905.06
WF98B	F13	WF98B16BWW1	1.9	8/19/98	CERATIUM TRIPOS	9337.85
WF98B	F13	WF98B16BWW1	1.9	8/19/98	CHOANOFLAGELLATE SPP.	125.57
WF98B	F13	WF98B16BWW1	1.9	8/19/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	119.54
WF98B	F13	WF98B16BWW1	1.9	8/19/98	EUTREPTIA/EUTREPTIELLA SPP.	NA
WF98B	F13	WF98B16BWW1	1.9	8/19/98	GUINARDIA FLACCIDA	32446.28
WF98B	F13	WF98B16BWW1	1.9	8/19/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	6609.40
WF98B	F13	WF98B16BWW1	1.9	8/19/98	GYMNODINIUM SP. GROUP 2 21-40UM W 21-50UM L	1830.34
WF98B	F13	WF98B16BWW1	1.9	8/19/98	GYRODINIUM SP. GROUP 1 5-20UM W 10-20UM L	33.05

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WF98B	F13	WF98B16BWW1	1.9	8/19/98	GYRODINIUM SPIRALE	5370.41
WF98B	F13	WF98B16BWW1	1.9	8/19/98	LEPTOCYLINDRUS DANICUS	559886.23
WF98B	F13	WF98B16BWW1	1.9	8/19/98	LEPTOCYLINDRUS MINIMUS	198.24
WF98B	F13	WF98B16BWW1	1.9	8/19/98	PROBOSCIA ALATA	8391.60
WF98B	F13	WF98B16BWW1	1.9	8/19/98	PROTOPERIDINIUM SP. GROUP 1 10-30W 10-40L	482.72
WF98B	F13	WF98B16BWW1	1.9	8/19/98	PSEUDONITZSCHIA DELICATISSIMA	14894.98
WF98B	F13	WF98B16BWW1	1.9	8/19/98	PSEUDONITZSCHIA PUNGENS	3867.59
WF98B	F13	WF98B16BWW1	1.9	8/19/98	PYRAMIMONAS SP. GROUP 1 10-20 MICRONS LENGTH	NA
WF98B	F13	WF98B16BWW1	1.9	8/19/98	RHIZOSOLENIA DELICATULA	766.21
WF98B	F13	WF98B16BWW1	1.9	8/19/98	SCRIPPSIELLA TROCHOIDEA	2165.45
WF98B	F13	WF98B16BWW1	1.9	8/19/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	15955.95
WF98B	F13	WF98B16BWW1	1.9	8/19/98	UNID. MICRO-PHYTOFLAG LENGTH >10 MICRONS	5819.87
WF98B	F23	WF98B1F1SW1	5.33	8/23/98	ATHECATE DINOFLAGELLATE	NA
WF98B	F23	WF98B1F1SW1	5.33	8/23/98	CERATIUM FUSUS	584.62
WF98B	F23	WF98B1F1SW1	5.33	8/23/98	CERATIUM LINEATUM	129.28
WF98B	F23	WF98B1F1SW1	5.33	8/23/98	CERATIUM SPP.	162.15
WF98B	F23	WF98B1F1SW1	5.33	8/23/98	CERATIUM TRIPOS	2523.07
WF98B	F23	WF98B1F1SW1	5.33	8/23/98	DINOPHYSIS NORVEGICA	NA
WF98B	F23	WF98B1F1SW1	5.33	8/23/98	GYRODINIUM SP. GROUP 1 5-20UM W 10-20UM L	0.42
WF98B	F23	WF98B1F1SW1	5.33	8/23/98	PROTOPERIDINIUM BIPES	2.71
WF98B	F23	WF98B1F1SW1	5.33	8/23/98	PROTOPERIDINIUM PALLIDUM	166.60
WF98B	F23	WF98B1F1SW1	5.33	8/23/98	PROTOPERIDINIUM PYRIFORME	NA
WF98B	F23	WF98B1F1SW1	5.33	8/23/98	PROTOPERIDINIUM SP. GROUP 1 10-30W 10-40L	8.15
WF98B	F23	WF98B1F1SW1	5.33	8/23/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	287.60
WF98B	F23	WF98B1F1SW1	5.33	8/23/98	PROTOPERIDINIUM SP. GROUP 3 76-150W 81-150L	317.92
WF98B	F23	WF98B1F1SW1	5.33	8/23/98	SCRIPPSIELLA TROCHOIDEA	43.88
WF98B	F23	WF98B1F1SW1	5.33	8/23/98	THECATE DINOFLAGELLATE SPP.	NA
WF98B	F23	WF98B1F1WW1	5.33	8/23/98	ASTERIONELLOPSIS GLACIALIS	441.31
WF98B	F23	WF98B1F1WW1	5.33	8/23/98	CALYCOMONAS WULFFII	68.20
WF98B	F23	WF98B1F1WW1	5.33	8/23/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	928.23
WF98B	F23	WF98B1F1WW1	5.33	8/23/98	CERATIUM FUSUS	893.16
WF98B	F23	WF98B1F1WW1	5.33	8/23/98	CERATIUM TRIPOS	4577.38
WF98B	F23	WF98B1F1WW1	5.33	8/23/98	CHAETOCEROS COMPRESSUS	3870.10
WF98B	F23	WF98B1F1WW1	5.33	8/23/98	CHAETOCEROS DECIPIENS	1798.77
WF98B	F23	WF98B1F1WW1	5.33	8/23/98	CHAETOCEROS DIDYMUS	134.82
WF98B	F23	WF98B1F1WW1	5.33	8/23/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	20481.54
WF98B	F23	WF98B1F1WW1	5.33	8/23/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	2871.26
WF98B	F23	WF98B1F1WW1	5.33	8/23/98	CRYPTOMONAS SP. GROUP 2 LENGTH >10 MICRONS	125.44
WF98B	F23	WF98B1F1WW1	5.33	8/23/98	CYLINDROTHECA CLOSTERIUM	138.52
WF98B	F23	WF98B1F1WW1	5.33	8/23/98	EBRIA TRIPARTITA	147.16
WF98B	F23	WF98B1F1WW1	5.33	8/23/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	11987.63
WF98B	F23	WF98B1F1WW1	5.33	8/23/98	GYRODINIUM SP. GROUP 1 5-20UM W 10-20UM L	64.80
WF98B	F23	WF98B1F1WW1	5.33	8/23/98	LEPTOCYLINDRUS DANICUS	169021.84
WF98B	F23	WF98B1F1WW1	5.33	8/23/98	PENNATE DIATOM SP. GROUP 2 10-30 MICRONS LENGTH	19.80
WF98B	F23	WF98B1F1WW1	5.33	8/23/98	PROROCENTRUM MINIMUM	46.48

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WF98B	F23	WF98B1F1WW1	5.33	8/23/98	PROTOPERIDINIUM SP. GROUP 1 10-30W 10-40L	236.63
WF98B	F23	WF98B1F1WW1	5.33	8/23/98	PSEUDONITZSCHIA DELICATISSIMA	24401.42
WF98B	F23	WF98B1F1WW1	5.33	8/23/98	PSEUDONITZSCHIA PUNGENS	6370.15
WF98B	F23	WF98B1F1WW1	5.33	8/23/98	RHIZOSOLENIA DELICATULA	8194.91
WF98B	F23	WF98B1F1WW1	5.33	8/23/98	RHIZOSOLENIA FRAGILISSIMA	1403.54
WF98B	F23	WF98B1F1WW1	5.33	8/23/98	SCRIPPSIELLA TROCHOIDEA	424.59
WF98B	F23	WF98B1F1WW1	5.33	8/23/98	SKELETONEMA COSTATUM GREV+CLEVE	738.82
WF98B	F23	WF98B1F1WW1	5.33	8/23/98	THALASSIOSIRA SP. GROUP 2 DIAM >20 MICRONS	3991.76
WF98B	F23	WF98B1F1WW1	5.33	8/23/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	23621.69
WF98B	F23	WF98B1F1WW1	5.33	8/23/98	UNID. MICRO-PHYTOFLAG LENGTH >10 MICRONS	2282.30
WF98B	F23	WF98B1F2SW1	1.73	8/23/98	AMYLAX TRIACANTHA	1.98
WF98B	F23	WF98B1F2SW1	1.73	8/23/98	ATHECATE DINOFLAGELLATE	NA
WF98B	F23	WF98B1F2SW1	1.73	8/23/98	CERATIUM FUSUS	607.11
WF98B	F23	WF98B1F2SW1	1.73	8/23/98	CERATIUM LINEATUM	134.25
WF98B	F23	WF98B1F2SW1	1.73	8/23/98	CERATIUM LONGIPES	159.31
WF98B	F23	WF98B1F2SW1	1.73	8/23/98	CERATIUM SPP.	252.58
WF98B	F23	WF98B1F2SW1	1.73	8/23/98	CERATIUM TRIPOS	1924.14
WF98B	F23	WF98B1F2SW1	1.73	8/23/98	DINOPHYSIS ACUMINATA	0.51
WF98B	F23	WF98B1F2SW1	1.73	8/23/98	DINOPHYSIS NORVEGICA	NA
WF98B	F23	WF98B1F2SW1	1.73	8/23/98	GYRODINIUM SP. GROUP 1 5-20UM W 10-20UM L	0.14
WF98B	F23	WF98B1F2SW1	1.73	8/23/98	PROROCENTRUM GRACILE	2.68
WF98B	F23	WF98B1F2SW1	1.73	8/23/98	PROROCENTRUM MINIMUM	0.21
WF98B	F23	WF98B1F2SW1	1.73	8/23/98	PROTOPERIDINIUM BIPES	4.93
WF98B	F23	WF98B1F2SW1	1.73	8/23/98	PROTOPERIDINIUM PALLIDUM	259.51
WF98B	F23	WF98B1F2SW1	1.73	8/23/98	PROTOPERIDINIUM SP. GROUP 1 10-30W 10-40L	12.70
WF98B	F23	WF98B1F2SW1	1.73	8/23/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	761.58
WF98B	F23	WF98B1F2SW1	1.73	8/23/98	PROTOPERIDINIUM SP. GROUP 3 76-150W 81-150L	146.73
WF98B	F23	WF98B1F2SW1	1.73	8/23/98	SCRIPPSIELLA TROCHOIDEA	93.99
WF98B	F23	WF98B1F2SW1	1.73	8/23/98	THECATE DINOFLAGELLATE SPP.	NA
WF98B	F23	WF98B1F2WW1	1.73	8/23/98	CALYCOMONAS OVALIS	93.10
WF98B	F23	WF98B1F2WW1	1.73	8/23/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	1605.58
WF98B	F23	WF98B1F2WW1	1.73	8/23/98	CERATAULINA PELAGICA	3597.34
WF98B	F23	WF98B1F2WW1	1.73	8/23/98	CERATIUM FUSUS	4465.81
WF98B	F23	WF98B1F2WW1	1.73	8/23/98	CERATIUM LONGIPES	29687.94
WF98B	F23	WF98B1F2WW1	1.73	8/23/98	CERATIUM TRIPOS	45773.76
WF98B	F23	WF98B1F2WW1	1.73	8/23/98	CHAETOCEROS COMPRESSUS	774.00
WF98B	F23	WF98B1F2WW1	1.73	8/23/98	CHAETOCEROS DECIPIENS	4871.67
WF98B	F23	WF98B1F2WW1	1.73	8/23/98	CHAETOCEROS DIDYMUS	112.35
WF98B	F23	WF98B1F2WW1	1.73	8/23/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	4096.31
WF98B	F23	WF98B1F2WW1	1.73	8/23/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	3047.05
WF98B	F23	WF98B1F2WW1	1.73	8/23/98	CRYPTOMONAS SP. GROUP 2 LENGTH >10 MICRONS	376.31
WF98B	F23	WF98B1F2WW1	1.73	8/23/98	CYLINDROTHECA CLOSTERIUM	6464.41
WF98B	F23	WF98B1F2WW1	1.73	8/23/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	6803.79
WF98B	F23	WF98B1F2WW1	1.73	8/23/98	GYRODINIUM SPIRALE	8775.18
WF98B	F23	WF98B1F2WW1	1.73	8/23/98	LEPTOCYLINDRUS DANICUS	192145.35

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WF98B	F23	WF98B1F2WW1	1.73	8/23/98	PENNATE DIATOM SP. GROUP 2 10-30 MICRONS LENGTH	197.98
WF98B	F23	WF98B1F2WW1	1.73	8/23/98	PROROCENTRUM MINIMUM	464.79
WF98B	F23	WF98B1F2WW1	1.73	8/23/98	PROTOPERIDINIUM SP. GROUP 1 10-30W 10-40L	394.38
WF98B	F23	WF98B1F2WW1	1.73	8/23/98	PSEUDONITZSCHIA DELICATISSIMA	34389.56
WF98B	F23	WF98B1F2WW1	1.73	8/23/98	PSEUDONITZSCHIA PUNGENS	9555.23
WF98B	F23	WF98B1F2WW1	1.73	8/23/98	RHIZOSOLENIA DELICATULA	3414.46
WF98B	F23	WF98B1F2WW1	1.73	8/23/98	RHIZOSOLENIA FRAGILISSIMA	24227.76
WF98B	F23	WF98B1F2WW1	1.73	8/23/98	SKELETONEMA COSTATUM GREV+CLEVE	1645.03
WF98B	F23	WF98B1F2WW1	1.73	8/23/98	THALASSIONEMA NITZSCHIOIDES	125.95
WF98B	F23	WF98B1F2WW1	1.73	8/23/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	27453.93
WF98B	F23	WF98B1F2WW1	1.73	8/23/98	UNID. MICRO-PHYTOFLAG LENGTH >10 MICRONS	4564.60
WF98B	F24	WF98B0CFSW1	6.65	8/19/98	AMYLAX TRIACANTHA	6.59
WF98B	F24	WF98B0CFSW1	6.65	8/19/98	ATHECATE DINOFLAGELLATE	NA
WF98B	F24	WF98B0CFSW1	6.65	8/19/98	CERATIUM FUSUS	408.29
WF98B	F24	WF98B0CFSW1	6.65	8/19/98	CERATIUM LINEATUM	37.29
WF98B	F24	WF98B0CFSW1	6.65	8/19/98	CERATIUM LONGIPES	531.05
WF98B	F24	WF98B0CFSW1	6.65	8/19/98	CERATIUM SPP.	93.55
WF98B	F24	WF98B0CFSW1	6.65	8/19/98	CERATIUM TRIPOS	1273.67
WF98B	F24	WF98B0CFSW1	6.65	8/19/98	DINOPHYSIS ACUMINATA	7.37
WF98B	F24	WF98B0CFSW1	6.65	8/19/98	DINOPHYSIS NORVEGICA	NA
WF98B	F24	WF98B0CFSW1	6.65	8/19/98	DISTEPHANUS SPECULUM	2.88
WF98B	F24	WF98B0CFSW1	6.65	8/19/98	GYRODINIUM SP. GROUP 1 5-20UM W 10-20UM L	3.38
WF98B	F24	WF98B0CFSW1	6.65	8/19/98	PROTOPERIDINIUM BIPES	1.56
WF98B	F24	WF98B0CFSW1	6.65	8/19/98	PROTOPERIDINIUM SP. GROUP 3 76-150W 81-150L	40.76
WF98B	F24	WF98B0CFSW1	6.65	8/19/98	PYROCYSTIS LUNULA	NA
WF98B	F24	WF98B0CFSW1	6.65	8/19/98	SCRIPPSIELLA TROCHOIDEA	12.66
WF98B	F24	WF98B0CFWW1	6.65	8/19/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	200.70
WF98B	F24	WF98B0CFWW1	6.65	8/19/98	CERATIUM TRIPOS	6866.06
WF98B	F24	WF98B0CFWW1	6.65	8/19/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	307.22
WF98B	F24	WF98B0CFWW1	6.65	8/19/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	273.45
WF98B	F24	WF98B0CFWW1	6.65	8/19/98	CRYPTOMONAS SP. GROUP 2 LENGTH >10 MICRONS	125.44
WF98B	F24	WF98B0CFWW1	6.65	8/19/98	EUTREPTIA/EUTREPTIELLA SPP.	NA
WF98B	F24	WF98B0CFWW1	6.65	8/19/98	GUINARDIA FLACCIDA	6915.24
WF98B	F24	WF98B0CFWW1	6.65	8/19/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	5183.84
WF98B	F24	WF98B0CFWW1	6.65	8/19/98	GYRODINIUM SPIRALE	2632.55
WF98B	F24	WF98B0CFWW1	6.65	8/19/98	LEPTOCYLINDRUS DANICUS	180033.04
WF98B	F24	WF98B0CFWW1	6.65	8/19/98	LICMOPHORA SPP.	27.63
WF98B	F24	WF98B0CFWW1	6.65	8/19/98	PENNATE DIATOM SP. GROUP 2 10-30 MICRONS LENGTH	98.99
WF98B	F24	WF98B0CFWW1	6.65	8/19/98	PSEUDONITZSCHIA DELICATISSIMA	20039.51
WF98B	F24	WF98B0CFWW1	6.65	8/19/98	PSEUDONITZSCHIA PUNGENS	20323.83
WF98B	F24	WF98B0CFWW1	6.65	8/19/98	RHIZOSOLENIA DELICATULA	4233.93
WF98B	F24	WF98B0CFWW1	6.65	8/19/98	SKELETONEMA COSTATUM GREV+CLEVE	98.12
WF98B	F24	WF98B0CFWW1	6.65	8/19/98	THALASSIONEMA NITZSCHIOIDES	251.90

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WF98B	F24	WF98B0CFWW1	6.65	8/19/98	THALASSIOSIRA SP. GROUP 2 DIAM >20 MICRONS	159.67
WF98B	F24	WF98B0CFWW1	6.65	8/19/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	16082.85
WF98B	F24	WF98B0CFWW1	6.65	8/19/98	UNID. MICRO-PHYTOFLAG LENGTH >10 MICRONS	1901.92
WF98B	F24	WF98B0D1SW1	1.68	8/19/98	ATHECATE DINOFLAGELLATE	NA
WF98B	F24	WF98B0D1SW1	1.68	8/19/98	CERATIUM FUSUS	1206.75
WF98B	F24	WF98B0D1SW1	1.68	8/19/98	CERATIUM LINEATUM	49.72
WF98B	F24	WF98B0D1SW1	1.68	8/19/98	CERATIUM LONGIPES	575.30
WF98B	F24	WF98B0D1SW1	1.68	8/19/98	CERATIUM SPP.	439.15
WF98B	F24	WF98B0D1SW1	1.68	8/19/98	CERATIUM TRIPOS	3153.84
WF98B	F24	WF98B0D1SW1	1.68	8/19/98	DINOPHYSIS NORVEGICA	NA
WF98B	F24	WF98B0D1SW1	1.68	8/19/98	DISTEPHANUS SPECULUM	1.95
WF98B	F24	WF98B0D1SW1	1.68	8/19/98	GYRODINIUM SP. GROUP 1 5-20UM W 10-20UM L	0.87
WF98B	F24	WF98B0D1SW1	1.68	8/19/98	MESODINIUM RUBRUM	NA
WF98B	F24	WF98B0D1SW1	1.68	8/19/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	251.65
WF98B	F24	WF98B0D1SW1	1.68	8/19/98	PYROCYSTIS LUNULA	NA
WF98B	F24	WF98B0D1SW1	1.68	8/19/98	SCRIPPSIELLA TROCHOIDEA	108.56
WF98B	F24	WF98B0D1SW1	1.68	8/19/98	THECATE DINOFLAGELLATE SPP.	NA
WF98B	F24	WF98B0D1WW1	1.68	8/19/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	153.53
WF98B	F24	WF98B0D1WW1	1.68	8/19/98	CERATIUM FUSUS	911.02
WF98B	F24	WF98B0D1WW1	1.68	8/19/98	CERATIUM LINEATUM	1177.72
WF98B	F24	WF98B0D1WW1	1.68	8/19/98	CERATIUM TRIPOS	2334.46
WF98B	F24	WF98B0D1WW1	1.68	8/19/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	104.45
WF98B	F24	WF98B0D1WW1	1.68	8/19/98	CHOANOFLAGELLATE SPP.	125.57
WF98B	F24	WF98B0D1WW1	1.68	8/19/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	577.77
WF98B	F24	WF98B0D1WW1	1.68	8/19/98	CRYPTOMONAS SP. GROUP 2 LENGTH >10 MICRONS	127.94
WF98B	F24	WF98B0D1WW1	1.68	8/19/98	CYLINDROTHECA CLOSTERIUM	1412.93
WF98B	F24	WF98B0D1WW1	1.68	8/19/98	EUTREPTIA/EUTREPTIELLA SPP.	NA
WF98B	F24	WF98B0D1WW1	1.68	8/19/98	GUINARDIA FLACCIDA	2821.42
WF98B	F24	WF98B0D1WW1	1.68	8/19/98	GYMNODINIUM SP. GROUP 2 21-40UM W 21-50UM L	610.11
WF98B	F24	WF98B0D1WW1	1.68	8/19/98	LEPTOCYLINDRUS DANICUS	253268.50
WF98B	F24	WF98B0D1WW1	1.68	8/19/98	LEPTOCYLINDRUS MINIMUS	273.25
WF98B	F24	WF98B0D1WW1	1.68	8/19/98	PENNATE DIATOM SP. GROUP 3 31-60 MICRONS LENGTH	57.74
WF98B	F24	WF98B0D1WW1	1.68	8/19/98	PROROCENTRUM MINIMUM	474.09
WF98B	F24	WF98B0D1WW1	1.68	8/19/98	PSEUDONITZSCHIA DELICATISSIMA	45845.58
WF98B	F24	WF98B0D1WW1	1.68	8/19/98	PSEUDONITZSCHIA PUNGENS	12066.89
WF98B	F24	WF98B0D1WW1	1.68	8/19/98	RHIZOSOLENIA DELICATULA	3900.68
WF98B	F24	WF98B0D1WW1	1.68	8/19/98	SKELETONEMA COSTATUM GREV+CLEVE	588.76
WF98B	F24	WF98B0D1WW1	1.68	8/19/98	THALASSIOSIRA SP. GROUP 2 DIAM >20 MICRONS	81.43
WF98B	F24	WF98B0D1WW1	1.68	8/19/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	17493.87
WF98B	F25	WF98B1DBSW1	6.39	8/20/98	ALEXANDRIUM TAMARENSE	0.55
WF98B	F25	WF98B1DBSW1	6.39	8/20/98	ATHECATE DINOFLAGELLATE	NA
WF98B	F25	WF98B1DBSW1	6.39	8/20/98	CERATIUM FUSUS	1469.84
WF98B	F25	WF98B1DBSW1	6.39	8/20/98	CERATIUM LINEATUM	175.56
WF98B	F25	WF98B1DBSW1	6.39	8/20/98	CERATIUM LONGIPES	265.52
WF98B	F25	WF98B1DBSW1	6.39	8/20/98	CERATIUM MACROCEROS	7.94

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WF98B	F25	WF98B1DBSW1	6.39	8/20/98	CERATIUM TRIPOS	4708.01
WF98B	F25	WF98B1DBSW1	6.39	8/20/98	DINOPHYSIS ACUMINATA	1.02
WF98B	F25	WF98B1DBSW1	6.39	8/20/98	DINOPHYSIS NORVEGICA	NA
WF98B	F25	WF98B1DBSW1	6.39	8/20/98	GONYAULAX SPP.	4.06
WF98B	F25	WF98B1DBSW1	6.39	8/20/98	KATODINIUM ROTUNDATUM	0.06
WF98B	F25	WF98B1DBSW1	6.39	8/20/98	MESODINIUM RUBRUM	NA
WF98B	F25	WF98B1DBSW1	6.39	8/20/98	PROROCENTRUM SPP.	3.11
WF98B	F25	WF98B1DBSW1	6.39	8/20/98	PROROCENTRUM TRIESTINUM	NA
WF98B	F25	WF98B1DBSW1	6.39	8/20/98	PROTOPERIDINIUM DIVERGENS	44.60
WF98B	F25	WF98B1DBSW1	6.39	8/20/98	PROTOPERIDINIUM PALLIDUM	302.76
WF98B	F25	WF98B1DBSW1	6.39	8/20/98	PROTOPERIDINIUM PENTAGONUM	451.22
WF98B	F25	WF98B1DBSW1	6.39	8/20/98	PROTOPERIDINIUM SP. GROUP 1 10-30W 10-40L	21.16
WF98B	F25	WF98B1DBSW1	6.39	8/20/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	1971.14
WF98B	F25	WF98B1DBSW1	6.39	8/20/98	PROTOPERIDINIUM SP. GROUP 3 76-150W 81-150L	440.20
WF98B	F25	WF98B1DBSW1	6.39	8/20/98	SCRIPPSIELLA TROCHOIDEA	398.73
WF98B	F25	WF98B1DBSW1	6.39	8/20/98	THECATE DINOFLAGELLATE SPP.	NA
WF98B	F25	WF98B1DBWW1	6.39	8/20/98	CALYCOMONAS OVALIS	23.28
WF98B	F25	WF98B1DBWW1	6.39	8/20/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	577.01
WF98B	F25	WF98B1DBWW1	6.39	8/20/98	CERATIUM TRIPOS	6866.06
WF98B	F25	WF98B1DBWW1	6.39	8/20/98	CHAETOCEROS DIDYMUS	224.70
WF98B	F25	WF98B1DBWW1	6.39	8/20/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	409.62
WF98B	F25	WF98B1DBWW1	6.39	8/20/98	CORETHRON CRIOPHILUM	921.38
WF98B	F25	WF98B1DBWW1	6.39	8/20/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	1113.35
WF98B	F25	WF98B1DBWW1	6.39	8/20/98	CRYPTOMONAS SP. GROUP 2 LENGTH >10 MICRONS	878.05
WF98B	F25	WF98B1DBWW1	6.39	8/20/98	CYLINDROTHECA CLOSTERIUM	1846.97
WF98B	F25	WF98B1DBWW1	6.39	8/20/98	DINOPHYSIS NORVEGICA	NA
WF98B	F25	WF98B1DBWW1	6.39	8/20/98	EUTREPTIA/EUTREPTIELLA SPP.	NA
WF98B	F25	WF98B1DBWW1	6.39	8/20/98	GUINARDIA FLACCIDA	15213.52
WF98B	F25	WF98B1DBWW1	6.39	8/20/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	5183.84
WF98B	F25	WF98B1DBWW1	6.39	8/20/98	GYRODINIUM SPIRALE	5265.11
WF98B	F25	WF98B1DBWW1	6.39	8/20/98	HETEROCAPSA TRIQUETRA	3423.09
WF98B	F25	WF98B1DBWW1	6.39	8/20/98	LEPTOCYLINDRUS DANICUS	228482.30
WF98B	F25	WF98B1DBWW1	6.39	8/20/98	LEPTOCYLINDRUS MINIMUS	162.84
WF98B	F25	WF98B1DBWW1	6.39	8/20/98	PENNATE DIATOM SP. GROUP 2 10-30 MICRONS LENGTH	98.99
WF98B	F25	WF98B1DBWW1	6.39	8/20/98	PROTOPERIDINIUM SP. GROUP 1 10-30W 10-40L	236.63
WF98B	F25	WF98B1DBWW1	6.39	8/20/98	PSEUDONITZSCHIA DELICATISSIMA	35274.59
WF98B	F25	WF98B1DBWW1	6.39	8/20/98	PSEUDONITZSCHIA PUNGENS	9555.23
WF98B	F25	WF98B1DBWW1	6.39	8/20/98	PYRAMIMONAS SP. GROUP 1 10-20 MICRONS LENGTH	NA
WF98B	F25	WF98B1DBWW1	6.39	8/20/98	RHIZOSOLENIA DELICATULA	1775.52
WF98B	F25	WF98B1DBWW1	6.39	8/20/98	SCRIPPSIELLA TROCHOIDEA	2122.99
WF98B	F25	WF98B1DBWW1	6.39	8/20/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	21171.57
WF98B	F25	WF98B1DBWW1	6.39	8/20/98	UNID. MICRO-PHYTOFLAG LENGTH >10 MICRONS	2282.30
WF98B	F25	WF98B1DDSW1	1.7	8/20/98	AMYLAX TRIACANTHA	24.18
WF98B	F25	WF98B1DDSW1	1.7	8/20/98	ATHECATE DINOFLAGELLATE	NA
WF98B	F25	WF98B1DDSW1	1.7	8/20/98	CERATIUM FUSUS	1789.97

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WF98B	F25	WF98B1DDSW1	1.7	8/20/98	CERATIUM LINEATUM	210.36
WF98B	F25	WF98B1DDSW1	1.7	8/20/98	CERATIUM LONGIPES	162.26
WF98B	F25	WF98B1DDSW1	1.7	8/20/98	CERATIUM MACROCEROS	16.17
WF98B	F25	WF98B1DDSW1	1.7	8/20/98	CERATIUM TRIPOS	4211.43
WF98B	F25	WF98B1DDSW1	1.7	8/20/98	DINOPHYSIS ACUMINATA	1.04
WF98B	F25	WF98B1DDSW1	1.7	8/20/98	DINOPHYSIS NORVEGICA	NA
WF98B	F25	WF98B1DDSW1	1.7	8/20/98	DINOPHYSIS SPP.	26.98
WF98B	F25	WF98B1DDSW1	1.7	8/20/98	GONYAULAX SPP.	4.14
WF98B	F25	WF98B1DDSW1	1.7	8/20/98	MESODINIUM RUBRUM	NA
WF98B	F25	WF98B1DDSW1	1.7	8/20/98	PROROCENTRUM GRACILE	0.50
WF98B	F25	WF98B1DDSW1	1.7	8/20/98	PROROCENTRUM SPP.	6.33
WF98B	F25	WF98B1DDSW1	1.7	8/20/98	PROROCENTRUM TRIESTINUM	NA
WF98B	F25	WF98B1DDSW1	1.7	8/20/98	PROTOPERIDINIUM BIPES	2.87
WF98B	F25	WF98B1DDSW1	1.7	8/20/98	PROTOPERIDINIUM BREVIPES	23.44
WF98B	F25	WF98B1DDSW1	1.7	8/20/98	PROTOPERIDINIUM PALLIDUM	220.26
WF98B	F25	WF98B1DDSW1	1.7	8/20/98	PROTOPERIDINIUM SP. GROUP 1 10-30W 10-40L	68.98
WF98B	F25	WF98B1DDSW1	1.7	8/20/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	1308.01
WF98B	F25	WF98B1DDSW1	1.7	8/20/98	PROTOPERIDINIUM SP. GROUP 3 76-150W 81-150L	672.52
WF98B	F25	WF98B1DDSW1	1.7	8/20/98	SCRIPPSIELLA TROCHOIDEA	251.40
WF98B	F25	WF98B1DDSW1	1.7	8/20/98	THECATE DINOFLAGELLATE SPP.	NA
WF98B	F25	WF98B1DDWW1	1.7	8/20/98	AMPHIDINIUM SPP.	618.64
WF98B	F25	WF98B1DDWW1	1.7	8/20/98	CALYCOMONAS OVALIS	23.28
WF98B	F25	WF98B1DDWW1	1.7	8/20/98	CALYCOMONAS WULFFII	68.20
WF98B	F25	WF98B1DDWW1	1.7	8/20/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	577.01
WF98B	F25	WF98B1DDWW1	1.7	8/20/98	CERATIUM FUSUS	893.16
WF98B	F25	WF98B1DDWW1	1.7	8/20/98	CERATIUM LINEATUM	577.31
WF98B	F25	WF98B1DDWW1	1.7	8/20/98	CERATIUM TRIPOS	9154.75
WF98B	F25	WF98B1DDWW1	1.7	8/20/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	512.03
WF98B	F25	WF98B1DDWW1	1.7	8/20/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	1347.73
WF98B	F25	WF98B1DDWW1	1.7	8/20/98	CRYPTOMONAS SP. GROUP 2 LENGTH >10 MICRONS	125.44
WF98B	F25	WF98B1DDWW1	1.7	8/20/98	CYLINDROTHECA CLOSTERIUM	1846.97
WF98B	F25	WF98B1DDWW1	1.7	8/20/98	EBRIA TRIPARTITA	147.16
WF98B	F25	WF98B1DDWW1	1.7	8/20/98	EUTREPTIA/EUTREPTIELLA SPP.	NA
WF98B	F25	WF98B1DDWW1	1.7	8/20/98	GUINARDIA FLACCIDA	15213.52
WF98B	F25	WF98B1DDWW1	1.7	8/20/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	4211.87
WF98B	F25	WF98B1DDWW1	1.7	8/20/98	GYRODINIUM SP. GROUP 1 5-20UM W 10-20UM L	64.80
WF98B	F25	WF98B1DDWW1	1.7	8/20/98	HETEROCAPSA TRIQUETRA	114.10
WF98B	F25	WF98B1DDWW1	1.7	8/20/98	LEPTOCYLINDRUS DANICUS	195448.71
WF98B	F25	WF98B1DDWW1	1.7	8/20/98	LEPTOCYLINDRUS MINIMUS	99.80
WF98B	F25	WF98B1DDWW1	1.7	8/20/98	PENNATE DIATOM SP. GROUP 2 10-30 MICRONS LENGTH	296.97
WF98B	F25	WF98B1DDWW1	1.7	8/20/98	PROTOPERIDINIUM SP. GROUP 1 10-30W 10-40L	1893.01
WF98B	F25	WF98B1DDWW1	1.7	8/20/98	PSEUDONITZSCHIA DELICATISSIMA	31165.54
WF98B	F25	WF98B1DDWW1	1.7	8/20/98	PSEUDONITZSCHIA PUNGENS	13346.99
WF98B	F25	WF98B1DDWW1	1.7	8/20/98	RHIZOSOLENIA DELICATULA	3004.73
WF98B	F25	WF98B1DDWW1	1.7	8/20/98	SCRIPPSIELLA TROCHOIDEA	2122.99

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WF98B	F25	WF98B1DDWW1	1.7	8/20/98	THALASSIOSIRA SP. GROUP 2 DIAM >20 MICRONS	798.35
WF98B	F25	WF98B1DDWW1	1.7	8/20/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	19224.04
WF98B	F25	WF98B1DDWW1	1.7	8/20/98	UNID. MICRO-PHYTOFLAG LENGTH >10 MICRONS	1141.15
WF98B	F27	WF98B0FESW1	22.58	8/19/98	ATHECATE DINOFLAGELLATE	NA
WF98B	F27	WF98B0FESW1	22.58	8/19/98	CERATIUM FUSUS	8474.67
WF98B	F27	WF98B0FESW1	22.58	8/19/98	CERATIUM LINEATUM	530.11
WF98B	F27	WF98B0FESW1	22.58	8/19/98	CERATIUM LONGIPES	826.07
WF98B	F27	WF98B0FESW1	22.58	8/19/98	CERATIUM SPP.	698.48
WF98B	F27	WF98B0FESW1	22.58	8/19/98	CERATIUM TRIPOS	35598.94
WF98B	F27	WF98B0FESW1	22.58	8/19/98	DICTYOCHA FIBULA	31.57
WF98B	F27	WF98B0FESW1	22.58	8/19/98	DINOPHYSIS ACUMINATA	3.17
WF98B	F27	WF98B0FESW1	22.58	8/19/98	DINOPHYSIS NORVEGICA	NA
WF98B	F27	WF98B0FESW1	22.58	8/19/98	DISTEPHANUS SPECULUM	48.42
WF98B	F27	WF98B0FESW1	22.58	8/19/98	GYMNODINIUM SP.GROUP 5 20-30 MICRONS	NA
WF98B	F27	WF98B0FESW1	22.58	8/19/98	GYRODINIUM SP. GROUP 1 5-20UM W 10-20UM L	1.80
WF98B	F27	WF98B0FESW1	22.58	8/19/98	PROTOPERIDINIUM DEPRESSUM	607.99
WF98B	F27	WF98B0FESW1	22.58	8/19/98	PROTOPERIDINIUM PALLIDUM	134.56
WF98B	F27	WF98B0FESW1	22.58	8/19/98	PROTOPERIDINIUM PENTAGONUM	1684.56
WF98B	F27	WF98B0FESW1	22.58	8/19/98	PROTOPERIDINIUM PYRIFORME	NA
WF98B	F27	WF98B0FESW1	22.58	8/19/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	1161.45
WF98B	F27	WF98B0FESW1	22.58	8/19/98	PROTOPERIDINIUM SP. GROUP 3 76-150W 81-150L	1826.00
WF98B	F27	WF98B0FESW1	22.58	8/19/98	SCRIPPSIELLA TROCHOIDEA	64.98
WF98B	F27	WF98B0FEWW1	22.58	8/19/98	AMPHIDINIUM SPP.	61.86
WF98B	F27	WF98B0FEWW1	22.58	8/19/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	175.61
WF98B	F27	WF98B0FEWW1	22.58	8/19/98	CENTRIC DIATOM SP. GROUP 2 DIAM 10-30 MICRONS	86.34
WF98B	F27	WF98B0FEWW1	22.58	8/19/98	CERATIUM FUSUS	24115.35
WF98B	F27	WF98B0FEWW1	22.58	8/19/98	CERATIUM LINEATUM	1154.63
WF98B	F27	WF98B0FEWW1	22.58	8/19/98	CERATIUM TRIPOS	48062.45
WF98B	F27	WF98B0FEWW1	22.58	8/19/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	716.84
WF98B	F27	WF98B0FEWW1	22.58	8/19/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	117.19
WF98B	F27	WF98B0FEWW1	22.58	8/19/98	CRYPTOMONAS SP. GROUP 2 LENGTH >10 MICRONS	125.44
WF98B	F27	WF98B0FEWW1	22.58	8/19/98	CYLINDROTHECA CLOSTERIUM	461.74
WF98B	F27	WF98B0FEWW1	22.58	8/19/98	DICTYOCHA SPECULUM	NA
WF98B	F27	WF98B0FEWW1	22.58	8/19/98	EUTREPTIA/EUTREPTIELLA SPP.	NA
WF98B	F27	WF98B0FEWW1	22.58	8/19/98	GUINARDIA FLACCIDA	127240.33
WF98B	F27	WF98B0FEWW1	22.58	8/19/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	1619.95
WF98B	F27	WF98B0FEWW1	22.58	8/19/98	GYMNODINIUM SP. GROUP 2 21-40UM W 21-50UM L	2990.75
WF98B	F27	WF98B0FEWW1	22.58	8/19/98	GYRODINIUM SPIRALE	7897.66
WF98B	F27	WF98B0FEWW1	22.58	8/19/98	LEPTOCYLINDRUS DANICUS	53954.86
WF98B	F27	WF98B0FEWW1	22.58	8/19/98	PENNATE DIATOM SP. GROUP 2 10-30 MICRONS LENGTH	98.99
WF98B	F27	WF98B0FEWW1	22.58	8/19/98	PROBOSCIA ALATA	4113.43
WF98B	F27	WF98B0FEWW1	22.58	8/19/98	PROTOPERIDINIUM SP. GROUP 1 10-30W 10-40L	709.88
WF98B	F27	WF98B0FEWW1	22.58	8/19/98	PSEUDONITZSCHIA DELICATISSIMA	31.61
WF98B	F27	WF98B0FEWW1	22.58	8/19/98	PSEUDONITZSCHIA PUNGENS	1911.00
WF98B	F27	WF98B0FEWW1	22.58	8/19/98	RHIZOSOLENIA DELICATULA	136.58

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WF98B	F27	WF98B0FEWW1	22.58	8/19/98	SCRIPPSIELLA TROCHOIDEA	2122.99
WF98B	F27	WF98B0FEWW1	22.58	8/19/98	THALASSIONEMA NITZSCHIOIDES	12.59
WF98B	F27	WF98B0FEWW1	22.58	8/19/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	7664.48
WF98B	F27	WF98B100SW1	1.94	8/19/98	ATHECATE DINOFLAGELLATE	NA
WF98B	F27	WF98B100SW1	1.94	8/19/98	CERATIUM FUSUS	41.42
WF98B	F27	WF98B100SW1	1.94	8/19/98	CERATIUM MACROCEROS	36.01
WF98B	F27	WF98B100SW1	1.94	8/19/98	CERATIUM SPP.	72.76
WF98B	F27	WF98B100SW1	1.94	8/19/98	CERATIUM TRIPOS	477.62
WF98B	F27	WF98B100SW1	1.94	8/19/98	GYMNODINIUM SP.GROUP 5 20-30 MICRONS	NA
WF98B	F27	WF98B100SW1	1.94	8/19/98	PROROCENTRUM GRACILE	2.53
WF98B	F27	WF98B100SW1	1.94	8/19/98	PROTOPERIDINIUM PALLIDUM	252.30
WF98B	F27	WF98B100SW1	1.94	8/19/98	PROTOPERIDINIUM PYRIFORME	NA
WF98B	F27	WF98B100SW1	1.94	8/19/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	232.29
WF98B	F27	WF98B100SW1	1.94	8/19/98	PYROCYSTIS LUNULA	NA
WF98B	F27	WF98B100SW1	1.94	8/19/98	SCRIPPSIELLA TROCHOIDEA	19.69
WF98B	F27	WF98B100SW1	1.94	8/19/98	THECATE DINOFLAGELLATE SPP.	NA
WF98B	F27	WF98B100WW1	1.94	8/19/98	AMPHIDINIUM SPP.	154.66
WF98B	F27	WF98B100WW1	1.94	8/19/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	125.44
WF98B	F27	WF98B100WW1	1.94	8/19/98	CERATIUM FUSUS	8931.83
WF98B	F27	WF98B100WW1	1.94	8/19/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	136.73
WF98B	F27	WF98B100WW1	1.94	8/19/98	GUINARDIA FLACCIDA	31118.56
WF98B	F27	WF98B100WW1	1.94	8/19/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	3563.89
WF98B	F27	WF98B100WW1	1.94	8/19/98	GYMNODINIUM SP. GROUP 2 21-40UM W 21-50UM L	11963.30
WF98B	F27	WF98B100WW1	1.94	8/19/98	LEPTOCYLINDRUS DANICUS	242796.85
WF98B	F27	WF98B100WW1	1.94	8/19/98	LEPTOCYLINDRUS MINIMUS	2495.07
WF98B	F27	WF98B100WW1	1.94	8/19/98	PROBOSCIA ALATA	6170.15
WF98B	F27	WF98B100WW1	1.94	8/19/98	PROTOPERIDINIUM SP. GROUP 1 10-30W 10-40L	1774.70
WF98B	F27	WF98B100WW1	1.94	8/19/98	PSEUDONITZSCHIA DELICATISSIMA	1438.13
WF98B	F27	WF98B100WW1	1.94	8/19/98	PSEUDONITZSCHIA PUNGENS	265.42
WF98B	F27	WF98B100WW1	1.94	8/19/98	RHIZOSOLENIA DELICATULA	3414.55
WF98B	F27	WF98B100WW1	1.94	8/19/98	SCRIPPSIELLA TROCHOIDEA	530.74
WF98B	F27	WF98B100WW1	1.94	8/19/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	9863.31
WF98B	F27	WF98B100WW1	1.94	8/19/98	UNID. MICRO-PHYTOFLAG LENGTH >10 MICRONS	760.77
WF98B	F30	WF98B188SW1	3.83	8/20/98	ATHECATE DINOFLAGELLATE	NA
WF98B	F30	WF98B188SW1	3.83	8/20/98	CERATIUM FUSUS	1174.28
WF98B	F30	WF98B188SW1	3.83	8/20/98	CERATIUM LINEATUM	322.28
WF98B	F30	WF98B188SW1	3.83	8/20/98	CERATIUM LONGIPES	46.47
WF98B	F30	WF98B188SW1	3.83	8/20/98	CERATIUM SPP.	294.67
WF98B	F30	WF98B188SW1	3.83	8/20/98	CERATIUM TRIPOS	3773.23
WF98B	F30	WF98B188SW1	3.83	8/20/98	DINOPHYSIS ACUMINATA	5.36
WF98B	F30	WF98B188SW1	3.83	8/20/98	DINOPHYSIS NORVEGICA	NA
WF98B	F30	WF98B188SW1	3.83	8/20/98	GYMNODINIUM SP.GROUP 5 20-30 MICRONS	NA
WF98B	F30	WF98B188SW1	3.83	8/20/98	GYRODINIUM SP. GROUP 1 5-20UM W 10-20UM L	0.34
WF98B	F30	WF98B188SW1	3.83	8/20/98	PROROCENTRUM GRACILE	5.41
WF98B	F30	WF98B188SW1	3.83	8/20/98	PROTOPERIDINIUM BIPES	0.82
WF98B	F30	WF98B188SW1	3.83	8/20/98	PROTOPERIDINIUM PENTAGONUM	52.64

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WF98B	F30	WF98B188SW1	3.83	8/20/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	174.22
WF98B	F30	WF98B188SW1	3.83	8/20/98	PYROCYSTIS LUNULA	NA
WF98B	F30	WF98B188SW1	3.83	8/20/98	SCRIPPSIELLA TROCHOIDEA	119.62
WF98B	F30	WF98B188SW1	3.83	8/20/98	THECATE DINOFLAGELLATE SPP.	NA
WF98B	F30	WF98B188WW1	3.83	8/20/98	CALYCOMONAS OVALIS	182.48
WF98B	F30	WF98B188WW1	3.83	8/20/98	CALYCOMONAS WULFFII	89.11
WF98B	F30	WF98B188WW1	3.83	8/20/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	1622.64
WF98B	F30	WF98B188WW1	3.83	8/20/98	CERATIUM FUSUS	2625.89
WF98B	F30	WF98B188WW1	3.83	8/20/98	CERATIUM LONGIPES	20365.93
WF98B	F30	WF98B188WW1	3.83	8/20/98	CERATIUM TRIPOS	8971.66
WF98B	F30	WF98B188WW1	3.83	8/20/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	1003.57
WF98B	F30	WF98B188WW1	3.83	8/20/98	CHAETOCEROS SPP.(<10UM)	428.90
WF98B	F30	WF98B188WW1	3.83	8/20/98	CHOANOFLAGELLATE SPP.	422.27
WF98B	F30	WF98B188WW1	3.83	8/20/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	2469.28
WF98B	F30	WF98B188WW1	3.83	8/20/98	CRYPTOMONAS SP. GROUP 2 LENGTH >10 MICRONS	3319.04
WF98B	F30	WF98B188WW1	3.83	8/20/98	CYLINDROTHECA CLOSTERIUM	1357.53
WF98B	F30	WF98B188WW1	3.83	8/20/98	EUTREPTIA/EUTREPTIELLA SPP.	NA
WF98B	F30	WF98B188WW1	3.83	8/20/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	6350.21
WF98B	F30	WF98B188WW1	3.83	8/20/98	HETEROCAPSA ROTUNDATA	18.74
WF98B	F30	WF98B188WW1	3.83	8/20/98	HETEROCAPSA TRIQUETRA	111.82
WF98B	F30	WF98B188WW1	3.83	8/20/98	LEPTOCYLINDRUS DANICUS	101974.68
WF98B	F30	WF98B188WW1	3.83	8/20/98	LEPTOCYLINDRUS MINIMUS	41.18
WF98B	F30	WF98B188WW1	3.83	8/20/98	PENNATE DIATOM SP. GROUP 2 10-30 MICRONS LENGTH	873.09
WF98B	F30	WF98B188WW1	3.83	8/20/98	PENNATE DIATOM SP. GROUP 3 31-60 MICRONS LENGTH	27.74
WF98B	F30	WF98B188WW1	3.83	8/20/98	PLEUROSIGMA SPP.	2489.55
WF98B	F30	WF98B188WW1	3.83	8/20/98	PROROCENTRUM MINIMUM	455.50
WF98B	F30	WF98B188WW1	3.83	8/20/98	PSEUDONITZSCHIA DELICATISSIMA	26019.75
WF98B	F30	WF98B188WW1	3.83	8/20/98	PSEUDONITZSCHIA PUNGENS	10107.31
WF98B	F30	WF98B188WW1	3.83	8/20/98	PYRAMIMONAS SP. GROUP 1 10-20 MICRONS LENGTH	NA
WF98B	F30	WF98B188WW1	3.83	8/20/98	PYROCYSTIS LUNULA	NA
WF98B	F30	WF98B188WW1	3.83	8/20/98	RHIZOSOLENIA DELICATULA	2208.47
WF98B	F30	WF98B188WW1	3.83	8/20/98	RHIZOSOLENIA FRAGILISSIMA	1277.22
WF98B	F30	WF98B188WW1	3.83	8/20/98	SCRIPPSIELLA TROCHOIDEA	416.10
WF98B	F30	WF98B188WW1	3.83	8/20/98	SKELETONEMA COSTATUM GREV+CLEVE	107.48
WF98B	F30	WF98B188WW1	3.83	8/20/98	THALASSIOSIRA SP. GROUP 2 DIAM >20 MICRONS	78.24
WF98B	F30	WF98B188WW1	3.83	8/20/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	38848.89
WF98B	F30	WF98B188WW1	3.83	8/20/98	UNID. MICRO-PHYTOFLAG LENGTH >10 MICRONS	1863.88
WF98B	F30	WF98B189SW1	2.01	8/20/98	ATHECATE DINOFLAGELLATE	NA
WF98B	F30	WF98B189SW1	2.01	8/20/98	CERATIUM FUSUS	1118.95
WF98B	F30	WF98B189SW1	2.01	8/20/98	CERATIUM LINEATUM	290.49
WF98B	F30	WF98B189SW1	2.01	8/20/98	CERATIUM LONGIPES	121.94
WF98B	F30	WF98B189SW1	2.01	8/20/98	CERATIUM SPP.	289.99
WF98B	F30	WF98B189SW1	2.01	8/20/98	CERATIUM TRIPOS	3149.29
WF98B	F30	WF98B189SW1	2.01	8/20/98	DINOPHYSIS ACUMINATA	5.27

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WF98B	F30	WF98B189SW1	2.01	8/20/98	DINOPHYSIS NORVEGICA	NA
WF98B	F30	WF98B189SW1	2.01	8/20/98	DINOPHYSIS SPP.	7.60
WF98B	F30	WF98B189SW1	2.01	8/20/98	PROTOPERIDINIUM PALLIDUM	24.83
WF98B	F30	WF98B189SW1	2.01	8/20/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	342.90
WF98B	F30	WF98B189SW1	2.01	8/20/98	SCRIPPSIELLA TROCHOIDEA	117.72
WF98B	F30	WF98B189SW1	2.01	8/20/98	THECATE DINOFLAGELLATE SPP.	NA
WF98B	F30	WF98B189WW1	2.01	8/20/98	CALYCOMONAS OVALIS	23.28
WF98B	F30	WF98B189WW1	2.01	8/20/98	CALYCOMONAS WULFFII	181.86
WF98B	F30	WF98B189WW1	2.01	8/20/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	1078.75
WF98B	F30	WF98B189WW1	2.01	8/20/98	CERATIUM FUSUS	2679.48
WF98B	F30	WF98B189WW1	2.01	8/20/98	CERATIUM TRIPOS	6866.06
WF98B	F30	WF98B189WW1	2.01	8/20/98	CHAETOCEROS DECIPIENS	1349.08
WF98B	F30	WF98B189WW1	2.01	8/20/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	1024.08
WF98B	F30	WF98B189WW1	2.01	8/20/98	CHOANOFLAGELLATE SPP.	184.67
WF98B	F30	WF98B189WW1	2.01	8/20/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	4160.40
WF98B	F30	WF98B189WW1	2.01	8/20/98	CRYPTOMONAS SP. GROUP 2 LENGTH >10 MICRONS	1505.23
WF98B	F30	WF98B189WW1	2.01	8/20/98	CYLINDROTHECA CLOSTERIUM	138.52
WF98B	F30	WF98B189WW1	2.01	8/20/98	EUTREPTIA/EUTREPTIELLA SPP.	NA
WF98B	F30	WF98B189WW1	2.01	8/20/98	GUINARDIA FLACCIDA	4149.14
WF98B	F30	WF98B189WW1	2.01	8/20/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	6155.81
WF98B	F30	WF98B189WW1	2.01	8/20/98	GYMNODINIUM SP. GROUP 2 21-40UM W 21-50UM L	2392.60
WF98B	F30	WF98B189WW1	2.01	8/20/98	LEPTOCYLINDRUS DANICUS	121123.15
WF98B	F30	WF98B189WW1	2.01	8/20/98	MERISMOPEDIA SPP.	16.62
WF98B	F30	WF98B189WW1	2.01	8/20/98	PENNATE DIATOM SP. GROUP 2 10-30 MICRONS LENGTH	296.97
WF98B	F30	WF98B189WW1	2.01	8/20/98	PENNATE DIATOM SP. GROUP 3 31-60 MICRONS LENGTH	28.30
WF98B	F30	WF98B189WW1	2.01	8/20/98	PROTOPERIDINIUM SP. GROUP 1 10-30W 10-40L	1183.13
WF98B	F30	WF98B189WW1	2.01	8/20/98	PSEUDONITZSCHIA DELICATISSIMA	24527.85
WF98B	F30	WF98B189WW1	2.01	8/20/98	PSEUDONITZSCHIA PUNGENS	7280.18
WF98B	F30	WF98B189WW1	2.01	8/20/98	PYRAMIMONAS SP. GROUP 1 10-20 MICRONS LENGTH	NA
WF98B	F30	WF98B189WW1	2.01	8/20/98	RHIZOSOLENIA DELICATULA	1707.23
WF98B	F30	WF98B189WW1	2.01	8/20/98	RHIZOSOLENIA FRAGILISSIMA	3508.85
WF98B	F30	WF98B189WW1	2.01	8/20/98	SCRIPPSIELLA TROCHOIDEA	2122.99
WF98B	F30	WF98B189WW1	2.01	8/20/98	SKELETONEMA COSTATUM GREV+CLEVE	588.75
WF98B	F30	WF98B189WW1	2.01	8/20/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	32605.47
WF98B	F30	WF98B189WW1	2.01	8/20/98	UNID. MICRO-PHYTOFLAG LENGTH >10 MICRONS	3043.07
WF98B	F31	WF98B0C1SW1	5.05	8/19/98	AMYLAX TRIACANTHA	4.69
WF98B	F31	WF98B0C1SW1	5.05	8/19/98	ATHECATE DINOFLAGELLATE	NA
WF98B	F31	WF98B0C1SW1	5.05	8/19/98	CERATIUM FUSUS	1420.14
WF98B	F31	WF98B0C1SW1	5.05	8/19/98	CERATIUM LINEATUM	159.11
WF98B	F31	WF98B0C1SW1	5.05	8/19/98	CERATIUM LONGIPES	125.88
WF98B	F31	WF98B0C1SW1	5.05	8/19/98	CERATIUM SPP.	99.78
WF98B	F31	WF98B0C1SW1	5.05	8/19/98	CERATIUM TRIPOS	3056.80
WF98B	F31	WF98B0C1SW1	5.05	8/19/98	DINOPHYSIS NORVEGICA	NA
WF98B	F31	WF98B0C1SW1	5.05	8/19/98	GYMNODINIUM SP.GROUP 5 20-30 MICRONS	NA

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WF98B	F31	WF98B0C1SW1	5.05	8/19/98	MESODINIUM RUBRUM	NA
WF98B	F31	WF98B0C1SW1	5.05	8/19/98	PROROCENTRUM GRACILE	1.45
WF98B	F31	WF98B0C1SW1	5.05	8/19/98	PROTOPERIDINIUM BIPES	0.83
WF98B	F31	WF98B0C1SW1	5.05	8/19/98	PROTOPERIDINIUM PYRIFORME	NA
WF98B	F31	WF98B0C1SW1	5.05	8/19/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	707.93
WF98B	F31	WF98B0C1SW1	5.05	8/19/98	PROTOPERIDINIUM SP. GROUP 3 76-150W 81-150L	304.33
WF98B	F31	WF98B0C1SW1	5.05	8/19/98	PYROCYSTIS LUNULA	NA
WF98B	F31	WF98B0C1SW1	5.05	8/19/98	SCRIPPSIELLA TROCHOIDEA	49.51
WF98B	F31	WF98B0C1SW1	5.05	8/19/98	THECATE DINOFLAGELLATE SPP.	NA
WF98B	F31	WF98B0C1WW1	5.05	8/19/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	313.09
WF98B	F31	WF98B0C1WW1	5.05	8/19/98	CERATIUM TRIPOS	2380.24
WF98B	F31	WF98B0C1WW1	5.05	8/19/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	532.51
WF98B	F31	WF98B0C1WW1	5.05	8/19/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	304.71
WF98B	F31	WF98B0C1WW1	5.05	8/19/98	CRYPTOMONAS SP. GROUP 2 LENGTH >10 MICRONS	260.91
WF98B	F31	WF98B0C1WW1	5.05	8/19/98	CYLINDROTHECA CLOSTERIUM	144.06
WF98B	F31	WF98B0C1WW1	5.05	8/19/98	EUTREPTIA/EUTREPTIELLA SPP.	NA
WF98B	F31	WF98B0C1WW1	5.05	8/19/98	GUINARDIA FLACCIDA	12945.32
WF98B	F31	WF98B0C1WW1	5.05	8/19/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	4380.35
WF98B	F31	WF98B0C1WW1	5.05	8/19/98	GYMNODINIUM SP. GROUP 2 21-40UM W 21-50UM L	1866.23
WF98B	F31	WF98B0C1WW1	5.05	8/19/98	GYRODINIUM SP. GROUP 1 5-20UM W 10-20UM L	336.95
WF98B	F31	WF98B0C1WW1	5.05	8/19/98	GYRODINIUM SPIRALE	2737.85
WF98B	F31	WF98B0C1WW1	5.05	8/19/98	HETEROCAPSA TRIQUETRA	1186.67
WF98B	F31	WF98B0C1WW1	5.05	8/19/98	LEPTOCYLINDRUS DANICUS	148871.36
WF98B	F31	WF98B0C1WW1	5.05	8/19/98	LEPTOCYLINDRUS MINIMUS	655.56
WF98B	F31	WF98B0C1WW1	5.05	8/19/98	PENNATE DIATOM SP. GROUP 2 10-30 MICRONS LENGTH	102.95
WF98B	F31	WF98B0C1WW1	5.05	8/19/98	PROBOSCIA ALATA	4277.97
WF98B	F31	WF98B0C1WW1	5.05	8/19/98	PROTOPERIDINIUM BIPES	1637.31
WF98B	F31	WF98B0C1WW1	5.05	8/19/98	PROTOPERIDINIUM SP. GROUP 1 10-30W 10-40L	492.18
WF98B	F31	WF98B0C1WW1	5.05	8/19/98	PSEUDONITZSCHIA DELICATISSIMA	18211.30
WF98B	F31	WF98B0C1WW1	5.05	8/19/98	PSEUDONITZSCHIA PUNGENS	17666.56
WF98B	F31	WF98B0C1WW1	5.05	8/19/98	RHIZOSOLENIA DELICATULA	2485.73
WF98B	F31	WF98B0C1WW1	5.05	8/19/98	SKELETONEMA COSTATUM GREV+CLEVE	120.06
WF98B	F31	WF98B0C1WW1	5.05	8/19/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	19012.95
WF98B	F31	WF98B0C1WW1	5.05	8/19/98	UNID. MICRO-PHYTOFLAG LENGTH >10 MICRONS	1186.80
WF98B	F31	WF98B0C2SW1	1.78	8/19/98	AMYLAX TRIACANTHA	15.90
WF98B	F31	WF98B0C2SW1	1.78	8/19/98	ATHECATE DINOFLAGELLATE	NA
WF98B	F31	WF98B0C2SW1	1.78	8/19/98	CERATIUM FUSUS	972.20
WF98B	F31	WF98B0C2SW1	1.78	8/19/98	CERATIUM LINEATUM	83.00
WF98B	F31	WF98B0C2SW1	1.78	8/19/98	CERATIUM SPP.	289.99
WF98B	F31	WF98B0C2SW1	1.78	8/19/98	CERATIUM TRIPOS	3713.34
WF98B	F31	WF98B0C2SW1	1.78	8/19/98	DINOPHYSIS ACUMINATA	1.76
WF98B	F31	WF98B0C2SW1	1.78	8/19/98	DINOPHYSIS NORVEGICA	NA
WF98B	F31	WF98B0C2SW1	1.78	8/19/98	GYMNODINIUM SP.GROUP 5 20-30 MICRONS	NA
WF98B	F31	WF98B0C2SW1	1.78	8/19/98	KATODINIUM ROTUNDATUM	0.03
WF98B	F31	WF98B0C2SW1	1.78	8/19/98	MESODINIUM RUBRUM	NA

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WF98B	F31	WF98B0C2SW1	1.78	8/19/98	PROROCENTRUM GRACILE	5.88
WF98B	F31	WF98B0C2SW1	1.78	8/19/98	PROTOPERIDINIUM DIVERGENS	38.41
WF98B	F31	WF98B0C2SW1	1.78	8/19/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	1303.03
WF98B	F31	WF98B0C2SW1	1.78	8/19/98	PROTOPERIDINIUM SP. GROUP 3 76-150W 81-150L	294.82
WF98B	F31	WF98B0C2SW1	1.78	8/19/98	PYROCYSTIS LUNULA	NA
WF98B	F31	WF98B0C2SW1	1.78	8/19/98	SCRIPPSIELLA TROCHOIDEA	122.08
WF98B	F31	WF98B0C2SW1	1.78	8/19/98	THECATE DINOFLAGELLATE SPP.	NA
WF98B	F31	WF98B0C2WW1	1.78	8/19/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	426.48
WF98B	F31	WF98B0C2WW1	1.78	8/19/98	CERATIUM FUSUS	4465.81
WF98B	F31	WF98B0C2WW1	1.78	8/19/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	256.01
WF98B	F31	WF98B0C2WW1	1.78	8/19/98	CHOANOFLAGELLATE SPP.	61.56
WF98B	F31	WF98B0C2WW1	1.78	8/19/98	COSCINODISCUS SP. GROUP 2 DIAM 40-100 MICRONS	1963.74
WF98B	F31	WF98B0C2WW1	1.78	8/19/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	585.97
WF98B	F31	WF98B0C2WW1	1.78	8/19/98	CYLINDROTHECA CLOSTERIUM	1385.23
WF98B	F31	WF98B0C2WW1	1.78	8/19/98	GUINARDIA FLACCIDA	27661.60
WF98B	F31	WF98B0C2WW1	1.78	8/19/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	3239.90
WF98B	F31	WF98B0C2WW1	1.78	8/19/98	GYMNODINIUM SP. GROUP 2 21-40UM W 21-50UM L	2990.75
WF98B	F31	WF98B0C2WW1	1.78	8/19/98	GYRODINIUM SP. GROUP 1 5-20UM W 10-20UM L	323.99
WF98B	F31	WF98B0C2WW1	1.78	8/19/98	LEPTOCYLINDRUS DANICUS	132684.90
WF98B	F31	WF98B0C2WW1	1.78	8/19/98	PENNATE DIATOM SP. GROUP 2 10-30 MICRONS LENGTH	98.99
WF98B	F31	WF98B0C2WW1	1.78	8/19/98	PENNATE DIATOM SP. GROUP 3 31-60 MICRONS LENGTH	70.76
WF98B	F31	WF98B0C2WW1	1.78	8/19/98	PROTOPERIDINIUM SP. GROUP 1 10-30W 10-40L	2366.32
WF98B	F31	WF98B0C2WW1	1.78	8/19/98	PSEUDONITZSCHIA DELICATISSIMA	14855.78
WF98B	F31	WF98B0C2WW1	1.78	8/19/98	PSEUDONITZSCHIA PUNGENS	32912.47
WF98B	F31	WF98B0C2WW1	1.78	8/19/98	PYRAMIMONAS SP. GROUP 1 10-20 MICRONS LENGTH	NA
WF98B	F31	WF98B0C2WW1	1.78	8/19/98	RHIZOSOLENIA DELICATULA	5121.69
WF98B	F31	WF98B0C2WW1	1.78	8/19/98	SKELETONEMA COSTATUM GREV+CLEVE	404.05
WF98B	F31	WF98B0C2WW1	1.78	8/19/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	18658.62
WF98B	F31	WF98B0C2WW1	1.78	8/19/98	UNID. MICRO-PHYTOFLAG LENGTH >10 MICRONS	2282.30
WF98B	N04	WF98B21FSW1	15.16	8/23/98	ATHECATE DINOFLAGELLATE	NA
WF98B	N04	WF98B21FSW1	15.16	8/23/98	CERATIUM FUSUS	1597.65
WF98B	N04	WF98B21FSW1	15.16	8/23/98	CERATIUM LINEATUM	10.33
WF98B	N04	WF98B21FSW1	15.16	8/23/98	CERATIUM LONGIPES	637.26
WF98B	N04	WF98B21FSW1	15.16	8/23/98	CERATIUM SPP.	168.38
WF98B	N04	WF98B21FSW1	15.16	8/23/98	CERATIUM TRIPOS	4871.77
WF98B	N04	WF98B21FSW1	15.16	8/23/98	DINOPHYSIS NORVEGICA	NA
WF98B	N04	WF98B21FSW1	15.16	8/23/98	DISTEPHANUS SPECULUM	5.19
WF98B	N04	WF98B21FSW1	15.16	8/23/98	GYRODINIUM SP. GROUP 1 5-20UM W 10-20UM L	0.43
WF98B	N04	WF98B21FSW1	15.16	8/23/98	PROTOPERIDINIUM DIVERGENS	55.75
WF98B	N04	WF98B21FSW1	15.16	8/23/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	209.06
WF98B	N04	WF98B21FSW1	15.16	8/23/98	PROTOPERIDINIUM SP. GROUP 3 76-150W 81-150L	36.68
WF98B	N04	WF98B21FSW1	15.16	8/23/98	SCRIPPSIELLA TROCHOIDEA	3.80
WF98B	N04	WF98B21FSW1	15.16	8/23/98	THECATE DINOFLAGELLATE SPP.	NA
WF98B	N04	WF98B21FWW1	15.16	8/23/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	87.81

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WF98B	N04	WF98B21FWW1	15.16	8/23/98	CERATIUM TRIPOS	3814.48
WF98B	N04	WF98B21FWW1	15.16	8/23/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	78.13
WF98B	N04	WF98B21FWW1	15.16	8/23/98	CYLINDROTHECA CLOSTERIUM	692.61
WF98B	N04	WF98B21FWW1	15.16	8/23/98	DICTYOCHA SPECULUM	NA
WF98B	N04	WF98B21FWW1	15.16	8/23/98	DINOPHYSIS NORVEGICA	NA
WF98B	N04	WF98B21FWW1	15.16	8/23/98	EUTREPTIA/EUTREPTIELLA SPP.	NA
WF98B	N04	WF98B21FWW1	15.16	8/23/98	GUINARDIA FLACCIDA	33423.64
WF98B	N04	WF98B21FWW1	15.16	8/23/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	2267.93
WF98B	N04	WF98B21FWW1	15.16	8/23/98	GYRODINIUM SP. GROUP 1 5-20UM W 10-20UM L	162.00
WF98B	N04	WF98B21FWW1	15.16	8/23/98	HETEROCAPSA ROTUNDATA	31.88
WF98B	N04	WF98B21FWW1	15.16	8/23/98	HETEROCAPSA TRIQUETRA	190.17
WF98B	N04	WF98B21FWW1	15.16	8/23/98	LEPTOCYLINDRUS DANICUS	5459.59
WF98B	N04	WF98B21FWW1	15.16	8/23/98	LEPTOCYLINDRUS MINIMUS	113.81
WF98B	N04	WF98B21FWW1	15.16	8/23/98	PENNATE DIATOM SP. GROUP 2 10-30 MICRONS LENGTH	49.50
WF98B	N04	WF98B21FWW1	15.16	8/23/98	PROTOPERIDINIUM BIPES	1574.33
WF98B	N04	WF98B21FWW1	15.16	8/23/98	PROTOPERIDINIUM DEPRESSUM	72835.61
WF98B	N04	WF98B21FWW1	15.16	8/23/98	PSEUDONITZSCHIA DELICATISSIMA	242.32
WF98B	N04	WF98B21FWW1	15.16	8/23/98	PSEUDONITZSCHIA PUNGENS	303.34
WF98B	N04	WF98B21FWW1	15.16	8/23/98	SKELETONEMA COSTATUM GREV+CLEVE	28.86
WF98B	N04	WF98B21FWW1	15.16	8/23/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	3675.18
WF98B	N04	WF98B21FWW1	15.16	8/23/98	UNID. MICRO-PHYTOFLAG LENGTH >10 MICRONS	570.58
WF98B	N04	WF98B221SW1	1.85	8/23/98	ATHECATE DINOFLAGELLATE	NA
WF98B	N04	WF98B221SW1	1.85	8/23/98	CERATIUM FUSUS	350.30
WF98B	N04	WF98B221SW1	1.85	8/23/98	CERATIUM LINEATUM	53.07
WF98B	N04	WF98B221SW1	1.85	8/23/98	CERATIUM LONGIPES	145.55
WF98B	N04	WF98B221SW1	1.85	8/23/98	CERATIUM MACROCEROS	108.75
WF98B	N04	WF98B221SW1	1.85	8/23/98	CERATIUM TRIPOS	1122.04
WF98B	N04	WF98B221SW1	1.85	8/23/98	DINOPHYSIS NORVEGICA	NA
WF98B	N04	WF98B221SW1	1.85	8/23/98	DINOPHYSIS SPP.	13.61
WF98B	N04	WF98B221SW1	1.85	8/23/98	GYMNODINIUM SP.GROUP 5 20-30 MICRONS	NA
WF98B	N04	WF98B221SW1	1.85	8/23/98	PROROCENTRUM GRACILE	3.68
WF98B	N04	WF98B221SW1	1.85	8/23/98	PROTOPERIDINIUM BREVIPES	2.63
WF98B	N04	WF98B221SW1	1.85	8/23/98	PROTOPERIDINIUM SP. GROUP 1 10-30W 10-40L	4.35
WF98B	N04	WF98B221SW1	1.85	8/23/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	122.78
WF98B	N04	WF98B221SW1	1.85	8/23/98	PROTOPERIDINIUM SP. GROUP 3 76-150W 81-150L	50.27
WF98B	N04	WF98B221SW1	1.85	8/23/98	SCRIPPSIELLA TROCHOIDEA	26.02
WF98B	N04	WF98B221SW1	1.85	8/23/98	THECATE DINOFLAGELLATE SPP.	NA
WF98B	N04	WF98B221WW1	1.85	8/23/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	75.26
WF98B	N04	WF98B221WW1	1.85	8/23/98	CERATIUM FUSUS	1488.60
WF98B	N04	WF98B221WW1	1.85	8/23/98	CERATIUM LONGIPES	4947.99
WF98B	N04	WF98B221WW1	1.85	8/23/98	CERATIUM MACROCEROS	1478.85
WF98B	N04	WF98B221WW1	1.85	8/23/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	253.92
WF98B	N04	WF98B221WW1	1.85	8/23/98	EUTREPTIA/EUTREPTIELLA SPP.	NA
WF98B	N04	WF98B221WW1	1.85	8/23/98	GUINARDIA FLACCIDA	43796.49
WF98B	N04	WF98B221WW1	1.85	8/23/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	13283.59

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WF98B	N04	WF98B221WW1	1.85	8/23/98	GYRODINIUM SP. GROUP 1 5-20UM W 10-20UM L	323.99
WF98B	N04	WF98B221WW1	1.85	8/23/98	GYRODINIUM SPIRALE	4387.59
WF98B	N04	WF98B221WW1	1.85	8/23/98	LEPTOCYLINDRUS DANICUS	158010.65
WF98B	N04	WF98B221WW1	1.85	8/23/98	LEPTOCYLINDRUS MINIMUS	437.73
WF98B	N04	WF98B221WW1	1.85	8/23/98	PROBOSCIA ALATA	8227.06
WF98B	N04	WF98B221WW1	1.85	8/23/98	PROTOPERIDINIUM SP. GROUP 1 10-30W 10-40L	788.75
WF98B	N04	WF98B221WW1	1.85	8/23/98	PSEUDONITZSCHIA DELICATISSIMA	3065.91
WF98B	N04	WF98B221WW1	1.85	8/23/98	PSEUDONITZSCHIA PUNGENS	176.94
WF98B	N04	WF98B221WW1	1.85	8/23/98	THALASSIONEMA NITZSCHIOIDES	20.99
WF98B	N04	WF98B221WW1	1.85	8/23/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	12376.26
WF98B	N04	WF98B221WW1	1.85	8/23/98	UNID. MICRO-PHYTOFLAG LENGTH >10 MICRONS	2282.30
WF98B	N16	WF98B1C1SW1	12.67	8/20/98	ATHECATE DINOFLAGELLATE	NA
WF98B	N16	WF98B1C1SW1	12.67	8/20/98	CERATIUM FUSUS	2265.12
WF98B	N16	WF98B1C1SW1	12.67	8/20/98	CERATIUM LINEATUM	66.55
WF98B	N16	WF98B1C1SW1	12.67	8/20/98	CERATIUM LONGIPES	1654.11
WF98B	N16	WF98B1C1SW1	12.67	8/20/98	CERATIUM TRIPOS	11003.94
WF98B	N16	WF98B1C1SW1	12.67	8/20/98	DINOPHYSIS ACUMINATA	1.64
WF98B	N16	WF98B1C1SW1	12.67	8/20/98	DINOPHYSIS NORVEGICA	NA
WF98B	N16	WF98B1C1SW1	12.67	8/20/98	DISTEPHANUS SPECULUM	2.44
WF98B	N16	WF98B1C1SW1	12.67	8/20/98	GYRODINIUM SP. GROUP 1 5-20UM W 10-20UM L	0.16
WF98B	N16	WF98B1C1SW1	12.67	8/20/98	MESODINIUM RUBRUM	NA
WF98B	N16	WF98B1C1SW1	12.67	8/20/98	PROROCENTRUM GRACILE	0.79
WF98B	N16	WF98B1C1SW1	12.67	8/20/98	PROTOPERIDINIUM DIVERGENS	47.91
WF98B	N16	WF98B1C1SW1	12.67	8/20/98	PROTOPERIDINIUM PYRIFORME	NA
WF98B	N16	WF98B1C1SW1	12.67	8/20/98	PROTOPERIDINIUM SP. GROUP 1 10-30W 10-40L	7.96
WF98B	N16	WF98B1C1SW1	12.67	8/20/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	481.17
WF98B	N16	WF98B1C1SW1	12.67	8/20/98	PROTOPERIDINIUM SP. GROUP 3 76-150W 81-150L	315.20
WF98B	N16	WF98B1C1SW1	12.67	8/20/98	SCRIPPSIELLA TROCHOIDEA	61.18
WF98B	N16	WF98B1C1SW1	12.67	8/20/98	THECATE DINOFLAGELLATE SPP.	NA
WF98B	N16	WF98B1C1WW1	12.67	8/20/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	75.26
WF98B	N16	WF98B1C1WW1	12.67	8/20/98	CENTRIC DIATOM SP. GROUP 2 DIAM 10-30 MICRONS	863.47
WF98B	N16	WF98B1C1WW1	12.67	8/20/98	CERATIUM FUSUS	17863.65
WF98B	N16	WF98B1C1WW1	12.67	8/20/98	CERATIUM LINEATUM	5773.28
WF98B	N16	WF98B1C1WW1	12.67	8/20/98	CERATIUM TRIPOS	11443.44
WF98B	N16	WF98B1C1WW1	12.67	8/20/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	2048.10
WF98B	N16	WF98B1C1WW1	12.67	8/20/98	CORETHRON CRIOPHILUM	4606.89
WF98B	N16	WF98B1C1WW1	12.67	8/20/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	410.18
WF98B	N16	WF98B1C1WW1	12.67	8/20/98	CYLINDROTHECA CLOSTERIUM	461.73
WF98B	N16	WF98B1C1WW1	12.67	8/20/98	DINOPHYSIS ACUMINATA	1141.03
WF98B	N16	WF98B1C1WW1	12.67	8/20/98	EUCAMPIA ZODIACUS	1334.06
WF98B	N16	WF98B1C1WW1	12.67	8/20/98	EUTREPTIA/EUTREPTIELLA SPP.	NA
WF98B	N16	WF98B1C1WW1	12.67	8/20/98	GUINARDIA FLACCIDA	41492.41
WF98B	N16	WF98B1C1WW1	12.67	8/20/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	4859.85
WF98B	N16	WF98B1C1WW1	12.67	8/20/98	GYRODINIUM SP. GROUP 1 5-20UM W 10-20UM L	647.98
WF98B	N16	WF98B1C1WW1	12.67	8/20/98	GYRODINIUM SP. GROUP 2 21-40UM W 21-50UM L	2990.75
WF98B	N16	WF98B1C1WW1	12.67	8/20/98	GYRODINIUM SPIRALE	26326.16

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WF98B	N16	WF98B1C1WW1	12.67	8/20/98	HETEROSIGMA AKASHIWO	NA
WF98B	N16	WF98B1C1WW1	12.67	8/20/98	LEPTOCYLINDRUS DANICUS	22572.95
WF98B	N16	WF98B1C1WW1	12.67	8/20/98	LEPTOCYLINDRUS MINIMUS	9297.66
WF98B	N16	WF98B1C1WW1	12.67	8/20/98	PENNATE DIATOM SP. GROUP 3 31-60 MICRONS LENGTH	141.52
WF98B	N16	WF98B1C1WW1	12.67	8/20/98	PROTOPERIDINIUM SP. GROUP 1 10-30W 10-40L	2366.32
WF98B	N16	WF98B1C1WW1	12.67	8/20/98	PSEUDONITZSCHIA DELICATISSIMA	2465.37
WF98B	N16	WF98B1C1WW1	12.67	8/20/98	PSEUDONITZSCHIA PUNGENS	303.34
WF98B	N16	WF98B1C1WW1	12.67	8/20/98	RHIZOSOLENIA DELICATULA	8194.91
WF98B	N16	WF98B1C1WW1	12.67	8/20/98	RHIZOSOLENIA FRAGILISSIMA	3007.66
WF98B	N16	WF98B1C1WW1	12.67	8/20/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	10491.55
WF98B	N16	WF98B1C3SW1	1.86	8/20/98	AMYLAX TRIACANTHA	24.18
WF98B	N16	WF98B1C3SW1	1.86	8/20/98	ATHECATE DINOFLAGELLATE	NA
WF98B	N16	WF98B1C3SW1	1.86	8/20/98	CERATIUM FUSUS	1497.06
WF98B	N16	WF98B1C3SW1	1.86	8/20/98	CERATIUM LINEATUM	49.96
WF98B	N16	WF98B1C3SW1	1.86	8/20/98	CERATIUM LONGIPES	324.53
WF98B	N16	WF98B1C3SW1	1.86	8/20/98	CERATIUM SPP.	57.17
WF98B	N16	WF98B1C3SW1	1.86	8/20/98	CERATIUM TRIPOS	9215.12
WF98B	N16	WF98B1C3SW1	1.86	8/20/98	DINOPHYSIS NORVEGICA	NA
WF98B	N16	WF98B1C3SW1	1.86	8/20/98	DISTEPHANUS SPECULUM	0.99
WF98B	N16	WF98B1C3SW1	1.86	8/20/98	GYRODINIUM SP. GROUP 1 5-20UM W 10-20UM L	0.15
WF98B	N16	WF98B1C3SW1	1.86	8/20/98	MESODINIUM RUBRUM	NA
WF98B	N16	WF98B1C3SW1	1.86	8/20/98	PROTOPERIDINIUM BIPES	0.72
WF98B	N16	WF98B1C3SW1	1.86	8/20/98	PROTOPERIDINIUM DIVERGENS	90.86
WF98B	N16	WF98B1C3SW1	1.86	8/20/98	PROTOPERIDINIUM PALLIDUM	154.18
WF98B	N16	WF98B1C3SW1	1.86	8/20/98	PROTOPERIDINIUM PENTAGONUM	275.75
WF98B	N16	WF98B1C3SW1	1.86	8/20/98	PROTOPERIDINIUM SP. GROUP 1 10-30W 10-40L	3.23
WF98B	N16	WF98B1C3SW1	1.86	8/20/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	1216.75
WF98B	N16	WF98B1C3SW1	1.86	8/20/98	PROTOPERIDINIUM SP. GROUP 3 76-150W 81-150L	784.61
WF98B	N16	WF98B1C3SW1	1.86	8/20/98	SCRIPPSIELLA TROCHOIDEA	73.49
WF98B	N16	WF98B1C3SW1	1.86	8/20/98	THECATE DINOFLAGELLATE SPP.	NA
WF98B	N16	WF98B1C3WW1	1.86	8/20/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	150.52
WF98B	N16	WF98B1C3WW1	1.86	8/20/98	CERATAULINA PELAGICA	1438.90
WF98B	N16	WF98B1C3WW1	1.86	8/20/98	CERATIUM LINEATUM	577.31
WF98B	N16	WF98B1C3WW1	1.86	8/20/98	CERATIUM TRIPOS	11443.44
WF98B	N16	WF98B1C3WW1	1.86	8/20/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	449.24
WF98B	N16	WF98B1C3WW1	1.86	8/20/98	CYLINDROTHECA CLOSTERIUM	92.35
WF98B	N16	WF98B1C3WW1	1.86	8/20/98	EUTREPTIA/EUTREPTIELLA SPP.	NA
WF98B	N16	WF98B1C3WW1	1.86	8/20/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	4859.85
WF98B	N16	WF98B1C3WW1	1.86	8/20/98	GYMNODINIUM SP. GROUP 2 21-40UM W 21-50UM L	2392.60
WF98B	N16	WF98B1C3WW1	1.86	8/20/98	GYRODINIUM SP. GROUP 1 5-20UM W 10-20UM L	1295.96
WF98B	N16	WF98B1C3WW1	1.86	8/20/98	HETEROCAPSA TRIQUETRA	114.10
WF98B	N16	WF98B1C3WW1	1.86	8/20/98	LEPTOCYLINDRUS DANICUS	121673.71
WF98B	N16	WF98B1C3WW1	1.86	8/20/98	LEPTOCYLINDRUS MINIMUS	9035.01
WF98B	N16	WF98B1C3WW1	1.86	8/20/98	PROTOPERIDINIUM SP. GROUP 1 10-30W 10-40L	1419.76
WF98B	N16	WF98B1C3WW1	1.86	8/20/98	PSEUDONITZSCHIA DELICATISSIMA	8534.17

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WF98B	N16	WF98B1C3WW1	1.86	8/20/98	PSEUDONITZSCHIA PUNGENS	455.01
WF98B	N16	WF98B1C3WW1	1.86	8/20/98	RHIZOSOLENIA DELICATULA	2048.73
WF98B	N16	WF98B1C3WW1	1.86	8/20/98	SCRIPPSIELLA TROCHOIDEA	1061.47
WF98B	N16	WF98B1C3WW1	1.86	8/20/98	THALASSIONEMA NITZSCHIOIDES	12.59
WF98B	N16	WF98B1C3WW1	1.86	8/20/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	11371.08
WF98B	N16	WF98B1C3WW1	1.86	8/20/98	UNID. MICRO-PHYTOFLAG LENGTH >10 MICRONS	3043.07
WF98B	N18	WF98B247SW1	13.15	8/23/98	ATHECATE DINOFLAGELLATE	NA
WF98B	N18	WF98B247SW1	13.15	8/23/98	CERATIUM LONGIPES	487.78
WF98B	N18	WF98B247SW1	13.15	8/23/98	CERATIUM TRIPOS	1269.12
WF98B	N18	WF98B247SW1	13.15	8/23/98	DINOPHYSIS ACUMINATA	4.10
WF98B	N18	WF98B247SW1	13.15	8/23/98	DISTEPHANUS SPECULUM	13.40
WF98B	N18	WF98B247SW1	13.15	8/23/98	MESODINIUM RUBRUM	NA
WF98B	N18	WF98B247SW1	13.15	8/23/98	PROROCENTRUM GRACILE	6.72
WF98B	N18	WF98B247SW1	13.15	8/23/98	PROTOPERIDINIUM SP. GROUP 3 76-150W 81-150L	673.88
WF98B	N18	WF98B247SW1	13.15	8/23/98	PYROCYSTIS LUNULA	NA
WF98B	N18	WF98B247SW1	13.15	8/23/98	SCRIPPSIELLA TROCHOIDEA	130.80
WF98B	N18	WF98B247WW1	13.15	8/23/98	ALEXANDRIUM TAMARENSE	66.81
WF98B	N18	WF98B247WW1	13.15	8/23/98	AMPHIDINIUM SPP.	133.62
WF98B	N18	WF98B247WW1	13.15	8/23/98	CALYCOMONAS WULFFII	24.55
WF98B	N18	WF98B247WW1	13.15	8/23/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	189.66
WF98B	N18	WF98B247WW1	13.15	8/23/98	CERATIUM FUSUS	1929.23
WF98B	N18	WF98B247WW1	13.15	8/23/98	CERATIUM TRIPOS	4943.57
WF98B	N18	WF98B247WW1	13.15	8/23/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	221.20
WF98B	N18	WF98B247WW1	13.15	8/23/98	CHOANOFLAGELLATE SPP.	66.48
WF98B	N18	WF98B247WW1	13.15	8/23/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	168.76
WF98B	N18	WF98B247WW1	13.15	8/23/98	DINOPHYSIS OVUM	8312.92
WF98B	N18	WF98B247WW1	13.15	8/23/98	EUTREPTIA/EUTREPTIELLA SPP.	NA
WF98B	N18	WF98B247WW1	13.15	8/23/98	GUINARDIA FLACCIDA	5974.76
WF98B	N18	WF98B247WW1	13.15	8/23/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	9797.46
WF98B	N18	WF98B247WW1	13.15	8/23/98	GYMNODINIUM SP. GROUP 2 21-40UM W 21-50UM L	5168.02
WF98B	N18	WF98B247WW1	13.15	8/23/98	GYRODINIUM SP. GROUP 1 5-20UM W 10-20UM L	1049.73
WF98B	N18	WF98B247WW1	13.15	8/23/98	GYRODINIUM SP. GROUP 2 21-40UM W 21-50UM L	646.00
WF98B	N18	WF98B247WW1	13.15	8/23/98	GYRODINIUM SPIRALE	2843.16
WF98B	N18	WF98B247WW1	13.15	8/23/98	HETEROCAPSA TRIQUETRA	739.37
WF98B	N18	WF98B247WW1	13.15	8/23/98	LEPTOCYLINDRUS DANICUS	353789.70
WF98B	N18	WF98B247WW1	13.15	8/23/98	LEPTOCYLINDRUS MINIMUS	28.37
WF98B	N18	WF98B247WW1	13.15	8/23/98	PROBOSCIA ALATA	888.50
WF98B	N18	WF98B247WW1	13.15	8/23/98	PSEUDONITZSCHIA DELICATISSIMA	12425.76
WF98B	N18	WF98B247WW1	13.15	8/23/98	PSEUDONITZSCHIA PUNGENS	6224.55
WF98B	N18	WF98B247WW1	13.15	8/23/98	PYROCYSTIS LUNULA	NA
WF98B	N18	WF98B247WW1	13.15	8/23/98	RHIZOSOLENIA DELICATULA	1180.04
WF98B	N18	WF98B247WW1	13.15	8/23/98	RHIZOSOLENIA FRAGILISSIMA	108.27
WF98B	N18	WF98B247WW1	13.15	8/23/98	SCRIPPSIELLA TROCHOIDEA	2292.83
WF98B	N18	WF98B247WW1	13.15	8/23/98	SKELETONEMA COSTATUM GREV+CLEVE	18.70
WF98B	N18	WF98B247WW1	13.15	8/23/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	24900.78

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WF98B	N18	WF98B249SW1	1.95	8/23/98	AMYLAX TRIACANTHA	2.01
WF98B	N18	WF98B249SW1	1.95	8/23/98	ATHECATE DINOFLAGELLATE	NA
WF98B	N18	WF98B249SW1	1.95	8/23/98	CERATIUM FUSUS	65.09
WF98B	N18	WF98B249SW1	1.95	8/23/98	CERATIUM LINEATUM	126.22
WF98B	N18	WF98B249SW1	1.95	8/23/98	CERATIUM MACROCEROS	20.21
WF98B	N18	WF98B249SW1	1.95	8/23/98	CERATIUM TRIPOS	2001.47
WF98B	N18	WF98B249SW1	1.95	8/23/98	DINOPHYSIS ACUMINATA	4.68
WF98B	N18	WF98B249SW1	1.95	8/23/98	DINOPHYSIS NORVEGICA	NA
WF98B	N18	WF98B249SW1	1.95	8/23/98	GYRODINIUM SP. GROUP 1 5-20UM W 10-20UM L	0.30
WF98B	N18	WF98B249SW1	1.95	8/23/98	MESODINIUM RUBRUM	NA
WF98B	N18	WF98B249SW1	1.95	8/23/98	PROROCENTRUM GRACILE	4.72
WF98B	N18	WF98B249SW1	1.95	8/23/98	PROTOPERIDINIUM PENTAGONUM	229.79
WF98B	N18	WF98B249SW1	1.95	8/23/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	486.70
WF98B	N18	WF98B249SW1	1.95	8/23/98	PYROCYSTIS LUNULA	NA
WF98B	N18	WF98B249SW1	1.95	8/23/98	SCRIPPSIELLA TROCHOIDEA	556.96
WF98B	N18	WF98B249SW1	1.95	8/23/98	THECATE DINOFLAGELLATE SPP.	NA
WF98B	N18	WF98B249WW1	1.95	8/23/98	CALYCOMONAS WULFFII	22.73
WF98B	N18	WF98B249WW1	1.95	8/23/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	150.52
WF98B	N18	WF98B249WW1	1.95	8/23/98	CERATIUM LONGIPES	7421.99
WF98B	N18	WF98B249WW1	1.95	8/23/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	214.86
WF98B	N18	WF98B249WW1	1.95	8/23/98	EUTREPTIA/EUTREPTIELLA SPP.	NA
WF98B	N18	WF98B249WW1	1.95	8/23/98	GUINARDIA FLACCIDA	13830.47
WF98B	N18	WF98B249WW1	1.95	8/23/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	1619.95
WF98B	N18	WF98B249WW1	1.95	8/23/98	LEPTOCYLINDRUS DANICUS	79831.16
WF98B	N18	WF98B249WW1	1.95	8/23/98	LEPTOCYLINDRUS MINIMUS	91.92
WF98B	N18	WF98B249WW1	1.95	8/23/98	PSEUDONITZSCHIA DELICATISSIMA	1975.46
WF98B	N18	WF98B249WW1	1.95	8/23/98	PSEUDONITZSCHIA PUNGENS	1516.70
WF98B	N18	WF98B249WW1	1.95	8/23/98	RHIZOSOLENIA DELICATULA	2731.57
WF98B	N18	WF98B249WW1	1.95	8/23/98	SKELETONEMA COSTATUM GREV+CLEVE	577.22
WF98B	N18	WF98B249WW1	1.95	8/23/98	THALASSIONEMA NITZSCHIOIDES	377.85
WF98B	N18	WF98B249WW1	1.95	8/23/98	THALASSIOSIRA SP. GROUP 2 DIAM >20 MICRONS	798.33
WF98B	N18	WF98B249WW1	1.95	8/23/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	18595.80
WF98E	F01	WF98E037SW1	19.36	10/4/98	CERATIUM FUSUS	637.88
WF98E	F01	WF98E037SW1	19.36	10/4/98	CERATIUM LONGIPES	192.75
WF98E	F01	WF98E037SW1	19.36	10/4/98	CERATIUM TRIPOS	965.86
WF98E	F01	WF98E037SW1	19.36	10/4/98	DISTEPHANUS SPECULUM	9.42
WF98E	F01	WF98E037SW1	19.36	10/4/98	GYRODINIUM SPP.	7.42
WF98E	F01	WF98E037SW1	19.36	10/4/98	PROTOPERIDINIUM DEPRESSUM	354.66
WF98E	F01	WF98E037SW1	19.36	10/4/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	379.41
WF98E	F01	WF98E037SW1	19.36	10/4/98	PROTOPERIDINIUM SP. GROUP 3 76-150W 81-150L	66.57
WF98E	F01	WF98E037WW1	19.36	10/4/98	AMPHIDINIUM SPP.	63.73
WF98E	F01	WF98E037WW1	19.36	10/4/98	ASTERIONELLOPSIS GLACIALIS	22.73
WF98E	F01	WF98E037WW1	19.36	10/4/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	1177.58
WF98E	F01	WF98E037WW1	19.36	10/4/98	CERATIUM FUSUS	920.11
WF98E	F01	WF98E037WW1	19.36	10/4/98	CHAETOCEROS ATLANTICUS	NA

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WF98E	F01	WF98E037WW1	19.36	10/4/98	CHAETOCEROS COMPRESSUS	3428.63
WF98E	F01	WF98E037WW1	19.36	10/4/98	CHAETOCEROS DECIPIENS	4639.30
WF98E	F01	WF98E037WW1	19.36	10/4/98	CHAETOCEROS DIDYMUS	231.47
WF98E	F01	WF98E037WW1	19.36	10/4/98	CHAETOCEROS SPP.(<10UM)	838.49
WF98E	F01	WF98E037WW1	19.36	10/4/98	CORETHRON CRIOPHILUM	4752.74
WF98E	F01	WF98E037WW1	19.36	10/4/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	322.40
WF98E	F01	WF98E037WW1	19.36	10/4/98	CYLINDROTHECA CLOSTERIUM	1429.05
WF98E	F01	WF98E037WW1	19.36	10/4/98	EUCAMPIA ZODIACUS	7833.57
WF98E	F01	WF98E037WW1	19.36	10/4/98	EUTREPTIA/EUTREPTIELLA SPP.	NA
WF98E	F01	WF98E037WW1	19.36	10/4/98	GUINARDIA FLACCIDA	35670.82
WF98E	F01	WF98E037WW1	19.36	10/4/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	668.48
WF98E	F01	WF98E037WW1	19.36	10/4/98	LAUDERIA ANNULATA	NA
WF98E	F01	WF98E037WW1	19.36	10/4/98	LEPTOCYLINDRUS DANICUS	5338.98
WF98E	F01	WF98E037WW1	19.36	10/4/98	PENNATE DIATOM SP. GROUP 2 10-30 MICRONS LENGTH	51.06
WF98E	F01	WF98E037WW1	19.36	10/4/98	PLEUROSIGMA SPP.	1046.78
WF98E	F01	WF98E037WW1	19.36	10/4/98	PROBOSCIA ALATA	4243.66
WF98E	F01	WF98E037WW1	19.36	10/4/98	PSEUDONITZSCHIA DELICATISSIMA	78.15
WF98E	F01	WF98E037WW1	19.36	10/4/98	PSEUDONITZSCHIA PUNGENS	1796.79
WF98E	F01	WF98E037WW1	19.36	10/4/98	RHIZOSOLENIA DELICATULA	844.20
WF98E	F01	WF98E037WW1	19.36	10/4/98	RHIZOSOLENIA HEBETATA	NA
WF98E	F01	WF98E037WW1	19.36	10/4/98	RHIZOSOLENIA SETIGERA	6533.13
WF98E	F01	WF98E037WW1	19.36	10/4/98	SKELETONEMA COSTATUM GREV+CLEVE	862.20
WF98E	F01	WF98E037WW1	19.36	10/4/98	THALASSIONEMA NITZSCHIOIDES	77.85
WF98E	F01	WF98E037WW1	19.36	10/4/98	THALASSIOSIRA SP. GROUP 1 DIAM <20 MICRONS	49.46
WF98E	F01	WF98E037WW1	19.36	10/4/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	12281.69
WF98E	F01	WF98E03ASW1	2.24	10/4/98	ATHECATE DINOFLAGELLATE	NA
WF98E	F01	WF98E03ASW1	2.24	10/4/98	CERATIUM FUSUS	2056.24
WF98E	F01	WF98E03ASW1	2.24	10/4/98	CERATIUM LINEATUM	105.18
WF98E	F01	WF98E03ASW1	2.24	10/4/98	CERATIUM LONGIPES	49.17
WF98E	F01	WF98E03ASW1	2.24	10/4/98	CERATIUM MACROCEROS	44.09
WF98E	F01	WF98E03ASW1	2.24	10/4/98	CERATIUM SPP.	259.85
WF98E	F01	WF98E03ASW1	2.24	10/4/98	CERATIUM TRIPOS	1250.92
WF98E	F01	WF98E03ASW1	2.24	10/4/98	MESODINIUM RUBRUM	NA
WF98E	F01	WF98E03ASW1	2.24	10/4/98	PROROCENTRUM MICANS	51.78
WF98E	F01	WF98E03ASW1	2.24	10/4/98	PROTOPERIDINIUM PENTAGONUM	125.34
WF98E	F01	WF98E03ASW1	2.24	10/4/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	248.88
WF98E	F01	WF98E03ASW1	2.24	10/4/98	PROTOPERIDINIUM SP. GROUP 3 76-150W 81-150L	67.93
WF98E	F01	WF98E03ASW1	2.24	10/4/98	SCRIPPSIELLA TROCHOIDEA	59.77
WF98E	F01	WF98E03ASW1	2.24	10/4/98	THECATE DINOFLAGELLATE SPP.	NA
WF98E	F01	WF98E03AWW1	2.24	10/4/98	ASTERIONELLOPSIS GLACIALIS	139.03
WF98E	F01	WF98E03AWW1	2.24	10/4/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	211.07
WF98E	F01	WF98E03AWW1	2.24	10/4/98	CERATAULINA PELAGICA	3399.98
WF98E	F01	WF98E03AWW1	2.24	10/4/98	CHAETOCEROS ATLANTICUS	NA
WF98E	F01	WF98E03AWW1	2.24	10/4/98	CHAETOCEROS COMPRESSUS	5039.60
WF98E	F01	WF98E03AWW1	2.24	10/4/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	6990.33

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WF98E	F01	WF98E03AWW1	2.24	10/4/98	CHAETOCEROS SPP.	1538.93
WF98E	F01	WF98E03AWW1	2.24	10/4/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	225.96
WF98E	F01	WF98E03AWW1	2.24	10/4/98	CYLINDROTHECA CLOSTERIUM	581.88
WF98E	F01	WF98E03AWW1	2.24	10/4/98	EUCAMPIA ZODIACUS	2801.99
WF98E	F01	WF98E03AWW1	2.24	10/4/98	GUINARDIA FLACCIDA	7262.22
WF98E	F01	WF98E03AWW1	2.24	10/4/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	1022.19
WF98E	F01	WF98E03AWW1	2.24	10/4/98	GYMNODINIUM SP. GROUP 2 21-40UM W 21-50UM L	1256.33
WF98E	F01	WF98E03AWW1	2.24	10/4/98	LEPTOCYLINDRUS DANICUS	7689.67
WF98E	F01	WF98E03AWW1	2.24	10/4/98	PROBOSCIA ALATA	7775.69
WF98E	F01	WF98E03AWW1	2.24	10/4/98	PSEUDONITZSCHIA DELICATISSIMA	199.16
WF98E	F01	WF98E03AWW1	2.24	10/4/98	PSEUDONITZSCHIA PUNGENS	3185.54
WF98E	F01	WF98E03AWW1	2.24	10/4/98	RHIZOSOLENIA DELICATULA	717.16
WF98E	F01	WF98E03AWW1	2.24	10/4/98	RHIZOSOLENIA HEBETATA	NA
WF98E	F01	WF98E03AWW1	2.24	10/4/98	RHIZOSOLENIA SETIGERA	7537.11
WF98E	F01	WF98E03AWW1	2.24	10/4/98	SKELETONEMA COSTATUM GREV+CLEVE	472.81
WF98E	F01	WF98E03AWW1	2.24	10/4/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	9910.42
WF98E	F01	WF98E03AWW1	2.24	10/4/98	UNID. MICRO-PHYTOFLAG LENGTH >10 MICRONS	400.04
WF98E	F02	WF98E050SW1	18.29	10/4/98	ATHECATE DINOFLAGELLATE	NA
WF98E	F02	WF98E050SW1	18.29	10/4/98	CERATIUM FUSUS	4579.94
WF98E	F02	WF98E050SW1	18.29	10/4/98	CERATIUM LINEATUM	14.34
WF98E	F02	WF98E050SW1	18.29	10/4/98	CERATIUM LONGIPES	59.01
WF98E	F02	WF98E050SW1	18.29	10/4/98	CERATIUM MACROCEROS	88.18
WF98E	F02	WF98E050SW1	18.29	10/4/98	CERATIUM TRIPOS	1728.55
WF98E	F02	WF98E050SW1	18.29	10/4/98	DISTEPHANUS SPECULUM	5.76
WF98E	F02	WF98E050SW1	18.29	10/4/98	GYRODINIUM SPP.	4.54
WF98E	F02	WF98E050SW1	18.29	10/4/98	PROTOPERIDINIUM DEPRESSUM	72.38
WF98E	F02	WF98E050SW1	18.29	10/4/98	PROTOPERIDINIUM PENTAGONUM	350.95
WF98E	F02	WF98E050SW1	18.29	10/4/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	199.11
WF98E	F02	WF98E050SW1	18.29	10/4/98	PROTOPERIDINIUM SP. GROUP 3 76-150W 81-150L	366.83
WF98E	F02	WF98E050SW1	18.29	10/4/98	PYROCYSTIS LUNULA	NA
WF98E	F02	WF98E050SW1	18.29	10/4/98	SCRIPPSIELLA TROCHOIDEA	3.16
WF98E	F02	WF98E050WW1	18.29	10/4/98	ASTERIONELLOPSIS GLACIALIS	117.13
WF98E	F02	WF98E050WW1	18.29	10/4/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	33.25
WF98E	F02	WF98E050WW1	18.29	10/4/98	CERATAULINA PELAGICA	1525.49
WF98E	F02	WF98E050WW1	18.29	10/4/98	CERATIUM FUSUS	10416.01
WF98E	F02	WF98E050WW1	18.29	10/4/98	CERATIUM TRIPOS	2426.42
WF98E	F02	WF98E050WW1	18.29	10/4/98	CHAETOCEROS DECIPIENS	953.51
WF98E	F02	WF98E050WW1	18.29	10/4/98	CHAETOCEROS SPP.(<10UM)	265.51
WF98E	F02	WF98E050WW1	18.29	10/4/98	COSCINODISCUS SP. GROUP 3 DIAM >100 MICRONS	3894.67
WF98E	F02	WF98E050WW1	18.29	10/4/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	82.95
WF98E	F02	WF98E050WW1	18.29	10/4/98	CYLINDROTHECA CLOSTERIUM	195.81
WF98E	F02	WF98E050WW1	18.29	10/4/98	GUINARDIA FLACCIDA	1466.28
WF98E	F02	WF98E050WW1	18.29	10/4/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	1375.90
WF98E	F02	WF98E050WW1	18.29	10/4/98	LEPTOCYLINDRUS DANICUS	2159.61
WF98E	F02	WF98E050WW1	18.29	10/4/98	PENNATE DIATOM SP. GROUP 2 10-30 MICRONS LENGTH	20.99

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WF98E	F02	WF98E050WW1	18.29	10/4/98	PROTOPERIDINIUM SP. GROUP 1 10-30W 10-40L	250.87
WF98E	F02	WF98E050WW1	18.29	10/4/98	PSEUDONITZSCHIA PUNGENS	1961.68
WF98E	F02	WF98E050WW1	18.29	10/4/98	RHIZOSOLENIA DELICATULA	579.19
WF98E	F02	WF98E050WW1	18.29	10/4/98	SKELETONEMA COSTATUM GREV+CLEVE	208.06
WF98E	F02	WF98E050WW1	18.29	10/4/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	4068.62
WF98E	F02	WF98E052SW1	1.89	10/4/98	ATHECATE DINOFLAGELLATE	NA
WF98E	F02	WF98E052SW1	1.89	10/4/98	CERATIUM FUSUS	778.71
WF98E	F02	WF98E052SW1	1.89	10/4/98	CERATIUM LINEATUM	21.42
WF98E	F02	WF98E052SW1	1.89	10/4/98	CERATIUM LONGIPES	3139.08
WF98E	F02	WF98E052SW1	1.89	10/4/98	CERATIUM MACROCEROS	131.68
WF98E	F02	WF98E052SW1	1.89	10/4/98	CERATIUM SPP.	21.83
WF98E	F02	WF98E052SW1	1.89	10/4/98	CERATIUM TRIPOS	1273.67
WF98E	F02	WF98E052SW1	1.89	10/4/98	DINOPHYSIS NORVEGICA	NA
WF98E	F02	WF98E052SW1	1.89	10/4/98	GYRODINIUM SPP.	2.83
WF98E	F02	WF98E052SW1	1.89	10/4/98	PROROCENTRUM MICANS	4.33
WF98E	F02	WF98E052SW1	1.89	10/4/98	PROTOPERIDINIUM DEPRESSUM	135.11
WF98E	F02	WF98E052SW1	1.89	10/4/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	61.94
WF98E	F02	WF98E052SW1	1.89	10/4/98	SCRIPPSIELLA TROCHOIDEA	29.54
WF98E	F02	WF98E052SW1	1.89	10/4/98	THECATE DINOFLAGELLATE SPP.	NA
WF98E	F02	WF98E052WW1	1.89	10/4/98	ASTERIONELLOPSIS GLACIALIS	32.16
WF98E	F02	WF98E052WW1	1.89	10/4/98	CERATIUM FUSUS	650.84
WF98E	F02	WF98E052WW1	1.89	10/4/98	CERATIUM TRIPOS	1667.75
WF98E	F02	WF98E052WW1	1.89	10/4/98	CHAETOCEROS ATLANTICUS	NA
WF98E	F02	WF98E052WW1	1.89	10/4/98	CHAETOCEROS COMPRESSUS	3214.86
WF98E	F02	WF98E052WW1	1.89	10/4/98	CHAETOCEROS DECIPIENS	655.38
WF98E	F02	WF98E052WW1	1.89	10/4/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	1790.93
WF98E	F02	WF98E052WW1	1.89	10/4/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	119.73
WF98E	F02	WF98E052WW1	1.89	10/4/98	CYLINDROTHECA CLOSTERIUM	336.46
WF98E	F02	WF98E052WW1	1.89	10/4/98	EUCAMPIA ZODIACUS	9137.92
WF98E	F02	WF98E052WW1	1.89	10/4/98	GUINARDIA FLACCIDA	1007.82
WF98E	F02	WF98E052WW1	1.89	10/4/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	70.83
WF98E	F02	WF98E052WW1	1.89	10/4/98	GYRODINIUM SPIRALE	1918.32
WF98E	F02	WF98E052WW1	1.89	10/4/98	LAUDERIA ANNULATA	NA
WF98E	F02	WF98E052WW1	1.89	10/4/98	LEPTOCYLINDRUS DANICUS	3811.21
WF98E	F02	WF98E052WW1	1.89	10/4/98	PENNATE DIATOM SP. GROUP 2 10-30 MICRONS LENGTH	7.21
WF98E	F02	WF98E052WW1	1.89	10/4/98	PROBOSCIA ALATA	3596.92
WF98E	F02	WF98E052WW1	1.89	10/4/98	PROTOPERIDINIUM SP. GROUP 1 10-30W 10-40L	689.71
WF98E	F02	WF98E052WW1	1.89	10/4/98	PSEUDONITZSCHIA DELICATISSIMA	46.06
WF98E	F02	WF98E052WW1	1.89	10/4/98	PSEUDONITZSCHIA PUNGENS	1381.48
WF98E	F02	WF98E052WW1	1.89	10/4/98	RHIZOSOLENIA DELICATULA	646.91
WF98E	F02	WF98E052WW1	1.89	10/4/98	RHIZOSOLENIA HEBETATA	NA
WF98E	F02	WF98E052WW1	1.89	10/4/98	RHIZOSOLENIA SETIGERA	3076.37
WF98E	F02	WF98E052WW1	1.89	10/4/98	SKELETONEMA COSTATUM GREV+CLEVE	67.30
WF98E	F02	WF98E052WW1	1.89	10/4/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	6739.09

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WF98E	F06	WF98E06ESW1	14.58	10/4/98	AMPHIDINIUM SPP.	2.21
WF98E	F06	WF98E06ESW1	14.58	10/4/98	ATHECATE DINOFLAGELLATE	NA
WF98E	F06	WF98E06ESW1	14.58	10/4/98	CERATIUM FUSUS	3035.54
WF98E	F06	WF98E06ESW1	14.58	10/4/98	CERATIUM LINEATUM	12.91
WF98E	F06	WF98E06ESW1	14.58	10/4/98	CERATIUM LONGIPES	212.42
WF98E	F06	WF98E06ESW1	14.58	10/4/98	CERATIUM MACROCEROS	218.24
WF98E	F06	WF98E06ESW1	14.58	10/4/98	CERATIUM TRIPOS	2742.93
WF98E	F06	WF98E06ESW1	14.58	10/4/98	GYMNODINIUM SP. GROUP 2 21-40UM W 21-50UM L	21.40
WF98E	F06	WF98E06ESW1	14.58	10/4/98	PROROCENTRUM MICANS	1.67
WF98E	F06	WF98E06ESW1	14.58	10/4/98	PROTOPERIDINIUM BIPES	0.70
WF98E	F06	WF98E06ESW1	14.58	10/4/98	PROTOPERIDINIUM DEPRESSUM	130.28
WF98E	F06	WF98E06ESW1	14.58	10/4/98	PROTOPERIDINIUM PALLIDUM	21.63
WF98E	F06	WF98E06ESW1	14.58	10/4/98	PROTOPERIDINIUM PENTAGONUM	45.12
WF98E	F06	WF98E06ESW1	14.58	10/4/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	627.18
WF98E	F06	WF98E06ESW1	14.58	10/4/98	PROTOPERIDINIUM SP. GROUP 3 76-150W 81-150L	880.39
WF98E	F06	WF98E06ESW1	14.58	10/4/98	SCRIPPSIELLA TROCHOIDEA	37.97
WF98E	F06	WF98E06ESW1	14.58	10/4/98	THECATE DINOFLAGELLATE SPP.	NA
WF98E	F06	WF98E06EWW1	14.58	10/4/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	156.79
WF98E	F06	WF98E06EWW1	14.58	10/4/98	CERATIUM FUSUS	4645.22
WF98E	F06	WF98E06EWW1	14.58	10/4/98	CERATIUM TRIPOS	5951.59
WF98E	F06	WF98E06EWW1	14.58	10/4/98	CHAETOCEROS COMPRESSUS	13485.37
WF98E	F06	WF98E06EWW1	14.58	10/4/98	CHAETOCEROS DECIPIENS	2338.80
WF98E	F06	WF98E06EWW1	14.58	10/4/98	CHAETOCEROS SOCIALIS	600.57
WF98E	F06	WF98E06EWW1	14.58	10/4/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	2396.68
WF98E	F06	WF98E06EWW1	14.58	10/4/98	CHAETOCEROS SPP.	380.52
WF98E	F06	WF98E06EWW1	14.58	10/4/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	122.08
WF98E	F06	WF98E06EWW1	14.58	10/4/98	CYLINDROTHECA CLOSTERIUM	360.21
WF98E	F06	WF98E06EWW1	14.58	10/4/98	DICTYOCHA SPECULUM	NA
WF98E	F06	WF98E06EWW1	14.58	10/4/98	EUCAMPIA ZODIACUS	66607.33
WF98E	F06	WF98E06EWW1	14.58	10/4/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	252.75
WF98E	F06	WF98E06EWW1	14.58	10/4/98	GYRODINIUM SPIRALE	13691.57
WF98E	F06	WF98E06EWW1	14.58	10/4/98	HETEROCAPSA ROTUNDATA	16.58
WF98E	F06	WF98E06EWW1	14.58	10/4/98	LEPTOCYLINDRUS DANICUS	5153.98
WF98E	F06	WF98E06EWW1	14.58	10/4/98	PROTOPERIDINIUM BIPES	409.39
WF98E	F06	WF98E06EWW1	14.58	10/4/98	PROTOPERIDINIUM SP. GROUP 1 10-30W 10-40L	615.33
WF98E	F06	WF98E06EWW1	14.58	10/4/98	PSEUDONITZSCHIA DELICATISSIMA	16.44
WF98E	F06	WF98E06EWW1	14.58	10/4/98	PSEUDONITZSCHIA PUNGENS	3155.20
WF98E	F06	WF98E06EWW1	14.58	10/4/98	RHIZOSOLENIA DELICATULA	355.16
WF98E	F06	WF98E06EWW1	14.58	10/4/98	RHIZOSOLENIA FRAGILISSIMA	260.70
WF98E	F06	WF98E06EWW1	14.58	10/4/98	RHIZOSOLENIA HEBETATA	NA
WF98E	F06	WF98E06EWW1	14.58	10/4/98	RHIZOSOLENIA SETIGERA	3293.53
WF98E	F06	WF98E06EWW1	14.58	10/4/98	SCRIPPSIELLA TROCHOIDEA	1104.12
WF98E	F06	WF98E06EWW1	14.58	10/4/98	THALASSIOSIRA SP. GROUP 1 DIAM <20 MICRONS	208.07
WF98E	F06	WF98E06EWW1	14.58	10/4/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	9946.92
WF98E	F06	WF98E070SW1	2.46	10/4/98	ATHECATE DINOFLAGELLATE	NA
WF98E	F06	WF98E070SW1	2.46	10/4/98	CERATIUM FUSUS	1666.29

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WF98E	F06	WF98E070SW1	2.46	10/4/98	CERATIUM LONGIPES	47.20
WF98E	F06	WF98E070SW1	2.46	10/4/98	CERATIUM MACROCEROS	94.06
WF98E	F06	WF98E070SW1	2.46	10/4/98	CERATIUM TRIPOS	1079.58
WF98E	F06	WF98E070SW1	2.46	10/4/98	DINOPHYSIS NORVEGICA	NA
WF98E	F06	WF98E070SW1	2.46	10/4/98	DISTEPHANUS SPECULUM	3.07
WF98E	F06	WF98E070SW1	2.46	10/4/98	GYMNODINIUM SP. GROUP 2 21-40UM W 21-50UM L	25.36
WF98E	F06	WF98E070SW1	2.46	10/4/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	141.59
WF98E	F06	WF98E070SW1	2.46	10/4/98	SCRIPPSIELLA TROCHOIDEA	4.50
WF98E	F06	WF98E070SW1	2.46	10/4/98	THECATE DINOFLAGELLATE SPP.	NA
WF98E	F06	WF98E070WW1	2.46	10/4/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	256.30
WF98E	F06	WF98E070WW1	2.46	10/4/98	CERATAULINA PELAGICA	1223.27
WF98E	F06	WF98E070WW1	2.46	10/4/98	CHAETOCEROS ATLANTICUS	NA
WF98E	F06	WF98E070WW1	2.46	10/4/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	2960.01
WF98E	F06	WF98E070WW1	2.46	10/4/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	159.64
WF98E	F06	WF98E070WW1	2.46	10/4/98	CYLINDROTHECA CLOSTERIUM	235.52
WF98E	F06	WF98E070WW1	2.46	10/4/98	EUCAMPIA ZODIACUS	51943.58
WF98E	F06	WF98E070WW1	2.46	10/4/98	GUINARDIA FLACCIDA	2351.58
WF98E	F06	WF98E070WW1	2.46	10/4/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	165.26
WF98E	F06	WF98E070WW1	2.46	10/4/98	LEPTOCYLINDRUS DANICUS	3837.95
WF98E	F06	WF98E070WW1	2.46	10/4/98	PSEUDONITZSCHIA PUNGENS	2449.83
WF98E	F06	WF98E070WW1	2.46	10/4/98	RHIZOSOLENIA SETIGERA	5024.74
WF98E	F06	WF98E070WW1	2.46	10/4/98	THALASSIOSIRA SP. GROUP 1 DIAM <20 MICRONS	136.05
WF98E	F06	WF98E070WW1	2.46	10/4/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	8215.27
WF98E	F13	WF98E097SW1	8.37	10/4/98	AMPHIDINIUM SPP.	1.03
WF98E	F13	WF98E097SW1	8.37	10/4/98	AMYLAX TRIACANTHA	2.45
WF98E	F13	WF98E097SW1	8.37	10/4/98	ATHECATE DINOFLAGELLATE	NA
WF98E	F13	WF98E097SW1	8.37	10/4/98	CERATIUM FUSUS	1764.23
WF98E	F13	WF98E097SW1	8.37	10/4/98	CERATIUM LINEATUM	9.61
WF98E	F13	WF98E097SW1	8.37	10/4/98	CERATIUM LONGIPES	131.78
WF98E	F13	WF98E097SW1	8.37	10/4/98	CERATIUM MACROCEROS	216.62
WF98E	F13	WF98E097SW1	8.37	10/4/98	CERATIUM TRIPOS	1828.62
WF98E	F13	WF98E097SW1	8.37	10/4/98	DISTEPHANUS SPECULUM	0.40
WF98E	F13	WF98E097SW1	8.37	10/4/98	GYMNODINIUM SP. GROUP 2 21-40UM W 21-50UM L	13.28
WF98E	F13	WF98E097SW1	8.37	10/4/98	GYRODINIUM SPP.	3.38
WF98E	F13	WF98E097SW1	8.37	10/4/98	PROROCENTRUM MICANS	12.43
WF98E	F13	WF98E097SW1	8.37	10/4/98	PROTOPERIDINIUM BREVIPES	4.76
WF98E	F13	WF98E097SW1	8.37	10/4/98	PROTOPERIDINIUM DEPRESSUM	242.47
WF98E	F13	WF98E097SW1	8.37	10/4/98	PROTOPERIDINIUM PALLIDUM	53.66
WF98E	F13	WF98E097SW1	8.37	10/4/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	1037.56
WF98E	F13	WF98E097SW1	8.37	10/4/98	PROTOPERIDINIUM SP. GROUP 3 76-150W 81-150L	728.23
WF98E	F13	WF98E097SW1	8.37	10/4/98	PYROCYSTIS LUNULA	NA
WF98E	F13	WF98E097SW1	8.37	10/4/98	SCRIPPSIELLA TROCHOIDEA	84.81
WF98E	F13	WF98E097SW1	8.37	10/4/98	THECATE DINOFLAGELLATE SPP.	NA
WF98E	F13	WF98E097WW1	8.37	10/4/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	929.70
WF98E	F13	WF98E097WW1	8.37	10/4/98	CERATIUM FUSUS	2233.28
WF98E	F13	WF98E097WW1	8.37	10/4/98	CERATIUM TRIPOS	5722.68

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WF98E	F13	WF98E097WW1	8.37	10/4/98	CHAETOCEROS ATLANTICUS	NA
WF98E	F13	WF98E097WW1	8.37	10/4/98	CHAETOCEROS COMPRESSUS	7741.31
WF98E	F13	WF98E097WW1	8.37	10/4/98	CHAETOCEROS SOCIALIS	2162.38
WF98E	F13	WF98E097WW1	8.37	10/4/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	5121.12
WF98E	F13	WF98E097WW1	8.37	10/4/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	293.45
WF98E	F13	WF98E097WW1	8.37	10/4/98	CYLINDROTHECA CLOSTERIUM	1500.88
WF98E	F13	WF98E097WW1	8.37	10/4/98	EUCAMPIA ZODIACUS	80724.03
WF98E	F13	WF98E097WW1	8.37	10/4/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	1947.02
WF98E	F13	WF98E097WW1	8.37	10/4/98	GYMNODINIUM SP. GROUP 2 21-40UM W 21-50UM L	7478.14
WF98E	F13	WF98E097WW1	8.37	10/4/98	GYRODINIUM SP. GROUP 1 5-20UM W 10-20UM L	81.01
WF98E	F13	WF98E097WW1	8.37	10/4/98	LAUDERIA ANNULATA	NA
WF98E	F13	WF98E097WW1	8.37	10/4/98	LEPTOCYLINDRUS DANICUS	3716.81
WF98E	F13	WF98E097WW1	8.37	10/4/98	PENNATE DIATOM SP. GROUP 2 10-30 MICRONS LENGTH	148.51
WF98E	F13	WF98E097WW1	8.37	10/4/98	PLEUROSIGMA SPP.	635.18
WF98E	F13	WF98E097WW1	8.37	10/4/98	PROBOSCIA ALATA	4114.12
WF98E	F13	WF98E097WW1	8.37	10/4/98	PROTOPERIDINIUM SP. GROUP 1 10-30W 10-40L	591.66
WF98E	F13	WF98E097WW1	8.37	10/4/98	PSEUDONITZSCHIA DELICATISSIMA	94.84
WF98E	F13	WF98E097WW1	8.37	10/4/98	PSEUDONITZSCHIA PUNGENS	3678.54
WF98E	F13	WF98E097WW1	8.37	10/4/98	RHIZOSOLENIA DELICATULA	341.50
WF98E	F13	WF98E097WW1	8.37	10/4/98	RHIZOSOLENIA SETIGERA	3166.85
WF98E	F13	WF98E097WW1	8.37	10/4/98	SKELETONEMA COSTATUM GREV+CLEVE	3175.15
WF98E	F13	WF98E097WW1	8.37	10/4/98	THALASSIONEMA NITZSCHIOIDES	94.48
WF98E	F13	WF98E097WW1	8.37	10/4/98	THALASSIOSIRA SP. GROUP 1 DIAM <20 MICRONS	120.04
WF98E	F13	WF98E097WW1	8.37	10/4/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	11955.43
WF98E	F13	WF98E099SW1	2.02	10/4/98	AMPHIDINIUM SPP.	6.35
WF98E	F13	WF98E099SW1	2.02	10/4/98	ATHECATE DINOFLAGELLATE	NA
WF98E	F13	WF98E099SW1	2.02	10/4/98	CERATIUM FUSUS	330.18
WF98E	F13	WF98E099SW1	2.02	10/4/98	CERATIUM LINEATUM	8.89
WF98E	F13	WF98E099SW1	2.02	10/4/98	CERATIUM MACROCEROS	164.01
WF98E	F13	WF98E099SW1	2.02	10/4/98	CERATIUM SPP.	24.17
WF98E	F13	WF98E099SW1	2.02	10/4/98	CERATIUM TRIPOS	141.01
WF98E	F13	WF98E099SW1	2.02	10/4/98	DINOPHYSIS NORVEGICA	NA
WF98E	F13	WF98E099SW1	2.02	10/4/98	DISTEPHANUS SPECULUM	4.10
WF98E	F13	WF98E099SW1	2.02	10/4/98	GYMNODINIUM SP. GROUP 2 21-40UM W 21-50UM L	36.85
WF98E	F13	WF98E099SW1	2.02	10/4/98	GYRODINIUM SPP.	18.77
WF98E	F13	WF98E099SW1	2.02	10/4/98	PROTOPERIDINIUM PENTAGONUM	103.61
WF98E	F13	WF98E099SW1	2.02	10/4/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	171.45
WF98E	F13	WF98E099SW1	2.02	10/4/98	PYROCYSTIS LUNULA	NA
WF98E	F13	WF98E099SW1	2.02	10/4/98	SCRIPPSIELLA TROCHOIDEA	17.44
WF98E	F13	WF98E099SW1	2.02	10/4/98	THECATE DINOFLAGELLATE SPP.	NA
WF98E	F13	WF98E099WW1	2.02	10/4/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	376.90
WF98E	F13	WF98E099WW1	2.02	10/4/98	CERATAULINA PELAGICA	2998.22
WF98E	F13	WF98E099WW1	2.02	10/4/98	CERATIUM FUSUS	1488.85
WF98E	F13	WF98E099WW1	2.02	10/4/98	CHAETOCEROS COMPRESSUS	3741.64
WF98E	F13	WF98E099WW1	2.02	10/4/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	5974.64

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WF98E	F13	WF98E099WW1	2.02	10/4/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	234.76
WF98E	F13	WF98E099WW1	2.02	10/4/98	CYLINDROTHECA CLOSTERIUM	461.81
WF98E	F13	WF98E099WW1	2.02	10/4/98	EUCAMPIA ZODIACUS	58041.24
WF98E	F13	WF98E099WW1	2.02	10/4/98	GUINARDIA FLACCIDA	2305.47
WF98E	F13	WF98E099WW1	2.02	10/4/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	324.04
WF98E	F13	WF98E099WW1	2.02	10/4/98	GYRODINIUM SP. GROUP 1 5-20UM W 10-20UM L	432.05
WF98E	F13	WF98E099WW1	2.02	10/4/98	GYRODINIUM SPIRALE	4388.32
WF98E	F13	WF98E099WW1	2.02	10/4/98	GYROSIGMA SPP.	423.45
WF98E	F13	WF98E099WW1	2.02	10/4/98	LAUDERIA ANNULATA	NA
WF98E	F13	WF98E099WW1	2.02	10/4/98	LEPTOCYLINDRUS DANICUS	4680.43
WF98E	F13	WF98E099WW1	2.02	10/4/98	LEPTOCYLINDRUS MINIMUS	43.78
WF98E	F13	WF98E099WW1	2.02	10/4/98	PROBOSCIA ALATA	1371.37
WF98E	F13	WF98E099WW1	2.02	10/4/98	PSEUDONITZSCHIA DELICATISSIMA	379.35
WF98E	F13	WF98E099WW1	2.02	10/4/98	PSEUDONITZSCHIA PUNGENS	2856.87
WF98E	F13	WF98E099WW1	2.02	10/4/98	RHIZOSOLENIA DELICATULA	455.34
WF98E	F13	WF98E099WW1	2.02	10/4/98	RHIZOSOLENIA HEBETATA	NA
WF98E	F13	WF98E099WW1	2.02	10/4/98	RHIZOSOLENIA SETIGERA	1407.49
WF98E	F13	WF98E099WW1	2.02	10/4/98	SKELETONEMA COSTATUM GREV+CLEVE	1443.25
WF98E	F13	WF98E099WW1	2.02	10/4/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	9878.96
WF98E	F13	WF98E099WW1	2.02	10/4/98	UNID. MICRO-PHYTOFLAG LENGTH >10 MICRONS	380.99
WF98E	F23	WF98E0AASW1	10.58	10/6/98	ATHECATE DINOFLAGELLATE	NA
WF98E	F23	WF98E0AASW1	10.58	10/6/98	CERATIUM FUSUS	17.75
WF98E	F23	WF98E0AASW1	10.58	10/6/98	CERATIUM TRIPOS	56.86
WF98E	F23	WF98E0AASW1	10.58	10/6/98	DINOPHYSIS NORVEGICA	NA
WF98E	F23	WF98E0AASW1	10.58	10/6/98	DISTEPHANUS SPECULUM	2.88
WF98E	F23	WF98E0AASW1	10.58	10/6/98	GYMNODINIUM SP. GROUP 2 21-40UM W 21-50UM L	11.89
WF98E	F23	WF98E0AASW1	10.58	10/6/98	PROROCENTRUM MICANS	15.76
WF98E	F23	WF98E0AASW1	10.58	10/6/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	232.29
WF98E	F23	WF98E0AASW1	10.58	10/6/98	THECATE DINOFLAGELLATE SPP.	NA
WF98E	F23	WF98E0AAWW1	10.58	10/6/98	ASTERIONELLOPSIS GLACIALIS	91.95
WF98E	F23	WF98E0AAWW1	10.58	10/6/98	CALYCOMONAS WULFFII	22.77
WF98E	F23	WF98E0AAWW1	10.58	10/6/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	678.43
WF98E	F23	WF98E0AAWW1	10.58	10/6/98	CERATIUM TRIPOS	1907.56
WF98E	F23	WF98E0AAWW1	10.58	10/6/98	CHAETOCEROS DIDYMUS	505.64
WF98E	F23	WF98E0AAWW1	10.58	10/6/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	512.11
WF98E	F23	WF98E0AAWW1	10.58	10/6/98	CHAETOCEROS SPP.(<10UM)	187.86
WF98E	F23	WF98E0AAWW1	10.58	10/6/98	COCCONEIS SPP.	25.94
WF98E	F23	WF98E0AAWW1	10.58	10/6/98	CORETHRON CRIOPHILUM	3839.72
WF98E	F23	WF98E0AAWW1	10.58	10/6/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	1858.52
WF98E	F23	WF98E0AAWW1	10.58	10/6/98	CRYPTOMONAS SP. GROUP 2 LENGTH >10 MICRONS	628.17
WF98E	F23	WF98E0AAWW1	10.58	10/6/98	CYLINDROTHECA CLOSTERIUM	885.14
WF98E	F23	WF98E0AAWW1	10.58	10/6/98	EBRIA TRIPARTITA	367.97
WF98E	F23	WF98E0AAWW1	10.58	10/6/98	EUTREPTIA/EUTREPTIELLA SPP.	NA
WF98E	F23	WF98E0AAWW1	10.58	10/6/98	GYRODINIUM SPIRALE	2194.16
WF98E	F23	WF98E0AAWW1	10.58	10/6/98	HETEROCAPSA TRIQUETRA	1142.84

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WF98E	F23	WF98E0AAWW1	10.58	10/6/98	LEPTOCYLINDRUS DANICUS	8947.88
WF98E	F23	WF98E0AAWW1	10.58	10/6/98	LEPTOCYLINDRUS MINIMUS	48.16
WF98E	F23	WF98E0AAWW1	10.58	10/6/98	LICMOPHORA SPP.	276.79
WF98E	F23	WF98E0AAWW1	10.58	10/6/98	PENNATE DIATOM SP. GROUP 2 10-30 MICRONS LENGTH	33.00
WF98E	F23	WF98E0AAWW1	10.58	10/6/98	PLEUROSIGMA SPP.	211.73
WF98E	F23	WF98E0AAWW1	10.58	10/6/98	PROBOSCIA ALATA	685.69
WF98E	F23	WF98E0AAWW1	10.58	10/6/98	PROROCENTRUM MINIMUM	465.53
WF98E	F23	WF98E0AAWW1	10.58	10/6/98	PSEUDONITZSCHIA DELICATISSIMA	57.96
WF98E	F23	WF98E0AAWW1	10.58	10/6/98	PSEUDONITZSCHIA PUNGENS	75.85
WF98E	F23	WF98E0AAWW1	10.58	10/6/98	PYRAMIMONAS SP. GROUP 1 10-20 MICRONS LENGTH	NA
WF98E	F23	WF98E0AAWW1	10.58	10/6/98	RHIZOSOLENIA DELICATULA	1593.68
WF98E	F23	WF98E0AAWW1	10.58	10/6/98	SKELETONEMA COSTATUM GREV+CLEVE	1226.76
WF98E	F23	WF98E0AAWW1	10.58	10/6/98	THALASSIONEMA NITZSCHIOIDES	209.95
WF98E	F23	WF98E0AAWW1	10.58	10/6/98	THALASSIOSIRA SP. GROUP 1 DIAM <20 MICRONS	1120.39
WF98E	F23	WF98E0AAWW1	10.58	10/6/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	17555.61
WF98E	F23	WF98E0AAWW1	10.58	10/6/98	UNID. MICRO-PHYTOFLAG LENGTH >10 MICRONS	761.97
WF98E	F23	WF98E0ACSW1	2.14	10/6/98	ATHECATE DINOFLAGELLATE	NA
WF98E	F23	WF98E0ACSW1	2.14	10/6/98	CERATIUM FUSUS	43.20
WF98E	F23	WF98E0ACSW1	2.14	10/6/98	CERATIUM MACROCEROS	10.73
WF98E	F23	WF98E0ACSW1	2.14	10/6/98	CERATIUM TRIPOS	55.34
WF98E	F23	WF98E0ACSW1	2.14	10/6/98	DINOPHYSIS NORVEGICA	NA
WF98E	F23	WF98E0ACSW1	2.14	10/6/98	DISTEPHANUS SPECULUM	0.44
WF98E	F23	WF98E0ACSW1	2.14	10/6/98	PROROCENTRUM MICANS	3.38
WF98E	F23	WF98E0ACSW1	2.14	10/6/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	40.37
WF98E	F23	WF98E0ACWW1	2.14	10/6/98	ASTERIONELLOPSIS GLACIALIS	37.52
WF98E	F23	WF98E0ACWW1	2.14	10/6/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	1178.96
WF98E	F23	WF98E0ACWW1	2.14	10/6/98	CHAETOCEROS DIDYMUS	649.47
WF98E	F23	WF98E0ACWW1	2.14	10/6/98	COCCONEIS SPP.	52.92
WF98E	F23	WF98E0ACWW1	2.14	10/6/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	1656.24
WF98E	F23	WF98E0ACWW1	2.14	10/6/98	CRYPTOMONAS SP. GROUP 2 LENGTH >10 MICRONS	128.15
WF98E	F23	WF98E0ACWW1	2.14	10/6/98	CYLINDROTHECA CLOSTERIUM	706.57
WF98E	F23	WF98E0ACWW1	2.14	10/6/98	EUCAMPIA ZODIACUS	1360.97
WF98E	F23	WF98E0ACWW1	2.14	10/6/98	GRAMMATOPHORA MARINA	49.54
WF98E	F23	WF98E0ACWW1	2.14	10/6/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	110.17
WF98E	F23	WF98E0ACWW1	2.14	10/6/98	LEPTOCYLINDRUS DANICUS	10671.38
WF98E	F23	WF98E0ACWW1	2.14	10/6/98	LEPTOCYLINDRUS MINIMUS	62.52
WF98E	F23	WF98E0ACWW1	2.14	10/6/98	PENNATE DIATOM SP. GROUP 2 10-30 MICRONS LENGTH	16.83
WF98E	F23	WF98E0ACWW1	2.14	10/6/98	PSEUDONITZSCHIA DELICATISSIMA	64.49
WF98E	F23	WF98E0ACWW1	2.14	10/6/98	PSEUDONITZSCHIA PUNGENS	128.94
WF98E	F23	WF98E0ACWW1	2.14	10/6/98	RHIZOSOLENIA DELICATULA	1509.45
WF98E	F23	WF98E0ACWW1	2.14	10/6/98	RHIZOSOLENIA SETIGERA	717.82
WF98E	F23	WF98E0ACWW1	2.14	10/6/98	SKELETONEMA COSTATUM GREV+CLEVE	1383.79
WF98E	F23	WF98E0ACWW1	2.14	10/6/98	THALASSIONEMA NITZSCHIOIDES	64.24

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WF98E	F23	WF98E0ACWW1	2.14	10/6/98	THALASSIOSIRA SP. GROUP 1 DIAM <20 MICRONS	952.33
WF98E	F23	WF98E0ACWW1	2.14	10/6/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	17778.35
WF98E	F23	WF98E0ACWW1	2.14	10/6/98	UNID. MICRO-PHYTOFLAG LENGTH >10 MICRONS	388.61
WF98E	F24	WF98E29BSW1	8.61	10/7/98	CERATIUM FUSUS	236.69
WF98E	F24	WF98E29BSW1	8.61	10/7/98	CERATIUM LINEATUM	4.78
WF98E	F24	WF98E29BSW1	8.61	10/7/98	CERATIUM LONGIPES	98.34
WF98E	F24	WF98E29BSW1	8.61	10/7/98	CERATIUM TRIPOS	265.35
WF98E	F24	WF98E29BSW1	8.61	10/7/98	DINOPHYSIS NORVEGICA	NA
WF98E	F24	WF98E29BSW1	8.61	10/7/98	GYMNODINIUM SP. GROUP 2 21-40UM W 21-50UM L	39.63
WF98E	F24	WF98E29BSW1	8.61	10/7/98	PROROCENTRUM MICANS	34.00
WF98E	F24	WF98E29BSW1	8.61	10/7/98	PROTOPERIDINIUM SP. GROUP 3 76-150W 81-150L	101.90
WF98E	F24	WF98E29BSW1	8.61	10/7/98	SCRIPPSIELLA TROCHOIDEA	3.52
WF98E	F24	WF98E29BSW1	8.61	10/7/98	THECATE DINOFLAGELLATE SPP.	NA
WF98E	F24	WF98E29BWW1	8.61	10/7/98	ASTERIONELLOPSIS GLACIALIS	33.10
WF98E	F24	WF98E29BWW1	8.61	10/7/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	153.27
WF98E	F24	WF98E29BWW1	8.61	10/7/98	CERATIUM FUSUS	446.66
WF98E	F24	WF98E29BWW1	8.61	10/7/98	CHAETOCEROS DIDYMUS	134.84
WF98E	F24	WF98E29BWW1	8.61	10/7/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	102.42
WF98E	F24	WF98E29BWW1	8.61	10/7/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	154.55
WF98E	F24	WF98E29BWW1	8.61	10/7/98	CRYPTOMONAS SP. GROUP 2 LENGTH >10 MICRONS	12.56
WF98E	F24	WF98E29BWW1	8.61	10/7/98	CYLINDROTHECA CLOSTERIUM	323.27
WF98E	F24	WF98E29BWW1	8.61	10/7/98	EUCAMPIA ZODIACUS	600.43
WF98E	F24	WF98E29BWW1	8.61	10/7/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	421.86
WF98E	F24	WF98E29BWW1	8.61	10/7/98	LEPTOCYLINDRUS DANICUS	2753.20
WF98E	F24	WF98E29BWW1	8.61	10/7/98	PROTOPERIDINIUM BIPES	78.73
WF98E	F24	WF98E29BWW1	8.61	10/7/98	PSEUDONITZSCHIA DELICATISSIMA	31.61
WF98E	F24	WF98E29BWW1	8.61	10/7/98	PSEUDONITZSCHIA PUNGENS	83.43
WF98E	F24	WF98E29BWW1	8.61	10/7/98	RHIZOSOLENIA DELICATULA	341.50
WF98E	F24	WF98E29BWW1	8.61	10/7/98	SKELETONEMA COSTATUM GREV+CLEVE	1050.69
WF98E	F24	WF98E29BWW1	8.61	10/7/98	THALASSIONEMA NITZSCHIOIDES	37.79
WF98E	F24	WF98E29BWW1	8.61	10/7/98	THALASSIOSIRA SP. GROUP 1 DIAM <20 MICRONS	624.22
WF98E	F24	WF98E29BWW1	8.61	10/7/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	1403.19
WF98E	F24	WF98E29DSW1	1.74	10/7/98	ATHECATE DINOFLAGELLATE	NA
WF98E	F24	WF98E29DSW1	1.74	10/7/98	CERATIUM TRIPOS	40.37
WF98E	F24	WF98E29DSW1	1.74	10/7/98	DISTEPHANUS SPECULUM	0.85
WF98E	F24	WF98E29DSW1	1.74	10/7/98	GYMNODINIUM SP. GROUP 2 21-40UM W 21-50UM L	10.55
WF98E	F24	WF98E29DSW1	1.74	10/7/98	PROROCENTRUM MICANS	39.50
WF98E	F24	WF98E29DSW1	1.74	10/7/98	SCRIPPSIELLA TROCHOIDEA	11.23
WF98E	F24	WF98E29DSW1	1.74	10/7/98	THECATE DINOFLAGELLATE SPP.	NA
WF98E	F24	WF98E29DWW1	1.74	10/7/98	ASTERIONELLOPSIS GLACIALIS	110.50
WF98E	F24	WF98E29DWW1	1.74	10/7/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	1356.86
WF98E	F24	WF98E29DWW1	1.74	10/7/98	CHAETOCEROS DIDYMUS	280.91
WF98E	F24	WF98E29DWW1	1.74	10/7/98	CHAETOCEROS SPP.(<10UM)	250.48
WF98E	F24	WF98E29DWW1	1.74	10/7/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	890.13
WF98E	F24	WF98E29DWW1	1.74	10/7/98	CYLINDROTHECA CLOSTERIUM	692.71

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WF98E	F24	WF98E29DWW1	1.74	10/7/98	EUCAMPIA ZODIACUS	4002.84
WF98E	F24	WF98E29DWW1	1.74	10/7/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	973.51
WF98E	F24	WF98E29DWW1	1.74	10/7/98	GYRODINIUM SP. GROUP 1 5-20UM W 10-20UM L	81.01
WF98E	F24	WF98E29DWW1	1.74	10/7/98	LEPTOCYLINDRUS DANICUS	11288.10
WF98E	F24	WF98E29DWW1	1.74	10/7/98	LEPTOCYLINDRUS MINIMUS	91.94
WF98E	F24	WF98E29DWW1	1.74	10/7/98	PLEUROSIGMA SPP.	635.18
WF98E	F24	WF98E29DWW1	1.74	10/7/98	PSEUDONITZSCHIA DELICATISSIMA	63.23
WF98E	F24	WF98E29DWW1	1.74	10/7/98	PSEUDONITZSCHIA PUNGENS	113.77
WF98E	F24	WF98E29DWW1	1.74	10/7/98	PYRAMIMONAS SP. GROUP 1 10-20 MICRONS LENGTH	NA
WF98E	F24	WF98E29DWW1	1.74	10/7/98	RHIZOSOLENIA DELICATULA	2732.03
WF98E	F24	WF98E29DWW1	1.74	10/7/98	RHIZOSOLENIA FRAGILISSIMA	501.35
WF98E	F24	WF98E29DWW1	1.74	10/7/98	SKELETONEMA COSTATUM GREV+CLEVE	2655.58
WF98E	F24	WF98E29DWW1	1.74	10/7/98	THALASSIONEMA NITZSCHIOIDES	125.97
WF98E	F24	WF98E29DWW1	1.74	10/7/98	THALASSIOSIRA SP. GROUP 1 DIAM <20 MICRONS	1600.56
WF98E	F24	WF98E29DWW1	1.74	10/7/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	10602.58
WF98E	F24	WF98E29DWW1	1.74	10/7/98	UNID. MICRO-PHYTOFLAG LENGTH >10 MICRONS	380.99
WF98E	F25	WF98E2DBSW1	6.68	10/15/98	ATHECATE DINOFLAGELLATE	NA
WF98E	F25	WF98E2DBSW1	6.68	10/15/98	CERATIUM FUSUS	36.69
WF98E	F25	WF98E2DBSW1	6.68	10/15/98	CERATIUM LINEATUM	723.26
WF98E	F25	WF98E2DBSW1	6.68	10/15/98	CERATIUM LONGIPES	60.97
WF98E	F25	WF98E2DBSW1	6.68	10/15/98	CERATIUM MACROCEROS	54.67
WF98E	F25	WF98E2DBSW1	6.68	10/15/98	CERATIUM SPP.	64.44
WF98E	F25	WF98E2DBSW1	6.68	10/15/98	CERATIUM TRIPOS	611.06
WF98E	F25	WF98E2DBSW1	6.68	10/15/98	DICTYOCHA FIBULA	4.53
WF98E	F25	WF98E2DBSW1	6.68	10/15/98	DINOPHYSIS NORVEGICA	NA
WF98E	F25	WF98E2DBSW1	6.68	10/15/98	DISTEPHANUS SPECULUM	0.74
WF98E	F25	WF98E2DBSW1	6.68	10/15/98	GYRODINIUM SPP.	3.13
WF98E	F25	WF98E2DBSW1	6.68	10/15/98	PROROCENTRUM MICANS	19.16
WF98E	F25	WF98E2DBSW1	6.68	10/15/98	PROTOPERIDINIUM PALLIDUM	74.49
WF98E	F25	WF98E2DBSW1	6.68	10/15/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	60.01
WF98E	F25	WF98E2DBSW1	6.68	10/15/98	PROTOPERIDINIUM SP. GROUP 3 76-150W 81-150L	336.94
WF98E	F25	WF98E2DBSW1	6.68	10/15/98	SCRIPPSIELLA TROCHOIDEA	21.80
WF98E	F25	WF98E2DBSW1	6.68	10/15/98	THECATE DINOFLAGELLATE SPP.	NA
WF98E	F25	WF98E2DBWW1	6.68	10/15/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	126.89
WF98E	F25	WF98E2DBWW1	6.68	10/15/98	CERATIUM FUSUS	2255.61
WF98E	F25	WF98E2DBWW1	6.68	10/15/98	CHAETOCEROS ATLANTICUS	NA
WF98E	F25	WF98E2DBWW1	6.68	10/15/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	3620.63
WF98E	F25	WF98E2DBWW1	6.68	10/15/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	474.22
WF98E	F25	WF98E2DBWW1	6.68	10/15/98	CYLINDROTHECA CLOSTERIUM	1049.46
WF98E	F25	WF98E2DBWW1	6.68	10/15/98	EUCAMPIA ZODIACUS	94333.70
WF98E	F25	WF98E2DBWW1	6.68	10/15/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	1311.00
WF98E	F25	WF98E2DBWW1	6.68	10/15/98	GYMNODINIUM SP. GROUP 2 21-40UM W 21-50UM L	1510.58
WF98E	F25	WF98E2DBWW1	6.68	10/15/98	LEPTOCYLINDRUS DANICUS	6117.60
WF98E	F25	WF98E2DBWW1	6.68	10/15/98	PROTOPERIDINIUM SP. GROUP 1 10-30W 10-40L	1195.16
WF98E	F25	WF98E2DBWW1	6.68	10/15/98	PSEUDONITZSCHIA DELICATISSIMA	207.54

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WF98E	F25	WF98E2DBWW1	6.68	10/15/98	PSEUDONITZSCHIA PUNGENS	612.84
WF98E	F25	WF98E2DBWW1	6.68	10/15/98	RHIZOSOLENIA DELICATULA	517.38
WF98E	F25	WF98E2DBWW1	6.68	10/15/98	SKELETONEMA COSTATUM GREV+CLEVE	728.84
WF98E	F25	WF98E2DBWW1	6.68	10/15/98	THALASSIONEMA NITZSCHIOIDES	127.23
WF98E	F25	WF98E2DBWW1	6.68	10/15/98	THALASSIOSIRA SP. GROUP 1 DIAM <20 MICRONS	282.90
WF98E	F25	WF98E2DBWW1	6.68	10/15/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	8960.91
WF98E	F25	WF98E2DDSW1	1.99	10/15/98	ATHECATE DINOFLAGELLATE	NA
WF98E	F25	WF98E2DDSW1	1.99	10/15/98	CERATIUM FUSUS	1878.13
WF98E	F25	WF98E2DDSW1	1.99	10/15/98	CERATIUM LINEATUM	96.77
WF98E	F25	WF98E2DDSW1	1.99	10/15/98	CERATIUM LONGIPES	90.47
WF98E	F25	WF98E2DDSW1	1.99	10/15/98	CERATIUM MACROCEROS	94.64
WF98E	F25	WF98E2DDSW1	1.99	10/15/98	CERATIUM SPP.	239.06
WF98E	F25	WF98E2DDSW1	1.99	10/15/98	CERATIUM TRIPOS	1150.85
WF98E	F25	WF98E2DDSW1	1.99	10/15/98	DICTYOCHA FIBULA	3.36
WF98E	F25	WF98E2DDSW1	1.99	10/15/98	DISTEPHANUS SPECULUM	0.28
WF98E	F25	WF98E2DDSW1	1.99	10/15/98	GYRODINIUM SPP.	18.57
WF98E	F25	WF98E2DDSW1	1.99	10/15/98	PROROCENTRUM MICANS	45.50
WF98E	F25	WF98E2DDSW1	1.99	10/15/98	PROTOPERIDINIUM PALLIDUM	313.18
WF98E	F25	WF98E2DDSW1	1.99	10/15/98	PROTOPERIDINIUM PENTAGONUM	922.50
WF98E	F25	WF98E2DDSW1	1.99	10/15/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	254.41
WF98E	F25	WF98E2DDSW1	1.99	10/15/98	PROTOPERIDINIUM SP. GROUP 3 76-150W 81-150L	93.75
WF98E	F25	WF98E2DDSW1	1.99	10/15/98	PYROCYSTIS LUNULA	NA
WF98E	F25	WF98E2DDSW1	1.99	10/15/98	SCRIPPSIELLA TROCHOIDEA	42.05
WF98E	F25	WF98E2DDWW1	1.99	10/15/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	310.57
WF98E	F25	WF98E2DDWW1	1.99	10/15/98	CERATAULINA PELAGICA	2779.35
WF98E	F25	WF98E2DDWW1	1.99	10/15/98	CERATIUM FUSUS	4600.55
WF98E	F25	WF98E2DDWW1	1.99	10/15/98	CERATIUM MACROCEROS	2285.21
WF98E	F25	WF98E2DDWW1	1.99	10/15/98	CERATIUM TRIPOS	11788.72
WF98E	F25	WF98E2DDWW1	1.99	10/15/98	CHAETOCEROS ATLANTICUS	NA
WF98E	F25	WF98E2DDWW1	1.99	10/15/98	CHAETOCEROS COMPRESSUS	797.36
WF98E	F25	WF98E2DDWW1	1.99	10/15/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	302.25
WF98E	F25	WF98E2DDWW1	1.99	10/15/98	CYLINDROTHECA CLOSTERIUM	237.83
WF98E	F25	WF98E2DDWW1	1.99	10/15/98	DICTYOCHA SPECULUM	NA
WF98E	F25	WF98E2DDWW1	1.99	10/15/98	EUCAMPIA ZODIACUS	71464.11
WF98E	F25	WF98E2DDWW1	1.99	10/15/98	GYRODINIUM SP. GROUP 1 5-20UM W 10-20UM L	83.44
WF98E	F25	WF98E2DDWW1	1.99	10/15/98	GYRODINIUM SPIRALE	6779.96
WF98E	F25	WF98E2DDWW1	1.99	10/15/98	HETEROCAPSA TRIQUETRA	293.86
WF98E	F25	WF98E2DDWW1	1.99	10/15/98	LEPTOCYLINDRUS DANICUS	5246.21
WF98E	F25	WF98E2DDWW1	1.99	10/15/98	LEPTOCYLINDRUS MINIMUS	135.28
WF98E	F25	WF98E2DDWW1	1.99	10/15/98	PROROCENTRUM MICANS	480.66
WF98E	F25	WF98E2DDWW1	1.99	10/15/98	PROTOPERIDINIUM SP. GROUP 1 10-30W 10-40L	609.41
WF98E	F25	WF98E2DDWW1	1.99	10/15/98	PSEUDONITZSCHIA DELICATISSIMA	260.49
WF98E	F25	WF98E2DDWW1	1.99	10/15/98	PSEUDONITZSCHIA PUNGENS	546.85
WF98E	F25	WF98E2DDWW1	1.99	10/15/98	SKELETONEMA COSTATUM GREV+CLEVE	297.31
WF98E	F25	WF98E2DDWW1	1.99	10/15/98	THALASSIONEMA NITZSCHIOIDES	64.87

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WF98E	F25	WF98E2DDWW1	1.99	10/15/98	THALASSIOSIRA SP. GROUP 1 DIAM <20 MICRONS	164.86
WF98E	F25	WF98E2DDWW1	1.99	10/15/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	8360.62
WF98E	F27	WF98E33BSW1	28.73	10/15/98	AMPHIDINIUM SPP.	4.87
WF98E	F27	WF98E33BSW1	28.73	10/15/98	ATHECATE DINOFLAGELLATE	NA
WF98E	F27	WF98E33BSW1	28.73	10/15/98	CERATIUM FUSUS	44.38
WF98E	F27	WF98E33BSW1	28.73	10/15/98	CERATIUM LONGIPES	61.46
WF98E	F27	WF98E33BSW1	28.73	10/15/98	CERATIUM MACROCEROS	22.04
WF98E	F27	WF98E33BSW1	28.73	10/15/98	CERATIUM SPP.	19.49
WF98E	F27	WF98E33BSW1	28.73	10/15/98	CERATIUM TRIPOS	113.72
WF98E	F27	WF98E33BSW1	28.73	10/15/98	DINOPHYSIS NORVEGICA	NA
WF98E	F27	WF98E33BSW1	28.73	10/15/98	GYMNODINIUM SP. GROUP 2 21-40UM W 21-50UM L	9.91
WF98E	F27	WF98E33BSW1	28.73	10/15/98	GYRODINIUM SPP.	1.26
WF98E	F27	WF98E33BSW1	28.73	10/15/98	MESODINIUM RUBRUM	NA
WF98E	F27	WF98E33BSW1	28.73	10/15/98	PROTOPERIDINIUM BIPES	1.96
WF98E	F27	WF98E33BSW1	28.73	10/15/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	221.23
WF98E	F27	WF98E33BSW1	28.73	10/15/98	PYROCYSTIS LUNULA	NA
WF98E	F27	WF98E33BSW1	28.73	10/15/98	SCRIPPSIELLA TROCHOIDEA	1.76
WF98E	F27	WF98E33BWW1	28.73	10/15/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	25.63
WF98E	F27	WF98E33BWW1	28.73	10/15/98	CHAETOCEROS ATLANTICUS	NA
WF98E	F27	WF98E33BWW1	28.73	10/15/98	CHAETOCEROS COMPRESSUS	2368.84
WF98E	F27	WF98E33BWW1	28.73	10/15/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	1044.71
WF98E	F27	WF98E33BWW1	28.73	10/15/98	CHAETOCEROS SPP.	74.64
WF98E	F27	WF98E33BWW1	28.73	10/15/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	49.89
WF98E	F27	WF98E33BWW1	28.73	10/15/98	CYLINDROTHECA CLOSTERIUM	94.21
WF98E	F27	WF98E33BWW1	28.73	10/15/98	EUCAMPIA ZODIACUS	37562.69
WF98E	F27	WF98E33BWW1	28.73	10/15/98	GYRODINIUM SPIRALE	2685.65
WF98E	F27	WF98E33BWW1	28.73	10/15/98	LEPTOCYLINDRUS DANICUS	3369.91
WF98E	F27	WF98E33BWW1	28.73	10/15/98	PENNATE DIATOM SP. GROUP 2 10-30 MICRONS LENGTH	10.10
WF98E	F27	WF98E33BWW1	28.73	10/15/98	PROTOPERIDINIUM BIPES	1608.37
WF98E	F27	WF98E33BWW1	28.73	10/15/98	PSEUDONITZSCHIA DELICATISSIMA	25.80
WF98E	F27	WF98E33BWW1	28.73	10/15/98	PSEUDONITZSCHIA PUNGENS	92.84
WF98E	F27	WF98E33BWW1	28.73	10/15/98	RHIZOSOLENIA DELICATULA	209.00
WF98E	F27	WF98E33BWW1	28.73	10/15/98	SKELETONEMA COSTATUM GREV+CLEVE	288.53
WF98E	F27	WF98E33BWW1	28.73	10/15/98	THALASSIONEMA NITZSCHIOIDES	64.24
WF98E	F27	WF98E33BWW1	28.73	10/15/98	THALASSIOSIRA SP. GROUP 1 DIAM <20 MICRONS	97.95
WF98E	F27	WF98E33BWW1	28.73	10/15/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	3690.45
WF98E	F27	WF98E33DSW1	2.13	10/15/98	AMPHIDINIUM SPP.	4.59
WF98E	F27	WF98E33DSW1	2.13	10/15/98	ATHECATE DINOFLAGELLATE	NA
WF98E	F27	WF98E33DSW1	2.13	10/15/98	CERATIUM FUSUS	132.55
WF98E	F27	WF98E33DSW1	2.13	10/15/98	CERATIUM LINEATUM	85.67
WF98E	F27	WF98E33DSW1	2.13	10/15/98	CERATIUM TRIPOS	169.82
WF98E	F27	WF98E33DSW1	2.13	10/15/98	DICTYOCHA FIBULA	1.17
WF98E	F27	WF98E33DSW1	2.13	10/15/98	DINOPHYSIS NORVEGICA	NA
WF98E	F27	WF98E33DSW1	2.13	10/15/98	GYMNODINIUM SP. GROUP 2 21-40UM W 21-50UM L	55.48
WF98E	F27	WF98E33DSW1	2.13	10/15/98	GYRODINIUM SPP.	2.83

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WF98E	F27	WF98E33DSW1	2.13	10/15/98	MESODINIUM RUBRUM	NA
WF98E	F27	WF98E33DSW1	2.13	10/15/98	PROROCENTRUM MICANS	20.77
WF98E	F27	WF98E33DSW1	2.13	10/15/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	340.69
WF98E	F27	WF98E33DSW1	2.13	10/15/98	SCRIPPSIELLA TROCHOIDEA	31.50
WF98E	F27	WF98E33DWW1	2.13	10/15/98	AMPHIDINIUM SPP.	103.12
WF98E	F27	WF98E33DWW1	2.13	10/15/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	301.52
WF98E	F27	WF98E33DWW1	2.13	10/15/98	CERATIUM FUSUS	744.43
WF98E	F27	WF98E33DWW1	2.13	10/15/98	CERATIUM MACROCEROS	739.55
WF98E	F27	WF98E33DWW1	2.13	10/15/98	CHAETOCEROS ATLANTICUS	NA
WF98E	F27	WF98E33DWW1	2.13	10/15/98	CHAETOCEROS COMPRESSUS	3999.68
WF98E	F27	WF98E33DWW1	2.13	10/15/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	1109.58
WF98E	F27	WF98E33DWW1	2.13	10/15/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	332.58
WF98E	F27	WF98E33DWW1	2.13	10/15/98	CYLINDROTHECA CLOSTERIUM	38.48
WF98E	F27	WF98E33DWW1	2.13	10/15/98	EUCAMPIA ZODIACUS	18012.80
WF98E	F27	WF98E33DWW1	2.13	10/15/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	2596.03
WF98E	F27	WF98E33DWW1	2.13	10/15/98	GYRODINIUM SP. GROUP 1 5-20UM W 10-20UM L	27.00
WF98E	F27	WF98E33DWW1	2.13	10/15/98	GYRODINIUM SPIRALE	10970.81
WF98E	F27	WF98E33DWW1	2.13	10/15/98	LAUDERIA ANNULATA	NA
WF98E	F27	WF98E33DWW1	2.13	10/15/98	LEPTOCYLINDRUS DANICUS	2110.78
WF98E	F27	WF98E33DWW1	2.13	10/15/98	LEPTOCYLINDRUS MINIMUS	17.51
WF98E	F27	WF98E33DWW1	2.13	10/15/98	PLEUROSIGMA SPP.	423.45
WF98E	F27	WF98E33DWW1	2.13	10/15/98	PROTOPERIDINIUM BIPES	131.21
WF98E	F27	WF98E33DWW1	2.13	10/15/98	PSEUDONITZSCHIA DELICATISSIMA	36.88
WF98E	F27	WF98E33DWW1	2.13	10/15/98	PSEUDONITZSCHIA PUNGENS	88.49
WF98E	F27	WF98E33DWW1	2.13	10/15/98	RHIZOSOLENIA DELICATULA	1138.35
WF98E	F27	WF98E33DWW1	2.13	10/15/98	RHIZOSOLENIA HEBETATA	NA
WF98E	F27	WF98E33DWW1	2.13	10/15/98	SCRIPPSIELLA TROCHOIDEA	176.94
WF98E	F27	WF98E33DWW1	2.13	10/15/98	SKELETONEMA COSTATUM GREV+CLEVE	413.73
WF98E	F27	WF98E33DWW1	2.13	10/15/98	THALASSIONEMA NITZSCHIOIDES	146.96
WF98E	F27	WF98E33DWW1	2.13	10/15/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	5914.79
WF98E	F27	WF98E33DWW1	2.13	10/15/98	UNID. MICRO-PHYTOFLAG LENGTH >10 MICRONS	380.99
WF98E	F30	WF98E17DSW1	5.06	10/7/98	ATHECATE DINOFLAGELLATE	NA
WF98E	F30	WF98E17DSW1	5.06	10/7/98	CERATIUM FUSUS	30.77
WF98E	F30	WF98E17DSW1	5.06	10/7/98	CERATIUM TRIPOS	29.57
WF98E	F30	WF98E17DSW1	5.06	10/7/98	DICTYOCHA FIBULA	0.54
WF98E	F30	WF98E17DSW1	5.06	10/7/98	DINOPHYSIS NORVEGICA	NA
WF98E	F30	WF98E17DSW1	5.06	10/7/98	PROROCENTRUM MICANS	22.50
WF98E	F30	WF98E17DWW1	5.06	10/7/98	ASTERIONELLOPSIS GLACIALIS	1556.93
WF98E	F30	WF98E17DWW1	5.06	10/7/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	973.92
WF98E	F30	WF98E17DWW1	5.06	10/7/98	CHAETOCEROS COMPRESSUS	592.21
WF98E	F30	WF98E17DWW1	5.06	10/7/98	CHAETOCEROS DIDYMUS	592.16
WF98E	F30	WF98E17DWW1	5.06	10/7/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	1995.46
WF98E	F30	WF98E17DWW1	5.06	10/7/98	CRYPTOMONAS SP. GROUP 2 LENGTH >10 MICRONS	128.15
WF98E	F30	WF98E17DWW1	5.06	10/7/98	CYLINDROTHECA CLOSTERIUM	1059.85
WF98E	F30	WF98E17DWW1	5.06	10/7/98	EUCAMPIA ZODIACUS	113.41

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WF98E	F30	WF98E17DWW1	5.06	10/7/98	GUINARDIA FLACCIDA	1175.79
WF98E	F30	WF98E17DWW1	5.06	10/7/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	992.98
WF98E	F30	WF98E17DWW1	5.06	10/7/98	GYRODINIUM SP. GROUP 1 5-20UM W 10-20UM L	27.54
WF98E	F30	WF98E17DWW1	5.06	10/7/98	LEPTOCYLINDRUS DANICUS	2340.22
WF98E	F30	WF98E17DWW1	5.06	10/7/98	LEPTOCYLINDRUS MINIMUS	268.32
WF98E	F30	WF98E17DWW1	5.06	10/7/98	PSEUDONITZSCHIA DELICATISSIMA	32.24
WF98E	F30	WF98E17DWW1	5.06	10/7/98	RHIZOSOLENIA DELICATULA	348.33
WF98E	F30	WF98E17DWW1	5.06	10/7/98	SCENESDESMUS QUADRICAUDA	3.02
WF98E	F30	WF98E17DWW1	5.06	10/7/98	SKELETONEMA COSTATUM GREV+CLEVE	451.45
WF98E	F30	WF98E17DWW1	5.06	10/7/98	THALASSIONEMA NITZSCHIOIDES	64.24
WF98E	F30	WF98E17DWW1	5.06	10/7/98	THALASSIOSIRA SP. GROUP 1 DIAM <20 MICRONS	639.42
WF98E	F30	WF98E17DWW1	5.06	10/7/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	16237.99
WF98E	F30	WF98E17DWW1	5.06	10/7/98	UNID. MICRO-PHYTOFLAG LENGTH >10 MICRONS	1165.82
WF98E	F30	WF98E17FSW1	1.87	10/7/98	ATHECATE DINOFLAGELLATE	NA
WF98E	F30	WF98E17FSW1	1.87	10/7/98	CERATIUM FUSUS	10.36
WF98E	F30	WF98E17FSW1	1.87	10/7/98	CERATIUM MACROCEROS	5.14
WF98E	F30	WF98E17FSW1	1.87	10/7/98	DINOPHYSIS NORVEGICA	NA
WF98E	F30	WF98E17FSW1	1.87	10/7/98	MESODINIUM RUBRUM	NA
WF98E	F30	WF98E17FSW1	1.87	10/7/98	PROROCENTRUM MICANS	17.31
WF98E	F30	WF98E17FWW1	1.87	10/7/98	ASTERIONELLOPSIS GLACIALIS	1549.20
WF98E	F30	WF98E17FWW1	1.87	10/7/98	CALYCOMONAS WULFFII	71.04
WF98E	F30	WF98E17FWW1	1.87	10/7/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	783.96
WF98E	F30	WF98E17FWW1	1.87	10/7/98	CHAETOCEROS DIDYMUS	603.78
WF98E	F30	WF98E17FWW1	1.87	10/7/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	2299.09
WF98E	F30	WF98E17FWW1	1.87	10/7/98	CYLINDROTHECA CLOSTERIUM	720.42
WF98E	F30	WF98E17FWW1	1.87	10/7/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	1687.42
WF98E	F30	WF98E17FWW1	1.87	10/7/98	GYROSIGMA SPP.	220.20
WF98E	F30	WF98E17FWW1	1.87	10/7/98	LEPTOCYLINDRUS DANICUS	3149.66
WF98E	F30	WF98E17FWW1	1.87	10/7/98	PENNATE DIATOM SP. GROUP 1 <10 MICRONS LENGTH	20.22
WF98E	F30	WF98E17FWW1	1.87	10/7/98	PENNATE DIATOM SP. GROUP 2 10-30 MICRONS LENGTH	25.74
WF98E	F30	WF98E17FWW1	1.87	10/7/98	RHIZOSOLENIA SETIGERA	1097.84
WF98E	F30	WF98E17FWW1	1.87	10/7/98	SCENESDESMUS QUADRICAUDA	3.08
WF98E	F30	WF98E17FWW1	1.87	10/7/98	SKELETONEMA COSTATUM GREV+CLEVE	795.52
WF98E	F30	WF98E17FWW1	1.87	10/7/98	THALASSIONEMA NITZSCHIOIDES	109.17
WF98E	F30	WF98E17FWW1	1.87	10/7/98	THALASSIOSIRA SP. GROUP 1 DIAM <20 MICRONS	568.73
WF98E	F30	WF98E17FWW1	1.87	10/7/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	14920.38
WF98E	F31	WF98E2CESW1	6.49	10/15/98	ATHECATE DINOFLAGELLATE	NA
WF98E	F31	WF98E2CESW1	6.49	10/15/98	CERATIUM FUSUS	497.05
WF98E	F31	WF98E2CESW1	6.49	10/15/98	CERATIUM LINEATUM	11.47
WF98E	F31	WF98E2CESW1	6.49	10/15/98	CERATIUM SPP.	31.18
WF98E	F31	WF98E2CESW1	6.49	10/15/98	CERATIUM TRIPOS	136.46
WF98E	F31	WF98E2CESW1	6.49	10/15/98	DISTEPHANUS SPECULUM	0.72
WF98E	F31	WF98E2CESW1	6.49	10/15/98	GYRODINIUM SPP.	4.54
WF98E	F31	WF98E2CESW1	6.49	10/15/98	PROROCENTRUM MICANS	14.84

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WF98E	F31	WF98E2CESW1	6.49	10/15/98	PROTOPERIDINIUM BREVIPES	4.26
WF98E	F31	WF98E2CESW1	6.49	10/15/98	PROTOPERIDINIUM PALLIDUM	24.03
WF98E	F31	WF98E2CESW1	6.49	10/15/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	165.92
WF98E	F31	WF98E2CEWW1	6.49	10/15/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	179.41
WF98E	F31	WF98E2CEWW1	6.49	10/15/98	CERATAULINA PELAGICA	688.09
WF98E	F31	WF98E2CEWW1	6.49	10/15/98	CERATIUM FUSUS	2277.94
WF98E	F31	WF98E2CEWW1	6.49	10/15/98	CHAETOCEROS ATLANTICUS	NA
WF98E	F31	WF98E2CEWW1	6.49	10/15/98	CHAETOCEROS DECIPIENS	573.45
WF98E	F31	WF98E2CEWW1	6.49	10/15/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	587.65
WF98E	F31	WF98E2CEWW1	6.49	10/15/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	578.68
WF98E	F31	WF98E2CEWW1	6.49	10/15/98	CYLINDROTHECA CLOSTERIUM	206.08
WF98E	F31	WF98E2CEWW1	6.49	10/15/98	EUCAMPIA ZODIACUS	23051.38
WF98E	F31	WF98E2CEWW1	6.49	10/15/98	EUTREPTIA/EUTREPTIELLA SPP.	NA
WF98E	F31	WF98E2CEWW1	6.49	10/15/98	GYRODINIUM SP. GROUP 1 5-20UM W 10-20UM L	20.66
WF98E	F31	WF98E2CEWW1	6.49	10/15/98	LEPTOCYLINDRUS DANICUS	2492.33
WF98E	F31	WF98E2CEWW1	6.49	10/15/98	PSEUDONITZSCHIA DELICATISSIMA	52.40
WF98E	F31	WF98E2CEWW1	6.49	10/15/98	PSEUDONITZSCHIA PUNGENS	193.41
WF98E	F31	WF98E2CEWW1	6.49	10/15/98	RHIZOSOLENIA DELICATULA	87.08
WF98E	F31	WF98E2CEWW1	6.49	10/15/98	RHIZOSOLENIA SETIGERA	269.18
WF98E	F31	WF98E2CEWW1	6.49	10/15/98	SKELETONEMA COSTATUM GREV+CLEVE	846.47
WF98E	F31	WF98E2CEWW1	6.49	10/15/98	THALASSIONEMA NITZSCHIOIDES	32.12
WF98E	F31	WF98E2CEWW1	6.49	10/15/98	THALASSIOSIRA SP. GROUP 1 DIAM <20 MICRONS	40.81
WF98E	F31	WF98E2CEWW1	6.49	10/15/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	9434.72
WF98E	F31	WF98E2D1SW1	0.5	10/15/98	AMPHIDINIUM SPP.	0.77
WF98E	F31	WF98E2D1SW1	0.5	10/15/98	ATHECATE DINOFLAGELLATE	NA
WF98E	F31	WF98E2D1SW1	0.5	10/15/98	CERATIUM FUSUS	502.97
WF98E	F31	WF98E2D1SW1	0.5	10/15/98	CERATIUM MACROCEROS	14.70
WF98E	F31	WF98E2D1SW1	0.5	10/15/98	CERATIUM SPP.	77.96
WF98E	F31	WF98E2D1SW1	0.5	10/15/98	CERATIUM TRIPOS	435.93
WF98E	F31	WF98E2D1SW1	0.5	10/15/98	DINOPHYSIS ACUMINATA	0.47
WF98E	F31	WF98E2D1SW1	0.5	10/15/98	DINOPHYSIS NORVEGICA	NA
WF98E	F31	WF98E2D1SW1	0.5	10/15/98	DISTEPHANUS SPECULUM	0.60
WF98E	F31	WF98E2D1SW1	0.5	10/15/98	GYMNODINIUM SP. GROUP 2 21-40UM W 21-50UM L	9.91
WF98E	F31	WF98E2D1SW1	0.5	10/15/98	GYRODINIUM SPP.	5.05
WF98E	F31	WF98E2D1SW1	0.5	10/15/98	MESODINIUM RUBRUM	NA
WF98E	F31	WF98E2D1SW1	0.5	10/15/98	PROROCENTRUM MICANS	24.73
WF98E	F31	WF98E2D1SW1	0.5	10/15/98	PROTOPERIDINIUM PENTAGONUM	41.78
WF98E	F31	WF98E2D1SW1	0.5	10/15/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	248.88
WF98E	F31	WF98E2D1SW1	0.5	10/15/98	PROTOPERIDINIUM SP. GROUP 3 76-150W 81-150L	135.86
WF98E	F31	WF98E2D1SW1	0.5	10/15/98	PYROCYSTIS LUNULA	NA
WF98E	F31	WF98E2D1SW1	0.5	10/15/98	SCRIPPSIELLA TROCHOIDEA	7.91
WF98E	F31	WF98E2D1WW1	0.5	10/15/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	75.38
WF98E	F31	WF98E2D1WW1	0.5	10/15/98	CERATIUM FUSUS	1339.97
WF98E	F31	WF98E2D1WW1	0.5	10/15/98	CHAETOCEROS ATLANTICUS	NA
WF98E	F31	WF98E2D1WW1	0.5	10/15/98	CHAETOCEROS DIDYMUS	89.89

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WF98E	F31	WF98E2D1WW1	0.5	10/15/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	204.84
WF98E	F31	WF98E2D1WW1	0.5	10/15/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	313.01
WF98E	F31	WF98E2D1WW1	0.5	10/15/98	CYLINDROTHECA CLOSTERIUM	207.81
WF98E	F31	WF98E2D1WW1	0.5	10/15/98	DINOPHYSIS NORVEGICA	NA
WF98E	F31	WF98E2D1WW1	0.5	10/15/98	EUCAMPIA ZODIACUS	15277.52
WF98E	F31	WF98E2D1WW1	0.5	10/15/98	GRAMMATOPHORA MARINA	14.57
WF98E	F31	WF98E2D1WW1	0.5	10/15/98	GYRODINIUM SPIRALE	1316.50
WF98E	F31	WF98E2D1WW1	0.5	10/15/98	LEPTOCYLINDRUS DANICUS	1844.64
WF98E	F31	WF98E2D1WW1	0.5	10/15/98	LEPTOCYLINDRUS MINIMUS	5.25
WF98E	F31	WF98E2D1WW1	0.5	10/15/98	PENNATE DIATOM SP. GROUP 2 10-30 MICRONS LENGTH	9.90
WF98E	F31	WF98E2D1WW1	0.5	10/15/98	PROROCENTRUM MICANS	93.33
WF98E	F31	WF98E2D1WW1	0.5	10/15/98	PSEUDONITZSCHIA DELICATISSIMA	22.13
WF98E	F31	WF98E2D1WW1	0.5	10/15/98	PSEUDONITZSCHIA PUNGENS	204.78
WF98E	F31	WF98E2D1WW1	0.5	10/15/98	PYRAMIMONAS SP. GROUP 1 10-20 MICRONS LENGTH	NA
WF98E	F31	WF98E2D1WW1	0.5	10/15/98	RHIZOSOLENIA DELICATULA	170.75
WF98E	F31	WF98E2D1WW1	0.5	10/15/98	RHIZOSOLENIA SETIGERA	844.49
WF98E	F31	WF98E2D1WW1	0.5	10/15/98	SKELETONEMA COSTATUM GREV+CLEVE	548.43
WF98E	F31	WF98E2D1WW1	0.5	10/15/98	STAURASTRUM SPP.	30.92
WF98E	F31	WF98E2D1WW1	0.5	10/15/98	THALASSIOSIRA SP. GROUP 1 DIAM <20 MICRONS	32.01
WF98E	F31	WF98E2D1WW1	0.5	10/15/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	7613.72
WF98E	N04	WF98E0CFSW1	16.17	10/6/98	AMYLAX TRIACANTHA	2.20
WF98E	N04	WF98E0CFSW1	16.17	10/6/98	ATHECATE DINOFLAGELLATE	NA
WF98E	N04	WF98E0CFSW1	16.17	10/6/98	CERATIUM FUSUS	195.27
WF98E	N04	WF98E0CFSW1	16.17	10/6/98	CERATIUM LINEATUM	22.95
WF98E	N04	WF98E0CFSW1	16.17	10/6/98	CERATIUM LONGIPES	177.02
WF98E	N04	WF98E0CFSW1	16.17	10/6/98	CERATIUM MACROCEROS	13.23
WF98E	N04	WF98E0CFSW1	16.17	10/6/98	CERATIUM SPP.	124.73
WF98E	N04	WF98E0CFSW1	16.17	10/6/98	CERATIUM TRIPOS	454.88
WF98E	N04	WF98E0CFSW1	16.17	10/6/98	DINOPHYSIS NORVEGICA	NA
WF98E	N04	WF98E0CFSW1	16.17	10/6/98	DISTEPHANUS SPECULUM	0.36
WF98E	N04	WF98E0CFSW1	16.17	10/6/98	GYMNODINIUM SP. GROUP 2 21-40UM W 21-50UM L	86.19
WF98E	N04	WF98E0CFSW1	16.17	10/6/98	GYRODINIUM SPP.	24.22
WF98E	N04	WF98E0CFSW1	16.17	10/6/98	PROROCENTRUM MICANS	33.38
WF98E	N04	WF98E0CFSW1	16.17	10/6/98	PROTOPERIDINIUM DEPRESSUM	144.76
WF98E	N04	WF98E0CFSW1	16.17	10/6/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	862.79
WF98E	N04	WF98E0CFSW1	16.17	10/6/98	PROTOPERIDINIUM SP. GROUP 3 76-150W 81-150L	81.52
WF98E	N04	WF98E0CFSW1	16.17	10/6/98	PYROCYSTIS LUNULA	NA
WF98E	N04	WF98E0CFSW1	16.17	10/6/98	SCRIPPSIELLA TROCHOIDEA	232.07
WF98E	N04	WF98E0CFSW1	16.17	10/6/98	THECATE DINOFLAGELLATE SPP.	NA
WF98E	N04	WF98E0CFWW1	16.17	10/6/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	1317.41
WF98E	N04	WF98E0CFWW1	16.17	10/6/98	CERATIUM FUSUS	4779.22
WF98E	N04	WF98E0CFWW1	16.17	10/6/98	CHAETOCEROS ATLANTICUS	NA
WF98E	N04	WF98E0CFWW1	16.17	10/6/98	CHAETOCEROS COMPRESSUS	4969.92
WF98E	N04	WF98E0CFWW1	16.17	10/6/98	CHAETOCEROS DIDYMUS	360.69
WF98E	N04	WF98E0CFWW1	16.17	10/6/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	5479.60

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WF98E	N04	WF98E0CFWW1	16.17	10/6/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	272.13
WF98E	N04	WF98E0CFWW1	16.17	10/6/98	CYLINDROTHECA CLOSTERIUM	1482.41
WF98E	N04	WF98E0CFWW1	16.17	10/6/98	EBRIA TRIPARTITA	787.45
WF98E	N04	WF98E0CFWW1	16.17	10/6/98	EUCAMPIA ZODIACUS	19273.69
WF98E	N04	WF98E0CFWW1	16.17	10/6/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	2083.32
WF98E	N04	WF98E0CFWW1	16.17	10/6/98	LEPTOCYLINDRUS DANICUS	86315.42
WF98E	N04	WF98E0CFWW1	16.17	10/6/98	LEPTOCYLINDRUS MINIMUS	84.32
WF98E	N04	WF98E0CFWW1	16.17	10/6/98	PROTOPERIDINIUM BIPES	1687.21
WF98E	N04	WF98E0CFWW1	16.17	10/6/98	PSEUDONITZSCHIA DELICATISSIMA	1183.89
WF98E	N04	WF98E0CFWW1	16.17	10/6/98	PSEUDONITZSCHIA PUNGENS	1055.02
WF98E	N04	WF98E0CFWW1	16.17	10/6/98	RHIZOSOLENIA DELICATULA	1827.04
WF98E	N04	WF98E0CFWW1	16.17	10/6/98	SKELETONEMA COSTATUM GREV+CLEVE	18654.87
WF98E	N04	WF98E0CFWW1	16.17	10/6/98	THALASSIONEMA NITZSCHIOIDES	1415.24
WF98E	N04	WF98E0CFWW1	16.17	10/6/98	THALASSIOSIRA SP. GROUP 1 DIAM <20 MICRONS	8734.24
WF98E	N04	WF98E0CFWW1	16.17	10/6/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	15148.79
WF98E	N04	WF98E0CFWW1	16.17	10/6/98	UNID. MICRO-PHYTOFLAG LENGTH >10 MICRONS	1630.62
WF98E	N04	WF98E0D0SW1	2.11	10/6/98	ATHECATE DINOFLAGELLATE	NA
WF98E	N04	WF98E0D0SW1	2.11	10/6/98	CERATIUM FUSUS	415.39
WF98E	N04	WF98E0D0SW1	2.11	10/6/98	CERATIUM LONGIPES	159.31
WF98E	N04	WF98E0D0SW1	2.11	10/6/98	CERATIUM MACROCEROS	27.78
WF98E	N04	WF98E0D0SW1	2.11	10/6/98	CERATIUM SPP.	49.11
WF98E	N04	WF98E0D0SW1	2.11	10/6/98	CERATIUM TRIPOS	2374.48
WF98E	N04	WF98E0D0SW1	2.11	10/6/98	DINOPHYSIS NORVEGICA	NA
WF98E	N04	WF98E0D0SW1	2.11	10/6/98	GYRODINIUM SPP.	1.36
WF98E	N04	WF98E0D0SW1	2.11	10/6/98	PROROCENTRUM MICANS	10.02
WF98E	N04	WF98E0D0SW1	2.11	10/6/98	PROTOPERIDINIUM DEPRESSUM	130.28
WF98E	N04	WF98E0D0SW1	2.11	10/6/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	627.18
WF98E	N04	WF98E0D0SW1	2.11	10/6/98	PYROCYSTIS LUNULA	NA
WF98E	N04	WF98E0D0SW1	2.11	10/6/98	SCRIPPSIELLA TROCHOIDEA	5.70
WF98E	N04	WF98E0D0WW1	2.11	10/6/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	256.30
WF98E	N04	WF98E0D0WW1	2.11	10/6/98	CERATIUM TRIPOS	5837.14
WF98E	N04	WF98E0D0WW1	2.11	10/6/98	CHAETOCEROS ATLANTICUS	NA
WF98E	N04	WF98E0D0WW1	2.11	10/6/98	CHAETOCEROS COMPRESSUS	45205.40
WF98E	N04	WF98E0D0WW1	2.11	10/6/98	CHAETOCEROS DECIPIENS	1146.91
WF98E	N04	WF98E0D0WW1	2.11	10/6/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	5484.72
WF98E	N04	WF98E0D0WW1	2.11	10/6/98	CHAETOCEROS SPP.	186.60
WF98E	N04	WF98E0D0WW1	2.11	10/6/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	458.96
WF98E	N04	WF98E0D0WW1	2.11	10/6/98	CYLINDROTHECA CLOSTERIUM	588.81
WF98E	N04	WF98E0D0WW1	2.11	10/6/98	EUCAMPIA ZODIACUS	104454.22
WF98E	N04	WF98E0D0WW1	2.11	10/6/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	992.98
WF98E	N04	WF98E0D0WW1	2.11	10/6/98	GYMNODINIUM SP. GROUP 2 21-40UM W 21-50UM L	3051.08
WF98E	N04	WF98E0D0WW1	2.11	10/6/98	GYRODINIUM SPIRALE	6714.14
WF98E	N04	WF98E0D0WW1	2.11	10/6/98	LEPTOCYLINDRUS DANICUS	11373.45
WF98E	N04	WF98E0D0WW1	2.11	10/6/98	PENNATE DIATOM SP. GROUP 2 10-30 MICRONS LENGTH	25.25
WF98E	N04	WF98E0D0WW1	2.11	10/6/98	PROROCENTRUM MICANS	475.99

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WF98E	N04	WF98E0D0WW1	2.11	10/6/98	PSEUDONITZSCHIA DELICATISSIMA	241.84
WF98E	N04	WF98E0D0WW1	2.11	10/6/98	PSEUDONITZSCHIA PUNGENS	2630.34
WF98E	N04	WF98E0D0WW1	2.11	10/6/98	RHIZOSOLENIA DELICATULA	1741.67
WF98E	N04	WF98E0D0WW1	2.11	10/6/98	RHIZOSOLENIA FRAGILISSIMA	511.38
WF98E	N04	WF98E0D0WW1	2.11	10/6/98	RHIZOSOLENIA SETIGERA	2153.46
WF98E	N04	WF98E0D0WW1	2.11	10/6/98	SKELETONEMA COSTATUM GREV+CLEVE	1957.91
WF98E	N04	WF98E0D0WW1	2.11	10/6/98	THALASSIONEMA NITZSCHIOIDES	64.24
WF98E	N04	WF98E0D0WW1	2.11	10/6/98	THALASSIOSIRA SP. GROUP 1 DIAM <20 MICRONS	734.66
WF98E	N04	WF98E0D0WW1	2.11	10/6/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	13157.27
WF98E	N04	WF98E0D0WW1	2.11	10/6/98	UNID. MICRO-PHYTOFLAG LENGTH >10 MICRONS	388.61
WF98E	N16	WF98E2B8SW1	5.07	10/7/98	ATHECATE DINOFLAGELLATE	NA
WF98E	N16	WF98E2B8SW1	5.07	10/7/98	CERATIUM FUSUS	710.07
WF98E	N16	WF98E2B8SW1	5.07	10/7/98	CERATIUM LINEATUM	28.69
WF98E	N16	WF98E2B8SW1	5.07	10/7/98	CERATIUM LONGIPES	55.32
WF98E	N16	WF98E2B8SW1	5.07	10/7/98	CERATIUM MACROCEROS	93.69
WF98E	N16	WF98E2B8SW1	5.07	10/7/98	CERATIUM TRIPOS	454.88
WF98E	N16	WF98E2B8SW1	5.07	10/7/98	DINOPHYSIS NORVEGICA	NA
WF98E	N16	WF98E2B8SW1	5.07	10/7/98	DISTEPHANUS SPECULUM	0.90
WF98E	N16	WF98E2B8SW1	5.07	10/7/98	GONYAULAX SPP.	2.82
WF98E	N16	WF98E2B8SW1	5.07	10/7/98	GYMNODINIUM SP. GROUP 2 21-40UM W 21-50UM L	7.43
WF98E	N16	WF98E2B8SW1	5.07	10/7/98	GYMNODINIUM SPLENDENS	1.61
WF98E	N16	WF98E2B8SW1	5.07	10/7/98	GYRODINIUM SPP.	13.25
WF98E	N16	WF98E2B8SW1	5.07	10/7/98	HETEROCAPSA TRIQUETRA	0.71
WF98E	N16	WF98E2B8SW1	5.07	10/7/98	MESODINIUM RUBRUM	NA
WF98E	N16	WF98E2B8SW1	5.07	10/7/98	PROROCENTRUM MICANS	64.91
WF98E	N16	WF98E2B8SW1	5.07	10/7/98	PROTOPERIDINIUM BREVIPES	23.98
WF98E	N16	WF98E2B8SW1	5.07	10/7/98	PROTOPERIDINIUM DEPRESSUM	361.90
WF98E	N16	WF98E2B8SW1	5.07	10/7/98	PROTOPERIDINIUM PALLIDUM	240.29
WF98E	N16	WF98E2B8SW1	5.07	10/7/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	1908.09
WF98E	N16	WF98E2B8SW1	5.07	10/7/98	PROTOPERIDINIUM SP. GROUP 3 76-150W 81-150L	50.95
WF98E	N16	WF98E2B8SW1	5.07	10/7/98	PYROCYSTIS LUNULA	NA
WF98E	N16	WF98E2B8SW1	5.07	10/7/98	SCRIPPSIELLA TROCHOIDEA	68.56
WF98E	N16	WF98E2B8SW1	5.07	10/7/98	THECATE DINOFLAGELLATE SPP.	NA
WF98E	N16	WF98E2B8WW1	5.07	10/7/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	2050.87
WF98E	N16	WF98E2B8WW1	5.07	10/7/98	CERATIUM FUSUS	9469.10
WF98E	N16	WF98E2B8WW1	5.07	10/7/98	CHAETOCEROS ATLANTICUS	NA
WF98E	N16	WF98E2B8WW1	5.07	10/7/98	CHAETOCEROS COMPRESSUS	13129.27
WF98E	N16	WF98E2B8WW1	5.07	10/7/98	CHAETOCEROS DIDYMUS	357.32
WF98E	N16	WF98E2B8WW1	5.07	10/7/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	7056.91
WF98E	N16	WF98E2B8WW1	5.07	10/7/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	725.80
WF98E	N16	WF98E2B8WW1	5.07	10/7/98	CRYPTOMONAS SP. GROUP 2 LENGTH >10 MICRONS	133.17
WF98E	N16	WF98E2B8WW1	5.07	10/7/98	CYLINDROTHECA CLOSTERIUM	1713.31
WF98E	N16	WF98E2B8WW1	5.07	10/7/98	EUCAMPIA ZODIACUS	110318.39
WF98E	N16	WF98E2B8WW1	5.07	10/7/98	GYRODINIUM SPIRALE	27909.75
WF98E	N16	WF98E2B8WW1	5.07	10/7/98	HETEROCAPSA ROTUNDATA	203.08

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WF98E	N16	WF98E2B8WW1	5.07	10/7/98	LAUDERIA ANNULATA	NA
WF98E	N16	WF98E2B8WW1	5.07	10/7/98	LEPTOCYLINDRUS DANICUS	12257.23
WF98E	N16	WF98E2B8WW1	5.07	10/7/98	PENNATE DIATOM SP. GROUP 2 10-30 MICRONS LENGTH	524.72
WF98E	N16	WF98E2B8WW1	5.07	10/7/98	PROBOSCIA ALATA	4360.97
WF98E	N16	WF98E2B8WW1	5.07	10/7/98	PROTOPERIDINIUM SP. GROUP 1 10-30W 10-40L	1254.33
WF98E	N16	WF98E2B8WW1	5.07	10/7/98	PSEUDONITZSCHIA DELICATISSIMA	636.68
WF98E	N16	WF98E2B8WW1	5.07	10/7/98	PSEUDONITZSCHIA PUNGENS	1688.33
WF98E	N16	WF98E2B8WW1	5.07	10/7/98	RHIZOSOLENIA DELICATULA	6877.88
WF98E	N16	WF98E2B8WW1	5.07	10/7/98	RHIZOSOLENIA HEBETATA	NA
WF98E	N16	WF98E2B8WW1	5.07	10/7/98	RHIZOSOLENIA SETIGERA	2237.91
WF98E	N16	WF98E2B8WW1	5.07	10/7/98	SKELETONEMA COSTATUM GREV+CLEVE	7985.79
WF98E	N16	WF98E2B8WW1	5.07	10/7/98	THALASSIONEMA NITZSCHIOIDES	400.58
WF98E	N16	WF98E2B8WW1	5.07	10/7/98	THALASSIOSIRA SP. GROUP 1 DIAM <20 MICRONS	2799.38
WF98E	N16	WF98E2B8WW1	5.07	10/7/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	10871.89
WF98E	N16	WF98E2B9SW1	1.68	10/7/98	AMPHIDINIUM SPP.	5.66
WF98E	N16	WF98E2B9SW1	1.68	10/7/98	AMYLAX TRIACANTHA	3.11
WF98E	N16	WF98E2B9SW1	1.68	10/7/98	ATHECATE DINOFLAGELLATE	NA
WF98E	N16	WF98E2B9SW1	1.68	10/7/98	CERATIUM FUSUS	679.00
WF98E	N16	WF98E2B9SW1	1.68	10/7/98	CERATIUM MACROCEROS	199.87
WF98E	N16	WF98E2B9SW1	1.68	10/7/98	CERATIUM TRIPOS	322.21
WF98E	N16	WF98E2B9SW1	1.68	10/7/98	GYMNODINIUM SP. GROUP 2 21-40UM W 21-50UM L	80.00
WF98E	N16	WF98E2B9SW1	1.68	10/7/98	GYRODINIUM SPP.	15.01
WF98E	N16	WF98E2B9SW1	1.68	10/7/98	PROROCENTRUM MICANS	21.02
WF98E	N16	WF98E2B9SW1	1.68	10/7/98	PROTOPERIDINIUM BREVIPES	6.04
WF98E	N16	WF98E2B9SW1	1.68	10/7/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	458.36
WF98E	N16	WF98E2B9SW1	1.68	10/7/98	PROTOPERIDINIUM SP. GROUP 3 76-150W 81-150L	692.90
WF98E	N16	WF98E2B9SW1	1.68	10/7/98	SCRIPPSIELLA TROCHOIDEA	59.77
WF98E	N16	WF98E2B9WW1	1.68	10/7/98	AMPHIDINIUM SPP.	632.01
WF98E	N16	WF98E2B9WW1	1.68	10/7/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	692.00
WF98E	N16	WF98E2B9WW1	1.68	10/7/98	CERATIUM TRIPOS	5837.14
WF98E	N16	WF98E2B9WW1	1.68	10/7/98	CHAETOCEROS COMPRESSUS	20135.16
WF98E	N16	WF98E2B9WW1	1.68	10/7/98	CHAETOCEROS DIDYMUS	916.90
WF98E	N16	WF98E2B9WW1	1.68	10/7/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	6268.25
WF98E	N16	WF98E2B9WW1	1.68	10/7/98	CORETHRON CRIOPHILUM	2349.91
WF98E	N16	WF98E2B9WW1	1.68	10/7/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	598.64
WF98E	N16	WF98E2B9WW1	1.68	10/7/98	CYLINDROTHECA CLOSTERIUM	1530.90
WF98E	N16	WF98E2B9WW1	1.68	10/7/98	EUCAMPIA ZODIACUS	96288.42
WF98E	N16	WF98E2B9WW1	1.68	10/7/98	EUTREPTIA/EUTREPTIELLA SPP.	NA
WF98E	N16	WF98E2B9WW1	1.68	10/7/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	3640.94
WF98E	N16	WF98E2B9WW1	1.68	10/7/98	GYRODINIUM SP. GROUP 1 5-20UM W 10-20UM L	992.98
WF98E	N16	WF98E2B9WW1	1.68	10/7/98	GYRODINIUM SPIRALE	26856.55
WF98E	N16	WF98E2B9WW1	1.68	10/7/98	HETEROCAPSA ROTUNDATA	260.55
WF98E	N16	WF98E2B9WW1	1.68	10/7/98	LAUDERIA ANNULATA	NA
WF98E	N16	WF98E2B9WW1	1.68	10/7/98	LEPTOCYLINDRUS DANICUS	11654.28
WF98E	N16	WF98E2B9WW1	1.68	10/7/98	LEPTOCYLINDRUS MINIMUS	147.37

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WF98E	N16	WF98E2B9WW1	1.68	10/7/98	PLEUROSIGMA SPP.	647.88
WF98E	N16	WF98E2B9WW1	1.68	10/7/98	PROBOSCIA ALATA	2098.20
WF98E	N16	WF98E2B9WW1	1.68	10/7/98	PROTOPERIDINIUM BIPES	1608.37
WF98E	N16	WF98E2B9WW1	1.68	10/7/98	PSEUDONITZSCHIA DELICATISSIMA	467.55
WF98E	N16	WF98E2B9WW1	1.68	10/7/98	PSEUDONITZSCHIA PUNGENS	2243.53
WF98E	N16	WF98E2B9WW1	1.68	10/7/98	RHIZOSOLENIA DELICATULA	5921.67
WF98E	N16	WF98E2B9WW1	1.68	10/7/98	RHIZOSOLENIA HEBETATA	NA
WF98E	N16	WF98E2B9WW1	1.68	10/7/98	RHIZOSOLENIA SETIGERA	1076.73
WF98E	N16	WF98E2B9WW1	1.68	10/7/98	SKELETONEMA COSTATUM GREV+CLEVE	18752.31
WF98E	N16	WF98E2B9WW1	1.68	10/7/98	THALASSIONEMA NITZSCHIOIDES	224.85
WF98E	N16	WF98E2B9WW1	1.68	10/7/98	THALASSIOSIRA SP. GROUP 1 DIAM <20 MICRONS	1346.87
WF98E	N16	WF98E2B9WW1	1.68	10/7/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	14697.63
WF98E	N18	WF98E0F4SW1	14.33	10/6/98	AMPHIDINIUM SPP.	3.44
WF98E	N18	WF98E0F4SW1	14.33	10/6/98	ATHECATE DINOFLAGELLATE	NA
WF98E	N18	WF98E0F4SW1	14.33	10/6/98	CERATIUM FUSUS	298.23
WF98E	N18	WF98E0F4SW1	14.33	10/6/98	CERATIUM MACROCEROS	115.22
WF98E	N18	WF98E0F4SW1	14.33	10/6/98	CERATIUM SPP.	58.21
WF98E	N18	WF98E0F4SW1	14.33	10/6/98	CERATIUM TRIPOS	265.35
WF98E	N18	WF98E0F4SW1	14.33	10/6/98	GYMNODINIUM SP. GROUP 2 21-40UM W 21-50UM L	22.19
WF98E	N18	WF98E0F4SW1	14.33	10/6/98	MESODINIUM RUBRUM	NA
WF98E	N18	WF98E0F4SW1	14.33	10/6/98	PROROCENTRUM MICANS	27.70
WF98E	N18	WF98E0F4SW1	14.33	10/6/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	185.83
WF98E	N18	WF98E0F4SW1	14.33	10/6/98	PROTOPERIDINIUM SP. GROUP 3 76-150W 81-150L	76.08
WF98E	N18	WF98E0F4SW1	14.33	10/6/98	PYROCYSTIS LUNULA	NA
WF98E	N18	WF98E0F4SW1	14.33	10/6/98	SCRIPPSIELLA TROCHOIDEA	47.26
WF98E	N18	WF98E0F4SW1	14.33	10/6/98	THECATE DINOFLAGELLATE SPP.	NA
WF98E	N18	WF98E0F4WW1	14.33	10/6/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	1985.03
WF98E	N18	WF98E0F4WW1	14.33	10/6/98	CHAETOCEROS COMPRESSUS	14321.43
WF98E	N18	WF98E0F4WW1	14.33	10/6/98	CHAETOCEROS DECIPIENS	2248.84
WF98E	N18	WF98E0F4WW1	14.33	10/6/98	CHAETOCEROS DIDYMUS	337.10
WF98E	N18	WF98E0F4WW1	14.33	10/6/98	CHAETOCEROS SPP.	1829.42
WF98E	N18	WF98E0F4WW1	14.33	10/6/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	528.21
WF98E	N18	WF98E0F4WW1	14.33	10/6/98	CYLINDROTHECA CLOSTERIUM	2078.14
WF98E	N18	WF98E0F4WW1	14.33	10/6/98	EUCAMPIA ZODIACUS	46032.71
WF98E	N18	WF98E0F4WW1	14.33	10/6/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	1622.52
WF98E	N18	WF98E0F4WW1	14.33	10/6/98	LEPTOCYLINDRUS DANICUS	17620.45
WF98E	N18	WF98E0F4WW1	14.33	10/6/98	PENNATE DIATOM SP. GROUP 2 10-30 MICRONS LENGTH	148.51
WF98E	N18	WF98E0F4WW1	14.33	10/6/98	PSEUDONITZSCHIA DELICATISSIMA	505.80
WF98E	N18	WF98E0F4WW1	14.33	10/6/98	PSEUDONITZSCHIA PUNGENS	1137.69
WF98E	N18	WF98E0F4WW1	14.33	10/6/98	RHIZOSOLENIA DELICATULA	1024.51
WF98E	N18	WF98E0F4WW1	14.33	10/6/98	RHIZOSOLENIA SETIGERA	2111.24
WF98E	N18	WF98E0F4WW1	14.33	10/6/98	SKELETONEMA COSTATUM GREV+CLEVE	8803.82
WF98E	N18	WF98E0F4WW1	14.33	10/6/98	THALASSIONEMA NITZSCHIOIDES	251.93
WF98E	N18	WF98E0F4WW1	14.33	10/6/98	THALASSIOSIRA SP. GROUP 1 DIAM <20 MICRONS	4001.39

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WF98E	N18	WF98E0F4WW1	14.33	10/6/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	12773.43
WF98E	N18	WF98E0F6SW1	2.25	10/6/98	AMPHIDINIUM SPP.	2.08
WF98E	N18	WF98E0F6SW1	2.25	10/6/98	AMYLAX TRIACANTHA	19.12
WF98E	N18	WF98E0F6SW1	2.25	10/6/98	ATHECATE DINOFLAGELLATE	NA
WF98E	N18	WF98E0F6SW1	2.25	10/6/98	CERATIUM FUSUS	566.28
WF98E	N18	WF98E0F6SW1	2.25	10/6/98	CERATIUM LINEATUM	22.18
WF98E	N18	WF98E0F6SW1	2.25	10/6/98	CERATIUM LONGIPES	114.08
WF98E	N18	WF98E0F6SW1	2.25	10/6/98	CERATIUM MACROCEROS	12.79
WF98E	N18	WF98E0F6SW1	2.25	10/6/98	CERATIUM SPP.	22.61
WF98E	N18	WF98E0F6SW1	2.25	10/6/98	CERATIUM TRIPOS	1539.01
WF98E	N18	WF98E0F6SW1	2.25	10/6/98	DINOPHYSIS ACUMINATA	8.22
WF98E	N18	WF98E0F6SW1	2.25	10/6/98	DINOPHYSIS NORVEGICA	NA
WF98E	N18	WF98E0F6SW1	2.25	10/6/98	GYMNODINIUM SP. GROUP 2 21-40UM W 21-50UM L	28.73
WF98E	N18	WF98E0F6SW1	2.25	10/6/98	PROROCENTRUM MICANS	14.34
WF98E	N18	WF98E0F6SW1	2.25	10/6/98	PROTOPERIDINIUM BREVIPES	2.06
WF98E	N18	WF98E0F6SW1	2.25	10/6/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	288.70
WF98E	N18	WF98E0F6SW1	2.25	10/6/98	PROTOPERIDINIUM SP. GROUP 3 76-150W 81-150L	472.80
WF98E	N18	WF98E0F6SW1	2.25	10/6/98	THECATE DINOFLAGELLATE SPP.	NA
WF98E	N18	WF98E0F6WW1	2.25	10/6/98	ASTERIONELLOPSIS GLACIALIS	55.17
WF98E	N18	WF98E0F6WW1	2.25	10/6/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	301.52
WF98E	N18	WF98E0F6WW1	2.25	10/6/98	CERATAULINA PELAGICA	899.46
WF98E	N18	WF98E0F6WW1	2.25	10/6/98	CERATIUM FUSUS	2233.28
WF98E	N18	WF98E0F6WW1	2.25	10/6/98	CERATIUM MACROCEROS	2218.65
WF98E	N18	WF98E0F6WW1	2.25	10/6/98	CERATIUM TRIPOS	5722.68
WF98E	N18	WF98E0F6WW1	2.25	10/6/98	CHAETOCEROS ATLANTICUS	NA
WF98E	N18	WF98E0F6WW1	2.25	10/6/98	CHAETOCEROS COMPRESSUS	34835.91
WF98E	N18	WF98E0F6WW1	2.25	10/6/98	CHAETOCEROS DIDYMUS	449.46
WF98E	N18	WF98E0F6WW1	2.25	10/6/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	12290.69
WF98E	N18	WF98E0F6WW1	2.25	10/6/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	293.45
WF98E	N18	WF98E0F6WW1	2.25	10/6/98	CYLINDROTHECA CLOSTERIUM	346.36
WF98E	N18	WF98E0F6WW1	2.25	10/6/98	EUCAMPIA ZODIACUS	65379.79
WF98E	N18	WF98E0F6WW1	2.25	10/6/98	EUTREPTIA/EUTREPTIELLA SPP.	NA
WF98E	N18	WF98E0F6WW1	2.25	10/6/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	1622.52
WF98E	N18	WF98E0F6WW1	2.25	10/6/98	LAUDERIA ANNULATA	NA
WF98E	N18	WF98E0F6WW1	2.25	10/6/98	LEPTOCYLINDRUS DANICUS	11012.78
WF98E	N18	WF98E0F6WW1	2.25	10/6/98	PSEUDONITZSCHIA DELICATISSIMA	347.74
WF98E	N18	WF98E0F6WW1	2.25	10/6/98	PSEUDONITZSCHIA PUNGENS	2730.46
WF98E	N18	WF98E0F6WW1	2.25	10/6/98	RHIZOSOLENIA DELICATULA	2390.53
WF98E	N18	WF98E0F6WW1	2.25	10/6/98	RHIZOSOLENIA SETIGERA	4222.47
WF98E	N18	WF98E0F6WW1	2.25	10/6/98	RHIZOSOLENIA STOLTERFOTHII	1820.43
WF98E	N18	WF98E0F6WW1	2.25	10/6/98	SKELETONEMA COSTATUM GREV+CLEVE	1241.19
WF98E	N18	WF98E0F6WW1	2.25	10/6/98	THALASSIOSIRA SP. GROUP 1 DIAM <20 MICRONS	560.20
WF98E	N18	WF98E0F6WW1	2.25	10/6/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	6103.56
WN98A	N04	WN98A039SW1	15.81	8/6/98	ATHECATE DINOFLAGELLATE	NA
WN98A	N04	WN98A039SW1	15.81	8/6/98	CERATIUM FUSUS	1916.06

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WN98A	N04	WN98A039SW1	15.81	8/6/98	CERATIUM LINEATUM	99.08
WN98A	N04	WN98A039SW1	15.81	8/6/98	CERATIUM LONGIPES	339.67
WN98A	N04	WN98A039SW1	15.81	8/6/98	CERATIUM SPP.	224.38
WN98A	N04	WN98A039SW1	15.81	8/6/98	CERATIUM TRIPOS	20228.46
WN98A	N04	WN98A039SW1	15.81	8/6/98	DINOPHYSIS ACUMINATA	9.79
WN98A	N04	WN98A039SW1	15.81	8/6/98	DINOPHYSIS NORVEGICA	NA
WN98A	N04	WN98A039SW1	15.81	8/6/98	DISTEPHANUS SPECULUM	676.16
WN98A	N04	WN98A039SW1	15.81	8/6/98	GYRODINIUM SPP.	8.72
WN98A	N04	WN98A039SW1	15.81	8/6/98	PROROCENTRUM MINIMUM	2.66
WN98A	N04	WN98A039SW1	15.81	8/6/98	PROTOPERIDINIUM DEPRESSUM	1249.98
WN98A	N04	WN98A039SW1	15.81	8/6/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	573.09
WN98A	N04	WN98A039SW1	15.81	8/6/98	PROTOPERIDINIUM TROCHOIDIUM	139.66
WN98A	N04	WN98A039SW1	15.81	8/6/98	THECATE DINOFLAGELLATE SPP.	NA
WN98A	N04	WN98A039WW1	15.81	8/6/98	CENTRIC DIATOM SP. GROUP 2 DIAM 10-30 MICRONS	863.44
WN98A	N04	WN98A039WW1	15.81	8/6/98	CERATAULINA PELAGICA	1798.61
WN98A	N04	WN98A039WW1	15.81	8/6/98	CERATIUM FUSUS	8946.00
WN98A	N04	WN98A039WW1	15.81	8/6/98	CERATIUM TRIPOS	17164.95
WN98A	N04	WN98A039WW1	15.81	8/6/98	CHAETOCEROS BOREALIS	709.43
WN98A	N04	WN98A039WW1	15.81	8/6/98	CHAETOCEROS COMPRESSUS	2325.74
WN98A	N04	WN98A039WW1	15.81	8/6/98	CHAETOCEROS SOCIALIS	336.31
WN98A	N04	WN98A039WW1	15.81	8/6/98	CHAETOCEROS SP. GROUP 1 DIAM <10 MICRONS	1127.18
WN98A	N04	WN98A039WW1	15.81	8/6/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	1536.06
WN98A	N04	WN98A039WW1	15.81	8/6/98	CHOANOFLAGELLATE SPP.	61.65
WN98A	N04	WN98A039WW1	15.81	8/6/98	COSCINODISCUS SP. GROUP 2 DIAM 40-100 MICRONS	5891.16
WN98A	N04	WN98A039WW1	15.81	8/6/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	117.38
WN98A	N04	WN98A039WW1	15.81	8/6/98	CYLINDROTHECA CLOSTERIUM	115.43
WN98A	N04	WN98A039WW1	15.81	8/6/98	DICTYOCHA SPECULUM	NA
WN98A	N04	WN98A039WW1	15.81	8/6/98	DINOPHYSIS NORVEGICA	NA
WN98A	N04	WN98A039WW1	15.81	8/6/98	GUINARDIA FLACCIDA	24203.03
WN98A	N04	WN98A039WW1	15.81	8/6/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	4543.06
WN98A	N04	WN98A039WW1	15.81	8/6/98	GYMNODINIUM SP. GROUP 2 21-40UM W 21-50UM L	1495.36
WN98A	N04	WN98A039WW1	15.81	8/6/98	GYRODINIUM SP. GROUP 1 5-20UM W 10-20UM L	649.01
WN98A	N04	WN98A039WW1	15.81	8/6/98	GYRODINIUM SP. GROUP 2 21-40UM W 21-50UM L	5981.44
WN98A	N04	WN98A039WW1	15.81	8/6/98	GYRODINIUM SPIRALE	6581.30
WN98A	N04	WN98A039WW1	15.81	8/6/98	LEPTOCYLINDRUS DANICUS	10597.89
WN98A	N04	WN98A039WW1	15.81	8/6/98	LEPTOCYLINDRUS MINIMUS	892.96
WN98A	N04	WN98A039WW1	15.81	8/6/98	PENNATE DIATOM SP. GROUP 2 10-30 MICRONS LENGTH	98.99
WN98A	N04	WN98A039WW1	15.81	8/6/98	PLEUROSIGMA SPP.	2540.27
WN98A	N04	WN98A039WW1	15.81	8/6/98	PROTOPERIDINIUM SP. GROUP 1 10-30W 10-40L	1183.12
WN98A	N04	WN98A039WW1	15.81	8/6/98	PSEUDONITZSCHIA DELICATISSIMA	569.85
WN98A	N04	WN98A039WW1	15.81	8/6/98	PSEUDONITZSCHIA PUNGENS	492.91
WN98A	N04	WN98A039WW1	15.81	8/6/98	PYRAMIMONAS SP. GROUP 1 10-20 MICRONS LENGTH	NA
WN98A	N04	WN98A039WW1	15.81	8/6/98	RHIZOSOLENIA DELICATULA	2048.65
WN98A	N04	WN98A039WW1	15.81	8/6/98	RHIZOSOLENIA FRAGILISSIMA	1253.14
WN98A	N04	WN98A039WW1	15.81	8/6/98	SCRIPPSIELLA TROCHOIDEA	530.73

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WN98A	N04	WN98A039WW1	15.81	8/6/98	SKELETONEMA COSTATUM GREV+CLEVE	3275.59
WN98A	N04	WN98A039WW1	15.81	8/6/98	THALASSIONEMA NITZSCHIOIDES	883.04
WN98A	N04	WN98A039WW1	15.81	8/6/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	23344.55
WN98A	N04	WN98A03BSW1	1.6	8/6/98	ALEXANDRIUM TAMARENSE	0.28
WN98A	N04	WN98A03BSW1	1.6	8/6/98	ATHECATE DINOFLAGELLATE	NA
WN98A	N04	WN98A03BSW1	1.6	8/6/98	CERATIUM FUSUS	3156.85
WN98A	N04	WN98A03BSW1	1.6	8/6/98	CERATIUM LINEATUM	136.73
WN98A	N04	WN98A03BSW1	1.6	8/6/98	CERATIUM LONGIPES	216.35
WN98A	N04	WN98A03BSW1	1.6	8/6/98	CERATIUM SPP.	142.92
WN98A	N04	WN98A03BSW1	1.6	8/6/98	CERATIUM TRIPOS	15177.84
WN98A	N04	WN98A03BSW1	1.6	8/6/98	DINOPHYSIS ACUMINATA	4.16
WN98A	N04	WN98A03BSW1	1.6	8/6/98	DINOPHYSIS NORVEGICA	NA
WN98A	N04	WN98A03BSW1	1.6	8/6/98	DISTEPHANUS SPECULUM	75.30
WN98A	N04	WN98A03BSW1	1.6	8/6/98	GYRODINIUM SPP.	11.10
WN98A	N04	WN98A03BSW1	1.6	8/6/98	KATODINIUM ROTUNDATUM	0.03
WN98A	N04	WN98A03BSW1	1.6	8/6/98	MESODINIUM RUBRUM	NA
WN98A	N04	WN98A03BSW1	1.6	8/6/98	PROROCENTRUM MINIMUM	0.21
WN98A	N04	WN98A03BSW1	1.6	8/6/98	PROTOPERIDINIUM BIPES	28.68
WN98A	N04	WN98A03BSW1	1.6	8/6/98	PROTOPERIDINIUM BREVIPES	44.94
WN98A	N04	WN98A03BSW1	1.6	8/6/98	PROTOPERIDINIUM DEPRESSUM	530.78
WN98A	N04	WN98A03BSW1	1.6	8/6/98	PROTOPERIDINIUM PYRIFORME	NA
WN98A	N04	WN98A03BSW1	1.6	8/6/98	PROTOPERIDINIUM SP. GROUP 1 10-30W 10-40L	5.39
WN98A	N04	WN98A03BSW1	1.6	8/6/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	2380.28
WN98A	N04	WN98A03BSW1	1.6	8/6/98	PROTOPERIDINIUM TROCHOIDIUM	139.24
WN98A	N04	WN98A03BSW1	1.6	8/6/98	THECATE DINOFLAGELLATE SPP.	NA
WN98A	N04	WN98A03BWW1	1.6	8/6/98	CALYCOMONAS WULFFII	67.62
WN98A	N04	WN98A03BWW1	1.6	8/6/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	223.88
WN98A	N04	WN98A03BWW1	1.6	8/6/98	CERATIUM FUSUS	4421.09
WN98A	N04	WN98A03BWW1	1.6	8/6/98	CERATIUM TRIPOS	22657.74
WN98A	N04	WN98A03BWW1	1.6	8/6/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	1520.70
WN98A	N04	WN98A03BWW1	1.6	8/6/98	CORETHRON CRIOPHILUM	9136.34
WN98A	N04	WN98A03BWW1	1.6	8/6/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	116.21
WN98A	N04	WN98A03BWW1	1.6	8/6/98	DICTYOCHA SPECULUM	NA
WN98A	N04	WN98A03BWW1	1.6	8/6/98	EUTREPTIA/EUTREPTIELLA SPP.	NA
WN98A	N04	WN98A03BWW1	1.6	8/6/98	GUINARDIA FLACCIDA	13692.00
WN98A	N04	WN98A03BWW1	1.6	8/6/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	2891.33
WN98A	N04	WN98A03BWW1	1.6	8/6/98	GYRODINIUM SP. GROUP 1 5-20UM W 10-20UM L	1927.55
WN98A	N04	WN98A03BWW1	1.6	8/6/98	GYRODINIUM SP. GROUP 2 21-40UM W 21-50UM L	5921.62
WN98A	N04	WN98A03BWW1	1.6	8/6/98	LEPTOCYLINDRUS DANICUS	129990.74
WN98A	N04	WN98A03BWW1	1.6	8/6/98	LEPTOCYLINDRUS MINIMUS	1404.05
WN98A	N04	WN98A03BWW1	1.6	8/6/98	PLEUROSIGMA SPP.	1257.43
WN98A	N04	WN98A03BWW1	1.6	8/6/98	PROTOPERIDINIUM DEPRESSUM	72104.66
WN98A	N04	WN98A03BWW1	1.6	8/6/98	PROTOPERIDINIUM SP. GROUP 1 10-30W 10-40L	1171.28
WN98A	N04	WN98A03BWW1	1.6	8/6/98	PSEUDONITZSCHIA DELICATISSIMA	2440.69
WN98A	N04	WN98A03BWW1	1.6	8/6/98	PYRAMIMONAS SP. GROUP 1 10-20 MICRONS LENGTH	NA

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WN98A	N04	WN98A03BWW1	1.6	8/6/98	RHIZOSOLENIA DELICATULA	676.06
WN98A	N04	WN98A03BWW1	1.6	8/6/98	RHIZOSOLENIA FRAGILISSIMA	13894.87
WN98A	N04	WN98A03BWW1	1.6	8/6/98	RHIZOSOLENIA HEBETATA F. SEMISPINA	831.12
WN98A	N04	WN98A03BWW1	1.6	8/6/98	SCRIPPSIELLA TROCHOIDEA	2105.10
WN98A	N04	WN98A03BWW1	1.6	8/6/98	SKELETONEMA COSTATUM GREV+CLEVE	7485.65
WN98A	N04	WN98A03BWW1	1.6	8/6/98	THALASSIONEMA NITZSCHIOIDES	62.34
WN98A	N04	WN98A03BWW1	1.6	8/6/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	19809.52
WN98A	N04	WN98A03BWW1	1.6	8/6/98	UNID. MICRO-PHYTOFLAG LENGTH >10 MICRONS	3771.77
WN98A	N18	WN98A063SW1	15.79	8/6/98	ATHECATE DINOFLAGELLATE	NA
WN98A	N18	WN98A063SW1	15.79	8/6/98	CERATIUM FUSUS	1046.17
WN98A	N18	WN98A063SW1	15.79	8/6/98	CERATIUM LINEATUM	39.78
WN98A	N18	WN98A063SW1	15.79	8/6/98	CERATIUM LONGIPES	664.79
WN98A	N18	WN98A063SW1	15.79	8/6/98	CERATIUM SPP.	135.12
WN98A	N18	WN98A063SW1	15.79	8/6/98	CERATIUM TRIPOS	7648.06
WN98A	N18	WN98A063SW1	15.79	8/6/98	DINOPHYSIS NORVEGICA	NA
WN98A	N18	WN98A063SW1	15.79	8/6/98	DISTEPHANUS SPECULUM	88.68
WN98A	N18	WN98A063SW1	15.79	8/6/98	PROROCENTRUM MINIMUM	0.40
WN98A	N18	WN98A063SW1	15.79	8/6/98	PROTOPERIDINIUM BIPES	3.39
WN98A	N18	WN98A063SW1	15.79	8/6/98	PROTOPERIDINIUM DEPRESSUM	1505.49
WN98A	N18	WN98A063SW1	15.79	8/6/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	316.36
WN98A	N18	WN98A063SW1	15.79	8/6/98	PROTOPERIDINIUM TROCHOIDIUM	131.64
WN98A	N18	WN98A063SW1	15.79	8/6/98	THECATE DINOFLAGELLATE SPP.	NA
WN98A	N18	WN98A063WW1	15.79	8/6/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	197.00
WN98A	N18	WN98A063WW1	15.79	8/6/98	CENTRIC DIATOM SP. GROUP 2 DIAM 10-30 MICRONS	423.77
WN98A	N18	WN98A063WW1	15.79	8/6/98	CERATAULINA PELAGICA	5287.90
WN98A	N18	WN98A063WW1	15.79	8/6/98	CERATIUM TRIPOS	22428.87
WN98A	N18	WN98A063WW1	15.79	8/6/98	CHAETOCEROS COMPRESSUS	4558.46
WN98A	N18	WN98A063WW1	15.79	8/6/98	CHAETOCEROS SOCIALIS	1697.75
WN98A	N18	WN98A063WW1	15.79	8/6/98	CHAETOCEROS SP. GROUP 1 DIAM <10 MICRONS	61.37
WN98A	N18	WN98A063WW1	15.79	8/6/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	2007.12
WN98A	N18	WN98A063WW1	15.79	8/6/98	CORETHRON CRIOPHILUM	9029.40
WN98A	N18	WN98A063WW1	15.79	8/6/98	COSCINODISCUS SP. GROUP 2 DIAM 40-100 MICRONS	3848.89
WN98A	N18	WN98A063WW1	15.79	8/6/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	19.17
WN98A	N18	WN98A063WW1	15.79	8/6/98	CYLINDROTHECA CLOSTERIUM	453.23
WN98A	N18	WN98A063WW1	15.79	8/6/98	DICTYOCHA SPECULUM	NA
WN98A	N18	WN98A063WW1	15.79	8/6/98	DINOPHYSIS OVUM	7555.17
WN98A	N18	WN98A063WW1	15.79	8/6/98	EUTREPTIA/EUTREPTIELLA SPP.	NA
WN98A	N18	WN98A063WW1	15.79	8/6/98	GUINARDIA FLACCIDA	13553.70
WN98A	N18	WN98A063WW1	15.79	8/6/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	2544.11
WN98A	N18	WN98A063WW1	15.79	8/6/98	GYMNODINIUM SP. GROUP 2 21-40UM W 21-50UM L	14654.52
WN98A	N18	WN98A063WW1	15.79	8/6/98	GYRODINIUM SP. GROUP 1 5-20UM W 10-20UM L	318.01
WN98A	N18	WN98A063WW1	15.79	8/6/98	GYRODINIUM SP. GROUP 2 21-40UM W 21-50UM L	2930.90
WN98A	N18	WN98A063WW1	15.79	8/6/98	GYRODINIUM SPIRALE	12899.35
WN98A	N18	WN98A063WW1	15.79	8/6/98	LEPTOCYLINDRUS DANICUS	40464.69
WN98A	N18	WN98A063WW1	15.79	8/6/98	LEPTOCYLINDRUS MINIMUS	3526.15

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WN98A	N18	WN98A063WW1	15.79	8/6/98	PARALIA SULCATA	1572.35
WN98A	N18	WN98A063WW1	15.79	8/6/98	PENNATE DIATOM SP. GROUP 2 10-30 MICRONS LENGTH	97.16
WN98A	N18	WN98A063WW1	15.79	8/6/98	PLEUROSIGMA SPP.	4987.00
WN98A	N18	WN98A063WW1	15.79	8/6/98	PROBOSCIA ALATA	8062.23
WN98A	N18	WN98A063WW1	15.79	8/6/98	PSEUDONITZSCHIA DELICATISSIMA	1022.17
WN98A	N18	WN98A063WW1	15.79	8/6/98	PSEUDONITZSCHIA PUNGENS	74.32
WN98A	N18	WN98A063WW1	15.79	8/6/98	PYRAMIMONAS SP. GROUP 1 10-20 MICRONS LENGTH	NA
WN98A	N18	WN98A063WW1	15.79	8/6/98	RHIZOSOLENIA DELICATULA	1673.07
WN98A	N18	WN98A063WW1	15.79	8/6/98	SCRIPPSIELLA TROCHOIDEA	2080.46
WN98A	N18	WN98A063WW1	15.79	8/6/98	SKELETONEMA COSTATUM GREV+CLEVE	593.93
WN98A	N18	WN98A063WW1	15.79	8/6/98	THALASSIONEMA NITZSCHIOIDES	246.85
WN98A	N18	WN98A063WW1	15.79	8/6/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	16587.85
WN98A	N18	WN98A063WW1	15.79	8/6/98	UNID. MICRO-PHYTOFLAG LENGTH >10 MICRONS	1120.10
WN98A	N18	WN98A065SW1	1.65	8/6/98	ATHECATE DINOFLAGELLATE	NA
WN98A	N18	WN98A065SW1	1.65	8/6/98	CERATIUM FUSUS	2276.95
WN98A	N18	WN98A065SW1	1.65	8/6/98	CERATIUM LINEATUM	119.33
WN98A	N18	WN98A065SW1	1.65	8/6/98	CERATIUM LONGIPES	357.97
WN98A	N18	WN98A065SW1	1.65	8/6/98	CERATIUM MACROCEROS	3.82
WN98A	N18	WN98A065SW1	1.65	8/6/98	CERATIUM SPP.	162.15
WN98A	N18	WN98A065SW1	1.65	8/6/98	CERATIUM TRIPOS	8436.52
WN98A	N18	WN98A065SW1	1.65	8/6/98	DINOPHYSIS ACUMINATA	0.49
WN98A	N18	WN98A065SW1	1.65	8/6/98	DINOPHYSIS NORVEGICA	NA
WN98A	N18	WN98A065SW1	1.65	8/6/98	DISTEPHANUS SPECULUM	3.75
WN98A	N18	WN98A065SW1	1.65	8/6/98	GYRODINIUM SPP.	7.87
WN98A	N18	WN98A065SW1	1.65	8/6/98	PROROCENTRUM GRACILE	1.88
WN98A	N18	WN98A065SW1	1.65	8/6/98	PROTOPERIDINIUM BIPES	4.75
WN98A	N18	WN98A065SW1	1.65	8/6/98	PROTOPERIDINIUM DEPRESSUM	439.10
WN98A	N18	WN98A065SW1	1.65	8/6/98	PROTOPERIDINIUM PYRIFORME	NA
WN98A	N18	WN98A065SW1	1.65	8/6/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	1409.22
WN98A	N18	WN98A065SW1	1.65	8/6/98	PROTOPERIDINIUM TROCHOIDIUM	526.58
WN98A	N18	WN98A065SW1	1.65	8/6/98	THECATE DINOFLAGELLATE SPP.	NA
WN98A	N18	WN98A065WW1	1.65	8/6/98	AMPHIDINIUM SPP.	309.31
WN98A	N18	WN98A065WW1	1.65	8/6/98	CALYCOMONAS WULFFII	204.92
WN98A	N18	WN98A065WW1	1.65	8/6/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	276.40
WN98A	N18	WN98A065WW1	1.65	8/6/98	CENTRIC DIATOM SP. GROUP 2 DIAM 10-30 MICRONS	431.72
WN98A	N18	WN98A065WW1	1.65	8/6/98	CERATIUM FUSUS	13397.26
WN98A	N18	WN98A065WW1	1.65	8/6/98	CERATIUM TRIPOS	34329.91
WN98A	N18	WN98A065WW1	1.65	8/6/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	1025.70
WN98A	N18	WN98A065WW1	1.65	8/6/98	CORETHRON CRIOPHILUM	9228.62
WN98A	N18	WN98A065WW1	1.65	8/6/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	97.82
WN98A	N18	WN98A065WW1	1.65	8/6/98	DINOPHYSIS NORVEGICA	NA
WN98A	N18	WN98A065WW1	1.65	8/6/98	GUINARDIA FLACCIDA	6915.15
WN98A	N18	WN98A065WW1	1.65	8/6/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	5516.57
WN98A	N18	WN98A065WW1	1.65	8/6/98	GYMNODINIUM SP. GROUP 2 21-40UM W 21-50UM L	17944.31
WN98A	N18	WN98A065WW1	1.65	8/6/98	GYRODINIUM SPIRALE	26367.92

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WN98A	N18	WN98A065WW1	1.65	8/6/98	HETEROCAPSA TRIQUETRA	1140.99
WN98A	N18	WN98A065WW1	1.65	8/6/98	LEPTOCYLINDRUS DANICUS	199570.73
WN98A	N18	WN98A065WW1	1.65	8/6/98	LEPTOCYLINDRUS MINIMUS	9927.65
WN98A	N18	WN98A065WW1	1.65	8/6/98	PENNATE DIATOM SP. GROUP 2 10-30 MICRONS LENGTH	49.49
WN98A	N18	WN98A065WW1	1.65	8/6/98	PLEUROSIGMA SPP.	1270.13
WN98A	N18	WN98A065WW1	1.65	8/6/98	PROROCENTRUM MINIMUM	232.39
WN98A	N18	WN98A065WW1	1.65	8/6/98	PROTOPERIDINIUM BIPES	1574.28
WN98A	N18	WN98A065WW1	1.65	8/6/98	PSEUDONITZSCHIA DELICATISSIMA	4938.68
WN98A	N18	WN98A065WW1	1.65	8/6/98	PSEUDONITZSCHIA PUNGENS	303.82
WN98A	N18	WN98A065WW1	1.65	8/6/98	PYRAMIMONAS SP. GROUP 1 10-20 MICRONS LENGTH	NA
WN98A	N18	WN98A065WW1	1.65	8/6/98	RHIZOSOLENIA DELICATULA	5804.52
WN98A	N18	WN98A065WW1	1.65	8/6/98	SCRIPPSIELLA TROCHOIDEA	4245.83
WN98A	N18	WN98A065WW1	1.65	8/6/98	SKELETONEMA COSTATUM GREV+CLEVE	202.02
WN98A	N18	WN98A065WW1	1.65	8/6/98	THALASSIONEMA NITZSCHIOIDES	62.97
WN98A	N18	WN98A065WW1	1.65	8/6/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	26994.10
WN98A	N18	WN98A065WW1	1.65	8/6/98	UNID. MICRO-PHYTOFLAG LENGTH >10 MICRONS	761.97
WN98C	N04	WN98C03CSW1	33.08	9/2/98	ATHECATE DINOFLAGELLATE	NA
WN98C	N04	WN98C03CSW1	33.08	9/2/98	CERATIUM FUSUS	138.46
WN98C	N04	WN98C03CSW1	33.08	9/2/98	CERATIUM LONGIPES	1738.69
WN98C	N04	WN98C03CSW1	33.08	9/2/98	CERATIUM SPP.	81.07
WN98C	N04	WN98C03CSW1	33.08	9/2/98	CERATIUM TRIPOS	709.61
WN98C	N04	WN98C03CSW1	33.08	9/2/98	DICTYOCHA FIBULA	0.54
WN98C	N04	WN98C03CSW1	33.08	9/2/98	DINOPHYSIS NORVEGICA	NA
WN98C	N04	WN98C03CSW1	33.08	9/2/98	GYMNODINIUM SPP. (30UM)	NA
WN98C	N04	WN98C03CSW1	33.08	9/2/98	PROTOPERIDINIUM DIVERGENS	42.95
WN98C	N04	WN98C03CSW1	33.08	9/2/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	57.52
WN98C	N04	WN98C03CSW1	33.08	9/2/98	SCRIPPSIELLA TROCHOIDEA	2.74
WN98C	N04	WN98C03CWW1	33.08	9/2/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	130.66
WN98C	N04	WN98C03CWW1	33.08	9/2/98	CENTRIC DIATOM SP. GROUP 3 DIAM 31-60 MICRONS	149.14
WN98C	N04	WN98C03CWW1	33.08	9/2/98	CERATIUM FUSUS	663.60
WN98C	N04	WN98C03CWW1	33.08	9/2/98	CERATIUM TRIPOS	1700.45
WN98C	N04	WN98C03CWW1	33.08	9/2/98	CHAETOCEROS BOREALIS	210.84
WN98C	N04	WN98C03CWW1	33.08	9/2/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	152.17
WN98C	N04	WN98C03CWW1	33.08	9/2/98	CORETHRON CRIOPHILUM	684.57
WN98C	N04	WN98C03CWW1	33.08	9/2/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	142.42
WN98C	N04	WN98C03CWW1	33.08	9/2/98	CYLINDROTHECA CLOSTERIUM	171.53
WN98C	N04	WN98C03CWW1	33.08	9/2/98	EBRIA TRIPARTITA	109.34
WN98C	N04	WN98C03CWW1	33.08	9/2/98	EUTREPTIA/EUTREPTIELLA SPP.	NA
WN98C	N04	WN98C03CWW1	33.08	9/2/98	GUINARDIA FLACCIDA	41103.16
WN98C	N04	WN98C03CWW1	33.08	9/2/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	1925.70
WN98C	N04	WN98C03CWW1	33.08	9/2/98	GYRODINIUM SP. GROUP 2 21-40UM W 21-50UM L	888.83
WN98C	N04	WN98C03CWW1	33.08	9/2/98	LEPTOCYLINDRUS DANICUS	736.28
WN98C	N04	WN98C03CWW1	33.08	9/2/98	LEPTOCYLINDRUS MINIMUS	23.42
WN98C	N04	WN98C03CWW1	33.08	9/2/98	LICMOPHORA SPP.	20.53
WN98C	N04	WN98C03CWW1	33.08	9/2/98	PROBOSCIA ALATA	611.24

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WN98C	N04	WN98C03CWW1	33.08	9/2/98	PROROCENTRUM MINIMUM	34.53
WN98C	N04	WN98C03CWW1	33.08	9/2/98	PSEUDONITZSCHIA DELICATISSIMA	14.09
WN98C	N04	WN98C03CWW1	33.08	9/2/98	RHIZOSOLENIA FRAGILISSIMA	74.49
WN98C	N04	WN98C03CWW1	33.08	9/2/98	RHIZOSOLENIA HEBETATA	NA
WN98C	N04	WN98C03CWW1	33.08	9/2/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	9685.16
WN98C	N04	WN98C03CWW1	33.08	9/2/98	UNID. MICRO-PHYTOFLAG LENGTH >10 MICRONS	396.23
WN98C	N04	WN98C03ESW1	1.77	9/2/98	ATHECATE DINOFLAGELLATE	NA
WN98C	N04	WN98C03ESW1	1.77	9/2/98	CERATIUM FUSUS	177.52
WN98C	N04	WN98C03ESW1	1.77	9/2/98	CERATIUM LINEATUM	28.69
WN98C	N04	WN98C03ESW1	1.77	9/2/98	CERATIUM LONGIPES	590.05
WN98C	N04	WN98C03ESW1	1.77	9/2/98	CERATIUM MACROCEROS	77.16
WN98C	N04	WN98C03ESW1	1.77	9/2/98	CERATIUM SPP.	129.93
WN98C	N04	WN98C03ESW1	1.77	9/2/98	CERATIUM TRIPOS	2843.00
WN98C	N04	WN98C03ESW1	1.77	9/2/98	DINOPHYSIS NORVEGICA	NA
WN98C	N04	WN98C03ESW1	1.77	9/2/98	GONYAULAX SPP.	1.88
WN98C	N04	WN98C03ESW1	1.77	9/2/98	MESODINIUM RUBRUM	NA
WN98C	N04	WN98C03ESW1	1.77	9/2/98	PROTOPERIDINIUM DEPRESSUM	180.95
WN98C	N04	WN98C03ESW1	1.77	9/2/98	PROTOPERIDINIUM PALLIDUM	20.02
WN98C	N04	WN98C03ESW1	1.77	9/2/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	193.57
WN98C	N04	WN98C03ESW1	1.77	9/2/98	PROTOPERIDINIUM SP. GROUP 3 76-150W 81-150L	305.69
WN98C	N04	WN98C03ESW1	1.77	9/2/98	SCRIPPSIELLA TROCHOIDEA	59.77
WN98C	N04	WN98C03ESW1	1.77	9/2/98	THECATE DINOFLAGELLATE SPP.	NA
WN98C	N04	WN98C03EWW1	1.77	9/2/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	184.68
WN98C	N04	WN98C03EWW1	1.77	9/2/98	CHAETOCEROS DIDYMUS	236.31
WN98C	N04	WN98C03EWW1	1.77	9/2/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	3230.96
WN98C	N04	WN98C03EWW1	1.77	9/2/98	CHAETOCEROS SPP.(<10UM)	82.07
WN98C	N04	WN98C03EWW1	1.77	9/2/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	267.04
WN98C	N04	WN98C03EWW1	1.77	9/2/98	CYLINDROTHECA CLOSTERIUM	1454.70
WN98C	N04	WN98C03EWW1	1.77	9/2/98	EUCAMPIA ZODIACUS	1403.02
WN98C	N04	WN98C03EWW1	1.77	9/2/98	GUINARDIA FLACCIDA	7262.22
WN98C	N04	WN98C03EWW1	1.77	9/2/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	19080.84
WN98C	N04	WN98C03EWW1	1.77	9/2/98	GYMNODINIUM SP. GROUP 2 21-40UM W 21-50UM L	3140.82
WN98C	N04	WN98C03EWW1	1.77	9/2/98	GYRODINIUM SP. GROUP 1 5-20UM W 10-20UM L	170.12
WN98C	N04	WN98C03EWW1	1.77	9/2/98	HETEROCAPSA TRIQUETRA	1199.98
WN98C	N04	WN98C03EWW1	1.77	9/2/98	LEPTOCYLINDRUS MINIMUS	6076.74
WN98C	N04	WN98C03EWW1	1.77	9/2/98	PENNATE DIATOM SP. GROUP 2 10-30 MICRONS LENGTH	104.10
WN98C	N04	WN98C03EWW1	1.77	9/2/98	PROBOSCIA ALATA	4319.83
WN98C	N04	WN98C03EWW1	1.77	9/2/98	PROROCENTRUM TRIESTINUM	NA
WN98C	N04	WN98C03EWW1	1.77	9/2/98	PROTOPERIDINIUM SP. GROUP 1 10-30W 10-40L	1242.50
WN98C	N04	WN98C03EWW1	1.77	9/2/98	PSEUDONITZSCHIA DELICATISSIMA	1643.07
WN98C	N04	WN98C03EWW1	1.77	9/2/98	PSEUDONITZSCHIA PUNGENS	159.28
WN98C	N04	WN98C03EWW1	1.77	9/2/98	RHIZOSOLENIA DELICATULA	358.58
WN98C	N04	WN98C03EWW1	1.77	9/2/98	RHIZOSOLENIA HEBETATA	NA
WN98C	N04	WN98C03EWW1	1.77	9/2/98	RHIZOSOLENIA SETIGERA	1108.40
WN98C	N04	WN98C03EWW1	1.77	9/2/98	SKELETONEMA COSTATUM GREV+CLEVE	136.39

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WN98C	N04	WN98C03EWW1	1.77	9/2/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	19226.22
WN98C	N04	WN98C03EWW1	1.77	9/2/98	UNID. MICRO-PHYTOFLAG LENGTH >10 MICRONS	2800.25
WN98C	N18	WN98C075SW1	9.78	9/2/98	ATHECATE DINOFLAGELLATE	NA
WN98C	N18	WN98C075SW1	9.78	9/2/98	CERATIUM FUSUS	251.48
WN98C	N18	WN98C075SW1	9.78	9/2/98	CERATIUM LONGIPES	3294.46
WN98C	N18	WN98C075SW1	9.78	9/2/98	CERATIUM MACROCEROS	3.67
WN98C	N18	WN98C075SW1	9.78	9/2/98	CERATIUM SPP.	181.90
WN98C	N18	WN98C075SW1	9.78	9/2/98	CERATIUM TRIPOS	6936.93
WN98C	N18	WN98C075SW1	9.78	9/2/98	DINOPHYSIS NORVEGICA	NA
WN98C	N18	WN98C075SW1	9.78	9/2/98	GYRODINIUM SPP.	3.79
WN98C	N18	WN98C075SW1	9.78	9/2/98	MESODINIUM RUBRUM	NA
WN98C	N18	WN98C075SW1	9.78	9/2/98	PROTOPERIDINIUM DIVERGENS	92.92
WN98C	N18	WN98C075SW1	9.78	9/2/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	698.25
WN98C	N18	WN98C075SW1	9.78	9/2/98	PROTOPERIDINIUM SP. GROUP 3 76-150W 81-150L	237.76
WN98C	N18	WN98C075SW1	9.78	9/2/98	PYROCYSTIS LUNULA	NA
WN98C	N18	WN98C075SW1	9.78	9/2/98	SCRIPPSIELLA TROCHOIDEA	56.26
WN98C	N18	WN98C075WW1	9.78	9/2/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	477.41
WN98C	N18	WN98C075WW1	9.78	9/2/98	CERATIUM FUSUS	1116.64
WN98C	N18	WN98C075WW1	9.78	9/2/98	CERATIUM LONGIPES	3711.62
WN98C	N18	WN98C075WW1	9.78	9/2/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	512.11
WN98C	N18	WN98C075WW1	9.78	9/2/98	CORETHRON CRIOPHILUM	1151.92
WN98C	N18	WN98C075WW1	9.78	9/2/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	234.76
WN98C	N18	WN98C075WW1	9.78	9/2/98	CYLINDROTHECA CLOSTERIUM	923.62
WN98C	N18	WN98C075WW1	9.78	9/2/98	EBRIA TRIPARTITA	183.98
WN98C	N18	WN98C075WW1	9.78	9/2/98	EUCAMPIA ZODIACUS	166.79
WN98C	N18	WN98C075WW1	9.78	9/2/98	GUINARDIA FLACCIDA	8645.50
WN98C	N18	WN98C075WW1	9.78	9/2/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	3159.36
WN98C	N18	WN98C075WW1	9.78	9/2/98	GYMNODINIUM SP. GROUP 2 21-40UM W 21-50UM L	747.81
WN98C	N18	WN98C075WW1	9.78	9/2/98	GYRODINIUM SP. GROUP 1 5-20UM W 10-20UM L	121.51
WN98C	N18	WN98C075WW1	9.78	9/2/98	LEPTOCYLINDRUS DANICUS	4611.60
WN98C	N18	WN98C075WW1	9.78	9/2/98	LEPTOCYLINDRUS MINIMUS	755.22
WN98C	N18	WN98C075WW1	9.78	9/2/98	PROBOSCIA ALATA	2057.06
WN98C	N18	WN98C075WW1	9.78	9/2/98	PROTOPERIDINIUM BIPES	196.82
WN98C	N18	WN98C075WW1	9.78	9/2/98	PROTOPERIDINIUM SP. GROUP 1 10-30W 10-40L	887.50
WN98C	N18	WN98C075WW1	9.78	9/2/98	PSEUDONITZSCHIA DELICATISSIMA	300.32
WN98C	N18	WN98C075WW1	9.78	9/2/98	PSEUDONITZSCHIA PUNGENS	37.92
WN98C	N18	WN98C075WW1	9.78	9/2/98	RHIZOSOLENIA DELICATULA	597.63
WN98C	N18	WN98C075WW1	9.78	9/2/98	RHIZOSOLENIA FRAGILISSIMA	125.34
WN98C	N18	WN98C075WW1	9.78	9/2/98	SKELETONEMA COSTATUM GREV+CLEVE	57.73
WN98C	N18	WN98C075WW1	9.78	9/2/98	THALASSIONEMA NITZSCHIOIDES	78.73
WN98C	N18	WN98C075WW1	9.78	9/2/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	12458.82
WN98C	N18	WN98C075WW1	9.78	9/2/98	UNID. MICRO-PHYTOFLAG LENGTH >10 MICRONS	3428.88
WN98C	N18	WN98C077SW1	1.76	9/2/98	ATHECATE DINOFLAGELLATE	NA
WN98C	N18	WN98C077SW1	1.76	9/2/98	CERATIUM LINEATUM	29.83
WN98C	N18	WN98C077SW1	1.76	9/2/98	CERATIUM LONGIPES	51.14

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WN98C	N18	WN98C077SW1	1.76	9/2/98	CERATIUM MACROCEROS	42.03
WN98C	N18	WN98C077SW1	1.76	9/2/98	CERATIUM SPP.	81.07
WN98C	N18	WN98C077SW1	1.76	9/2/98	CERATIUM TRIPOS	906.73
WN98C	N18	WN98C077SW1	1.76	9/2/98	DINOPHYSIS SPP.	9.57
WN98C	N18	WN98C077SW1	1.76	9/2/98	GYMNODINIUM SPP. (30UM)	NA
WN98C	N18	WN98C077SW1	1.76	9/2/98	PROROCENTRUM GRACILE	3.76
WN98C	N18	WN98C077SW1	1.76	9/2/98	PROROCENTRUM TRIESTINUM	NA
WN98C	N18	WN98C077SW1	1.76	9/2/98	PROTOPERIDINIUM PENTAGONUM	86.90
WN98C	N18	WN98C077SW1	1.76	9/2/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	258.84
WN98C	N18	WN98C077SW1	1.76	9/2/98	PROTOPERIDINIUM SP. GROUP 3 76-150W 81-150L	35.32
WN98C	N18	WN98C077SW1	1.76	9/2/98	PYROCYSTIS LUNULA	NA
WN98C	N18	WN98C077SW1	1.76	9/2/98	SCRIPPSIELLA TROCHOIDEA	69.48
WN98C	N18	WN98C077SW1	1.76	9/2/98	THECATE DINOFLAGELLATE SPP.	NA
WN98C	N18	WN98C077WW1	1.76	9/2/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	486.96
WN98C	N18	WN98C077WW1	1.76	9/2/98	CHAETOCEROS COMPRESSUS	2372.26
WN98C	N18	WN98C077WW1	1.76	9/2/98	CHAETOCEROS DIDYMUS	688.67
WN98C	N18	WN98C077WW1	1.76	9/2/98	CHAETOCEROS SPP.(<10UM)	510.99
WN98C	N18	WN98C077WW1	1.76	9/2/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	598.64
WN98C	N18	WN98C077WW1	1.76	9/2/98	CRYPTOMONAS SP. GROUP 2 LENGTH >10 MICRONS	128.15
WN98C	N18	WN98C077WW1	1.76	9/2/98	CYLINDROTHECA CLOSTERIUM	706.57
WN98C	N18	WN98C077WW1	1.76	9/2/98	EUCAMPIA ZODIACUS	1362.93
WN98C	N18	WN98C077WW1	1.76	9/2/98	GUINARDIA FLACCIDA	14109.45
WN98C	N18	WN98C077WW1	1.76	9/2/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	13901.76
WN98C	N18	WN98C077WW1	1.76	9/2/98	GYRODINIUM SP. GROUP 1 5-20UM W 10-20UM L	661.99
WN98C	N18	WN98C077WW1	1.76	9/2/98	LEPTOCYLINDRUS MINIMUS	11108.60
WN98C	N18	WN98C077WW1	1.76	9/2/98	PROBOSCIA ALATA	8404.91
WN98C	N18	WN98C077WW1	1.76	9/2/98	PROROCENTRUM TRIESTINUM	NA
WN98C	N18	WN98C077WW1	1.76	9/2/98	PROTOPERIDINIUM SP. GROUP 1 10-30W 10-40L	1207.00
WN98C	N18	WN98C077WW1	1.76	9/2/98	PSEUDONITZSCHIA DELICATISSIMA	3579.18
WN98C	N18	WN98C077WW1	1.76	9/2/98	PSEUDONITZSCHIA PUNGENS	386.82
WN98C	N18	WN98C077WW1	1.76	9/2/98	RHIZOSOLENIA DELICATULA	1395.34
WN98C	N18	WN98C077WW1	1.76	9/2/98	SKELETONEMA COSTATUM GREV+CLEVE	824.38
WN98C	N18	WN98C077WW1	1.76	9/2/98	THALASSIONEMA NITZSCHIOIDES	128.49
WN98C	N18	WN98C077WW1	1.76	9/2/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	20473.99
WN98D	N04	WN98D02CSW1	20.13	9/23/98	CERATIUM FUSUS	19.53
WN98D	N04	WN98D02CSW1	20.13	9/23/98	CERATIUM LONGIPES	194.72
WN98D	N04	WN98D02CSW1	20.13	9/23/98	CERATIUM SPP.	68.60
WN98D	N04	WN98D02CSW1	20.13	9/23/98	CERATIUM TRIPOS	1551.14
WN98D	N04	WN98D02CSW1	20.13	9/23/98	DINOPHYSIS NORVEGICA	NA
WN98D	N04	WN98D02CSW1	20.13	9/23/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	73.01
WN98D	N04	WN98D02CSW1	20.13	9/23/98	PYROCYSTIS LUNULA	NA
WN98D	N04	WN98D02CSW1	20.13	9/23/98	THECATE DINOFLAGELLATE SPP.	NA
WN98D	N04	WN98D02CWW1	20.13	9/23/98	AMPHIDINIUM SPP.	30.93
WN98D	N04	WN98D02CWW1	20.13	9/23/98	CALYCOMONAS OVALIS	23.31
WN98D	N04	WN98D02CWW1	20.13	9/23/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	326.65

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WN98D	N04	WN98D02CWW1	20.13	9/23/98	CERATAULINA PELAGICA	1618.65
WN98D	N04	WN98D02CWW1	20.13	9/23/98	CERATIUM TRIPOS	3432.78
WN98D	N04	WN98D02CWW1	20.13	9/23/98	CHAETOCEROS DIDYMUS	33.70
WN98D	N04	WN98D02CWW1	20.13	9/23/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	19.56
WN98D	N04	WN98D02CWW1	20.13	9/23/98	CRYPTOMONAS SP. GROUP 2 LENGTH >10 MICRONS	18.81
WN98D	N04	WN98D02CWW1	20.13	9/23/98	CYLINDROTHECA CLOSTERIUM	230.85
WN98D	N04	WN98D02CWW1	20.13	9/23/98	DINOPHYSIS NORVEGICA	NA
WN98D	N04	WN98D02CWW1	20.13	9/23/98	EUTREPTIA/EUTREPTIELLA SPP.	NA
WN98D	N04	WN98D02CWW1	20.13	9/23/98	GUINARDIA FLACCIDA	1382.95
WN98D	N04	WN98D02CWW1	20.13	9/23/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	631.72
WN98D	N04	WN98D02CWW1	20.13	9/23/98	HETEROCAPSA ROTUNDATA	63.86
WN98D	N04	WN98D02CWW1	20.13	9/23/98	HETEROSIGMA AKASHIWO	NA
WN98D	N04	WN98D02CWW1	20.13	9/23/98	LEPTOCYLINDRUS DANICUS	770.71
WN98D	N04	WN98D02CWW1	20.13	9/23/98	LEPTOCYLINDRUS MINIMUS	336.15
WN98D	N04	WN98D02CWW1	20.13	9/23/98	PENNATE DIATOM SP. GROUP 2 10-30 MICRONS LENGTH	9.90
WN98D	N04	WN98D02CWW1	20.13	9/23/98	PROTOPERIDINIUM BIPES	78.71
WN98D	N04	WN98D02CWW1	20.13	9/23/98	PROTOPERIDINIUM SP. GROUP 1 10-30W 10-40L	236.61
WN98D	N04	WN98D02CWW1	20.13	9/23/98	RHIZOSOLENIA FRAGILISSIMA	200.49
WN98D	N04	WN98D02CWW1	20.13	9/23/98	RHIZOSOLENIA HEBETATA	NA
WN98D	N04	WN98D02CWW1	20.13	9/23/98	RHIZOSOLENIA SETIGERA	211.07
WN98D	N04	WN98D02CWW1	20.13	9/23/98	RHIZOSOLENIA STOLTERFOTHII	17289.91
WN98D	N04	WN98D02CWW1	20.13	9/23/98	SKELETONEMA COSTATUM GREV+CLEVE	86.57
WN98D	N04	WN98D02CWW1	20.13	9/23/98	THALASSIONEMA NITZSCHIOIDES	50.37
WN98D	N04	WN98D02CWW1	20.13	9/23/98	THALASSIOSIRA SP. GROUP 2 DIAM >20 MICRONS	638.62
WN98D	N04	WN98D02CWW1	20.13	9/23/98	THALASSIOSIRA SPP.	102.25
WN98D	N04	WN98D02CWW1	20.13	9/23/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	9123.88
WN98D	N04	WN98D02ESW1	1.62	9/23/98	ATHECATE DINOFLAGELLATE	NA
WN98D	N04	WN98D02ESW1	1.62	9/23/98	CERATIUM FUSUS	24.04
WN98D	N04	WN98D02ESW1	1.62	9/23/98	CERATIUM MACROCEROS	90.75
WN98D	N04	WN98D02ESW1	1.62	9/23/98	CERATIUM SPP.	8.45
WN98D	N04	WN98D02ESW1	1.62	9/23/98	CERATIUM TRIPOS	61.60
WN98D	N04	WN98D02ESW1	1.62	9/23/98	DINOPHYSIS NORVEGICA	NA
WN98D	N04	WN98D02ESW1	1.62	9/23/98	GYRODINIUM SPP.	1.64
WN98D	N04	WN98D02ESW1	1.62	9/23/98	PROROCENTRUM GRACILE	0.88
WN98D	N04	WN98D02ESW1	1.62	9/23/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	26.96
WN98D	N04	WN98D02ESW1	1.62	9/23/98	SCRIPPSIELLA TROCHOIDEA	22.85
WN98D	N04	WN98D02EWW1	1.62	9/23/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	100.51
WN98D	N04	WN98D02EWW1	1.62	9/23/98	CHAETOCEROS DIDYMUS	202.21
WN98D	N04	WN98D02EWW1	1.62	9/23/98	CYLINDROTHECA CLOSTERIUM	46.17
WN98D	N04	WN98D02EWW1	1.62	9/23/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	1298.02
WN98D	N04	WN98D02EWW1	1.62	9/23/98	GYMNODINIUM SP. GROUP 2 21-40UM W 21-50UM L	1794.32
WN98D	N04	WN98D02EWW1	1.62	9/23/98	LEPTOCYLINDRUS MINIMUS	63.03
WN98D	N04	WN98D02EWW1	1.62	9/23/98	PENNATE DIATOM SP. GROUP 2 10-30 MICRONS LENGTH	4.95
WN98D	N04	WN98D02EWW1	1.62	9/23/98	PROBOSCIA ALATA	822.63

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WN98D	N04	WN98D02EWW1	1.62	9/23/98	PROTOPERIDINIUM SP. GROUP 1 10-30W 10-40L	236.61
WN98D	N04	WN98D02EWW1	1.62	9/23/98	PSEUDONITZSCHIA PUNGENS	68.25
WN98D	N04	WN98D02EWW1	1.62	9/23/98	PYRAMIMONAS SP. GROUP 1 10-20 MICRONS LENGTH	NA
WN98D	N04	WN98D02EWW1	1.62	9/23/98	RHIZOSOLENIA FRAGILISSIMA	150.37
WN98D	N04	WN98D02EWW1	1.62	9/23/98	RHIZOSOLENIA HEBETATA	NA
WN98D	N04	WN98D02EWW1	1.62	9/23/98	RHIZOSOLENIA STOLTERFOTHII	1637.99
WN98D	N04	WN98D02EWW1	1.62	9/23/98	SCRIPPSIELLA TROCHOIDEA	106.14
WN98D	N04	WN98D02EWW1	1.62	9/23/98	SKELETONEMA COSTATUM GREV+CLEVE	54.83
WN98D	N04	WN98D02EWW1	1.62	9/23/98	THALASSIONEMA NITZSCHIOIDES	6.30
WN98D	N04	WN98D02EWW1	1.62	9/23/98	THALASSIOSIRA SP. GROUP 4 20-30 MICRONS LENGTH	39.91
WN98D	N04	WN98D02EWW1	1.62	9/23/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	11263.27
WN98D	N18	WN98D054SW1	11.88	9/23/98	AMYLAX TRIACANTHA	1.83
WN98D	N18	WN98D054SW1	11.88	9/23/98	ATHECATE DINOFLAGELLATE	NA
WN98D	N18	WN98D054SW1	11.88	9/23/98	CERATIUM FUSUS	147.93
WN98D	N18	WN98D054SW1	11.88	9/23/98	CERATIUM LINEATUM	28.69
WN98D	N18	WN98D054SW1	11.88	9/23/98	CERATIUM LONGIPES	245.86
WN98D	N18	WN98D054SW1	11.88	9/23/98	CERATIUM MACROCEROS	11.02
WN98D	N18	WN98D054SW1	11.88	9/23/98	CERATIUM SPP.	12.99
WN98D	N18	WN98D054SW1	11.88	9/23/98	CERATIUM TRIPOS	1250.92
WN98D	N18	WN98D054SW1	11.88	9/23/98	DINOPHYSIS NORVEGICA	NA
WN98D	N18	WN98D054SW1	11.88	9/23/98	DISTEPHANUS SPECULUM	0.60
WN98D	N18	WN98D054SW1	11.88	9/23/98	GONYAULAX SPP.	1.88
WN98D	N18	WN98D054SW1	11.88	9/23/98	GYMNODINIUM SPP.	2.66
WN98D	N18	WN98D054SW1	11.88	9/23/98	MESODINIUM RUBRUM	NA
WN98D	N18	WN98D054SW1	11.88	9/23/98	PROROCENTRUM GRACILE	7.23
WN98D	N18	WN98D054SW1	11.88	9/23/98	PROTOPERIDINIUM BIPES	7.82
WN98D	N18	WN98D054SW1	11.88	9/23/98	PROTOPERIDINIUM BREVIPES	21.31
WN98D	N18	WN98D054SW1	11.88	9/23/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	746.64
WN98D	N18	WN98D054SW1	11.88	9/23/98	PYROCYSTIS LUNULA	NA
WN98D	N18	WN98D054SW1	11.88	9/23/98	SCRIPPSIELLA TROCHOIDEA	21.10
WN98D	N18	WN98D054SW1	11.88	9/23/98	THECATE DINOFLAGELLATE SPP.	NA
WN98D	N18	WN98D054WW1	11.88	9/23/98	CALYCOMONAS WULFFII	22.77
WN98D	N18	WN98D054WW1	11.88	9/23/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	954.83
WN98D	N18	WN98D054WW1	11.88	9/23/98	CERATIUM TRIPOS	11442.62
WN98D	N18	WN98D054WW1	11.88	9/23/98	CHAETOCEROS DIDYMUS	19129.63
WN98D	N18	WN98D054WW1	11.88	9/23/98	CHAETOCEROS SP. GROUP 1 DIAM <10 MICRONS	500.97
WN98D	N18	WN98D054WW1	11.88	9/23/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	1023.98
WN98D	N18	WN98D054WW1	11.88	9/23/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	78.25
WN98D	N18	WN98D054WW1	11.88	9/23/98	CYLINDROTHECA CLOSTERIUM	6474.66
WN98D	N18	WN98D054WW1	11.88	9/23/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	5841.07
WN98D	N18	WN98D054WW1	11.88	9/23/98	LEPTOCYLINDRUS DANICUS	33305.67
WN98D	N18	WN98D054WW1	11.88	9/23/98	LEPTOCYLINDRUS MINIMUS	2209.72
WN98D	N18	WN98D054WW1	11.88	9/23/98	PSEUDONITZSCHIA DELICATISSIMA	316.05
WN98D	N18	WN98D054WW1	11.88	9/23/98	PSEUDONITZSCHIA PUNGENS	303.82
WN98D	N18	WN98D054WW1	11.88	9/23/98	RHIZOSOLENIA DELICATULA	2389.95

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WN98D	N18	WN98D054WW1	11.88	9/23/98	RHIZOSOLENIA STOLTERFOTHII	76568.21
WN98D	N18	WN98D054WW1	11.88	9/23/98	SKELETONEMA COSTATUM GREV+CLEVE	4914.13
WN98D	N18	WN98D054WW1	11.88	9/23/98	THALASSIONEMA NITZSCHIOIDES	251.87
WN98D	N18	WN98D054WW1	11.88	9/23/98	THALASSIOSIRA SP. GROUP 2 DIAM >20 MICRONS	4797.71
WN98D	N18	WN98D054WW1	11.88	9/23/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	17366.84
WN98D	N18	WN98D054WW1	11.88	9/23/98	UNID. MICRO-PHYTOFLAG LENGTH >10 MICRONS	761.97
WN98D	N18	WN98D056SW1	1.87	9/23/98	ALEXANDRIUM TAMARENSE	0.31
WN98D	N18	WN98D056SW1	1.87	9/23/98	ATHECATE DINOFLAGELLATE	NA
WN98D	N18	WN98D056SW1	1.87	9/23/98	CERATIUM FUSUS	88.76
WN98D	N18	WN98D056SW1	1.87	9/23/98	CERATIUM LINEATUM	22.95
WN98D	N18	WN98D056SW1	1.87	9/23/98	CERATIUM LONGIPES	309.78
WN98D	N18	WN98D056SW1	1.87	9/23/98	CERATIUM SPP.	62.36
WN98D	N18	WN98D056SW1	1.87	9/23/98	CERATIUM TRIPOS	1273.67
WN98D	N18	WN98D056SW1	1.87	9/23/98	DINOPHYSIS NORVEGICA	NA
WN98D	N18	WN98D056SW1	1.87	9/23/98	EUGLENOID SPP.	NA
WN98D	N18	WN98D056SW1	1.87	9/23/98	GYMNODINIUM SPP.	76.55
WN98D	N18	WN98D056SW1	1.87	9/23/98	PROROCENTRUM GRACILE	14.09
WN98D	N18	WN98D056SW1	1.87	9/23/98	PROROCENTRUM TRIESTINUM	NA
WN98D	N18	WN98D056SW1	1.87	9/23/98	PROTOPERIDINIUM BIPES	14.08
WN98D	N18	WN98D056SW1	1.87	9/23/98	PROTOPERIDINIUM BREVIPES	14.92
WN98D	N18	WN98D056SW1	1.87	9/23/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	1460.10
WN98D	N18	WN98D056SW1	1.87	9/23/98	PROTOPERIDINIUM SP. GROUP 3 76-150W 81-150L	81.52
WN98D	N18	WN98D056SW1	1.87	9/23/98	PYROCYSTIS LUNULA	NA
WN98D	N18	WN98D056SW1	1.87	9/23/98	SCRIPPSIELLA TROCHOIDEA	29.54
WN98D	N18	WN98D056SW1	1.87	9/23/98	THECATE DINOFLAGELLATE SPP.	NA
WN98D	N18	WN98D056WW1	1.87	9/23/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	2186.05
WN98D	N18	WN98D056WW1	1.87	9/23/98	CERATIUM FUSUS	8946.00
WN98D	N18	WN98D056WW1	1.87	9/23/98	CHAETOCEROS COMPRESSUS	2325.74
WN98D	N18	WN98D056WW1	1.87	9/23/98	CHAETOCEROS DIDYMUS	23180.61
WN98D	N18	WN98D056WW1	1.87	9/23/98	CHAETOCEROS SP. GROUP 1 DIAM <10 MICRONS	500.97
WN98D	N18	WN98D056WW1	1.87	9/23/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	1791.96
WN98D	N18	WN98D056WW1	1.87	9/23/98	CORETHRON CRIOPHILUM	4606.56
WN98D	N18	WN98D056WW1	1.87	9/23/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	156.51
WN98D	N18	WN98D056WW1	1.87	9/23/98	CYLINDROTHECA CLOSTERIUM	3237.33
WN98D	N18	WN98D056WW1	1.87	9/23/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	3569.55
WN98D	N18	WN98D056WW1	1.87	9/23/98	LEPTOCYLINDRUS DANICUS	28123.10
WN98D	N18	WN98D056WW1	1.87	9/23/98	LEPTOCYLINDRUS MINIMUS	1365.63
WN98D	N18	WN98D056WW1	1.87	9/23/98	PROBOSCIA ALATA	2056.57
WN98D	N18	WN98D056WW1	1.87	9/23/98	PROROCENTRUM MICANS	933.09
WN98D	N18	WN98D056WW1	1.87	9/23/98	PROTOPERIDINIUM BIPES	3153.66
WN98D	N18	WN98D056WW1	1.87	9/23/98	PSEUDONITZSCHIA DELICATISSIMA	521.48
WN98D	N18	WN98D056WW1	1.87	9/23/98	PSEUDONITZSCHIA PUNGENS	151.66
WN98D	N18	WN98D056WW1	1.87	9/23/98	RHIZOSOLENIA DELICATULA	341.42
WN98D	N18	WN98D056WW1	1.87	9/23/98	RHIZOSOLENIA FRAGILISSIMA	4016.57
WN98D	N18	WN98D056WW1	1.87	9/23/98	RHIZOSOLENIA STOLTERFOTHII	41859.78

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WN98D	N18	WN98D056WW1	1.87	9/23/98	SCRIPPSIELLA TROCHOIDEA	530.70
WN98D	N18	WN98D056WW1	1.87	9/23/98	SKELETONEMA COSTATUM GREV+CLEVE	3939.13
WN98D	N18	WN98D056WW1	1.87	9/23/98	THALASSIOSIRA SP. GROUP 4 20-30 MICRONS LENGTH	2398.86
WN98D	N18	WN98D056WW1	1.87	9/23/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	22841.16
WN98D	N18	WN98D056WW1	1.87	9/23/98	UNID. MICRO-PHYTOFLAG LENGTH >10 MICRONS	761.97
WN98F	N04	WN98F3DFSW1	13.11	11/3/98	CERATIUM FUSUS	1704.17
WN98F	N04	WN98F3DFSW1	13.11	11/3/98	CERATIUM LINEATUM	134.63
WN98F	N04	WN98F3DFSW1	13.11	11/3/98	CERATIUM LONGIPES	188.82
WN98F	N04	WN98F3DFSW1	13.11	11/3/98	CERATIUM MACROCEROS	319.79
WN98F	N04	WN98F3DFSW1	13.11	11/3/98	CERATIUM SPP.	332.61
WN98F	N04	WN98F3DFSW1	13.11	11/3/98	CERATIUM TRIPOS	2959.76
WN98F	N04	WN98F3DFSW1	13.11	11/3/98	DICTYOCHA FIBULA	7.35
WN98F	N04	WN98F3DFSW1	13.11	11/3/98	DINOPHYSIS NORVEGICA	NA
WN98F	N04	WN98F3DFSW1	13.11	11/3/98	DISTEPHANUS SPECULUM	0.77
WN98F	N04	WN98F3DFSW1	13.11	11/3/98	GYMNODINIUM SPP.	23.81
WN98F	N04	WN98F3DFSW1	13.11	11/3/98	MESODINIUM RUBRUM	NA
WN98F	N04	WN98F3DFSW1	13.11	11/3/98	PROROCENTRUM MICANS	130.57
WN98F	N04	WN98F3DFSW1	13.11	11/3/98	PROTOPERIDINIUM PALLIDUM	51.26
WN98F	N04	WN98F3DFSW1	13.11	11/3/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	424.76
WN98F	N04	WN98F3DFSW1	13.11	11/3/98	PROTOPERIDINIUM SP. GROUP 3 76-150W 81-150L	1217.33
WN98F	N04	WN98F3DFSW1	13.11	11/3/98	THECATE DINOFLAGELLATE SPP.	NA
WN98F	N04	WN98F3DFWW1	13.11	11/3/98	AMPHIDINIUM SPP.	110.31
WN98F	N04	WN98F3DFWW1	13.11	11/3/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	134.43
WN98F	N04	WN98F3DFWW1	13.11	11/3/98	CERATIUM FUSUS	7963.45
WN98F	N04	WN98F3DFWW1	13.11	11/3/98	CERATIUM TRIPOS	49056.81
WN98F	N04	WN98F3DFWW1	13.11	11/3/98	CHAETOCEROS ATLANTICUS	NA
WN98F	N04	WN98F3DFWW1	13.11	11/3/98	CHAETOCEROS SPP. (10-20UM)	NA
WN98F	N04	WN98F3DFWW1	13.11	11/3/98	CHOANOFLAGELLATE SPP.	65.97
WN98F	N04	WN98F3DFWW1	13.11	11/3/98	COSCINODISCUS SP. GROUP 3 DIAM >100 MICRONS	6550.78
WN98F	N04	WN98F3DFWW1	13.11	11/3/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	460.52
WN98F	N04	WN98F3DFWW1	13.11	11/3/98	CYLINDROTHECA CLOSTERIUM	1399.72
WN98F	N04	WN98F3DFWW1	13.11	11/3/98	DICTYOCHA SPECULUM	NA
WN98F	N04	WN98F3DFWW1	13.11	11/3/98	EUCAMPIA ZODIACUS	34256.12
WN98F	N04	WN98F3DFWW1	13.11	11/3/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	3819.41
WN98F	N04	WN98F3DFWW1	13.11	11/3/98	GYRODINIUM SP. GROUP 1 5-20UM W 10-20UM L	347.22
WN98F	N04	WN98F3DFWW1	13.11	11/3/98	GYRODINIUM SPIRALE	9388.76
WN98F	N04	WN98F3DFWW1	13.11	11/3/98	LEPTOCYLINDRUS DANICUS	12958.93
WN98F	N04	WN98F3DFWW1	13.11	11/3/98	LEPTOCYLINDRUS MINIMUS	65.57
WN98F	N04	WN98F3DFWW1	13.11	11/3/98	PLEUROSIGMA SPP.	452.99
WN98F	N04	WN98F3DFWW1	13.11	11/3/98	PROBOSCIA ALATA	1467.02
WN98F	N04	WN98F3DFWW1	13.11	11/3/98	PROROCENTRUM MICANS	665.60
WN98F	N04	WN98F3DFWW1	13.11	11/3/98	PSEUDONITZSCHIA PUNGENS	243.41
WN98F	N04	WN98F3DFWW1	13.11	11/3/98	RHIZOSOLENIA DELICATULA	3896.76
WN98F	N04	WN98F3DFWW1	13.11	11/3/98	THALASSIONEMA NITZSCHIOIDES	67.38
WN98F	N04	WN98F3DFWW1	13.11	11/3/98	THALASSIOSIRA SP. GROUP 1 DIAM <20 MICRONS	28.54

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WN98F	N04	WN98F3DFWW1	13.11	11/3/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	11311.10
WN98F	N04	WN98F3DFWW1	13.11	11/3/98	UNID. MICRO-PHYTOFLAG LENGTH >10 MICRONS	3261.25
WN98F	N04	WN98F3E1SW1	2.56	11/3/98	CERATIUM FUSUS	2139.67
WN98F	N04	WN98F3E1SW1	2.56	11/3/98	CERATIUM LINEATUM	134.63
WN98F	N04	WN98F3E1SW1	2.56	11/3/98	CERATIUM LONGIPES	62.94
WN98F	N04	WN98F3E1SW1	2.56	11/3/98	CERATIUM MACROCEROS	300.98
WN98F	N04	WN98F3E1SW1	2.56	11/3/98	CERATIUM SPP.	232.83
WN98F	N04	WN98F3E1SW1	2.56	11/3/98	CERATIUM TRIPOS	2037.86
WN98F	N04	WN98F3E1SW1	2.56	11/3/98	DICTYOCHA FIBULA	7.35
WN98F	N04	WN98F3E1SW1	2.56	11/3/98	DINOPHYSIS NORVEGICA	NA
WN98F	N04	WN98F3E1SW1	2.56	11/3/98	DISTEPHANUS SPECULUM	1.15
WN98F	N04	WN98F3E1SW1	2.56	11/3/98	GYMNODINIUM SPP.	40.82
WN98F	N04	WN98F3E1SW1	2.56	11/3/98	PROROCENTRUM MICANS	142.44
WN98F	N04	WN98F3E1SW1	2.56	11/3/98	PROTOPERIDINIUM DEPRESSUM	231.61
WN98F	N04	WN98F3E1SW1	2.56	11/3/98	PROTOPERIDINIUM PALLIDUM	51.26
WN98F	N04	WN98F3E1SW1	2.56	11/3/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	495.55
WN98F	N04	WN98F3E1SW1	2.56	11/3/98	PROTOPERIDINIUM SP. GROUP 3 76-150W 81-150L	130.43
WN98F	N04	WN98F3E1SW1	2.56	11/3/98	PYROCYSTIS LUNULA	NA
WN98F	N04	WN98F3E1SW1	2.56	11/3/98	SCRIPPSIELLA TROCHOIDEA	2.25
WN98F	N04	WN98F3E1SW1	2.56	11/3/98	THECATE DINOFLAGELLATE SPP.	NA
WN98F	N04	WN98F3E1WW1	2.56	11/3/98	AMPHIDINIUM SPP.	210.67
WN98F	N04	WN98F3E1WW1	2.56	11/3/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	51.26
WN98F	N04	WN98F3E1WW1	2.56	11/3/98	CERATIUM FUSUS	2277.40
WN98F	N04	WN98F3E1WW1	2.56	11/3/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	2441.17
WN98F	N04	WN98F3E1WW1	2.56	11/3/98	CHOANOFLAGELLATE SPP.	20.96
WN98F	N04	WN98F3E1WW1	2.56	11/3/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	359.18
WN98F	N04	WN98F3E1WW1	2.56	11/3/98	CYLINDROTHECA CLOSTERIUM	235.47
WN98F	N04	WN98F3E1WW1	2.56	11/3/98	EUCAMPIA ZODIACUS	33675.85
WN98F	N04	WN98F3E1WW1	2.56	11/3/98	GRAMMATOPHORA MARINA	74.30
WN98F	N04	WN98F3E1WW1	2.56	11/3/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	8826.51
WN98F	N04	WN98F3E1WW1	2.56	11/3/98	GYRODINIUM SPIRALE	13425.05
WN98F	N04	WN98F3E1WW1	2.56	11/3/98	LEPTOCYLINDRUS DANICUS	6551.03
WN98F	N04	WN98F3E1WW1	2.56	11/3/98	PENNATE DIATOM SP. GROUP 2 10-30 MICRONS LENGTH	33.71
WN98F	N04	WN98F3E1WW1	2.56	11/3/98	PROBOSCIA ALATA	2097.70
WN98F	N04	WN98F3E1WW1	2.56	11/3/98	PROROCENTRUM MICANS	635.57
WN98F	N04	WN98F3E1WW1	2.56	11/3/98	PSEUDONITZSCHIA DELICATISSIMA	48.36
WN98F	N04	WN98F3E1WW1	2.56	11/3/98	PSEUDONITZSCHIA PUNGENS	232.03
WN98F	N04	WN98F3E1WW1	2.56	11/3/98	RHIZOSOLENIA DELICATULA	3830.75
WN98F	N04	WN98F3E1WW1	2.56	11/3/98	RHIZOSOLENIA HEBETATA	NA
WN98F	N04	WN98F3E1WW1	2.56	11/3/98	RHIZOSOLENIA SETIGERA	1076.47
WN98F	N04	WN98F3E1WW1	2.56	11/3/98	SKELETONEMA COSTATUM GREV+CLEVE	29.44
WN98F	N04	WN98F3E1WW1	2.56	11/3/98	THALASSIOSIRA SP. GROUP 1 DIAM <20 MICRONS	81.61
WN98F	N04	WN98F3E1WW1	2.56	11/3/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	7423.69
WN98F	N04	WN98F3E1WW1	2.56	11/3/98	UNID. MICRO-PHYTOFLAG LENGTH >10 MICRONS	906.75
WN98F	N18	WN98F40FSW1	11.64	11/3/98	AMPHIDINIUM SPP.	0.26

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WN98F	N18	WN98F40FSW1	11.64	11/3/98	CERATIUM FUSUS	2352.10
WN98F	N18	WN98F40FSW1	11.64	11/3/98	CERATIUM LINEATUM	141.04
WN98F	N18	WN98F40FSW1	11.64	11/3/98	CERATIUM LONGIPES	24.59
WN98F	N18	WN98F40FSW1	11.64	11/3/98	CERATIUM MACROCEROS	297.60
WN98F	N18	WN98F40FSW1	11.64	11/3/98	CERATIUM SPP.	285.84
WN98F	N18	WN98F40FSW1	11.64	11/3/98	CERATIUM TRIPOS	4179.21
WN98F	N18	WN98F40FSW1	11.64	11/3/98	DICTYOCHA FIBULA	3.65
WN98F	N18	WN98F40FSW1	11.64	11/3/98	DINOPHYSIS NORVEGICA	NA
WN98F	N18	WN98F40FSW1	11.64	11/3/98	DINOPHYSIS SPP.	3.07
WN98F	N18	WN98F40FSW1	11.64	11/3/98	GYMNODINIUM SPP.	7.97
WN98F	N18	WN98F40FSW1	11.64	11/3/98	PROROCENTRUM GRACILE	0.45
WN98F	N18	WN98F40FSW1	11.64	11/3/98	PROROCENTRUM MICANS	204.01
WN98F	N18	WN98F40FSW1	11.64	11/3/98	PROTOPERIDINIUM PALLIDUM	180.22
WN98F	N18	WN98F40FSW1	11.64	11/3/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	414.80
WN98F	N18	WN98F40FSW1	11.64	11/3/98	PROTOPERIDINIUM SP. GROUP 3 76-150W 81-150L	985.01
WN98F	N18	WN98F40FSW1	11.64	11/3/98	PYROCYSTIS LUNULA	NA
WN98F	N18	WN98F40FSW1	11.64	11/3/98	SCRIPPSIELLA TROCHOIDEA	7.03
WN98F	N18	WN98F40FSW1	11.64	11/3/98	THECATE DINOFLAGELLATE SPP.	NA
WN98F	N18	WN98F40FWW1	11.64	11/3/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	51.26
WN98F	N18	WN98F40FWW1	11.64	11/3/98	CERATIUM FUSUS	2277.40
WN98F	N18	WN98F40FWW1	11.64	11/3/98	CERATIUM TRIPOS	5835.73
WN98F	N18	WN98F40FWW1	11.64	11/3/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	1958.36
WN98F	N18	WN98F40FWW1	11.64	11/3/98	COSCINODISCUS SP. GROUP 3 DIAM >100 MICRONS	4683.50
WN98F	N18	WN98F40FWW1	11.64	11/3/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	698.41
WN98F	N18	WN98F40FWW1	11.64	11/3/98	CYLINDROTHECA CLOSTERIUM	1236.20
WN98F	N18	WN98F40FWW1	11.64	11/3/98	DICTYOCHA SPECULUM	NA
WN98F	N18	WN98F40FWW1	11.64	11/3/98	EUCAMPIA ZODIACUS	26872.65
WN98F	N18	WN98F40FWW1	11.64	11/3/98	GUINARDIA FLACCIDA	15869.32
WN98F	N18	WN98F40FWW1	11.64	11/3/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	7612.87
WN98F	N18	WN98F40FWW1	11.64	11/3/98	GYRODINIUM SPIRALE	6712.53
WN98F	N18	WN98F40FWW1	11.64	11/3/98	LEPTOCYLINDRUS DANICUS	9896.74
WN98F	N18	WN98F40FWW1	11.64	11/3/98	LEPTOCYLINDRUS MINIMUS	20.09
WN98F	N18	WN98F40FWW1	11.64	11/3/98	PENNATE DIATOM SP. GROUP 2 10-30 MICRONS LENGTH	12.62
WN98F	N18	WN98F40FWW1	11.64	11/3/98	PROROCENTRUM MICANS	1906.70
WN98F	N18	WN98F40FWW1	11.64	11/3/98	PSEUDONITZSCHIA PUNGENS	58.01
WN98F	N18	WN98F40FWW1	11.64	11/3/98	RHIZOSOLENIA DELICATULA	2176.56
WN98F	N18	WN98F40FWW1	11.64	11/3/98	RHIZOSOLENIA HEBETATA	NA
WN98F	N18	WN98F40FWW1	11.64	11/3/98	RHIZOSOLENIA STOLTERFOTHII	928.20
WN98F	N18	WN98F40FWW1	11.64	11/3/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	10718.36
WN98F	N18	WN98F411SW1	2.34	11/3/98	AMPHIDINIUM SPP.	0.51
WN98F	N18	WN98F411SW1	2.34	11/3/98	ATHECATE DINOFLAGELLATE	NA
WN98F	N18	WN98F411SW1	2.34	11/3/98	CERATIUM FUSUS	1072.50
WN98F	N18	WN98F411SW1	2.34	11/3/98	CERATIUM LINEATUM	181.68
WN98F	N18	WN98F411SW1	2.34	11/3/98	CERATIUM LONGIPES	36.88
WN98F	N18	WN98F411SW1	2.34	11/3/98	CERATIUM MACROCEROS	169.01

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WN98F	N18	WN98F411SW1	2.34	11/3/98	CERATIUM SPP.	110.44
WN98F	N18	WN98F411SW1	2.34	11/3/98	CERATIUM TRIPOS	2454.46
WN98F	N18	WN98F411SW1	2.34	11/3/98	DICTYOCHA FIBULA	12.53
WN98F	N18	WN98F411SW1	2.34	11/3/98	DINOPHYSIS NORVEGICA	NA
WN98F	N18	WN98F411SW1	2.34	11/3/98	GYMNODINIUM SPP.	5.32
WN98F	N18	WN98F411SW1	2.34	11/3/98	PROROCENTRUM MICANS	219.47
WN98F	N18	WN98F411SW1	2.34	11/3/98	PROTOPERIDINIUM PALLIDUM	20.02
WN98F	N18	WN98F411SW1	2.34	11/3/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	269.62
WN98F	N18	WN98F411SW1	2.34	11/3/98	PROTOPERIDINIUM SP. GROUP 3 76-150W 81-150L	373.62
WN98F	N18	WN98F411SW1	2.34	11/3/98	PYROCYSTIS LUNULA	NA
WN98F	N18	WN98F411SW1	2.34	11/3/98	SCRIPPSIELLA TROCHOIDEA	6.15
WN98F	N18	WN98F411SW1	2.34	11/3/98	THECATE DINOFLAGELLATE SPP.	NA
WN98F	N18	WN98F411WW1	2.34	11/3/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	40.71
WN98F	N18	WN98F411WW1	2.34	11/3/98	CHAETOCEROS SPP. (10-20UM)	NA
WN98F	N18	WN98F411WW1	2.34	11/3/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	813.45
WN98F	N18	WN98F411WW1	2.34	11/3/98	CYLINDROTHECA CLOSTERIUM	747.95
WN98F	N18	WN98F411WW1	2.34	11/3/98	EUCAMPIA ZODIACUS	33135.60
WN98F	N18	WN98F411WW1	2.34	11/3/98	GUINARDIA FLACCIDA	14960.97
WN98F	N18	WN98F411WW1	2.34	11/3/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	3855.11
WN98F	N18	WN98F411WW1	2.34	11/3/98	GYRODINIUM SP. GROUP 1 5-20UM W 10-20UM L	350.46
WN98F	N18	WN98F411WW1	2.34	11/3/98	HETEROCAPSA ROTUNDATA	34.48
WN98F	N18	WN98F411WW1	2.34	11/3/98	LEPTOCYLINDRUS DANICUS	5945.47
WN98F	N18	WN98F411WW1	2.34	11/3/98	LEPTOCYLINDRUS MINIMUS	255.27
WN98F	N18	WN98F411WW1	2.34	11/3/98	PENNATE DIATOM SP. GROUP 2 10-30 MICRONS LENGTH	26.72
WN98F	N18	WN98F411WW1	2.34	11/3/98	PROBOSCIA ALATA	4449.66
WN98F	N18	WN98F411WW1	2.34	11/3/98	PROROCENTRUM MICANS	1009.43
WN98F	N18	WN98F411WW1	2.34	11/3/98	PSEUDONITZSCHIA PUNGENS	164.06
WN98F	N18	WN98F411WW1	2.34	11/3/98	RHIZOSOLENIA DELICATULA	1843.68
WN98F	N18	WN98F411WW1	2.34	11/3/98	RHIZOSOLENIA HEBETATA	NA
WN98F	N18	WN98F411WW1	2.34	11/3/98	THALASSIONEMA NITZSCHIOIDES	272.48
WN98F	N18	WN98F411WW1	2.34	11/3/98	THALASSIOSIRA SP. GROUP 1 DIAM <20 MICRONS	86.41
WN98F	N18	WN98F411WW1	2.34	11/3/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	7509.27
WN98F	N18	WN98F411WW1	2.34	11/3/98	UNID. MICRO-PHYTOFLAG LENGTH >10 MICRONS	1028.66
WN98G	N04	WN98G4D2SW1	20.43	11/24/98	CERATIUM FUSUS	2609.50
WN98G	N04	WN98G4D2SW1	20.43	11/24/98	CERATIUM LINEATUM	25.82
WN98G	N04	WN98G4D2SW1	20.43	11/24/98	CERATIUM LONGIPES	295.03
WN98G	N04	WN98G4D2SW1	20.43	11/24/98	CERATIUM MACROCEROS	211.63
WN98G	N04	WN98G4D2SW1	20.43	11/24/98	CERATIUM SPP.	7.80
WN98G	N04	WN98G4D2SW1	20.43	11/24/98	CERATIUM TRIPOS	3229.65
WN98G	N04	WN98G4D2SW1	20.43	11/24/98	DICTYOCHA FIBULA	10.65
WN98G	N04	WN98G4D2SW1	20.43	11/24/98	DISTEPHANUS SPECULUM	0.36
WN98G	N04	WN98G4D2SW1	20.43	11/24/98	PROROCENTRUM MICANS	167.85
WN98G	N04	WN98G4D2SW1	20.43	11/24/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	107.85
WN98G	N04	WN98G4D2SW1	20.43	11/24/98	PROTOPERIDINIUM SP. GROUP 3 76-150W 81-150L	81.52
WN98G	N04	WN98G4D2SW1	20.43	11/24/98	SCRIPPSIELLA TROCHOIDEA	1.05

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WN98G	N04	WN98G4D2SW1	20.43	11/24/98	THECATE DINOFLAGELLATE SPP.	NA
WN98G	N04	WN98G4D2WW1	20.43	11/24/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	33.50
WN98G	N04	WN98G4D2WW1	20.43	11/24/98	CERATIUM FUSUS	1488.85
WN98G	N04	WN98G4D2WW1	20.43	11/24/98	CERATIUM TRIPOS	7630.24
WN98G	N04	WN98G4D2WW1	20.43	11/24/98	CORETHRON CRIOPHILUM	1535.89
WN98G	N04	WN98G4D2WW1	20.43	11/24/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	528.21
WN98G	N04	WN98G4D2WW1	20.43	11/24/98	CYLINDROTHECA CLOSTERIUM	307.87
WN98G	N04	WN98G4D2WW1	20.43	11/24/98	DINOPHYSIS CAUDATA	2831.61
WN98G	N04	WN98G4D2WW1	20.43	11/24/98	GUINARDIA FLACCIDA	9235.16
WN98G	N04	WN98G4D2WW1	20.43	11/24/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	432.67
WN98G	N04	WN98G4D2WW1	20.43	11/24/98	PENNATE DIATOM SP. GROUP 2 10-30 MICRONS LENGTH	99.15
WN98G	N04	WN98G4D2WW1	20.43	11/24/98	PSEUDONITZSCHIA DELICATISSIMA	42.15
WN98G	N04	WN98G4D2WW1	20.43	11/24/98	PSEUDONITZSCHIA PUNGENS	75.85
WN98G	N04	WN98G4D2WW1	20.43	11/24/98	RHIZOSOLENIA DELICATULA	13318.64
WN98G	N04	WN98G4D2WW1	20.43	11/24/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	4152.94
WN98G	N04	WN98G4D2WW1	20.43	11/24/98	UNID. MICRO-PHYTOFLAG LENGTH >10 MICRONS	380.99
WN98G	N04	WN98G4D4SW1	1.99	11/24/98	CERATIUM FUSUS	4042.21
WN98G	N04	WN98G4D4SW1	1.99	11/24/98	CERATIUM LINEATUM	57.37
WN98G	N04	WN98G4D4SW1	1.99	11/24/98	CERATIUM LONGIPES	393.37
WN98G	N04	WN98G4D4SW1	1.99	11/24/98	CERATIUM MACROCEROS	543.76
WN98G	N04	WN98G4D4SW1	1.99	11/24/98	CERATIUM SPP.	149.41
WN98G	N04	WN98G4D4SW1	1.99	11/24/98	CERATIUM TRIPOS	5875.54
WN98G	N04	WN98G4D4SW1	1.99	11/24/98	DICTYOCHA FIBULA	7.83
WN98G	N04	WN98G4D4SW1	1.99	11/24/98	DINOPHYSIS NORVEGICA	NA
WN98G	N04	WN98G4D4SW1	1.99	11/24/98	DISTEPHANUS SPECULUM	2.40
WN98G	N04	WN98G4D4SW1	1.99	11/24/98	PROROCENTRUM MICANS	268.93
WN98G	N04	WN98G4D4SW1	1.99	11/24/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	117.53
WN98G	N04	WN98G4D4SW1	1.99	11/24/98	PROTOPERIDINIUM SP. GROUP 3 76-150W 81-150L	407.59
WN98G	N04	WN98G4D4SW1	1.99	11/24/98	PYROCYSTIS LUNULA	NA
WN98G	N04	WN98G4D4WW1	1.99	11/24/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	66.59
WN98G	N04	WN98G4D4WW1	1.99	11/24/98	CENTRIC DIATOM SP. GROUP 2 DIAM 10-30 MICRONS	152.57
WN98G	N04	WN98G4D4WW1	1.99	11/24/98	CERATIUM FUSUS	14224.13
WN98G	N04	WN98G4D4WW1	1.99	11/24/98	CHAETOCEROS DECIPIENS	794.59
WN98G	N04	WN98G4D4WW1	1.99	11/24/98	CHAETOCEROS DIDYMUS	79.40
WN98G	N04	WN98G4D4WW1	1.99	11/24/98	CORETHRON CRIOPHILUM	1628.04
WN98G	N04	WN98G4D4WW1	1.99	11/24/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	1182.02
WN98G	N04	WN98G4D4WW1	1.99	11/24/98	CYLINDROTHECA CLOSTERIUM	122.38
WN98G	N04	WN98G4D4WW1	1.99	11/24/98	DICTYOCHA FIBULA	669.20
WN98G	N04	WN98G4D4WW1	1.99	11/24/98	GUINARDIA FLACCIDA	9775.17
WN98G	N04	WN98G4D4WW1	1.99	11/24/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	1375.90
WN98G	N04	WN98G4D4WW1	1.99	11/24/98	GYRODINIUM SPIRALE	13975.00
WN98G	N04	WN98G4D4WW1	1.99	11/24/98	HETEROCAPSA ROTUNDATA	67.69
WN98G	N04	WN98G4D4WW1	1.99	11/24/98	PENNATE DIATOM SP. GROUP 1 <10 MICRONS LENGTH	10.30
WN98G	N04	WN98G4D4WW1	1.99	11/24/98	PENNATE DIATOM SP. GROUP 2 10-30 MICRONS LENGTH	34.98
WN98G	N04	WN98G4D4WW1	1.99	11/24/98	PROROCENTRUM MICANS	1981.47

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WN98G	N04	WN98G4D4WW1	1.99	11/24/98	PSEUDONITZSCHIA DELICATISSIMA	89.36
WN98G	N04	WN98G4D4WW1	1.99	11/24/98	PSEUDONITZSCHIA PUNGENS	133.99
WN98G	N04	WN98G4D4WW1	1.99	11/24/98	RHIZOSOLENIA DELICATULA	18944.35
WN98G	N04	WN98G4D4WW1	1.99	11/24/98	THALASSIONEMA NITZSCHIOIDES	133.72
WN98G	N04	WN98G4D4WW1	1.99	11/24/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	7903.80
WN98G	N04	WN98G4D4WW1	1.99	11/24/98	UNID. MICRO-PHYTOFLAG LENGTH >10 MICRONS	201.92
WN98G	N18	WN98G4EDSW1	12.9	11/24/98	CERATIUM FUSUS	703.56
WN98G	N18	WN98G4EDSW1	12.9	11/24/98	CERATIUM LINEATUM	30.50
WN98G	N18	WN98G4EDSW1	12.9	11/24/98	CERATIUM MACROCEROS	191.79
WN98G	N18	WN98G4EDSW1	12.9	11/24/98	CERATIUM SPP.	60.29
WN98G	N18	WN98G4EDSW1	12.9	11/24/98	CERATIUM TRIPOS	1110.29
WN98G	N18	WN98G4EDSW1	12.9	11/24/98	DICTYOCHA FIBULA	1.21
WN98G	N18	WN98G4EDSW1	12.9	11/24/98	DINOPHYSIS NORVEGICA	NA
WN98G	N18	WN98G4EDSW1	12.9	11/24/98	DISTEPHANUS SPECULUM	4.53
WN98G	N18	WN98G4EDSW1	12.9	11/24/98	MESODINIUM RUBRUM	NA
WN98G	N18	WN98G4EDSW1	12.9	11/24/98	PROROCENTRUM MICANS	34.96
WN98G	N18	WN98G4EDSW1	12.9	11/24/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	96.23
WN98G	N18	WN98G4EDSW1	12.9	11/24/98	PROTOPERIDINIUM SP. GROUP 3 76-150W 81-150L	78.80
WN98G	N18	WN98G4EDSW1	12.9	11/24/98	THECATE DINOFLAGELLATE SPP.	NA
WN98G	N18	WN98G4EDWW1	12.9	11/24/98	ASTERIONELLOPSIS GLACIALIS	27.03
WN98G	N18	WN98G4EDWW1	12.9	11/24/98	CALYCOMONAS OVALIS	11.42
WN98G	N18	WN98G4EDWW1	12.9	11/24/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	61.56
WN98G	N18	WN98G4EDWW1	12.9	11/24/98	CERATIUM FUSUS	4383.54
WN98G	N18	WN98G4EDWW1	12.9	11/24/98	CERATIUM MACROCEROS	1087.14
WN98G	N18	WN98G4EDWW1	12.9	11/24/98	CERATIUM TRIPOS	2804.11
WN98G	N18	WN98G4EDWW1	12.9	11/24/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	125.47
WN98G	N18	WN98G4EDWW1	12.9	11/24/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	201.02
WN98G	N18	WN98G4EDWW1	12.9	11/24/98	CYLINDROTHECA CLOSTERIUM	282.86
WN98G	N18	WN98G4EDWW1	12.9	11/24/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	318.01
WN98G	N18	WN98G4EDWW1	12.9	11/24/98	GYMNODINIUM SP. GROUP 2 21-40UM W 21-50UM L	1465.72
WN98G	N18	WN98G4EDWW1	12.9	11/24/98	GYRO/PLEUROSIGMA SPP.	NA
WN98G	N18	WN98G4EDWW1	12.9	11/24/98	HETEROCAPSA ROTUNDATA	62.58
WN98G	N18	WN98G4EDWW1	12.9	11/24/98	PENNATE DIATOM SP. GROUP 2 10-30 MICRONS LENGTH	36.38
WN98G	N18	WN98G4EDWW1	12.9	11/24/98	PSEUDONITZSCHIA PUNGENS	111.49
WN98G	N18	WN98G4EDWW1	12.9	11/24/98	RHIZOSOLENIA DELICATULA	16566.34
WN98G	N18	WN98G4EDWW1	12.9	11/24/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	4501.53
WN98G	N18	WN98G4EDWW1	12.9	11/24/98	UNID. MICRO-PHYTOFLAG LENGTH >10 MICRONS	186.68
WN98G	N18	WN98G4EFSW1	1.54	11/24/98	CERATIUM FUSUS	1082.26
WN98G	N18	WN98G4EFSW1	1.54	11/24/98	CERATIUM LINEATUM	59.28
WN98G	N18	WN98G4EFSW1	1.54	11/24/98	CERATIUM LONGIPES	182.92
WN98G	N18	WN98G4EFSW1	1.54	11/24/98	CERATIUM MACROCEROS	287.02
WN98G	N18	WN98G4EFSW1	1.54	11/24/98	CERATIUM TRIPOS	1692.16
WN98G	N18	WN98G4EFSW1	1.54	11/24/98	DICTYOCHA FIBULA	7.77
WN98G	N18	WN98G4EFSW1	1.54	11/24/98	DINOPHYSIS NORVEGICA	NA
WN98G	N18	WN98G4EFSW1	1.54	11/24/98	DISTEPHANUS SPECULUM	0.74

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WN98G	N18	WN98G4EFSW1	1.54	11/24/98	GYMNODINIUM SPP.	6.59
WN98G	N18	WN98G4EFSW1	1.54	11/24/98	MESODINIUM RUBRUM	NA
WN98G	N18	WN98G4EFSW1	1.54	11/24/98	PROROCENTRUM GRACILE	0.84
WN98G	N18	WN98G4EFSW1	1.54	11/24/98	PROROCENTRUM MICANS	30.66
WN98G	N18	WN98G4EFSW1	1.54	11/24/98	PROTOPERIDINIUM PALLIDUM	173.81
WN98G	N18	WN98G4EFSW1	1.54	11/24/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	171.45
WN98G	N18	WN98G4EFSW1	1.54	11/24/98	PYROCYSTIS LUNULA	NA
WN98G	N18	WN98G4EFSW1	1.54	11/24/98	THECATE DINOFLAGELLATE SPP.	NA
WN98G	N18	WN98G4EFWW1	1.54	11/24/98	CALYCOMONAS OVALIS	12.59
WN98G	N18	WN98G4EFWW1	1.54	11/24/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	40.65
WN98G	N18	WN98G4EFWW1	1.54	11/24/98	CENTRIC DIATOM SP. GROUP 2 DIAM 10-30 MICRONS	29.15
WN98G	N18	WN98G4EFWW1	1.54	11/24/98	CERATIUM FUSUS	3617.91
WN98G	N18	WN98G4EFWW1	1.54	11/24/98	CERATIUM TRIPOS	3090.25
WN98G	N18	WN98G4EFWW1	1.54	11/24/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	121.31
WN98G	N18	WN98G4EFWW1	1.54	11/24/98	CYLINDROTHECA CLOSTERIUM	62.34
WN98G	N18	WN98G4EFWW1	1.54	11/24/98	GUINARDIA FLACCIDA	1867.43
WN98G	N18	WN98G4EFWW1	1.54	11/24/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	700.93
WN98G	N18	WN98G4EFWW1	1.54	11/24/98	HETEROCAPSA ROTUNDATA	34.48
WN98G	N18	WN98G4EFWW1	1.54	11/24/98	PENNATE DIATOM SP. GROUP 2 10-30 MICRONS LENGTH	6.68
WN98G	N18	WN98G4EFWW1	1.54	11/24/98	PROROCENTRUM MICANS	126.00
WN98G	N18	WN98G4EFWW1	1.54	11/24/98	PSEUDONITZSCHIA PUNGENS	40.96
WN98G	N18	WN98G4EFWW1	1.54	11/24/98	RHIZOSOLENIA DELICATULA	15813.33
WN98G	N18	WN98G4EFWW1	1.54	11/24/98	THALASSIONEMA NITZSCHIOIDES	25.51
WN98G	N18	WN98G4EFWW1	1.54	11/24/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	5470.55
WN98H	N04	WN98H043SW1	15.28	12/15/98	AMYLAX TRIACANTHA	10.55
WN98H	N04	WN98H043SW1	15.28	12/15/98	CERATIUM FUSUS	4665.15
WN98H	N04	WN98H043SW1	15.28	12/15/98	CERATIUM LINEATUM	261.61
WN98H	N04	WN98H043SW1	15.28	12/15/98	CERATIUM LONGIPES	354.03
WN98H	N04	WN98H043SW1	15.28	12/15/98	CERATIUM MACROCEROS	603.13
WN98H	N04	WN98H043SW1	15.28	12/15/98	CERATIUM SPP.	299.35
WN98H	N04	WN98H043SW1	15.28	12/15/98	CERATIUM TRIPOS	7150.72
WN98H	N04	WN98H043SW1	15.28	12/15/98	DICTYOCHA FIBULA	63.14
WN98H	N04	WN98H043SW1	15.28	12/15/98	DINOPHYSIS NORVEGICA	NA
WN98H	N04	WN98H043SW1	15.28	12/15/98	DISTEPHANUS SPECULUM	16.43
WN98H	N04	WN98H043SW1	15.28	12/15/98	MESODINIUM RUBRUM	NA
WN98H	N04	WN98H043SW1	15.28	12/15/98	PROROCENTRUM MICANS	899.14
WN98H	N04	WN98H043SW1	15.28	12/15/98	PROTOPERIDINIUM DEPRESSUM	347.42
WN98H	N04	WN98H043SW1	15.28	12/15/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	238.93
WN98H	N04	WN98H043SW1	15.28	12/15/98	PROTOPERIDINIUM SP. GROUP 3 76-150W 81-150L	1369.50
WN98H	N04	WN98H043WW1	15.28	12/15/98	CALYCOMONAS OVALIS	25.18
WN98H	N04	WN98H043WW1	15.28	12/15/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	298.51
WN98H	N04	WN98H043WW1	15.28	12/15/98	CENTRIC DIATOM SP. GROUP 2 DIAM 10-30 MICRONS	1515.39
WN98H	N04	WN98H043WW1	15.28	12/15/98	CERATIUM FUSUS	9646.37
WN98H	N04	WN98H043WW1	15.28	12/15/98	CERATIUM LINEATUM	4676.36
WN98H	N04	WN98H043WW1	15.28	12/15/98	CERATIUM MACROCEROS	9598.39

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WN98H	N04	WN98H043WW1	15.28	12/15/98	CERATIUM TRIPOS	12359.21
WN98H	N04	WN98H043WW1	15.28	12/15/98	CHAETOCEROS COMPRESSUS	835.94
WN98H	N04	WN98H043WW1	15.28	12/15/98	CHAETOCEROS DECIPIENS	1214.20
WN98H	N04	WN98H043WW1	15.28	12/15/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	3041.51
WN98H	N04	WN98H043WW1	15.28	12/15/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	126.77
WN98H	N04	WN98H043WW1	15.28	12/15/98	CRYPTOMONAS SP. GROUP 2 LENGTH >10 MICRONS	135.69
WN98H	N04	WN98H043WW1	15.28	12/15/98	CYLINDROTHECA CLOSTERIUM	499.47
WN98H	N04	WN98H043WW1	15.28	12/15/98	DETONULA CONFERVACEA	207.84
WN98H	N04	WN98H043WW1	15.28	12/15/98	DINOPHYSIS NORVEGICA	NA
WN98H	N04	WN98H043WW1	15.28	12/15/98	DITYLUM BRIGHTWELLII	8473.87
WN98H	N04	WN98H043WW1	15.28	12/15/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	1051.39
WN98H	N04	WN98H043WW1	15.28	12/15/98	PROROCENTRUM MICANS	3023.49
WN98H	N04	WN98H043WW1	15.28	12/15/98	PSEUDONITZSCHIA DELICATISSIMA	1997.00
WN98H	N04	WN98H043WW1	15.28	12/15/98	PSEUDONITZSCHIA PUNGENS	4095.10
WN98H	N04	WN98H043WW1	15.28	12/15/98	RHIZOSOLENIA DELICATULA	3693.56
WN98H	N04	WN98H043WW1	15.28	12/15/98	SKELETONEMA COSTATUM GREV+CLEVE	187.31
WN98H	N04	WN98H043WW1	15.28	12/15/98	THALASSIONEMA NITZSCHIOIDES	374.07
WN98H	N04	WN98H043WW1	15.28	12/15/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	5640.45
WN98H	N04	WN98H045SW1	1.89	12/15/98	AMYLAX TRIACANTHA	17.58
WN98H	N04	WN98H045SW1	1.89	12/15/98	CERATIUM FUSUS	1686.41
WN98H	N04	WN98H045SW1	1.89	12/15/98	CERATIUM LINEATUM	200.80
WN98H	N04	WN98H045SW1	1.89	12/15/98	CERATIUM LONGIPES	236.02
WN98H	N04	WN98H045SW1	1.89	12/15/98	CERATIUM MACROCEROS	304.21
WN98H	N04	WN98H045SW1	1.89	12/15/98	CERATIUM SPP.	62.36
WN98H	N04	WN98H045SW1	1.89	12/15/98	CERATIUM TRIPOS	5037.80
WN98H	N04	WN98H045SW1	1.89	12/15/98	DICTYOCHA FIBULA	60.13
WN98H	N04	WN98H045SW1	1.89	12/15/98	DINOPHYSIS NORVEGICA	NA
WN98H	N04	WN98H045SW1	1.89	12/15/98	DISTEPHANUS SPECULUM	7.57
WN98H	N04	WN98H045SW1	1.89	12/15/98	MESODINIUM RUBRUM	NA
WN98H	N04	WN98H045SW1	1.89	12/15/98	PROROCENTRUM MICANS	441.41
WN98H	N04	WN98H045SW1	1.89	12/15/98	PROTOPERIDINIUM DEPRESSUM	72.38
WN98H	N04	WN98H045SW1	1.89	12/15/98	PROTOPERIDINIUM PALLIDUM	24.03
WN98H	N04	WN98H045SW1	1.89	12/15/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	16.59
WN98H	N04	WN98H045SW1	1.89	12/15/98	PROTOPERIDINIUM SP. GROUP 3 76-150W 81-150L	285.31
WN98H	N04	WN98H045WW1	1.89	12/15/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	298.51
WN98H	N04	WN98H045WW1	1.89	12/15/98	CENTRIC DIATOM SP. GROUP 2 DIAM 10-30 MICRONS	1631.96
WN98H	N04	WN98H045WW1	1.89	12/15/98	CERATIUM FUSUS	7234.78
WN98H	N04	WN98H045WW1	1.89	12/15/98	CERATIUM LINEATUM	1558.79
WN98H	N04	WN98H045WW1	1.89	12/15/98	CERATIUM MACROCEROS	9598.39
WN98H	N04	WN98H045WW1	1.89	12/15/98	CERATIUM TRIPOS	24718.42
WN98H	N04	WN98H045WW1	1.89	12/15/98	CHAETOCEROS COMPRESSUS	5015.65
WN98H	N04	WN98H045WW1	1.89	12/15/98	CHAETOCEROS DECIPIENS	4864.51
WN98H	N04	WN98H045WW1	1.89	12/15/98	CHAETOCEROS DIDYMUS	486.12
WN98H	N04	WN98H045WW1	1.89	12/15/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	7742.02
WN98H	N04	WN98H045WW1	1.89	12/15/98	CORETHRON CRIOPHILUM	4975.56

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WN98H	N04	WN98H045WW1	1.89	12/15/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	147.90
WN98H	N04	WN98H045WW1	1.89	12/15/98	CYLINDROTHECA CLOSTERIUM	499.47
WN98H	N04	WN98H045WW1	1.89	12/15/98	DETONULA CONFERVACEA	1247.02
WN98H	N04	WN98H045WW1	1.89	12/15/98	DITYLUM BRIGHTWELLII	5649.25
WN98H	N04	WN98H045WW1	1.89	12/15/98	GUINARDIA FLACCIDA	3734.32
WN98H	N04	WN98H045WW1	1.89	12/15/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	2102.79
WN98H	N04	WN98H045WW1	1.89	12/15/98	LEPTOCYLINDRUS MINIMUS	42.55
WN98H	N04	WN98H045WW1	1.89	12/15/98	PENNATE DIATOM SP. GROUP 2 10-30 MICRONS LENGTH	26.73
WN98H	N04	WN98H045WW1	1.89	12/15/98	PROROCENTRUM MICANS	3023.49
WN98H	N04	WN98H045WW1	1.89	12/15/98	PSEUDONITZSCHIA DELICATISSIMA	1860.45
WN98H	N04	WN98H045WW1	1.89	12/15/98	PSEUDONITZSCHIA PUNGENS	3972.25
WN98H	N04	WN98H045WW1	1.89	12/15/98	RHIZOSOLENIA DELICATULA	1106.31
WN98H	N04	WN98H045WW1	1.89	12/15/98	RHIZOSOLENIA HEBETATA	NA
WN98H	N04	WN98H045WW1	1.89	12/15/98	THALASSIONEMA NITZSCHIOIDES	204.04
WN98H	N04	WN98H045WW1	1.89	12/15/98	THALASSIOSIRA PUNCTIGERA	NA
WN98H	N04	WN98H045WW1	1.89	12/15/98	THALASSIOTHRIX SPP.	267.46
WN98H	N04	WN98H045WW1	1.89	12/15/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	5844.32
WN98H	N18	WN98H04ESW1	9.46	12/15/98	AMYLAX TRIACANTHA	25.06
WN98H	N18	WN98H04ESW1	9.46	12/15/98	CERATIUM FUSUS	4266.63
WN98H	N18	WN98H04ESW1	9.46	12/15/98	CERATIUM LINEATUM	250.71
WN98H	N18	WN98H04ESW1	9.46	12/15/98	CERATIUM LONGIPES	448.44
WN98H	N18	WN98H04ESW1	9.46	12/15/98	CERATIUM MACROCEROS	904.70
WN98H	N18	WN98H04ESW1	9.46	12/15/98	CERATIUM SPP.	207.36
WN98H	N18	WN98H04ESW1	9.46	12/15/98	CERATIUM TRIPOS	7303.10
WN98H	N18	WN98H04ESW1	9.46	12/15/98	DICTYOCHA FIBULA	26.18
WN98H	N18	WN98H04ESW1	9.46	12/15/98	DINOPHYSIS NORVEGICA	NA
WN98H	N18	WN98H04ESW1	9.46	12/15/98	DISTEPHANUS SPECULUM	16.43
WN98H	N18	WN98H04ESW1	9.46	12/15/98	MESODINIUM RUBRUM	NA
WN98H	N18	WN98H04ESW1	9.46	12/15/98	PROROCENTRUM MICANS	701.25
WN98H	N18	WN98H04ESW1	9.46	12/15/98	PROTOPERIDINIUM DEPRESSUM	137.52
WN98H	N18	WN98H04ESW1	9.46	12/15/98	PROTOPERIDINIUM PALLIDUM	365.24
WN98H	N18	WN98H04ESW1	9.46	12/15/98	PROTOPERIDINIUM SP. GROUP 1 10-30W 10-40L	4.47
WN98H	N18	WN98H04ESW1	9.46	12/15/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	157.62
WN98H	N18	WN98H04ESW1	9.46	12/15/98	PROTOPERIDINIUM SP. GROUP 3 76-150W 81-150L	77.44
WN98H	N18	WN98H04EWW1	9.46	12/15/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	542.74
WN98H	N18	WN98H04EWW1	9.46	12/15/98	CENTRIC DIATOM SP. GROUP 2 DIAM 10-30 MICRONS	699.41
WN98H	N18	WN98H04EWW1	9.46	12/15/98	CERATIUM FUSUS	7234.78
WN98H	N18	WN98H04EWW1	9.46	12/15/98	CERATIUM MACROCEROS	2395.80
WN98H	N18	WN98H04EWW1	9.46	12/15/98	CERATIUM TRIPOS	12359.21
WN98H	N18	WN98H04EWW1	9.46	12/15/98	CHAETOCEROS COMPRESSUS	13375.06
WN98H	N18	WN98H04EWW1	9.46	12/15/98	CHAETOCEROS DECIPIENS	1214.20
WN98H	N18	WN98H04EWW1	9.46	12/15/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	27650.07
WN98H	N18	WN98H04EWW1	9.46	12/15/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	232.41
WN98H	N18	WN98H04EWW1	9.46	12/15/98	DETONULA CONFERVACEA	935.26
WN98H	N18	WN98H04EWW1	9.46	12/15/98	DITYLUM BRIGHTWELLII	5649.25

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WN98H	N18	WN98H04EWW1	9.46	12/15/98	GUINARDIA FLACCIDA	3734.32
WN98H	N18	WN98H04EWW1	9.46	12/15/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	1051.39
WN98H	N18	WN98H04EWW1	9.46	12/15/98	PROROCENTRUM MICANS	2018.86
WN98H	N18	WN98H04EWW1	9.46	12/15/98	PSEUDONITZSCHIA DELICATISSIMA	1706.83
WN98H	N18	WN98H04EWW1	9.46	12/15/98	PSEUDONITZSCHIA PUNGENS	3439.88
WN98H	N18	WN98H04EWW1	9.46	12/15/98	RHIZOSOLENIA DELICATULA	8864.54
WN98H	N18	WN98H04EWW1	9.46	12/15/98	RHIZOSOLENIA HEBETATA	NA
WN98H	N18	WN98H04EWW1	9.46	12/15/98	RHIZOSOLENIA STOLTERFOTHII	1965.78
WN98H	N18	WN98H04EWW1	9.46	12/15/98	THALASSIONEMA NITZSCHIOIDES	340.06
WN98H	N18	WN98H04EWW1	9.46	12/15/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	9717.88
WN98H	N18	WN98H050SW1	2.09	12/15/98	AMYLAX TRIACANTHA	25.64
WN98H	N18	WN98H050SW1	2.09	12/15/98	CERATIUM FUSUS	2085.83
WN98H	N18	WN98H050SW1	2.09	12/15/98	CERATIUM LINEATUM	258.17
WN98H	N18	WN98H050SW1	2.09	12/15/98	CERATIUM LONGIPES	98.34
WN98H	N18	WN98H050SW1	2.09	12/15/98	CERATIUM MACROCEROS	382.10
WN98H	N18	WN98H050SW1	2.09	12/15/98	CERATIUM SPP.	51.97
WN98H	N18	WN98H050SW1	2.09	12/15/98	CERATIUM TRIPOS	5799.73
WN98H	N18	WN98H050SW1	2.09	12/15/98	DICTYOCHA FIBULA	10.44
WN98H	N18	WN98H050SW1	2.09	12/15/98	DINOPHYSIS NORVEGICA	NA
WN98H	N18	WN98H050SW1	2.09	12/15/98	DISTEPHANUS SPECULUM	3.60
WN98H	N18	WN98H050SW1	2.09	12/15/98	GYMNODINIUM SPP.	10.63
WN98H	N18	WN98H050SW1	2.09	12/15/98	MESODINIUM RUBRUM	NA
WN98H	N18	WN98H050SW1	2.09	12/15/98	PROROCENTRUM MICANS	352.39
WN98H	N18	WN98H050SW1	2.09	12/15/98	PROTOPERIDINIUM DIVERGENS	82.60
WN98H	N18	WN98H050SW1	2.09	12/15/98	PROTOPERIDINIUM PALLIDUM	280.34
WN98H	N18	WN98H050SW1	2.09	12/15/98	PROTOPERIDINIUM SP. GROUP 2 31-75W 41-80L	96.79
WN98H	N18	WN98H050SW1	2.09	12/15/98	PROTOPERIDINIUM SP. GROUP 3 76-150W 81-150L	611.38
WN98H	N18	WN98H050WW1	2.09	12/15/98	CALYCOMONAS OVALIS	24.71
WN98H	N18	WN98H050WW1	2.09	12/15/98	CENTRIC DIATOM SP. GROUP 1 DIAM <10 MICRONS	186.44
WN98H	N18	WN98H050WW1	2.09	12/15/98	CENTRIC DIATOM SP. GROUP 2 DIAM 10-30 MICRONS	572.05
WN98H	N18	WN98H050WW1	2.09	12/15/98	CHAETOCEROS COMPRESSUS	13127.38
WN98H	N18	WN98H050WW1	2.09	12/15/98	CHAETOCEROS DIDYMUS	178.63
WN98H	N18	WN98H050WW1	2.09	12/15/98	CHAETOCEROS SP. GROUP 2 DIAM 10-30 MICRONS	26052.51
WN98H	N18	WN98H050WW1	2.09	12/15/98	CRYPTOMONAS SP. GROUP 1 LENGTH <10 MICRONS	103.69
WN98H	N18	WN98H050WW1	2.09	12/15/98	CYLINDROTHECA CLOSTERIUM	367.09
WN98H	N18	WN98H050WW1	2.09	12/15/98	DETONULA CONFERVACEA	3263.80
WN98H	N18	WN98H050WW1	2.09	12/15/98	DINOPHYSIS NORVEGICA	NA
WN98H	N18	WN98H050WW1	2.09	12/15/98	DITYLUM BRIGHTWELLII	11106.86
WN98H	N18	WN98H050WW1	2.09	12/15/98	GUINARDIA FLACCIDA	14683.91
WN98H	N18	WN98H050WW1	2.09	12/15/98	GYMNODINIUM SP. GROUP 1 5-20UM W 10-20UM L	1031.92
WN98H	N18	WN98H050WW1	2.09	12/15/98	GYRODINIUM SP. GROUP 2 21-40UM W 21-50UM L	1585.14
WN98H	N18	WN98H050WW1	2.09	12/15/98	PENNATE DIATOM SP. GROUP 2 10-30 MICRONS LENGTH	26.23
WN98H	N18	WN98H050WW1	2.09	12/15/98	PROTOPERIDINIUM BIPES	1671.44
WN98H	N18	WN98H050WW1	2.09	12/15/98	PSEUDONITZSCHIA DELICATISSIMA	1876.25
WN98H	N18	WN98H050WW1	2.09	12/15/98	PSEUDONITZSCHIA PUNGENS	2009.63

Survey	Sta.	Sample Number	Depth (m)	Sampling Date	Plankton	Estimated Carbon Equivalence (ng Carbon/L)
WN98H	N18	WN98H050WW1	2.09	12/15/98	RHIZOSOLENIA DELICATULA	904.85
WN98H	N18	WN98H050WW1	2.09	12/15/98	RHIZOSOLENIA HEBETATA	NA
WN98H	N18	WN98H050WW1	2.09	12/15/98	SKELETONEMA COSTATUM GREV+CLEVE	30.59
WN98H	N18	WN98H050WW1	2.09	12/15/98	THALASSIONEMA NITZSCHIOIDES	467.27
WN98H	N18	WN98H050WW1	2.09	12/15/98	THALASSIOTHRIX SPP.	262.51
WN98H	N18	WN98H050WW1	2.09	12/15/98	UNID. MICRO-PHYTOFLAG LENGTH <10 MICRONS	6869.97
WN98H	N18	WN98H050WW1	2.09	12/15/98	UNID. MICRO-PHYTOFLAG LENGTH >10 MICRONS	403.85

APPENDICES

[Note: These appendices are not available on-line. To obtain a printed copy, please call the Environmental Quality Department at (617) 788-4700.]

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