Rodorn

Ref. No. [UMCEES]CBL 85-121

MARYLAND OFFICE OF ENVIRONMENTAL PROGRAMS

MARYLAND CHESAPEAKE BAY WATER QUALITY MONITORING PROGRAM

ECOSYSTEM PROCESSES COMPONENT (EPC)

LEVEL I DATA REPORT NO.2

(July 1984 - June 1985)

PREPARED FOR:

Office of Environmental Programs
Department of Health & Mental Hygiene
State of Maryland

PREPARED BY:

W.R. Boynton[1] and W.M. Kemp[2], Principal Investigators
J.M. Barnes, Program Manager[1]

Center for Environmental & Estuarine Studies
University of Maryland

[1]Chesapeake Biological Laboratory (CBL)
Solomons, Maryland 20688-0038

[2]Horn Point Environmental Laboratories (HPEL)
Cambridge, Maryland 21613-0775

Ref. No. [UMCEES]CBL 85-121

MARYLAND OFFICE OF ENVIRONMENTAL PROGRAMS

MARYLAND CHESAPEAKE BAY WATER QUALITY MONITORING PROGRAM

ECOSYSTEM PROCESSES COMPONENT (EPC)

LEVEL I DATA REPORT NO.2

(July 1984 - June 1985)

PREPARED FOR:

Office of Environmental Programs
Department of Health & Mental Hygiene
State of Maryland

PREPARED BY:

W.R. Boynton[1] and W.M. Kemp[2], Principal Investigators
J.M. Barnes, Program Manager[1]

Center for Environmental & Estuarine Studies
University of Maryland

[1]Chesapeake Biological Laboratory (CBL)
Solomons, Maryland 20688-0038

[2]Horn Point Environmental Laboratories (HPEL)
Cambridge, Maryland 21613-0775

ABSTRACT

Program Objectives

The primary objectives of the Ecosystem Processes Component (EPC) of the Maryland Chesapeake Bay Water Quality Monitoring Program are to:

1) characterize the present state of the bay (including spatial and seasonal variation) relative to sediment-water nutrient exchanges and oxygen consumption and the vertical rate of deposition of organic particulates to deep waters and the sediment surface.

2) determine the long-term trends that might develop in sedimenwater exchanges and vertical deposition rates in response to pollution control programs.

3) integrate the information collected in this program with other elements of the monitoring program to gain a better understanding of the processes affecting Chesapeake Bay water quality and its impact on living resources.

Measurements of sediment-water nutrient and oxygen exchanges are made on a quarterly basis at four locations in the mainstem Bay, and at two locations in each of three major tributary rivers (Patuxent, Choptank, and Potomac). Vertical deposition rates are monitored at two mainstem Bay locations, one near the upstream point in which anoxic conditions exist and one in the central anoxic region farther downstream. Measurements are made almost continuously during the spring and summer periods, with a lower frequency during the fall and winter. Activities in this program have been coordinated with other components of the Maryland Chesapeake Bay Water Quality Monitoring Program in terms of station locations, sampling frequency, methodologies, data storage and transmission, reporting schedules and data synthesis.

Justification

Recently, it has been shown that sediment-water processes and deposition of organic matter to the sediment surface are major features of estuarine nutrient cycles and play an important role in determining water quality and habitat conditions. For example, it has been found that during summer periods, when water quality conditions are typically poorest (i.e. anoxic conditions in deep water, algal blooms), sediment releases of nutrients (e.g. nitrogen, phosphorus) and consumption of oxygen are often highest as is the rate of organic matter deposition to the deep waters of the Bay. To a considerable extent, it is the magnitude of these processes which determines nutrient and oxygen water quality conditions in many zones of the Bay. Ultimately, these processes are driven by inputs of organic matter and nutrients from both natural and anthropogenic sources. If water quality management programs are instituted and loadings decrease, changes in the magnitude of the processes monitored in this program will serve as a guide in determining the effectiveness of strategies aimed at improving Bay water quality and habitat conditions.

INTRODUCTION

During the past decade much has been learned about the effects of nutrient inputs (e.g. nitrogen, phosphorus, silica), from both natural and anthropogenic sources, on such important estuarine processes as phytoplankton production and oxygen status (Nixon, 1981; D'Elia et al., 1983; Kemp and Boynton, 1982). While our understanding is not complete, important pathways regulating these processes have also been identified and related to water quality conditions. For example, it has been shown that annual algal primary production and maximum algal biomass levels in many estuaries (including portions of Chesapeake Bay) are related to the magnitude of nutrient loading from all types of sources (Boynton et al., 1982a). It has also been found that high, and at times excessive, algal production is sustained through the summer and fall periods by the recycling of essential nutrients which had entered the estuary previous to periods exhibiting eutrophic characteristics. Similarly, sediment oxygen demand (SOD) has been found to be related to the amount of organic matter reaching the sediment surface and the magnitude of this demand is sufficiently high in many regions to be a major oxygen sink (Hargrave, 1969; Kemp and Boynton, 1980).

The delay between nutrient additions and the response of algal communities suggests that there are mechanisms wherein nutrients are retained in estuaries, such as the Chesapeake, and can be mobilized for use at later dates. Research conducted in Chesapeake Bay and other estuaries has shown that estuarine sediments can act as both important storages and sources for nutrients as well as important sites of intense oxygen consumption (Kemp and Boynton, 1984). For example, during summer periods in the Choptank and Patuxent estuaries, 40-70% of the total oxygen utilization was associated with sediments and 25-70% of algal nitrogen demand was supplied from estuarine sediments (Boynton et al., 1982b). Processes of this magnitude have a pronounced effect on estuarine water quality and habitat conditions. In terms of storage, sediments in much of Chesapeake Bay, especially the upper Bay and tributary rivers, contain large amounts of carbon, nitrogen, phosphorus and other compounds. It appears that a large percentage of this material reaches the sediments during the warm periods of the year and that some portion is available to regenerative processes and hence for continued algal utilization. Nutrients, and other materials deposited or buried in sediments, represent the potential "water quality memory" of the Bay.

Justification

Processes associated with estuarine sediments have a considerable influence on water quality and habitat conditions in the Bay and it's tributaries. In a simplified fashion, nutrients and organic matter enter the Bay from a variety of sources, including sewage treatment plant effluents, fluvial inputs, local non-point drainage and direct rainfall on Bay waters. It appears that dissolved nutrients are rapidly removed from the water column via biological, chemical and physical mechanisms and much of this material then sinks to the bottom where it is remineralized. These essential nutrients are then utilized by algal communities, a portion of which in turn sinks to the bottom, contributing to the development of anoxic conditions and loss of habitat for important infaunal, shellfish and demersal fish communities. The regenerative capacities and the potentially large nutrient storages in bottom sediments ensure a large return flux of nutrients from sediments to the water column and sustain continued phytoplankton growth, deposition of organics to deep waters and anoxic conditions typically associated with eutrophying estuarine systems.

It is within the context of this model that a monitoring study of deposition, sediment oxygen demand and sediment nutrient regeneration has been initiated. The rationale is that if nutrient and organic matter loading to the Bay is decreased then the cycle of deposition to sediments, sediment oxygen demand, release of nutrients and continued high algal production will also be decreased. Since these benthic processes are important in influencing water quality conditions, changes in these processes will serve as important indications as to the effectiveness of nutrient control actions.

Objectives

The primary objectives of the Ecosystem Processes Component (EPC) of the Maryland Chesapeake Bay Water Quality Monitoring Program are to:

1) characterize the present state of the bay (including spatial and seasonal variation) relative to sediment-water nutrient exchanges and oxygen consumption and the vertical rate of deposition of organic and inorganic particulates to deep waters and the sediment surface.

2) determine the long-term trends that might develop in sediment water exchanges and vertical deposition rates in response to pollution control programs.

3) integrate the information collected in this program with other elements of the monitoring program to gain a better understanding of the processes affecting Chesapeake Bay water quality and its impact on living resources.

PROJECT DESCRIPTION

Sampling Locations

General

Sampling locations for both the sediment oxygen and nutrient exchange study (SONE) and the vertical flux study (VFX) are shown in Figures 1 and 2. Brief descriptions and exact locations of SONE and VFX stations are given in Tables 1 and 2 and referenced to OEP station numbers. Four of the 10 stations sampled as part of the SONE study are located along the salinity gradient in the mainstem Bay between Point No Point (north of the mouth of the Potomac River) and Still Pond Neck (20 km south of the Susquehanna River mouth). Two additional stations were located in each of three tributary rivers (Patuxent, Choptank and Potomac), one in the turbidity maximum or transition zone and one in the lower mesohaline region. The two stations monitored as part of the VFX study were located in the mainstem of the Bay, one near the upstream point in which anoxic conditions exist (during summer periods) and one in the central anoxic region (Fig. 2).

Justification of Station Locations

Locations of SONE stations (Fig. 1 and Table 1) were selected based on prior knowledge of the general patterns of sediment-water nutrient and oxygen exchanges in Chesapeake Bay. Several earlier studies (Boynton et al., 1980, 1984 and Boynton and Kemp, 1985) reported the following: 1) along the mainstem of the Bay fluxes were moderate in the upper Bay, reached a maxima in the mid-Bay and were lower in the higher salinity regions and, 2) fluxes in the transition zone of tributaries were larger than those observed in the higher salinity downstream portions of tributaries. Hence, a series of stations were located along the mainstem from Still Pond Neck in the upper Bay to Point No Point near the mouth of the Potomac River. A pair of stations were established in three tributaries (Potomac, Patuxent, and Choptank), one being in the transition zone and one in

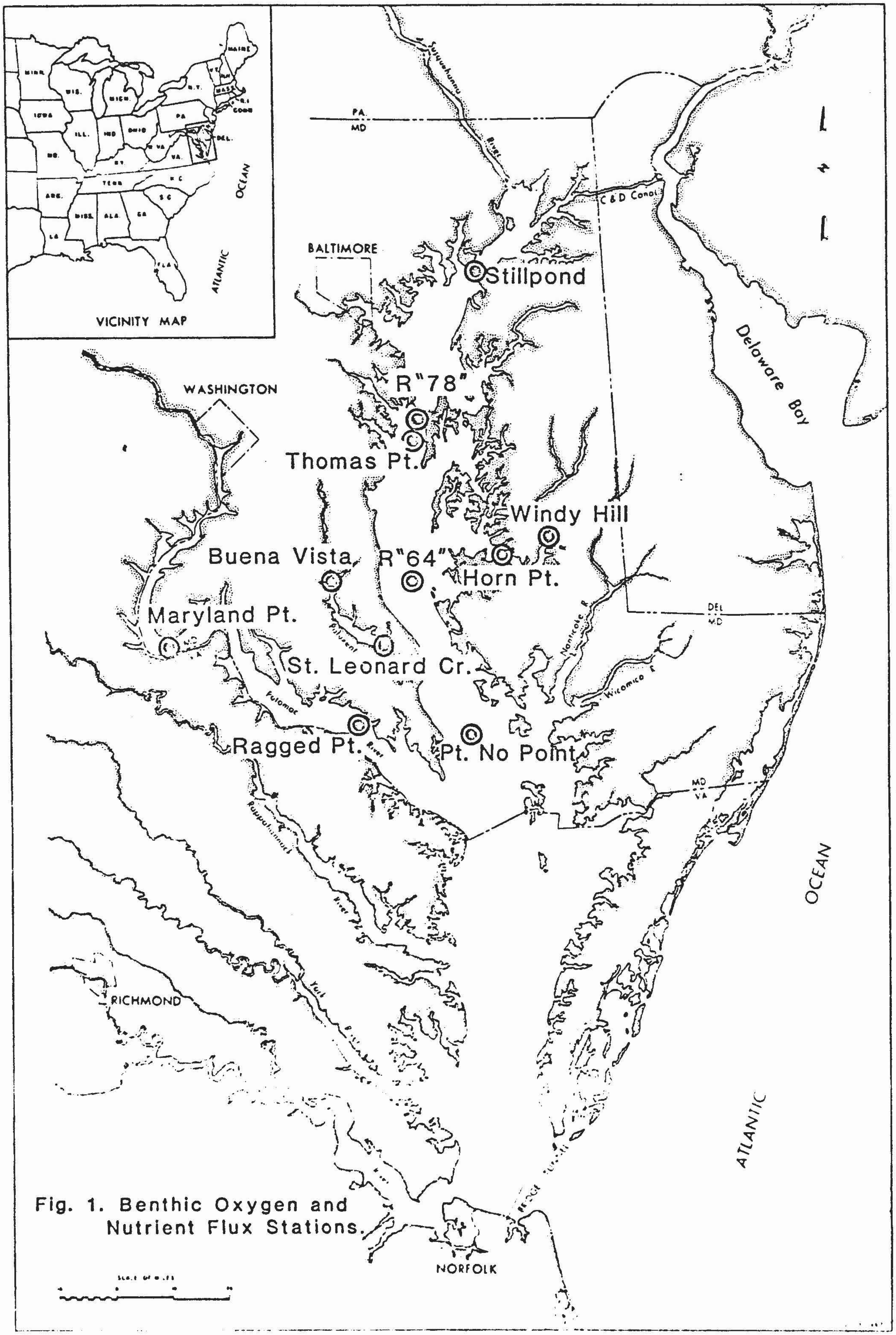


Fig. 1. Benthic Oxygen and Nutrient Flux Stations.

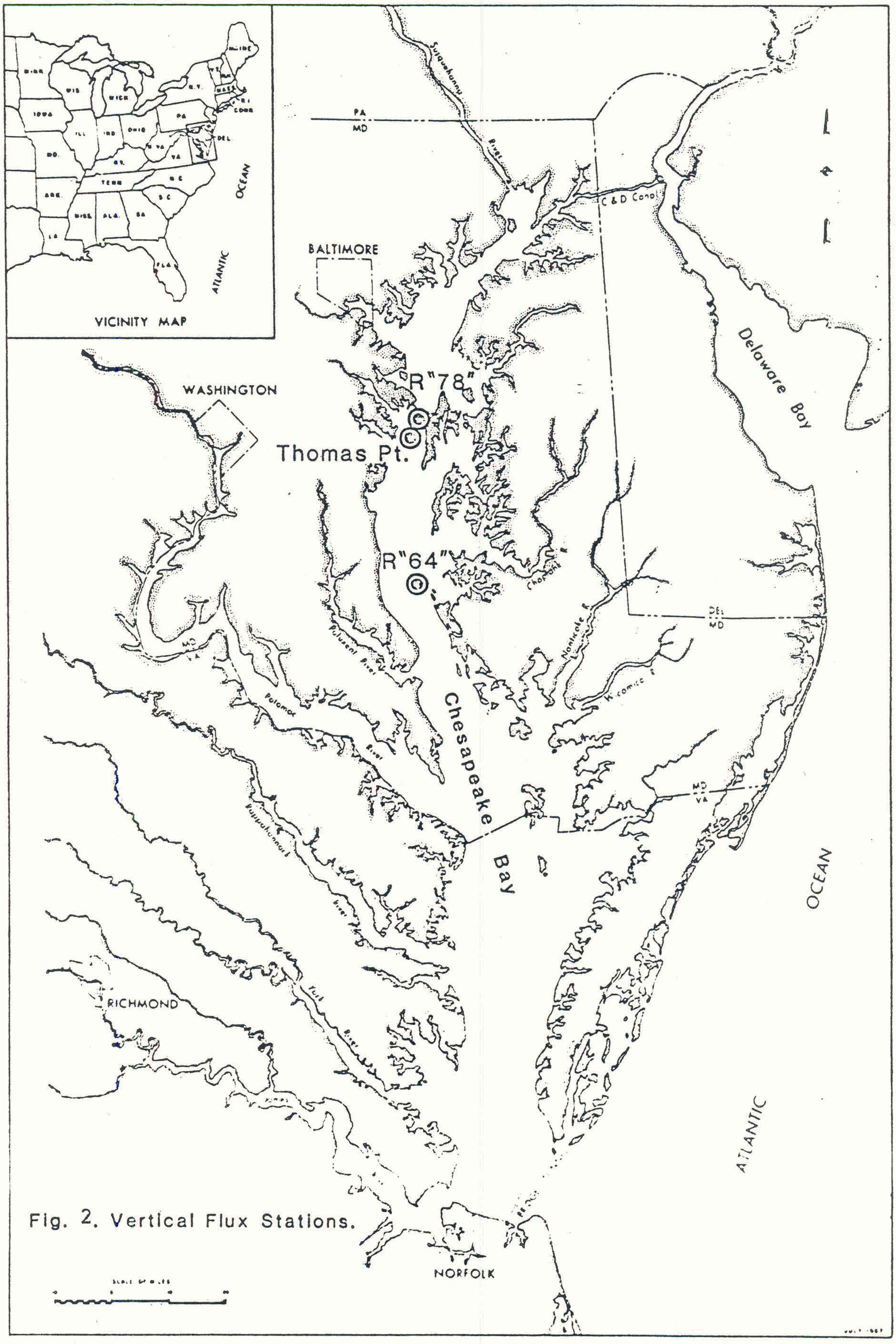


Fig. 2. Vertical Flux Stations.

Table 1. Locations and descriptions of stations sampled as part of the Ecosystem Processes Sediment Oxygen and Nutrient Exchange Project (SONE).

Bay Segment	Station Name	Code Name (Nearest OEP Station)	General Location	Latitude & Longitude	Total Depth, m	Salinity Characteristics
Patuxent River	Buena Vista	Bu. Vista (XDE 9401)	0.75 naut. mi N of Rt. 231 Bridge at Benedict, MD	38°30.96[1] 76°39.85	3-4	Oligohaline
	St. Leonard Creek	St. Leo (XDE 2792)	7.5 naut. mi of upstream of Patuxent River mouth	38°22.74 76°30.08	6-7	Mesohaline
Choptank River	Windy Hill	Wind. HL (None)	10.0 naut. mi upstream of Rt. 50 bridge at Cambridge, MD	38°41.43 75°58.42	3-4	Oligohaline
	Horn Point	Horn. Pt (MET5.2)	4.0 naut. mi downstream Rt. 50 Bridge at Cambridge, MD	38°37.07 76°07.80	7-8	Mesohaline
Potomac River	Maryland Point	Md. Pt (XDA 1177)	1250 yds. SE of buoy R-18	38°21.36 77°11.52	9-10	Oligohaline
	Ragged Point	Rag. Pt (XBE 9541)	1.5 naut. mi WNW of BW "51B"	38°09.77 76°35.58	13-14	Mesohaline
Chesapeake Mainstem	Still Pond	Stil. Pd (MCB2.2)	700 yds W of channel marker "41"	37°20.91 76°10.87	9-10	Oligohaline
	Buoy R-78	R-78 (MCB3.3C)	200 yds NNW of channel buoy "78"	38°57.28 76°23.58	15-16	Oligo-Meso haline
	Buoy R-64	R-64 (MCB4.3C)	300 yds NE of channel buoy R-64	38°33.60 76°25.64	15-16	Mesohaline
	Point No Point	Pt. No. Pt (MCB5.2)	3.2 naut. mi E of Pt. No Pt.	38°07.98 76°15.10	13-14	Mesohaline

[1]Seconds of latitude and longitude are expressed as hundredths of a second.

Table 2. Locations and descriptions of stations sampled as part of the Ecosystem Processes Vertical Flux Project (VFX).

Station Name	Code Name (Nearest OEP Station)	General Location	Latitude & Longitude	Total Depth, m	Salinity Characteristics
Buoy R-78	R-78 (MCB3.3C)	200 yds NNW of channel buoy R-78	38°57.28[1] 76°23.58	15-16	Oligo-Meso haline
Buoy R-64	R-64 (MCB43.C)	300 yds NE of channel buoy R-64	38°33.60 76°25.64	15-16	Mesohaline

[1]Seconds of latitude and longitude expressed as hundreths of a minute.

the lower estuary. In all cases station locations were selected having depths and sediment characteristics representative of the estuarine zone being monitored.

In a few instances (Patuxent stations and Choptank station at Horn Point) SONE stations are not located exactly at the same site as other Maryland Chesapeake Bay Water Quality Monitoring Program stations, although they are close ($\leq$ 10 km). The prime reason for this is that there is a considerable amount of benthic flux data already available from the SONE sites selected in the Patuxent and Choptank and these data can be used by the monitoring program. In all cases our stations and the OEP stations are in the same estuarine zone. Benthic fluxes have been found to be quite constant over small spatial scales (~10-20 km) given that measurements were taken in the same estuarine zone (similar salinity, sediments and depths) and hence this program retains a high degree of comparability with other program components (Boynton et al., 1982b).

The use of sediment trap methodology to determine the net vertical flux of particulate material is restricted to the deeper portions of the Bay. In shallower areas local resuspension of bottom sediments is sufficiently large to mask the downward flux of "new" material. Hence, sediment traps are not a useful tool in the upper reaches of the mainstem and in many tributary areas and are deployed only in mainstem areas. One array (R "64", Fig. 2) is positioned near the center of the region experiencing seasonal anoxia to monitor the vertical flux of particulate organics reaching deeper waters. This location is close to, but does not exactly coincide with, OEP stations in this area. Since sediment traps are fixed pieces of gear exposed to damage and/or loss by commercial boat traffic, a location was selected not regularly used by such vessels, but still close to the OEP station.

The second station was located farther north (R-78, Fig. 2), but still in the region experiencing seasonal anoxia. The magnitude and composition of sedimenting material differs from the down-Bay station because of the lower salinity and proximity to the turbid upper Bay. Again, the location of this sediment trap station does not coincide exactly with the other water quality monitoring program stations in this region, although they are close. The justification for this is again based on the need to locate these sampling devices in areas not exposed to heavy commercial boat traffic.

Sampling Frequency

The sampling frequency for the SONE portion of this program is based on the seasonal patterns of sediment water exchanges observed in previous studies conducted in the Chesapeake Bay region (Kemp and Boynton, 1980; Kemp and Boynton, 1981; Boynton et al., 1982b; Boynton and Kemp, 1985). These studies indicated that there are several distinct periods over an annual cycle including: 1) a period influenced by the presence of a large macrofaunal community (spring-early summer), 2) a period during which macrofaunal biomass is low but water temperature and water column metabolic activity high and anoxia prevalent in deeper waters (August), 3) a period in the fall when anoxia was not present and macrofaunal community abundance low but re-establishing and 4) an early spring period (April-May) when the spring phytoplankton bloom occurs, and water column nutrient concentrations are high (particularly nitrate). Previous studies also indicate that short-term temporal (day-month) variation in these exchanges is small but that there are considerable differences in the magnitude and characteristics of fluxes among distinctively different estuarine zones (i.e. tidal fresh vs. mesohaline regions). In light of these results, the monitoring design adopted for the SONE study involves quarterly measurements, as described above, distributed in zones characteristic of mainstem Chesapeake Bay and tributary rivers.

The selection of sampling frequency for the VFX (organic deposition) monitoring program is governed by different constraints, although compatible with SONE sampling frequencies. It appears that net depositional rates are largest during the warm seasons of the year (May-October) and considerably lower during winter periods (November-March). Resuspension of near-bottom sediments and organics in one tributary of the Bay (Patuxent) followed a similar pattern (Boynton et al., 1982b; Kemp and Boynton, 1984). However, there is some variability in warm season depositional rates, due probably to algal blooms (of short duration; days-week), variation in zooplankton grazing rates (week-month) and other, less well described, features of the Bay. Given the importance of obtaining inter-annual estimates of organic matter deposition rates to deep waters of the Bay, sampling is designed to be almost continuous during the summer period (July-August), of shorter duration during the generally smaller bloom periods of the spring and fall and only occasional during the low productivity, low depositional period of the winter (December-March). Direct measurements of organic deposition to Bay sediments is monitored 17 times per year. Vertical deposition rate measurements are coordinated with SONE measurements in that sediment-water exchanges are monitored at the end of each intensive VFX deployment period and also coincide with other Monitoring Program sampling activities. The sampling schedule for the period July 1984 - June 1985 is shown in Table 3 for this component of the Monitoring Program.

Field Methods

Details concerning methodologies have been described in the Ecosystem Processes Component Study Plan (Boynton et al,1985). The following section provides an overview of field activities.

SONE Study

Water Column Profiles: At each of the 10 SONE stations, vertical water column profiles of temperature, salinity and oxygen are obtained at 2 m intervals from the surface to the bottom immediately prior to obtaining intact sediment cores for incubation. Near-surface (≃1 m) and near-bottom (≃+1 m) water samples are also collected using a high volume submersible pump system. Samples are analyzed for the following dissolved nutrients and particulate materials:

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1984	JUL																							○							◎	
	AUG							◎							◎								◎					░	░	░	░●	░
	SEP																	○							◎							
	OCT				○											░	░●	░	░													
	NOV																														○	
	DEC																	●														
1985	JAN																															
	FEB																			○												
	MAR				●																											
	APR	○														◎															○	
	MAY						░	░●	░	░																		○				
	JUN					◎													◎						░	░◎	░	░				

○ sediment trap deployment
◎ sediment trap retrieval and deployment of new traps
● sediment trap retrieval
░ duration of sediment-water flux monitoring

Table 3. Sampling frequency for the 1984-1985 Ecosystem Processes Component of the Biomonitoring Program.

ammonium (NH_4^+), nitrate (NO_3^-), nitrite (NO_2^-), total dissolved nitrogen (DON), dissolved inorganic phosphorous (PO_4^{-3}), dissolved organic phosphorus (DOP), silicious acid ($Si(OH)_4$), particulate carbon (PC), particulate nitrogen (PN), particulate phosphorous (PP), chlorophyll-a and seston.

Sediment Cores: Intact sediment cores are obtained at each SONE station using a modified Bouma box corer. After deployment and retrieval of the box corer, the plexiglass liner containing the sediment sample is removed and visually inspected for disturbance. If the core appears satisfactory it is placed in a holding stand prior to further processing.

Three intact cores are used to estimate net exchanges of oxygen and dissolved nutrients between sediments and overlying waters (Fig. 3). Prior to beginning incubation, the overlying water in the cores is replaced by bottom water to insure that water quality conditions in the cores closely approximates in-situ conditions. Gentle circulation of water is maintained in the cores during the measurement period via the stirring devices attached to the O_2 probes. The rate of circulation does not induce sediment resuspension. The cores are placed in a darkened water bath to maintain ambient temperature. Oxygen concentrations are recorded every 15 minutes and water samples (30 ml) are extracted from each core every 30 minutes over the 2-5 hour incubation period. As a nutrient sample is extracted from a core, an equal amount of ambient bottom water is added. One additional sample of bottom water is incubated and sampled as described above and serves as a water blank. Water samples are filtered, immediately frozen and later analyzed for NH_4^+, NO_3^-, NO_2^-, PO_4^{-3} and $Si(OH)_4$ concentrations. Nutrient and oxygen fluxes are estimated by calculating the mean rate of change in concentration over the incubation period and then converting the volumetric rate to a flux using the volume:area ratio of each core.

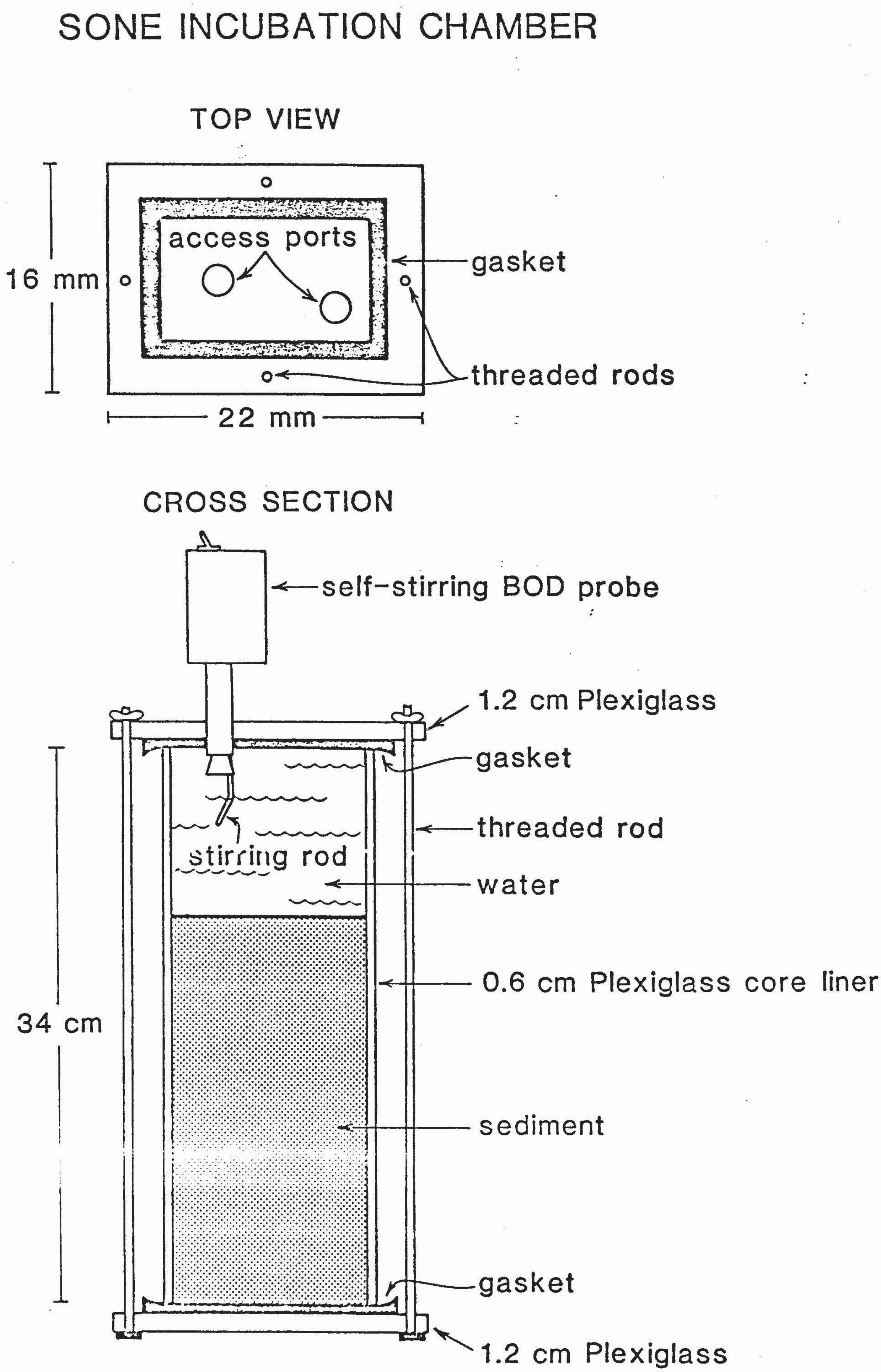


Figure 3. Schematic diagram of the incubation chamber used in the SONE program.

Sediment Profiles: At each SONE station an intact sediment core is obtained and Eh measurements immediately made at 1 cm intervals to a depth of about 10cm. Once a year (October) sediments are sampled for vertical distribution of both dissolved and particulate nutrient concentrations and water content. Several intact sediment cores are obtained at each station using the Bouma box corer. Sub-cores are taken and later sliced at 1cm intervals to a depth of 10cm. Samples are analyzed for water content, particulate carbon (PC), nitrogen (PN), phosphorus (PP) biogenic silica (BSi), NH_4^+, NO^-_3, NO^-_2, PO_4^{-3} and $Si(OH)_4$ concentrations.

VFX Study

At each of the VFX stations, water column profiles of temperature, salinity and oxygen are obtained at 2 m intervals from the surface to the bottom to characterize general features of the water column. Water samples are also collected at 5 discrete depths using a submersible pump system. Routinely, a sample is taken from near-bottom and near-surface waters, and the remaining three distributed such that one is just above, one just below and one at the pycnocline. Samples are analyzed for particulate materials including PC, PN, PP, chlorophyll-a and seston. These data provide descriptions of the particulate matter field at that moment and are useful in evaluating results developed from sediment trap collections.

Sediment Sampling. During each VFX monitoring cruise a surficial sediment sample (surface 1 cm) is obtained at each station using either a Van Veen grab or the Bouma box corer. Samples are analyzed to determine particulate carbon, nitrogen and phosphorus concentrations and chlorophyll-a content (mg m^{-2}). Subsamples are also examined to determine the composition of surficial sediment particulates (e.g. algal species, zooplankton fecal pellets, etc.)

VFX Sampling. The sampling device used to develop estimates of the vertical flux of particulate materials is comprised of a lead or concrete anchor-weight (~200 kg) connected to a stainless steel wire (0.8 cm diameter) which is maintained in a vertical position through the water column by a sub-surface buoy (45 cm diameter; 40 kg positive buoyancy). The sub-surface buoy is tethered to a surface marker buoy by wire cable (Fig. 4). Collecting arrays are attached at about 5, 9 and 14 m beneath the water surface to obtain estimates of vertical flux of particulates from the surface euphotic zone to the pycnocline, flux across the pycnocline to deep waters and flux of materials associated with the near-bottom which includes local resuspension of sediments as well as net deposition.

The two sediment trap strings are routinely deployed and retrieved using CEES research vessels. Normal sampling periods last 1-2 weeks. At the end of a sampling period, collecting cups are retrieved either by SCUBA equipped divers or by hoisting the entire array to shipboard. In either case, cups are not capped prior to retrieval. New cups are then attached, fouling organisms removed from the frames and the array lowered back into the water.

The contents of a collecting cup are removed and aliquots taken for determination of PC, PN, PP, chlorophyll-a and seston concentrations. Additionally, a 10 ml sample is preserved and examined to determine characteristics of collected particulate material (e.g. algal speciation, zooplankton fecal pellets, etc.).

Particulate material concentrations in sampling cups are converted to vertical flux to the depth at which the collecting cup was suspended by consideration of the cross-sectional area of the collecting cup, deployment time and sample and subsample volumes.

Chemical Analyses

In brief, methods are as follows: NO_3^-, NO_2^-, NH_4^+ and PO_4^{-3} are measured using the automated method of EPA (1979); dissolved organic phosphorus (DOP) analysis uses the digestion and neutralization procedure of D'Elia et al. (1977)

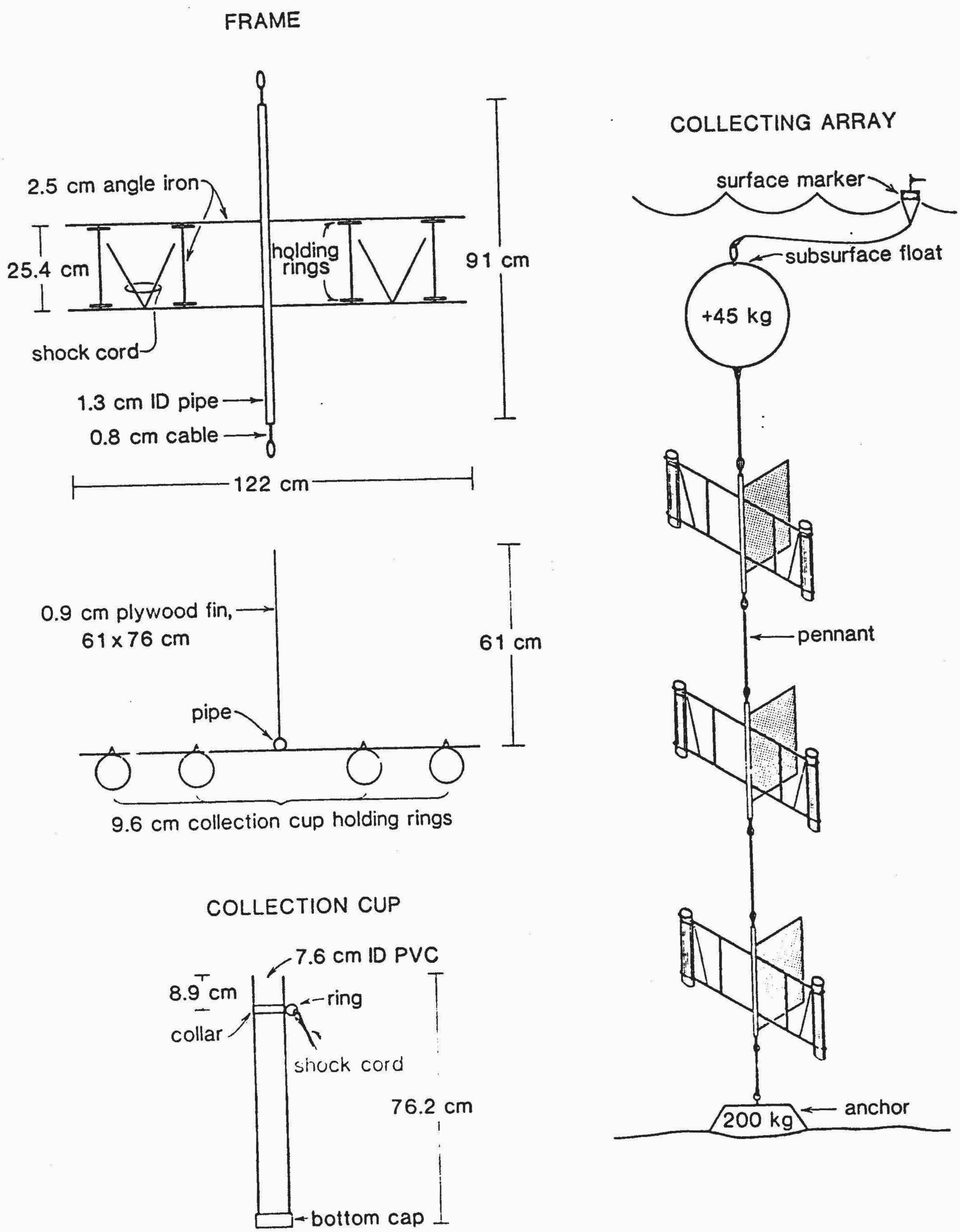


Figure 4. Schematic diagram of sediment trap used in VFX monitoring.

followed by DIP analysis (EPA 1979); silicious acid is determined using the Technicon Industrial System (1977) method; dissolved organic nitrogen (DON) analysis follows the method of D'Elia et al. (1977); PP concentrations are obtained by acid digestion of muffled dry samples (Aspila et al. 1976) while PC and PN samples are analyzed using a model 240B Perkin-Elmer Elemental Analyzer; biogenic silica is measured using the method of Paasche (1973); methods of Strickland and Parsons (1972) and Shoaf and Lium (1976) are followed for chlorophyll *a* analysis; total suspended solids determination uses the gravimetric technique of EPA (1979).

Algal Identification

Identification of particulates is accomplished by microscopic examination (Nikon Inverted Microscope, Diaphot-TMD). Phytoplankton samples are allowed to settle for 3 or more days prior to concentration and subsequent analysis. Net plankton (<40 on longest axis) and nannoplankton are counted using the random field technique (Lund et al., 1958; Venrick, 1978), which requires a minimum of 10 fields to be enumerated with 200 cells or more present. This random field technique is done at 200x magnification, with species identification confirmed at 400x as required. Following the identification of more than 200 cells via random field analysis, a 100X scan is made of the entire settling chamber to identify the large net forms and rare species present. Algae are identified to species where possible. Additionally, non-algal particles are also examined and identified (i.e. zooplankton fecal pellets, cysts, skeletal fragments) to further characterize the composition of depositing materials.

Level I Analysis

SONE Study

Each Level I report includes tabular listing of all variables measured. Specifically, at each SONE station sediment Eh, net sediment-water nutrient and oxygen flux, surface and bottom water dissolved nutrient concentrations and vertical profiles (2M intervals) of dissolved oxygen, temperature and salinity are reported. Summary statistics (means, standard deviations) are provided for nutrient and oxygen flux data.

VFX Study

Each Level I report includes tabular listing of all variables measured. Specifically, at each VFX station deposition of particulate materials to collection cup depth, algal composition of collected material, characterization of surficial sediments, particulate material concentration in the water column and vertical profiles (2m intervals) of dissolved oxygen, temperature and salinity are reported.

RESULTS AND DISCUSSION

Sediment-Water Oxygen and Nutrient Exchange (SONE)

Water Column Characteristics

Water column profiles of temperature, salinity and dissolved oxygen are provided in Appendix Table 1 for all SONE stations for the period August 1984-June 1985. Nutrient data for the same sites and time period are given in Appendix Table 2. Additionally, differences between surface and bottom water concentrations of these variables are summarized in Table 4.

Bottom salinities ranged from 0.7 ppt at Still Pond in May to 19.8 ppt at R-64 in August and were generally higher during the summer-fall period than in spring, as expected. Vertical differences in salinity were greatest at the deeper stations (>14m) and were most pronounced in August, 1984.

Bottom water oxygen concentrations ranged from near-zero at deeper stations in August to 9.0 mg/l at Horn Pt. in October. Concentations were lowest in summer and highest in fall. Vertical differences in oxygen concentration were very pronounced (ΔO_2=2.4-9.3 mg/l) at the deep stations throughout the sampling period and much less pronounced at the remaining sites, particularly in May and June. In general, oxygen as well as nutrient gradients were largest at sites where the vertical salinity gradient was large indicating the importance of density structure on water quality conditions.

Bottom water dissolved nutrient concentrations were quite variable, probably reflecting the complex interactions of various sources, sinks and water column density structure. However, several patterns emerged. Generally NH_4^+ concentrations were highest, and at times very high (>20uM), at the deep stations, particularly in August and June. Nitrate

TABLE 4. Differences between surface and bottom water concentrations of selected variables. Negative sign indicates surface value exceeded bottom value.

STATION	DATE	STATION DEPTH	SALINITY (0/00)	O_2 (mg l^{-1})	NH_4 (uM)	NO_3 (uM)	PO_4 (uM)
St. Leo	Aug-84	7	3.5	5.6	9.0	0.3	0.4
	Oct		1.2	2.1	3.7	2.0	0.2
	May-85		1.0	1.2	2.9	5.9	0.0
	June		0.4	2.0	3.5	0.6	0.0
Bu.Vista	Aug-84	4	0.1	0.5	-.1	0.0	.2
	Oct		0.7	0.0	0.1	-0.1	0.0
	May-85		1.0	1.1	-0.5	-3.9	-0.3
	June		0.2	1.0	0.2	-0.1	0.0
Horn Pt.	Aug-84	8	1.4	2.9	7.3	0.6	0.0
	Oct		0.5	1.8	-1.5	1.9	-0.2
	May-85		1.4	0.1	-0.1	-0.2	0.0
	June		0.2	0.5	1.1	0.6	0.1
Wind Hl	Aug-84	4	0.3	0.3	0.1	0.0	0.2
	Oct		3.1	0.2	-3.7	-0.8	0.0
	May-85		0.3	0.2	-0.3	-1.7	0.5
	June		NO DATA				
Rag Pt.	Aug-84	15	8.5	7.6	19.0	0.4	1.6
	Oct		3.1	2.4	7.2	0.3	0.1
	May-85		4.4	6.8	7.5	3.1	0.0
	June		4.7	7.1	15.7	0.2	1.4
Md. Pt	Aug-84	10	0.2	1.2	1.2	1.3	0.6
	Oct		1.9	1.4	1.8	-7.1	0.0
	May-85		0.9	1.0	2.8	-7.4	0.0
	June		2.0	2.1	3.2	-7.2	0.2
Pt.No.Pt	Aug-84	14	7.5	6.8	19.8	0.0	0.9
	Oct		3.8	3.9	6.6	-3.1	0.1
	May-85		1.3	3.7	3.6	-5.8	0.0
	June		1.3	6.9	12.1	0.1	0.2
R-64	Aug-84	17	6.8	7.4	22.2	-0.8	1.2
	Oct		6.0	5.7	9.7	-8.7	0.2
	May-85		3.4	4.5	3.2	-11.8	0.0
	June		1.7	9.3	21.8	0.2	0.1
R-78	Aug-84	17	6.0	6.5	10.2	-0.7	0.1
	Oct		6.8	4.3	8.4	-6.0	-0.1
	May-85		3.4	7.4	4.0	-6.1	0.0
	June		3.9	5.9	19.1	-7.1	0.2
Stil.Pd	Aug-84	10	0.8	0.8	0.7	-1.0	0.1
	Oct		3.7	2.0	5.0	-12.9	0.1
	May-85		0.1	0.3	0.8	-0.4	0.0
	June		1.9	1.1	0.9	-5.0	0.1

concentrations were consistantly higher at low salinity sites then in mid-bay regions reflecting the riverine source of this compound. Nitrate concentrations in surface waters were also generally somewhat higher than bottom concentrations, indicating the importance of physical circulation on the distribution of this nutrient (Table 4).

Concentrations of dissolved inorganic phosphorous (DIP) appeared to be somewhat higher during the summer and late spring than other times. Tributary values were not noticeably different than those observed at other sites, as was the case of NO_3^-. Finally, vertical differences in DIP were small, except during late summer at some of the deeper stations (Table 4).

Sediment Characteristics

Sediment profiles of Eh and particulate nutrients concentrations are given in Appendix Table 3 for all SONE stations for the period August 1984-June 1985. The redox status of surficial sediments can have an important influence on the nature and magnitude of sediment-water nutrient exchanges and hence these data are of considerable importance in interpreting benthic flux data. For example, under oxidizing conditions(+Eh) the potential exists for enhanced ammonification and nitrification, while under reducing conditions (-Eh) denitrification is possible (assuming NO_3^- is available) and release of DIP from sediments may be enhanced.

Measurements of Eh in surficial sediments (1-2 cm) exhibited strong seasonal and spatial trends. In these sediments Eh was highest in the fall(+264 to 364 mV) and generally decreased through the spring to minimum values in late summer (-142mV). Additionally, with few exceptions, Eh values were lower at the deep stations, particularly in August and June. The depth in the sediment column to which positive Eh values were observed also exhibited strong patterns. For example, in

August Eh was negative at all stations below 1 cm. However, in spring and fall positive Eh values were observed to depths of at least 8 cm at the shallow stations (<10m). At the deeper stations positive Eh values were observed at sediment depths of 7, 5 and 3 cm in October, May and June, respectively. Thus, during the first year of monitoring a strong sesonal cycle was observed wherein Eh was highest during the fall and steadily decreased to a summer minimum and was most pronounced at the deeper stations.

There was considerable variability in particulate nutrient concentrations in surficial sediments, possibly as a result of aperiodic depositional events and a complex of regenerative processes. Particulate carbon values (% of dry sediments by weight) ranged from 1.1 to 10.4% but values in the range of 2-4% were very common. Additional insights regarding the sources of deposited organic particulates can be gained by examining the relative amounts of carbon, nitrogen and phosphorous in this material. For example, phytoplankton typically have composition ratios (C:N:P) on the order of 100:16:1 (atomic) while terrestrial detritus ratios are generally much higher.

Several interesting patterns emerged. First, there is evidence of substantial P enrichment in surficial sediments at the upper river sites in the Patuxent and Potomac (C:P = 42-62) but not in the Choptank. While it is not clear why this pattern was not observed in the Choptank, low ratios (relative to probable source materials) may be the result of P sorbtion- flocculation reactions known to occur in low salinity estuarine sites. Ratios of C:P closely approximated phytoplanktonic detritus at most mid-bay and lower tributary stations (C:P = 103-172) and was usually higher at the upper bay stations, suggesting a mixture of terrestrial and phytoplanktonic detritus in deposited materials.

Ratios of C:N ranged from about 7 to 26 during the monitoring period. Nitrogen enrichment relative carbon was never observed assuming deposited material to me mainly phytodetritus. Surficial sediments at tributary stations had C:N ratios which were commonly less than 10 while at upper tributary stations values were more often between 10 and 20. However, deep stations (>14m) always had C:N ratios of less than 10 while the upper bay station always had ratios in excess of 18, again possibly reflecting the influence of terrestrial material or more rapid loss of nitrogen. As with Eh measurements, there are some strong signals in the composition ratio data which will be of utility in interpretation of sediment-water flux data.

Sediment-Water Nutrient Exchanges

Sediment-water fluxes of oxygen (O_2), ammonium (NH_4^+), nitrate (NO_3^-), dissolved inorganic phosphorous (PO_4^- or DIP) and silica (Si) are provided in Appendix Table 5 and average rates (n=3) are shown in Fig. 5 for each station and date. The nutrient and O_2 concentration data from which fluxes were calculated are given in Appendix Table 4 for the monitoring period August, 1984-June 1985.

Sediment Oxygen Demand: During the monitoring period SOD ranged between 0.45-3.9$gO_2m^{-2}d^{-1}$, being comparable to rates observed in other estuarine systems. Rates were higher in tributary areas than in the main-stem bay and, with few exceptions, were higher during spring-early summer than late summer-fall. In a qualitative fashion there appears to be some dependency of the magnitude of SOD on O_2 concentration in overlying waters. For example, SOD was always less than 0.7$gO_2m^{-2}d^{-1}$ under conditions where overlying water O_2 concentrations were less than 2.5 mg/l. However, there were numerous occasions wherein SOD was of a similar magnitude and O_2 concentrations were much higher suggesting that factors other than O_2 in overlying waters were also influencing the

FIG.5

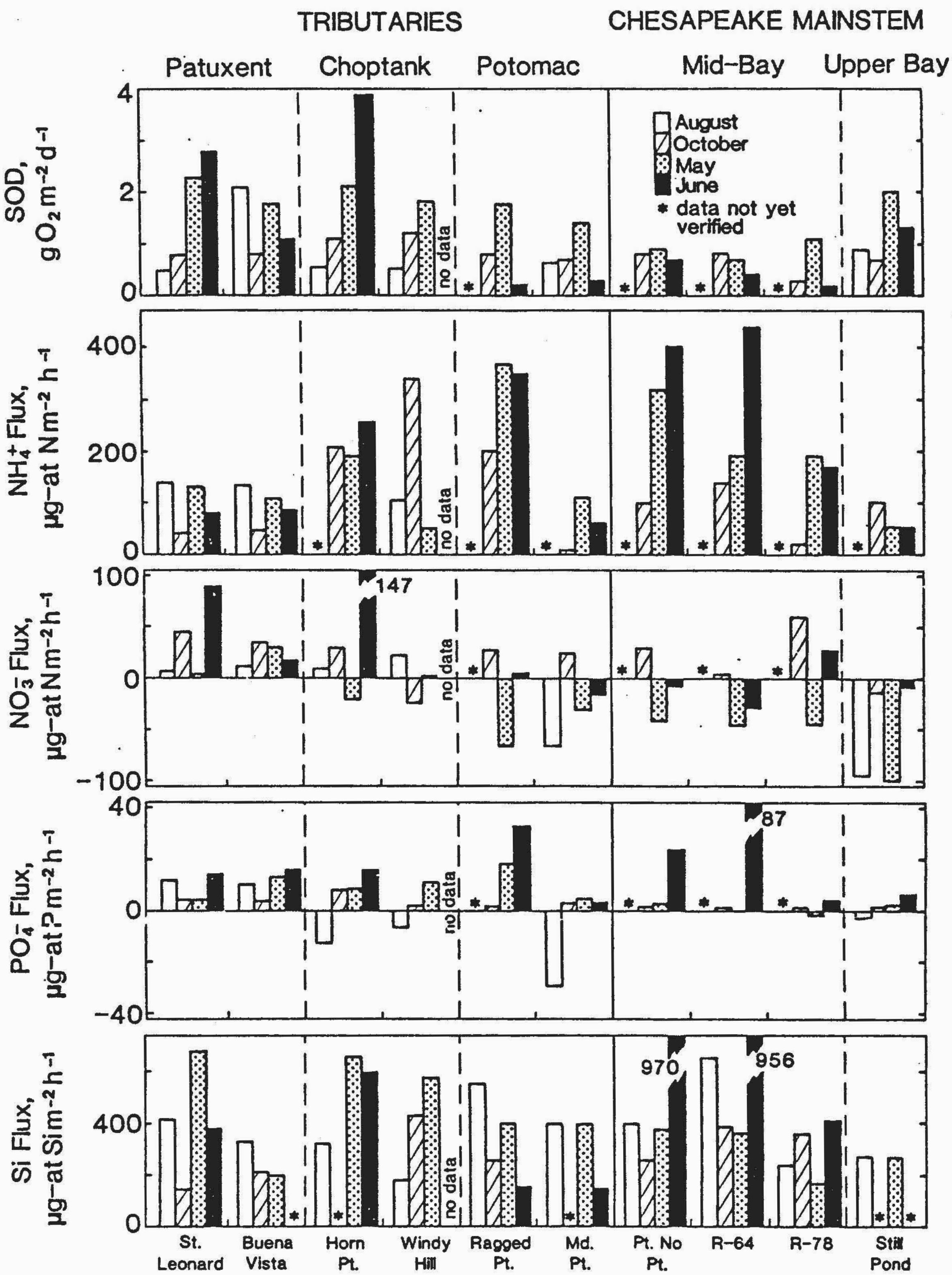


Fig. 5. Average sediment-water exchanges of oxygen (SOD), ammonium (NH_4+)n nitrate (NO_3^-), dissolved inorganic phosphorous (PO_4^-) and silicious acid (Si) at SONE stations for the period August, 1984-June, 1985. Negative values for nutrient fluxes indicate fluxes from water to sediments. All SOD fluxes were from water to sediments. Asterisks indicate data not yet verified.

observed fluxes.

Ammonium Flux: During the monitoring period NH_4^+ fluxes ranged from 0 to 435 ug-at N $m^{-2}h^{-1}$. Fluxes at almost all stations were lowest during the fall and higher in the early and late spring. In general, NH_4^+ fluxes were higher at the deeper stations, particularly those in the main-stem area of the bay. Preliminary inspection of NH_4^+ fluxes relative to other variables suggests possible relationhips with the particulate nitrogen content of surficial sediments as well as Eh.

Nitrate Flux: Nitrate fluxes were directed both from and into sediments and ranged from -100 to + 147 ug-at N $m^{-2}h^{-1}$. In general, NO_3^- fluxes were from sediments to the water column at tributary sites in the Patuxent and Choptank. At other sites NO_3^- fluxes were predominently from water to sediments, particularly at locations where there was appriciable NO_3^- in overlying waters. (>5 uM) Earlier we noted that Eh of surficial sediments was highest at most stations in October, providing oxidizing conditions necessary for nitrification. Consistent with this oservation, NO_3^- fluxes were from sediments to water during this cruise at all but 2 locations suggesting widespread nitrification. Overall, NO_3^- fluxes were of sufficient magnitude to have an appreciable impact on dissolved nutrient concentrations in overlying waters.

Dissolved Inorganic Phosphorous Flux (DIP): Fluxes of DIP ranged from -28 to 87 ug-atP$m^{-2}h^{-1}$. In the majority of instances, fluxes were directed from sediments to the water column and values in the range of 5-15 ug-atP$m^{-2}h^{-1}$ were common. Fluxes directed into sediments were only observed during the August 1984 cruise at tributary sites. While the reason for this is not clear, DIP fluxes into sediments in these regions are consistent with the often observed rapid decrease in DIP concentrations in overlying waters in low salinity estuarine areas and may involve sorption-flocculation processes. On occasion large fluxes from sediments were observed and all of these occurred at deep stations here O_2 concentrations in overlying waters were less than 2 mgl^{-1}.

Silicious Acid Flux (Si): Fluxes of Si ranged from 140 to 956 ug-at Si $m^{-2}h^{-1}$. While highest fluxes were observed at deep main-stem bay sites in the late spring, high fluxes were also recorded at other sites in various seasons. No obvious seasonal or spatial patterns were evident but the magnitude of these fluxes were sufficient to have a considerable impact on Si concentrations in overlying waters.

Sediment Traps (VFX)

Vertical distributions of particulate deposition rates for fixed-depth sediment traps followed a relatively consistent pattern for all particulate constituents analyzed (PC, PN, PP, Chl-a, dry wt.). Deposition rates for the upper and middle traps were similar at Sta. R64, while at R78 middle traps collection rates were generally 20-30% higher than those for the upper traps (Data Table 8). Bottom traps, deployed at 2 m above the sediment surface, collected particulates at 10-15 times higher rates for both stations. These higher rates are probably attributable to wave and tidal resuspension of bottom sediments from below or from adjacent shoal areas (Steele and Baird 1972, Kemp and Boynton 1984, Ward 1985).

Carbon and chlorophyll-a deposition rates were both 20-80% higher at R78 compared to the seaward Sta. R64 (Table 5). Although chlorophyll-a concentrations were similar at both stations, higher rates of primary production at R78 (at least during the summer period) may account for observed differences in deposition. Two periods of high sedimentation rates were evident at both stations for both carbon and chlorophyll-a, one in summer (Aug-Sept) and one in spring (Apr-May). However, while the C:Chl ratios for deposited material varied from 100-300 in the summer, C:Chl remained

TABLE 5. Plankton production, chlorophyll *a* abundance and carbon and chlorophyll *a* deposition to sediment traps located just above the pycnocline at two Chesapeake Bay Stations.

DATE	R78 WATER COLUMN PROD* ($gCm^{-2}d^{-1}$)	R78 WATER COLUMN CHLA (mgm^{-3})	R78 WATER COLUMN CHLA (mgm^{-2})	R78 SEDIMENTATION PC ($gm^{-2}d^{-1}$)	R78 SEDIMENTATION CHLA ($mgm^{-2}d^{-1}$)	R64 WATER COLUMN PROD* ($gCm^{-2}d^{-1}$)	R64 WATER COLUMN CHLA (mgm^{-3})	R64 WATER COLUMN CHLA (mgm^{-2})	R64 SEDIMENTATION PC ($gm^{-2}d^{-1}$)	R64 SEDIMENTATION CHLA ($mgm^{-2}d^{-1}$)
23 Jul 84		22.9	118				22.9	139		
	-			1.12	10.8	-			0.40	3.8
30 Jul 84		22.4	107				20.9	135		
	-			0.95	5.9	-			0.26	2.1
7 Aug 84		24.4	38				22.0	95		
	6.88			0.74	3.1	3.94			0.45	2.2
14 Aug 84		21.3	93				10.4	60		
	-			0.69	3.1	-			0.55	2.2
22 Aug 84		9.8	60				8.0	56		
	3.44			1.02	2.7	3.73			0.83	2.4
30 Aug 84		10.2	62				7.5	43		
	3.21			-	-	0.43			-	-
17 Sep 84		5.5	37				16.7	122		
	2.03			1.13	8.5	0.93			0.60	5.4
24 Sep		19.2	130				6.0	60		
	-			1.60	5.5	-			0.87	4.2
4 Oct		4.9	30				5.3	41		
	2.81			0.93	3.9	2.54			0.61	5.1
16 Oct		9.9	52				6.9	35		
	0.32			-	-	0.81			-	-
30 Nov		2.7	29				2.6	21		
	0.12			0.88	2.2	0.61			TRAP LOST	
17 Dec		5.2	29				3.3	32		
	0.50			-	-	0.15				
19 Feb 85		8.9	82				6.8	77		
	-			0.85	6.6	-			0.66	5.1
5 Mar 85		7.1	121				5.1	67		
	0.67			-	-	1.00			-	-
1 Apr 85		7.9	215				31.3	310		
	-			-	-	-			1.07	16.4
15 Apr 85		19.6	257				29.2	244		
	-			-	-	-			-	-
30 Apr 85		-	-				13.1	157		
	-			TRAP LOST		-			1.16	10.9
7 May 85		-	-				10.3	106		
	-					-			-	-
27 May 85		14.6	63				5.6	31		
	-			0.79	5.6	-			0.40	3.6
5 Jun 85		15.4	71				36.5	165		
	-			0.62	3.8	-			0.48	4.8
18 Jun 85		24.9	126				14.8	97		
	-			0.76	5.5	-			0.69	5.4
25 Jun 85		18.3	137				15.8	113		
	-			-	-	-			-	-

* Data from OEP Report of Sellner et al. (1985).
**Integrated from 0-9m

consistently at or below 100 during the spring (Data Table 10). The same pattern was evident in the composition of bottom-water (15 m) seston (Fig. 6). These springtime C:Chl ratios are typical of those reported for healthy algal cells, whereas the higher ratios in summer are more indicative of algal detritus (e.g. Chervin et al. 1981). Thus, it appears that much of the springtime deposition was composed of intact algal cells, whereas material sinking from the euphotic zone in summer was largely phytodetritus, probably including zooplankton fecal pellets. Qualitatively similar seasonal cycles of deposition have been reported for other coastal areas (Smetacek et al. 1978; Smetacek 1980; Hargrave and Taguchi 1978).

The two seasons of high sedimentation rates coresponded generally to periods of high phytoplankton abundance (as Chl-a). However, the fact that peak chlorophyll-a concentrations were 2-3 times higher in spring than summer, while carbon deposition was only 20-50% higher in spring (Table 5), further supports the concept that sinking of intact algal was the dominant mechanism of organic deposition in spring (Smetacek 1985). Patterns of primary production in the water overlying our sediment traps during July-Feb. (Sellner et al. 1985) correspond reasonably well with temporal trends of sediment trap collection; however, production data are not yet available for spring 1985. In general, carbon deposition (trap collections) represented about 30-50% of the carbon production in overlying water during summer. These percentages are similar to those reported for various other marine systems (Smetacek 1980; Tabuchi 1982; Bishop and Marra 1984; Davies and Payne 1984; Downes and Lorenzen 1985.)

Comparing particulate composition ratios (C:N, N:P, C:Chl) for seston in surface waters (1-3 m) and for material in mid-depth traps (located just above the pycnocline) for Sta. R78 and R64, several trends are evident (Data Table 10). In general, C:N ratios remained between 6 and 8 throughout the year for

FIG. 6

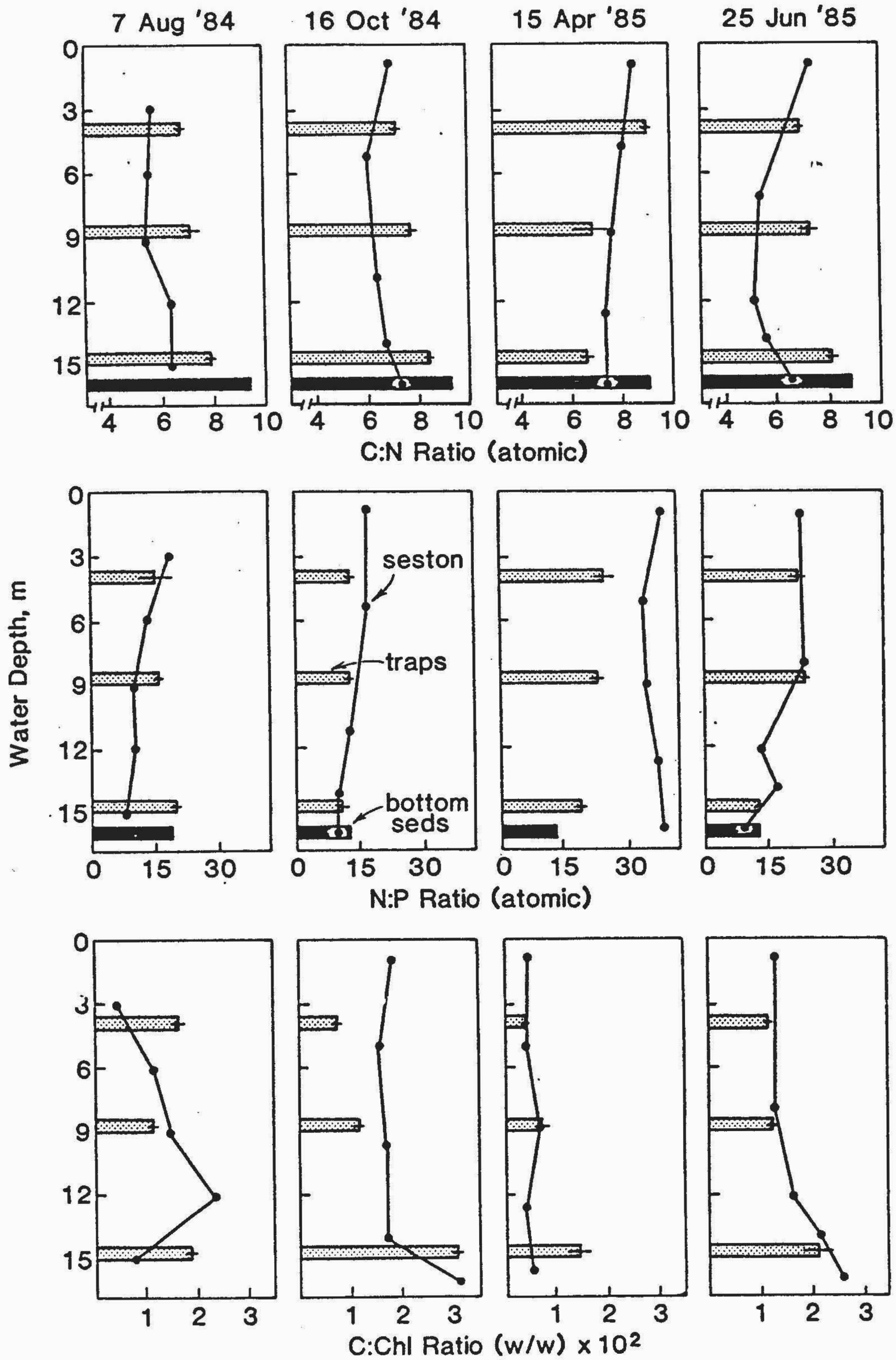


Fig. 6 Vertical distribution of particulate composition ratios (C:N, N:P, C:Chl a) for material in seston, in fixed sediment traps deployed at 3 depths, and in upper 1.0 cm of bottom sediments for four dates at station R64.

seston at both stations and for trap collections at Sta. R64. At Sta. R78, however, C:N ratios were consistently higher in trap material, typically exceeding 8. This indicates either rapid decomposition and loss of nitrogen from material in traps at that station, or alternatively, substantial inputs of resuspended material from bottom sediments caught in traps. This same pattern is reflected in N:P and C:Chl ratios, which were consistently lower and higher, respectively, in R78 traps. However, no such difference was observed at R64. A slight seasonal trend in N:P ratios was also evident, with highest and lowest values occurring in late spring and in early fall, respectively. Lower N:P ratios generally occurred when C:Chl ratios were highest, suggesting a predominance of partially decomposed detrital material and a rapid degradation of chlorophyll-a and release of nitrogen to the dissolved phase.

Vertical distributions of particulate composition ratios indicate variable trends with depth and slight differences between seston and deposited material (Fig. 6, Data Table 10). C:N ratios of both seston and trap particulates tended to increase with depth in summer (7 Aug) and decrease with depth in spring (15 Apr). Trap material had increasing C:N ratios with depth over most of the year, while C:N of surficial bottom sediments was consistently higher (9-10) than that of other particulates sampled. Conversely, N:P ratios in seston and traps were very similar, with generally decreasing ratios at depth, except in April when ratios were 30-60% higher in seston. All C:Chl ratios increased markedly with depth, and trap ratios (especially at mid-depth) were similar to C:Chl ratios for seston in the upper layer.

With few exceptions, all composition ratios for material collected in mid-depth traps (just above the pycnocline) were within 20% of ratios for particulates in the upper water column, indicating both little change in composition of trapped material during deployment and minor inputs from resuspended bottom sediments. Using percent organic carbon as a robust tracer for distinguishing between "tripton" (detritus originating in-situ or from terrestrial sources) and recently resuspended bottom sediments (Gasith 1975), we calculate that only 5-20% of the particulates collected in mid-depth traps originated from resuspension.

A broader perspective on the relationships between particulate deposition and other physical, chemical and biological processes can be inferred by considering seasonal patterns in sediment-trap data relative to patterns for other variables at R64 (Fig. 4, Table 3). Surface water temperatures ranged from 1.5°C (Feb) to 28.0°C (Aug), and vertical difference between surface (1 m) and bottom (15 m) salinities (Δ Sal) ranged from 1.7 (Jun 85) to 12.4 (Aug 84). Surprisingly little seasonality was apparent in these Δ Sal data.

Concentrations of NH_4^+ were relatively high in summer and low in winter, and chlorophyll-a exhibited two distinct periods of high concentration in spring and summer, as indicated previously. While the summer bloom was characterized by high concentrations of chlorophyll-a in surface waters and low concentrations near the bottom, the spring bloom in surface waters was preceded by dramatic increases in bottom chlorophyll-a. Some of this increase may be due to subsurface upbay transport of dinoflagellates such as Prorocentrum minimum (Tyler and Seliger 1978). However, since the spring bloom at R64 was dominated by diatoms (Sellner et al. 1985), it is likely that much of the "seed" of algal cells was comprised of these larger cells concentrated and transported from seaward sources.

Diatoms, which are relatively large and non-motile, are more likely to fall from the euphotic zone as intact cells (Smetacek 1985). This explains the relatively low C:Chl ratios and slow (0.06 d-1) chlorophyll-a turnover rates (water column concentration divided by deposition rate) during spring. The smaller, often flagellated algal cells dominating the summer period are less susceptible to sinking as living cells. Thus, the material collected in sediment traps during summer was characterized by much higher C:Chl ratios

FIG. 7

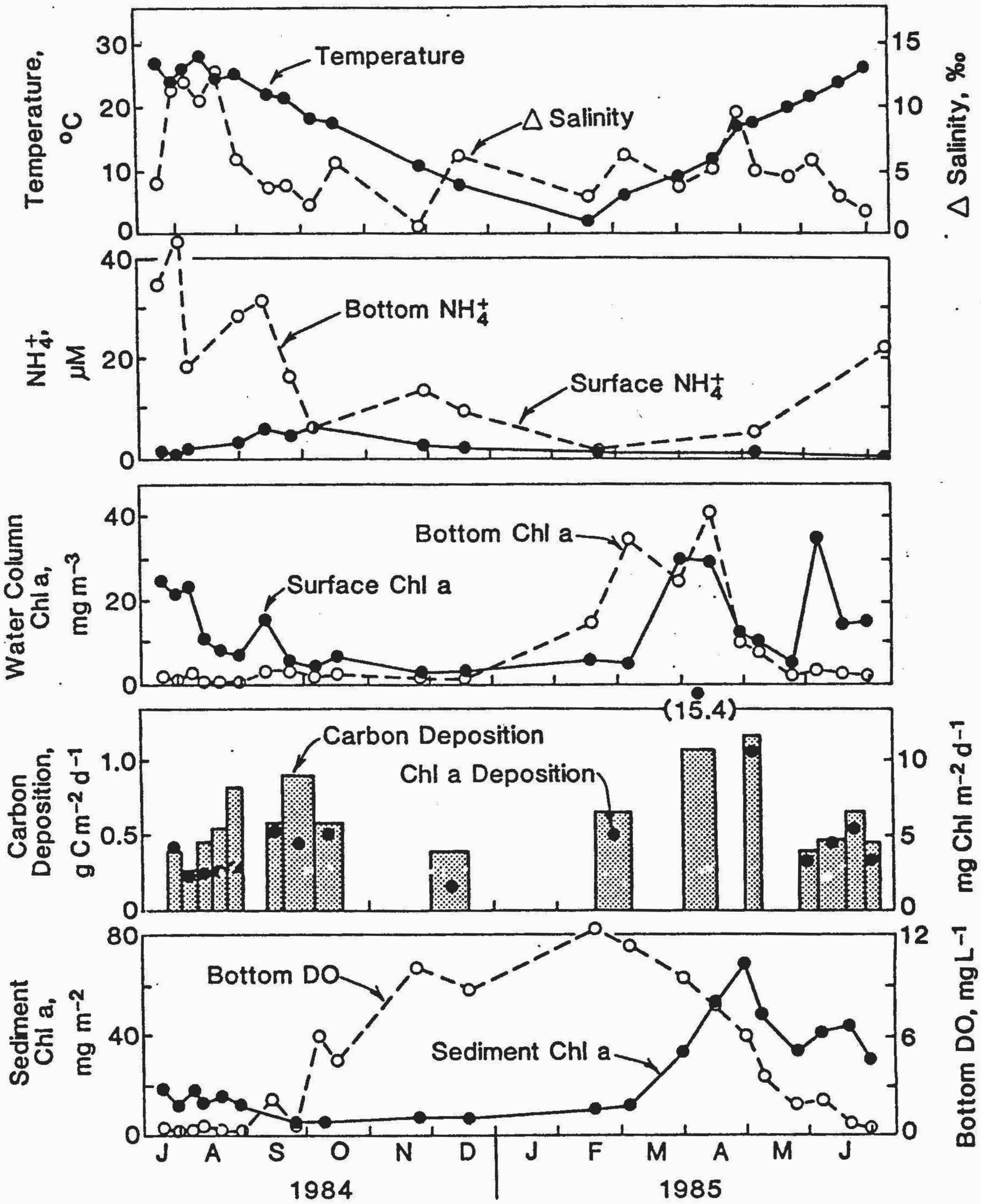


Fig. 7. Seasonal trends at station R64: surface (1-3m depth) water temperature; vertical salinity difference from 1m to 15m depth; surface (1m) and bottom (15m) NH_4^+ concentrations (from OEP, 1985); surface (1m) and bottom (15m) chlorophyll a concentrations; carbon and chlorophyll a deposition; chlorophyll a in upper 1.0cm of sediments; and bottom water (15m) O_2 concentrations.

indicative of algal detritus. Higher temperatures in summer may have contributed to degradation of algal cells, and during this period chlorophyll-a did not appreciably accumulate on the sediment surface. In contrast, high sediment concentrations of chlorophyll-a accompanied the spring deposition event. Finally, low concentrations (<2 mg/L) of dissolved oxygen in bottom waters coincided with periods of intense organic deposition in summer, while a 1-2 month lag occurred between peak spring deposition and incipient hypoxia. Thus, organic decomposition and attendent O_2 consumption rates were evidently lower in spring than summer, despite high rates of organic deposition in both seasons.

Measurements of benthic remineralization rates, as indicated by O_2 and NH_4^+ fluxes across the sediment-water interface in SONE cruises, corroborate this pattern (Table 6). Rates of SOD and NH_4^+ regeneration were twice as great in summer as compared to spring. Mean values for the four SONE cruise dates indicate about 40% of the organic carbon deposited was oxidized via O_2 consumption, while over 70% of the particulate nitrogen deposition was regenerated as NH_4^+. Similarly, Wassmann (1985) estimated that 20-60% of carbon deposited in a Norwegian fjord could be accounted for as SOD. The remainder of the material deposited may be buried or oxidized by sulfate, with subsequent sediment accumulations of iron sulfides.

We are encouraged that sediment trap collections at these two stations in Chesapeake Bay correspond both quantitatively and qualitatively to plankton populations and processes in the overlying waters. Similarly, temporal patterns of sediment oxygen demand and nutrient regeneration measured in SONE cruises were proportional to organic deposition rates measured in this VFX program. Finally, concentrations of O_2 and nutrients in bottom waters of the Bay appear to be inversely related to sedementation and metabolic processes of the benthos.

TABLE 6. Estimated fraction of particulate carbon and nitrogen deposition remineralized in sediments of Station R64.

DATE	Particle Deposition* Carbon ($mgCm^{-2}d^{-1}$)	Nitrogen ($mgNm^{-2}d^{-1}$)	Benthic Remineralization SOD# ($mgCm^{-2}d^{-1}$)	Frac. Dep.	NH_4^+ Flux ($mgNm^{-2}d^{-1}$)	Frac. Dep.
29 Aug 84	828	145	450	54%	89**	61%
16 Oct 84	605	89	300	49%	47	53%
5 May 85	1164	173	319	27%	64	37%
27 Jun 85	687	108	150	22%	168	100%+

* Based on sediment-trap collections from deployments just above pycnocline during week preceeding measurements of benthic O_2 and NH_4^+ fluxes.

\# SOD is sediment oxygen demand; carbon equivalent calculated assuming a respiratory quotient of 1.0 mol CO_2/mol O_2.

** Nh_4^+ flux on this date estimated from concentration change in water over core prior to reduction of dissolved oxygen below 2 mg/l.

REFERENCES

Aspila, I., H. Agemian and A.S.Y. Chau. 1976. A semi-automated method for the determination of inorganic, organic and total phosphate in sediments. Analyst 101:187-197.

Bishop, J.K.B. and J. Marra. 1984 Variations in primary production and particulate carbon flux through the euphotic zone. J. Mar. Res. 42:189-206.

Boynton, W.R., W.M. Kemp and C.W. Keefe. 1980. Nutrient fluxes across the sediment water interface in the turbid zone of a coastal plain estuary. Pages 93-109 in V.S. Kennedy [ed.], Estuarine Perspectives, Academic Press, New York.

Boynton, W.R., W.M. Kemp and C.W. Keefe. 1982a. A comparative analysis of nutrients and other factors influencing estuarine phytoplankton production. Pages 69-90 in V.S. Kennedy [ed.], Estuarine Comparisons, Academic Press, New York.

Boynton, W.R., W.M. Kemp, C.G. Osborne, E. Spalding, C.W. Keefe and K.V. Wood. 1982b. Estuarine community dynamics in relation to power plant operations. Univ. Md. Cntr. Environ. Estuar. Stud. Ref. No. 82-78. Solomons, Md.

Boynton, W.R., W.M. Kemp, L. Lubbers, K.V. Wood and C.W. Keefe. 1985. Ecosystem Processes Component. Pilot Study, June-July 1984. Ref. No. [UMCEES] CBL 85-3.

Boynton, W.R., W.M. Kemp, et al. Ecosystem Processes Component Study Plan. UMCEES-CBL Ref. No. 85-16.

Boynton, W.R. and W.M. Kemp. 1985. Nutrient regeneration and oxygen consumption by sediments along an estuarine salinity gradient. Mar. Ecol. Progr. Ser. (in press).

Chervin, M.B., T.C. Malone and P.J. Neale. 1981. Interactions between suspended organic matter and copepod grazing in the plume of the Hudson River. Estuar. Coast. Sh. Sci. 13:169-184.

Davies, J.M. and R. Payne. 1984. Supply of organic matter to the sediment in the northern North Sea suring a spring bloom. Mar. Biol. 78:315-324.

D'Elia, C.F., P.A. Steudler and N. Corwin. 1977. Determination of total nitrogen in aqueous samples using persulfate digestion. Limnol. Oceanogr. 22:760-764.

D'Elia, C.F., J. Nelson and W.R. Boynton. 1983. Chesapeake Bay nutrient and plankton dynamics: III. The annual cycle of dissolved silicon. Geochim. Cosmochim. Acta 14:1945-1955.

Downs, J.N. and C.J. Lorenzen. 1985. Carbon:phaeopigment ratios of zooplankton fecal pellets as an index of herbivorous feeding. Limnol. Oceanogr. 30:1024-1036.

Environmental Protection Agency (EPA). 1979. Methods for Chemical Analysis of Water and Wastes. USEPA-600/4-79-020. Environmental Monitoring and Support Laboratory, Cincinnati.

Hargrave, B.T. 1969. Similarity of oxygen uptake by benthic communities. Limnol. Oceanogr. 14:801-805.

Kemp, W.M. and W.R. Boynton. 1980. Influence of biological and physical factors on dissolved oxygen dynamics in an estuarine system: implications for measurement of community metabolism. Estuarine Coastal Mar. Sci. 11:407-431.

Kemp, W.M. and W.R. Boynton. 1981. External and internal factors regulating metabolic rates of an estuarine benthic community. Oecologia 51:19-27.

Kemp, W.M. and W.R. Boynton. 1984. Spatial and temporal coupling of nutrient inputs to estuarine primary production: the role of particulate transport and decomposition. Bull. Mar. Sci. (in press).

Lund, J.W.G., C. Kipling and E.D. LeCren. 1958. The inverted microscope method of estimating algae numbers and the statistical basis of estimations by counting. Hydrobiologica 11:143-170.

Nixon, S.W. 1981. Remineralization and nutrient cycling in coastal marine ecosystems. Pages 111-138 in B.J. Neilson and L.E. Cronin [eds.], Estuaries and Nutrients, Humana Press, Clifton, New Jersey.

Paasche, E. 1973. The influence of cell size on growth rate, silica content, and some other properties of four marine diatom species. Nowr. J. Bot. 20:197-204.

Sellner, K. et al. 1985. Phytoplankton and microzooplankton data summary. OEP Report. Acad. Nat. Science Benedict Estuar. Res. Lab., Benedict, MD.

Shoaf, W.T. and B.W. Lium. 1976. Improved extraction of chlorophyll a and b from algae using Dimethyl Sulfoxide. Limnol. Oceanogr. 21:926-928.

Smetacek, V. 1985. Role of sinking in diatom life-history cycles: Ecological, sevolutionary and geological significance. Mar. Biol. 84:239-251.

Strickland, J.D.H. and T.R. Parsons. 1972. A practical handbook of seawater analysis. Bull. 167 (second edition), Fisheries Research Bd. Canada, Ottawa, Canada.

Taguchi, S. 1982. Sedimentation of newly produced particulate organic matter in a subtropical inlet, Kaneohe Bay, Hawaii. Estuar. Coast. Shelf Sci. 14:533-544.

Technicon Industrial Systems. 1977. Silicates in water and seawater. Industrial Method No. 186-72W/B. Technicon Industrial Systems, Terrytown, NY.

Venrick, E.L. 1978. How many cells to count. In: A. Sournia (ed). Phytoplankton Manual. UNESCO Publ. Page Brothers Ltd., Paris, pp. 167-180.

Data Table No. 1-1

BIOMONITORING PROGRAM: SEDIMENT OXYGEN AND NUTRIENT EXCHANGE COMPONENT(SONE)
H2OPROF(Vertical profiles of temp.,salinity and oxygen conc. at SONE stations)

STATION LOCATION	DATE	TIME	TOTAL DEPTH (m)	SAMPLE DEPTH (m)	TEMP (oC)	SALINITY (ppt)	DISS.OXY (mg/l)
ST.LEO	27-AUG-84	940	6.7	0.5	25.3	9.8	7.80
				2	25.40	10.50	7.30
				4	25.30	10.80	5.90
				6	24.70	13.30	2.20
BU.VISTA	27-AUG-84	1335	3.6	0.5	25.80	8.80	7.50
				2	25.90	8.90	7.20
				3	25.80	8.90	7.00
HORN.PT	29-AUG-84	1025	7.2	0.5	25.20	11.20	6.25
				2	25.10	11.50	5.60
				4	24.80	12.00	4.40
				6	24.70	12.60	3.60
				6.7	24.70	12.60	3.40
WIND.HL	29-AUG-84	1255	3.6	0.5	25.60	4.80	6.50
				1	25.60	4.80	6.50
				2	25.20	4.90	6.20
				3	25.40	5.10	6.20
RAG.PT	28-AUG-84	1145	13.2	0.5	25.10	8.50	7.90
				2	24.60	8.50	7.50
				4	24.80	8.50	7.10
				6	24.50	8.60	6.80
				8	24.70	9.10	5.90
				10	24.40	9.40	5.20
				12	24.30	16.50	0.40
				13	24.10	17.00	0.30

No. 1-2

BIOMONITORING PROGRAM: SEDIMENT OXYGEN AND NUTRIENT EXCHANGE COMPONENT(SONE)
H2OPROF(Vertical profiles of temp.,salinity and oxygen conc. at SONE stations)

STATION LOCATION	DATE	TIME	TOTAL DEPTH (m)	SAMPLE DEPTH (m)	TEMP (oC)	SALINITY (ppt)	DISS.OXY (mg/l)
MD.PT	28-AUG-84	1720	9.8	0.5	26.20	2.20	7.40
				2	25.90	2.20	7.40
				4	25.80	2.30	7.30
				6	26.00	2.20	7.30
				8	25.60	2.40	6.50
				9	25.70	2.40	6.20
PT.NO.PT	28-AUG-84	900	13	0.5	24.70	11.80	7.20
				2	25.00	11.80	7.10
				4	25.00	11.80	7.10
				6	25.00	11.80	7.10
				8	24.80	13.90	4.20
				10	24.90	16.50	1.50
				12	25.10	19.30	0.40
R-64	29-AUG-84	745	16	0.5	24.50	13.00	7.80
				2	24.40	12.70	7.70
				4	24.50	12.90	7.60
				6	24.50	12.90	7.30
				8	24.50	13.00	7.00
				10	24.20	15.50	3.70
				12	23.90	17.60	1.40
				14	23.60	18.90	0.50
				16	23.50	19.80	0.40
TOM.PT	30-AUG-84	1010	15.2	0.5	24.30	12.40	6.80
				2	24.30	12.40	6.80
				4	24.40	12.50	6.30
				6	24.20	12.60	5.90
				8	24.10	12.70	5.80
				10	24.10	12.70	5.70
				12	24.20	13.50	4.60
				14	23.20	16.50	3.30
				15.25	23.20	18.40	0.30
STIL.PD	30-AUG-84	730	9.5	0.5	24.70	1.50	7.20
				2	24.80	1.20	6.70
				4	24.60	1.70	6.70
				6	24.60	1.70	6.50
				8	24.90	2.30	6.40
				9	24.90	2.30	6.40

BIOMONITORINBIOMONITORING PROGRAM: SEDIMENT OXYGEN AND NUTRIENT EXCHANGE COMPONENT(SONE)
H2OPROF(VerH2OPROF(Vertical profiles of temp.,salinity and oxygen conc. at SONE stations)

STATION LOCATION	STATION LOCATION	DATE	TIME	TOTAL DEPTH (m)	SAMPLE DEPTH (m)	TEMP (oC)	SALINITY (ppt)	DISS.OXY (mg/l)
ST.LEO	ST.LEO	17-OCT-84	1300	7.0	1.0	18.50	13.00	9.60
					3.0	18.40	12.90	9.50
					5.0	18.40	13.80	7.90
					6.5	18.40	14.20	7.50
BU.VISTA	BU.VISTA	17-OCT-84	1000	4.0	1.0	18.40	11.90	6.20
					2.0	18.30	11.50	6.20
					3.0	18.40	11.20	6.20
HORN.PT	HORN.PT	15-OCT-84	1557	8.0	1.0	17.40	13.00	10.80
					3.0	17.50	12.80	9.10
					5.0	17.20	13.00	9.20
					7.0	17.10	13.50	9.00
WIND.HIL	WIND.HIL	15-OCT-84	1050	4.6	1.0	17.30	5.80	8.70
					3.0	17.00	8.50	8.70
					4.5	17.00	8.90	8.50
RAG.PT	RAG.PT	18-OCT-84	0820	15.5	1.0	18.20	12.40	8.58
					3.0	18.20	13.30	7.40
					5.0	18.20	13.60	7.05
					7.0	18.30	14.50	6.10
					9.0	18.40	14.70	6.00
					11.0	18.40	15.40	6.00
					13.0	18.30	15.90	6.25
					15.0	18.20	15.50	6.25
MD.PT	MD.PT	18-OCT-84	1233	9.5	1.0	19.10	4.10	7.95
					3.0	18.80	4.30	7.50
					5.0	18.70	4.60	7.40
					7.0	18.70	4.90	7.05
					9.0	18.70	6.00	6.55
PT.NO.PT	PT.NO.PT	17-OCT-84	1650	13.4	1.0	18.30	15.30	10.55
					3.0	18.10	15.30	10.40
					5.0	18.30	16.20	9.20
					7.0	18.30	16.10	8.90
					9.0	18.20	16.40	8.40
					11.0	18.00	17.20	7.40
					13.0	18.20	19.10	6.60

BIOMONITORINBIOMONITORING PROGRAM: SEDIMENT OXYGEN AND NUTRIENT EXCHANGE COMPONENT(SONE)
H2OPROF(VerH2OPROF(Vertical profiles of temp.,salinity and oxygen conc. at SONE stations)

STATION LOCATION	STATION LOCATION	DATE	TIME	TOTAL DEPTH (m)	SAMPLE DEPTH (m)	TEMP (oC)	SALINITY (ppt)	DISS.OXY (mg/l)
R-64	R-64	16-OCT-84	1540	19.0	1.0	17.70	12.80	10.40
					3.0	17.80	14.80	9.30
					5.0	17.40	15.90	8.40
					7.0	17.30	16.10	8.30
					9.0	17.80	16.50	8.10
					11.0	18.00	17.30	6.90
					13.0	18.10	17.50	6.30
					15.0	18.30	18.70	5.40
					17.0	18.40	19.60	5.10
					19.0	18.70	18.40	4.70
R-78	R-78	16-OCT-84	1100	16.4	1.0	17.70	12.10	8.30
					3.0	17.80	13.30	8.20
					5.0	17.90	14.10	8.20
					7.0	17.90	14.70	7.70
					9.0	18.00	13.50	7.20
					11.0	18.30	16.60	5.60
					13.0	18.50	18.40	4.60
					15.0	18.60	18.80	4.20
					15.8	18.80	18.90	4.00
STIL.PD	STIL.PD	16-OCT-84	0750	10.0	1.0	16.90	4.70	9.60
					3.0	16.90	5.40	9.10
					5.0	16.90	6.80	8.90
					7.0	17.10	7.20	8.10
					9.0	17.10	8.40	7.60

BIOMONITORINBIOMONITORING PROGRAM: SEDIMENT OXYGEN AND NUTRIENT EXCHANGE COMPONENT(SONE)
H2OPROF(VerH2OPROF(Vertical profiles of temp.,salinity and oxygen conc. at SONE stations)

STATION LOCATION	STATION LOCATION	DATE	TIME	TOTAL DEPTH (m)	SAMPLE DEPTH (m)	TEMP (oC)	SALINITY (ppt)	DISS.OX. (mg/l)
ST.LEO	ST.LEO	6-MAY-85	0740	6.6	1	18	10.5	7.65
					3	18	10.5	7.3
					5	18	11.5	6.63
					6.5	17	11.5	6.45
BU.VISTA	BU.VISTA	6-MAY-85	1150	4	0	21.5	7.8	9.1
					2	20	8.0	7.8
					4	19.8	8.8	7.95
HORN.PT	HORN.PT	7-MAY-85	9	9.5-10m	.5	17.5	10.4	8.2
					2	17.5	10.4	8.2
					4	17.5	10.4	8.2
					6	17.5	11.8	8.4
					7	17.5	11.8	8.1
WIND.HIL	WIND.HIL	7-MAY-85	705	4.2	5	19.5	6.2	7.31
					1	19.1	6.4	7.20
					3	18.9	5.9	7.15
RAG.PT	RAG.PT	9-MAY-85	640	17	0.5	17.4	11.0	10.09
					2	17.4	11.0	10.02
					4	16.8	12.0	7.65
					6	16.8	12.1	7.31
					8	15.8	14.8	3.28
					10	15.6	15.0	3.00
					12	15.5	15.3	3.25
					14	15.6	15.4	3.40
					15.5	15.6	15.4	3.31
MD.PT	MD.PT	9-MAY-85	1025	10.8	0.5	19.5	3.1	7.77
					2	19.5	3.2	7.26
					4	19.3	3.8	7.05
					6	19.3	3.8	7.0
					8.5	19.4	4.0	6.82
PT.NO.PT	PT.NO.PT	8-MAY-85	1630	14.5	0.5	18.6	13.	9.61
					2	17.2	12.9	9.30
					4	17.	12.8	9.08
					6	16.8	12.8	9.03
					8	16.8	13.4	9.03
					10	16.6	13.6	8.20
					12	16.6	13.5	7.35
					13.5	15.8	14.3	5.9

No. 1-6

BIOMONITORINBIOMONITORING PROGRAM: SEDIMENT OXYGEN AND NUTRIENT EXCHANGE COMPONENT(SONE)
H2OPROF (VertH2OPROF(Vertical profiles of temp.,salinity and oxygen conc. at SONE stations)

STATION LOCATION	STATION LOCATION	DATE	TIME	TOTAL DEPTH (m)	SAMPLE DEPTH (m)	TEMP (oC)	SALINITY (ppt)	DISS.OXY (mg/l)
R-64	R-64	6-MAY-85	1720	16.8M	1	17	9.6	9.8
					3	17	9.5	9.8
					6	15.6	10.5	8.8
					9	15.	11.5	6.9
					12	14.3	12.5	6.3
					15	13.8	13	5.3
R-78	R-78	7-MAY-85	1655	17M	.5	16.4	9.2	12.6
					2	16.4	9.2	12.2
					4	16.4	9.2	12.25
					6	16.4	9.2	11.2
					8	16.0	9.8	10.65
					10	15.8	11.4	8.4
					12	14.0	11.5	6.70
					14	13.8	11.9	5.70
					16	13.8	12.6	5.23
STIL.Pd	STIL.Pd	8 MAY-85	705	9.5	0.5	17.5	0.8	8.60
					2	17.5	0.3	8.49
					4	17.6	0.3	8.49
					6	17.6	0.2	8.45
					8	17.7	0.3	8.42
					9	17.8	0.7	8.29

No. 1-7

BIOMONITORINBIOMONITORING PROGRAM: SEDIMENT OXYGEN AND NUTRIENT EXCHANGE COMPONENT(SONE)
H2OPROF(VerH2OPROF(Vertical profiles of temp.,salinity and oxygen conc. at SONE stations)

STATION LOCATION	STATION LOCATION	DATE	TIME	TOTAL DEPTH (m)	SAMPLE DEPTH (m)	TEMP (oC)	SALINITY (ppt)	DISS.OXY (mg/l)
St.Leo	St.Leo	25-June-85	1100	7.5	0.5	24.8	12.8	6.12
					2	24.7	13	6.05
					4	24.6	13	5.80
					6	24.5	13.2	4.12
Bu.Vista	Bu.Vista	25-June-85	730	4.6	.5	25.5	11.2	5.5
					2	25.7	11.4	4.9
					3	25.7	11.0	4.5
Horn Pt.	Horn Pt.	26-June-85	700	8.2	.5	24.5	5.8	6.15
					2	24.6	5.9	6.20
					4	24.6	5.9	6.15
					6	24.8	6.0	5.85
					7	24.8	6.0	5.68
Rag. Pt	Rag. Pt	24-June-85	920	16.5	.5	24.2	11.5	7.4
					2	24.2	11.5	7.2
					4	24.1	11.7	7.2
					6	23.2	14.1	2.2
					8	23.1	14.3	0.4
					10	22.9	16.2	0.35
					12	22.3	16.2	0.3
					14	22.3	16.2	0.3
					15	22.3	16.2	
Md.PT	Md.PT	24-June-85	1320	9.6	0.5	25.9	4.2	6.8
					2	25.8	4.8	7.2
					4	25.3	5.5	5.3
					6	24.8	6.2	4.75
					8	24.7	6.2	4.7
Pt.NO.Pt	Pt.NO.Pt	24-June-85	1630	14.4	.5	25.2	14.8	8.72
					2	25.2	14.8	8.70
					4	24.1	14.5	8.35
					6	24.0	14.8	7.6
					8	24.0	14.8	7.4
					10	23.3	15.2	5.0
					12	22.7	16.1	1.8
					13	22.6	16.1	1.8

No. 1-8

BIOMONITORINGIOMONITORING PROGRAM: SEDIMENT OXYGEN AND NUTRIENT EXCHANGE COMPONENT(SONE)
H2OPROF(VertH2OPROF(Vertical profiles of temp.,salinity and oxygen conc. at SONE stations)

STATION LOCATION	STATION LOCATION	DATE	TIME	TOTAL DEPTH (m)	SAMPLE DEPTH (m)	TEMP (oC)	SALINITY (ppt)	DISS.OXY (mg/l)
R-64	R-64	25-June-85	1540	17.5	0.5	25.7	13.8	9.85
					2	24.3	13.6	9.60
					4	24.0	13.2	8.60
					6	23.9	13.2	8.35
					8	23.8	13.2	8.12
					10	23.5	13.3	6.50
					12	22.4	14.0	3.05
					14	21.7	14.8	1.10
					16	21.6	15.5	0.55
R-78	R-78	27-June-85	1045	16.8	.5	22.5	10.8	7.48
					2	22.5	10.8	7.42
					4	22.6	10.9	7.20
					6	22.5	11.1	6.52
					8	22.4	12.5	4.72
					10	22.3	14.0	2.38
					12	21.8	14.5	1.90
					14	21.6	14.7	1.58
					15	21.5		0.92
Stil.Pd	Stil.Pd	26-June-85	1710	10.4	.5	23.7	1.7	7.02
					2	23.7	1.7	7.05
					4	23.7	1.7	6.95
					6	23.7	2.2	6.82
					8	23.6	3.6	6.10
					9	23.6	3.6	5.90

Data Table No. 2-1

BIOMONITIORING PROGRAM: SEDIMENT OXYGEN AND NUTRIENT EXCHANGES(SONE)
H2ONUTS (Surface and bottom water dissolved and particulate nutrient concentrations at SONE stations)

					DISSOLVED NUTRIENTS						PARTICULATES				
STATION	DATE	TIME	TOTAL DEPTH (m)	SAMPLE DEPTH (m)	NH4 (uM N)	NO3+NO2 (uM N)	TDN (uM N)	DIP (uM P)	TDP (uM P)	SI(OH)4 (uM Si)	PC (ug/l)	PN (ug/l)	PP (ug/l)	CHLORO (ug/l)	SESTON (mg/l)
ST.LEO	27-8-84	940	6.7	0.5	1.9	0.12	27.35	0.33	0.38	72.8	2126	439	79.8	14.85	21.6
				6	10.9	0.38	17.25	0.69	0.07	63.5	626	108	30.6	3.2	19.4
BU.VISTA	27-8-84	1335	3.6	0.5	0.7	0.16	25.8	2.89	2.89	93	2463	395	110	16.15	54
				3	0.6	0.15	26.6	3.06	3.63	91	2872	439	140	14.45	70
PT.NO.PT	28-8-84	900	13	0.5	0.7	0.06	21.6	0.15	0.14	46.8	1078	194	36.1	4.8	13.8
				12	20.5	0.13	38.9	1.1	0.57	47.6	1182	196	33.1	2.45	33.2
RAG.PT	28-8-84	1145	13.2	0.5	0.3	0.39	21.6	0.83	0.75	62.1	1341	210	40	7.8	10.1
				13	19.3	0.75	46.75	2.42	2.72	57.6	824	137	34.8	2.5	20.65
MD.PT	28-8-84	1720	9.8	0.5	0.6	36.3	62.35	1.7	1.85	32.8	3438	564	69.6	21.85	22
				9	1.8	35	59.7	2.28	1.92	38.8	2607	435	72.4	16.1	31.8
R-64	29-8-84	745	16	0.5	3	0.92	28.35	0.09	0.07	50	947	198	27.6	5.9	9.4
				16	25.2	0.18	44.9	1.29	0.89	48.2	1243	186	38.3	2.4	45.2
HORN.PT	29-8-84	1025	7.2	0.5	0.5	0.19	28.15	0.28	0.95	74.6	2108	409	70.1	20.25	21
				6.7	7.8	0.84	36.65	0.31	0.49	68.7	938	179	37.5	4.25	28.4
WIND.HIL	29-8-84	1255	3.6	0.5	0.4	0.15	29.3	1	1.67	37.5	3313	470	85.2	18.4	37.25
				3	0.5	0.2	27.6	1.23	1.76	39.6	13847	1601	375	23.4	272
STIL.PD	30-8-84	730	9.5	0.5	5.2	48.5	82.95	0.2	1.42	47.9	959	136	32.2	6.25	16
				9	5.9	47.5	70.95	0.3	0.44	42.6	1189	162	38.2	6.4	21.8
TOM.PT	30-8-84	1010	15.2	0.5	5.6	6.32	36.15	0.16	0.85	47.1	1287	247	50.2	10.15	17.2
				15.2	15.8	5.58	53.95	0.28	0.95	47.5	565	110	27.6	2.2	16.8

NO. 2-2

BIOMONITIORING PROGRAM: SEDIMENT OXYGEN AND NUTRIENT EXCHANGES(SONE)
H2ONUTS (Surface and bottom water dissolved and particulate nutrient concentrations at SONE stations)

STATION	DATE	TIME	TOTAL DEPTH (m)	SAMPLE DEPTH (m)	DISSOLVED NUTRIENTS NH4 (uM N)	NO3+NO2 (uM N)	TDN (uM N)	DIP (uM P)	TDP (uM P)	SI(OH)4 (uM Si)	PARTICULATES PC (ug/l)	PN (ug/l)	PP (ug/l)	CHLORO (ug/l)	SESTON (mg/l)
ST.LEO	17OCT84	1300	7	1	3	1.69	24.65	0.27	0.27	32.7	958.3	190.3	25.1	6.8	12.8
				6.5		6.7	3.72	~~34.15~~ .47	~~0.47~~ 0.94	~~0.74~~ 24.3	915.1	146	32.6	2.7	40.2
BU.VISTA	17OCT84	1000	4	1	8.4	2.97	29.3	1.41	1.46	47.3	703.2	153.6	30.8	3.1	20.3
				3	8.5	2.87	31.35	1.38	1.48	47.2	686.4	140.7	39.3	2	29.8
HORN PT.	15OCT84	1557	8	1	2.9	0.17	24.85	0.21	0.39	22.8	1397.1	222.2	36.6	8	18\36.8
				8	1.4	2.1	21.8	0.02	0.02	23.9	902	153.4	28.8	5.4	35
WIND.HIL	15OCT84	1050	4.6	1	5.5	6.66	30.85	0.85	2.64	32.3	1958.2	331.6	63.2	7.1	35.8
				4.5	1.8	5.94	26.45	0.94	1.52	38.7	2060.3	281.6	48.4	5.8	43.4
RAG.PT	18OCT84	820	15.5	1	1.7	1.9	23.15	0.21	0.15	31.3	829.8	175.5	26.8	4.2	12
				15	8.9	2.18	30.0	0.25	0.4	12.9	603.8	105.9	23.5	1.9	20.4
MD.PT	18OCT84	1233	9.5	1	6.9	36.9	62.55	1.06	2.45	23.4	824.2	135.7	36.3	3.4	11.4
				9	8.7	29.8	52.15	1.09	2.51	36.2	1901.1	251.6	67.4	3	65
PT.NO.PT	17OCT84	1650	13.4	1	1.6	4.52	26.0	0.17	0.12	2.5	1025.8	160.5	20.2	9.8	16.2
				13	8.2	1.37	27.2	0.27	0.22	13.7	524.9	89.1	19.2	2.9	24
R-64	17OCT84	1540	19	1	2.9	11.7	32.35	0.2	0.42	21.5	1270.5	212.1	27	9.9	15.3
				19	12.6	2.99	32.0	0.4	0.24	19	629.2	101.3	21.3	3.6	28.1
R-78	16OCT84	1100	16.4	1	6.1	8.04	38.35	0.16	0.52	25.1	812.1	171.8	28	6.9	13
				15.8	14.5	2.02	38.0	0.41	1.22	24.3	581	97.9	27.7	2	37
STIL.PD	16OCT84	750	10	1	0.3	42.3	58.45	0.18	0.18	18.8	931.4	179.8	29.2	7.8	9.4
				9	5.3	29.4	49.55	0.27	0.38	25.8	982.8	158.2	32.4	3.5	19

NO. 2-3

BIOMONITIORING PROGRAM: SEDIMENT OXYGEN AND NUTRIENT EXCHANGES(SONE)
H2ONUTS (Surface and bottom water dissolved and particulate nutrient concentrations at SONE stations)

STATION	DATE	TIME	TOTAL DEPTH (m)	SAMPLE DEPTH (m)	DISSOLVED NUTRIENTS NH4 (uM N)	NO3+NO2 (uM N)	TDN (uM N)	DIP (uM P)	TDP (uM P)	SI(OH)4 (uM Si)	PARTICULATES PC (ug/l)	PN (ug/l)	PP (ug/l)	CHLORO (ug/l)	SESTON (mg/l)
ST.LEO	6-May-85	0740	6.6	0.5	1.4	0.7	27.0	.20	1.28	7.8	991.0	254.5	16.6	8.9	12.3
				6.5	4.3	6.6	35.5	.17	1.29	8.0	808.6	162.8	17.1	6.3	10.9
BU.VISTA	6-May-85	1150	4	0.5	1.1	6.3	29.15	1.2	2.08	34.6	3135.1	682.2	74	41.45	34.6
				4	0.6	2.4	26.5	0.86	1.86	29.9	2548.9	398.0	76	28.7	45.5
HORN PT.	7-May-85	920	7.5	0.5	2.6	6.2	29.3	.11	1.16	3.3	860.4	257.1	14	7.9	11.4
				7	2.5	6.0	32.95	.10	0.4	3.0	734.2	124.0	12.3	8.15	8.6
WIND.HIL	7-May-85	705	4.2	0.5	1.4	26.2	50.7	.59	2.63	9.0	3304.5	438.8	86	21.9	70
				3	1.1	24.5	46.45	.58	2.45	9.4	3714.2	489.7	94	25.0	73
RAG.PT.	9-May-85	640	17	0.5	0.5	2.4	27.75	.12	1.22	7.9	2207.2	276.5	23.3	16.4	12
				15.5	8.0	5.5	35.4	.12	0.43	10.3	1193.7	205.4	18.7	16.7	11.4
MD.PT.	9-May-85	1025	10.8	0.5	4.2	50.3	80.3	.73	2.32	29.5	1964.0	457.5	56	28.2	28
				8.5	7.0	42.9	68.55	.73	2.93	29.1	2991.0	485.8	130	22.8	85.5
PT.NO PT.	8-May-85	1630	14.5	0.5	2.7	13.6	41.85	.07	1.52	2.2	583.3	153.1	10	4.85	10.6
				13.5	6.3	7.8	34.7	.09	0.79	8.1	612.6	220.9	10.7	9.9	8.4
R-64	6-May-85	1720	16.8	0.5	2.0	21.5	45.6	.11	0.45	1.3	984.2	158.3	11	9.75	7.4
				15	5.2	9.7	34.3	.10	0.14	4.7	1096.8	226.7	17.5	16.1	19.4
R-78	7-May-85	1655	17	0.5	.7	20.3	42.85	.20	0.16	1.3	2666.7	361.8	20.7	35.4	12.8
				16	4.7	14.2	41.3	.15	0.68	3.1	4324.3	643.4	44	68.25	31.6
STIL. PD	8-May-85	705	9.5	0.5	4.0	57.7	79.45	.17	1.81	7.1	1638.6	221.9	44	17.7	27.8
				9	4.8	57.3	79.35	.16	1.6	7.8	2640.0	298.5	64	18.85	45.8

NO. 2-4

BIOMONITIORING PROGRAM: SEDIMENT OXYGEN AND NUTRIENT EXCHANGES(SONE)
H2ONUTS (Surface and bottom water dissolved and particulate nutrient concentrations at SONE stations)

					DISSOLVED NUTRIENTS						PARTICULATES				
STATION	DATE	TIME	TOTAL DEPTH (m)	SAMPLE DEPTH (m)	NH4 (uM N)	NO3+NO2 (uM N)	TDN (uM N)	DIP (uM P)	TDP (uM P)	SI(OH)4 (uM Si)	PC (ug/l)	PN (ug/l)	PP (ug/l)	CHLORO (ug/l)	SESTON (mg/l)
ST.LEO	25-June-85	1100	7.5	0.5	5.0	1.16	27.7	.12	0.66	67.9	1508	281	36.5	12	27.4
				7.5	8.5	1.82	32.3	.13	0.33	59.2	1125	198	33.7	6.4	29.2
BU.VISTA	25-June-85	730	4.6	0.5	0.6	.69	26.25	1.36	2.08	91	3344	672	74.7	33.6	45.6
				3	0.8	.62	28.85	1.41	2.03	91	2214	344	67.5	13.6	34.4
HORN PT.	26-June-85	700	8.2	0.5	1.8	1.01	27.35	.20	1.04	55.3	1144	198	27.5	8	30.2
				7	2.9	1.55	34.25	.27	0.89	54.3	2633	513	55.3	6.8	31.8
RAG.PT.	24-June-85	920	16.5	0.5	3.1	.19	38.4	.20	0.74	41.9	1841	378	48.5	19	19
				15	18.8	.36	42.65	1.56	2.34	42.4	1007	155	18.1	4.4	44.8\24.8
MD.PT	24-June-85	1320	9.6	0.5	1.4	38.1	63.35	1.10	1.96	33.3	1239	212	40.2	11.6	25.8
				8	4.6	30.9	57.45	1.27	1.84	40.9	1244	202	48.1	9	23.8
PT.NO.PT	24-June-85	1830	14.4	0.5	0.5	.37	24.1	.14	0.96	11.8	998	142	17.4	4	13.2
				13	12.6	.47	36.5	.32	.5	39.4	1066	216	24	3.2	12.6
R-64	25-June-85	1540	17.5	0.5	0.3	.68	21.8	.27	0.88	28.6	2080	337	30.3	15.8	24.8
				16	22.1	.85	46.2	.40	0.51	46.2	513	92	20.7	2	7.9
R-78	27-June-85	1045	16.8	0.5	3.8	8.0	33.75	.15	0.26	46.5	1690	318	43.1	18.3	20.6
				15	22.9	.90	52.55	.43	0.74	47.8	692	128	27.2	4	24.6\10.8
STIL.PD	26-June-85	1710	10.4	0.5	3.6	43.6	67	.44	1.09	31.6	1194	96.4	27.3	6.6	25
				9	4.5	38.6	63.5	.49	0.94	38.5	1941	201	44.9	4.8	32.8

Data Table No.3-1

LONG-TERM BIOMONITORING PROGRAM: ECOSYSTEM PROCESSES COMPONENT (SONE STUDY)
SEDPROF (Vertical sediment profiles of Eh,%H20 and various particulates)
Add +244 mV to all Eh data to correct values to hydrogen electrode
NOTE:Vertical profiles of particulates collected only during October cruise.
NOTE: No surfical particulate samples taken during this cruise.

STATION	DATE	TIME	TOTAL DEPTH (M)	CORE DEPTH (CM)	Eh	%H20 (%)	PC	PN	PP	SI	CHLORO (mg/m2)
								SEDIMENT ANALYSIS,%			
ST.LEO	27-AUG-84	1035	6.7	0	-272						
				1	-286						
				2	-276						
				3	-233						
				4	-246						
				5	-248						
				6	-248						
				7	-253						
				8	-255						
				9	-264						
BU.VISTA	27-AUG-84	1410	3.6	0	-75						
				1	-263						
				2	-270						
				3	-272						
				4	-281						
				5	-298						
				6	-297						
				7	-300						
				8	-303						
				9	-303						
HORN.PT	29-AUG-84	1120	7.2	0	-249						
				1	-256						
				2	-278						
				3	-290						
				4	-291						
				5	-282						
				6	-295						
				7	-322						
				8	-345						
				9	-347						
				10	-362						
				11	-381						
				12	-361						

LONG-TERM BIOMONITORING PROGRAM: ECOSYSTEM PROCESSES COMPONENT (SONE STUDY)
SEDPROF (Vertical sediment profiles of Eh,%H2O and various particulates)
Add +244 mV to all Eh data to correct values to hydrogen electrode
NOTE:Vertical profiles of particulates collected only during October cruise.
NOTE: No surfical particulate samples taken during this cruise.

STATION	DATE	TIME	TOTAL DEPTH (M)	CORE DEPTH (CM)	Eh	%H2O (%)	SEDIMENT ANALYSIS,% PC	PN	PP	SI	CHLORO (mg/m2)
WIND.HIL	29-AUG-84	1343	3.6	0	-63						
				1							
				2	-257						
				3	-277						
				4	-284						
				5	-292						
				6	-290						
				7	-291						
				8	-304						
				9	-297						
				10	-324						
				11	-340						
				12	-359						
RAG.PT	28-AUG-84	1248	13.2	0	-386						
				1	-395						
				2	-402						
				3	-413						
				4	-412						
				5	-450						
				6	-472						
				7	-465						
				8	-453						
				9	-425						
				10	-412						
MD.PT	28-AUG-84	1715	9.8	0	-65						
				1	-177						
				2	-365						
				3	-438						
				4	-452						
				5	-502						
				6	-483						
				7	-472						
				8	-503						
				9	-462						

LONG-TERM BIOMONITORING PROGRAM: ECOSYSTEM PROCESSES COMPONENT (SONE STUDY)
SEDPROF (Vertical sediment profiles of Eh,%H2O and various particulates)
Add +244 mV to all Eh data to correct values to hydrogen electrode
NOTE:Vertical profiles of particulates collected only during October cruise.
NOTE: No surfical particulate samples taken during this cruise.

STATION	DATE	TIME	TOTAL DEPTH (M)	CORE DEPTH (CM)	Eh	%H2O (%)	SEDIMENT ANALYSIS,% PC	PN	PP	SI	CHLORO (mg/m2)
PT.NO.PT	28-AUG-84	940	13	0	-278						
				1	-332						
				2	-318						
				3	-332						
				4	-342						
				5	-362						
				6							
				7	-364						
				8	-353						
				9							
R-64	29-AUG-84	845	16	0	-355						
				1	-400						
				2	-410						
				3	-423						
				4	-424						
				5	-426						
				6	-433						
				7	-430						
				8	-438						
				9	-430						
				10	-436						
				11	-442						
TOM.PT	30-AUG-84	1100	15.2	0	-238						
				1	-283						
				2	-284						
				3	-302						
				4	-313						
				5	-313						
				6	-324						
				7	-401						
				8	-353						
				9	-450						
				10	-500						
				11	-522						
				12	-440						
				13	-310						
				14	-335						

LONG-TERM BIOMONITORING PROGRAM: ECOSYSTEM PROCESSES COMPONENT (SONE STUDY)
SEDPROF (Vertical sediment profiles of Eh,%H2O and various particulates)
Add +244 mV to all Eh data to correct values to hydrogen electrode
NOTE:Vertical profiles of particulates collected only during October cruise.
NOTE: No surfical particulate samples taken during this cruise.

STATION	DATE	TIME	TOTAL DEPTH (M)	CORE DEPTH (CM)	Eh	%H2O (%)	SEDIMENT ANALYSIS,% PC	PN	PP	SI	CHLORO (mg/m2)
STIL.PD	30-AUG-84	800	9.5	0	-38						
				1	-230						
				2	-257						
				3	-263						
				4	-285						
				5	-291						
				6	-293						
				7	-304						
				8	-284						
				9	-307						
				10	-320						
				11	-354						
				12	-357						
				13	-369						
				14	-404						

BIOMONITORING PROGRAM: ECOSYSTEM PROCESSES COMPONENT(SONE STUDY)
SEDPROF (Vertical sediment profiles of Eh,%H20 and various particulates)
ALL EH DATA TO ADD +244 mV to correct to hydrogen electrode.
NOTE: No SI or CHLORO data collected during this cruise.

SEDIMENT PROFILES

STATION	DATE	TIME	TOTAL DEPTH (M)	CORE DEPTH (CM)	Eh	%H20 (%)	SEDIMENT ANALYSIS,% PC	PN	PP	SI	CHLORO (mg/m2)
ST.LEO	17-OCT-84	1419	7	0	140						
				1	100	81.4	2.42	0.28	0.061		
				2	-120	72.5	2.29	0.27	0.057		
				3	-140	70.5	2.5	0.31	0.063		
				4	-155	70.6	2.74	0.34	0.057		
				5		68.8	2.86	0.32	0.075		
				6	-155	67.2	2.88	0.31	0.059		
				7		65.5	2.53	0.3	0.056		
				8	-160						
				10	-150						
BU.VISTA	17-OCT-84	1222	4	0	160						
				0.5	90						
				1		82.5	2.19	0.27	0.134		
				1.5	20						
				2		72.5	2.34	0.29	0.145		
				2.5	-140						
				3		68.7	2.38	0.28	0.147		
				3.5	-175						
				4		65.8	2.24	0.25	0.124		
				4.5	-170						
				5		62.5	2.15	0.24	0.111		
				5.5							
				6		60.9	2.2	0.25	0.115		
				6.5	-155						
				7		59.4	2.2	0.24	0.109		
				7.5	-155						
				8		58.8	2.34	0.22	0.102		
HORN.PT	15-OCT-85	1628	8	0	135						
				1		83.2	4.03	0.25	0.059		
				1.2	95						
				2		71.6	2.19	0.26	0.058		
				2.2	-60						
				3		70.8	2.58	0.3	0.071		
				3.2	-150						
				4		68.4	2.31	0.26	0.069		
				4.2	-90						
				5		67	2.32	0.28	0.059		
				5.2	-80						
				6		64.7	2.01	0.26	0.051		
				6.2	-70						
				7		63.1	1.89	0.23	0.05		
				7.2	-90						
				8		60.9	1.98	0.23	0.048		
				8.2	-110						
				9		59.6	1.86	0.24	0.045		
				9.2							
				10		58.4	1.96	0.24	0.043		
				10.2							

BIOMONITORING PROGRAM: ECOSYSTEM PROCESSES COMPONENT(SONE STUDY)
SEDPROF (Vertical sediment profiles of Eh,%H20 and various particulates)
ALL EH DATA TO ADD +244 mV to correct to hydrogen electrode.
NOTE: No SI or CHLORO data collected during this cruise.

SEDIMENT PROFILES

STATION	DATE	TIME	TOTAL DEPTH (M)	CORE DEPTH (CM)	Eh	%H20 (%)	SEDIMENT ANALYSIS,% PC	PN	PP	SI	CHLORO (mg/m2)
WIND.HIL	15-OCT-84	1100	4.6	0	130						
				1	-120	81.4	4.52	0.36	0.102		
				2	-120	75.7	7.05	0.52	0.126		
				3	-70	74.6	7.08	0.52	0.112		
				4	-110	74	7.08	0.49	0.117		
				5		72.5	6.74	0.5	0.113		
				6	-70	69.7	5.51	0.4	0.102		
				7		71.9	6.16	0.47	0.104		
				8	-90	74.3	7.98	0.54	0.12		
				9		72.2	6.68	0.49	0.123		
				10	-180	70.5	6.8	0.47	0.105		
				11							
				12	-190						
RAG.PT	18-OCT-84	0950	15.5	0	120						
				1	20	89.3	3.47	0.48	0.084		
				2	-230	84	3.44	0.46	0.069		
				3	-305	80.7	3.53	0.45	0.066		
				4	-305	80	3.56	0.47	0.071		
				5		79.8	3.51	0.46	0.07		
				6	-310	77.1	3.08	0.4	0.061		
				7		77.8	2.93	0.35	0.06		
				8	-340	75.6	2.72	0.34	0.058		
				9		72.9	2.91	0.37	0.058		
				10	-330	72.6	2.94	0.36	0.056		
MD.PT	18-Oct-84	1340	9.5	0	130						
				1	100	86.4	2.79	0.3	0.117		
				2	50	79.4	2.86	0.31	0.108		
				3	-150	74.9	2.94	0.32	0.121		
				4	-180	74.8	3.36	0.38	0.125		
				5	-210	69.2	2.82	0.31	0.108		
				6	-235	61.4	2.44	0.25	0.094		
				7	-220	60.3	2.35	0.26	0.089		
				8		59.3	2.48	0.25	0.095		
				9		59.8	2.48	0.26	0.093		
				10							

BIOMONITORING PROGRAM: ECOSYSTEM PROCESSES COMPONENT(SONE STUDY)
SEDPROF (Vertical sediment profiles of Eh,%H20 and various particulates)
ALL EH DATA TO ADD +244 mV to correct to hydrogen electrode.
NOTE: No SI or CHLORO data collected during this cruise.

SEDIMENT PROFILES

STATION	DATE	TIME	TOTAL DEPTH (M)	CORE DEPTH (CM)	Eh	%H20 (%)	PC	PN	PP	SI	CHLORO (mg/m2)
							SEDIMENT ANALYSIS,%				
PT.NO.PT	17-OCT-84	1810	13.4	0	160						
				1	100	70.8	1.14	0.16	0.031		
				2	-110	57.3	1.56	0.16	0.035		
				3	-220	45.8	0.97	0.12	0.023		
				4	-250	36.4	0.67	0.08	0.021		
				5	-280	30.9	0.43	0.05	0.022		
				6		31.8	0.75	0.07	0.018		
				7	-310	31.7	0.56	0.05	0.022		
				8		37.4	0.68	0.07	0.025		
				9	-300	42.8	1.09	0.12	0.031		
				10		44.5	1.01	0.11	0.032		
				11	-280						
R-64	16-OCT-84	1810	19	0	160						
				1	100	89.5	2.3	0.36	0.055		
				2	90	80.9	3.83	0.3	0.054		
				3	-150	76.5	2.87	0.35	0.049		
				4	-220	74.8	2.9	0.37	0.052		
				5	-210	73.9	2.56	0.31	0.049		
				6	-250	74.9	2.62	0.31	0.049		
				7		75.5	2.62	0.31	0.051		
				8	-250	74.1	2.68	0.32	0.048		
				9	-270	72.3	2.63	0.32	0.051		
				10		74	2.69	0.31	0.049		
				11	-300						
R-78	16-OCT-84	1218	16.4	0	145						
				1	90	89.6	9.74	0.46	0.091		
				2	-190	65.8	17.98	0.48	0.069		
				3	-230	65.9	2.56	0.19	0.045		
				4	-210	65.3	2.53	0.19	0.047		
				5	-220	64.3	2.53	0.2	0.05		
				6		63.1	2.06	0.17	0.044		
				7	-230	61	2.08	0.17	0.043		
				8		62.5	1.66	0.16	0.041		
				9	-250						

BIOMONITORING PROGRAM: ECOSYSTEM PROCESSES COMPONENT(SONE STUDY)
SEDPROF (Vertical sediment profiles of Eh,%H20 and various particulates)
ALL EH DATA TO ADD +244 mV to correct to hydrogen electrode.
NOTE: No SI or CHLORO data collected during this cruise.

SEDIMENT PROFILES

STATION	DATE	TIME	TOTAL DEPTH (M)	CORE DEPTH (CM)	Eh	%H20 (%)	SEDIMENT ANALYSIS,% PC	PN	PP	SI	CHLORO (mg/m2)
STIL.PD	16-OCT-84	1000	10	0	40						
				1	30	82.9	4.69	0.24	0.066		
				2	-95	69.4	4.83	0.25	0.07		
				3	-90	67.8	4.81	0.26	0.077		
				4	-105	67.7	5.06	0.27	0.081		
				5	-95	59	3.72	0.21	0.051		
				6	-145	56.4	2.78	0.19	0.045		
				7	-105	56.3	2.84	0.21	0.051		
				8		54.8	2.56	0.21	0.036		
				9		52.2	2.32	0.2	0.035		
				10		53	2.44	0.21	0.034		

BIOMONITORING PROGRAM: ECOSYSTEM PROCESSES COMPONENT(SONE STUDY)
SEDPROF (Vertical sediment profiles of Eh,%H20 and various particulates)
ALL EH DATA TO ADD +244 mV to correct to hydrogen electrode.

SEDIMENT PROFILES

STATION	DATE	TIME	TOTAL DEPTH (M)	CORE DEPTH (CM)	Eh	%H20 (%)	SEDIMENT ANALYSIS,% PC	PN	PP	SI	CHLORO (mg/m2)
ST.LEO	6-MAY-85	830	6.6	H20	173						
				SED/H20	97						
				1	-77		2.67	0.34	0.089		30.9
				2	-150						
				3	-150						
				4	-170						
				5	-200						
				6	-206						
				7	-185						
				8							
BU.VISTA	6-MAY-85	12PM	4	H20	197						
				SED/H20	-5						
				1cm	+8		2.78	0.32	0.166		31.8
				2	+53						
				3	+20						
				4	-135						
				5	-111						
				6	-146						
HORN.PT	7-MAY-85		9.5-10M	H20	+185						
				1cm	-155		2.31	0.33	0.079		31
				2cm	-200						
				3cm	-200						
				4cm	-225						
				5cm	-210						
				6cm	-236						
				7cm	-140						
				8cm	-210						
WIND.HIL	7-MAY-85	0710	4.2	H20	+200						
				1cm	+19		7.45	0.55	0.118		38.2
				2cm	+135						
				3cm	+124						
				4cm	+200						
				5cm	+100						
				6cm	+120						

BIOMONITORING PROGRAM: ECOSYSTEM PROCESSES COMPONENT(SONE STUDY)
SEDPROF (Vertical sediment profiles of Eh,%H20 and various particulates)
ALL EH DATA TO ADD +244 mV to correct to hydrogen electrode.

SEDIMENT PROFILES

STATION	DATE	TIME	TOTAL DEPTH (M)	CORE DEPTH (CM)	Eh	%H20 (%)	SEDIMENT ANALYSIS,% PC	PN	PP	SI	CHLORO (mg/m2)
RAG.PT	9-MAY-85	0700?	17	H20	+195						
				1	-90		4.97	0.66	0.09		51.8
				2	-100						
				3	-93						
				4	-110						
				5	-180						
MD.PT	9-MAY-85	1030?	10.8	H20	+195						
				1	+150		2.86	0.33	0.12		26
				2	+125						
				3	-90						
				4	-165						
				5	-180						
				6	-200						
				7	-210						
				8	-190						
PT.NO.PT	5-MAY-85	1800	14.5	SUR/H20	+195						
				H20/SED	-260						
				1cm	-230		4.24	0.56	0.111		38.2
				2	-200						
				3	-140						
				4	-100						
				5	-100						
				6	-100						
				7	-70						
				8	-60						

BIOMONITORING PROGRAM: ECOSYSTEM PROCESSES COMPONENT(SONE STUDY)
SEDPROF (Vertical sediment profiles of Eh,%H20 and various particulates)
ALL EH DATA TO ADD +244 mV to correct to hydrogen electrode.

SEDIMENT PROFILES

STATION	DATE	TIME	TOTAL DEPTH (M)	CORE DEPTH (CM)	Eh	%H20 (%)	SEDIMENT ANALYSIS,% PC	PN	PP	SI	CHLORO (mg/m2)
R-64	6-MAY-85	1830	16.8m	H20	+200						
				1cm	-201		3.45	0.48	0.08		49.5
				2	-180						
				3	-155						
				4	-210						
				5	-250						
				6	-270						
				7	-300						
R-78	5-MAY-85	1655	17m	H20	+200						
				*2cm	-460						
				3cm	-360						
				4	-330						
				5	-300						
				1cm	-470		10.39	0.52	0.144		43.6
				0cm	-110						
STIL.Pd	5-MAY-85	0710	9.5m	H20	+180						
				0cm	+120						
				1	-140		4.92	0.22	0.077		11.4
				2	-100						
				3	-195						
				4	-200						
				5	-185						
				6	-200						
				7	-160						
				8	-180						

BIOMONITORING PROGRAM: ECOSYSTEM PROCESSES COMPONENT(SONE STUDY)
SEDPROF (Vertical sediment profiles of Eh,%H20 and various particulates)
ALL EH DATA TO ADD +244 mV to correct to hydrogen electrode.

SEDIMENT PROFILES

STATION	DATE	TIME	TOTAL DEPTH (M)	CORE DEPTH (CM)	Eh	%H20 (%)	SEDIMENT ANALYSIS,% PC	PN	PP	SI	CHLORO (mg/m2)
ST.LEO	25-June-85	1100		H20	170						
				SED/H20	175						
				1	147		2.72	0.4	0.084		24.17
				2	70						
				3	-100						
				4	-80						
				5	-130						
				6	-120						
				7	-165						
				8	-140						
BU.VISTA	25-June-85	730		H20	160						
				SED/H20	150						
				1cm	102		2.49	0.31	0.152		15.81
				2	-160						
				3	-225						
				4	-227						
				5	-245						
				6	-211						
				7	-225						
				8	-135						
HORN.PT	26-June-85	700		H20	90						
				SED/H20	170						
				1	200		2.76	0.3	0.064		29.67
				2	167						
				3	-110						
				4	-80						
				5	-120						
				6	-202						
				7	-227						
				8	-230						

BIOMONITORING PROGRAM: ECOSYSTEM PROCESSES COMPONENT(SONE STUDY)
SEDPROF (Vertical sediment profiles of Eh,%H20 and various particulates)
ALL EH DATA TO ADD +244 mV to correct to hydrogen electrode.

SEDIMENT PROFILES

STATION	DATE	TIME	TOTAL DEPTH (M)	CORE DEPTH (CM)	Eh	%H20 (%)	SEDIMENT ANALYSIS,% PC	PN	PP	SI	CHLORO (mg/m2)
RAG.PT	24-June-85	1030		H20	-290						
				SED/H20	-75						
				1	-320		3.37	0.43	0.063		22.94
				2	-340						
				3	-360						
				4	-332						
				5	-362						
				6	-332						
MD.PT.	24-June-85	1310		H20	140						
				SED/H20	162						
				1	130		2.71	0.32	0.126		20.5
				2	115						
				3	105						
				4	102						
				5	100						
				6	103						
				7	121						
				8	130						
PT.NO.PT	24-JUNE-85	1910		H20	205						
				SED/H20	-160						
				1	-203		3.27	0.45	0.087		22.33
				2	-194						
				3	-235						
				4	-250						
				5	-250						
				6	-245						
				7	-328						
				8	-203						

BIOMONITORING PROGRAM: ECOSYSTEM PROCESSES COMPONENT(SONE STUDY)
SEDPROF (Vertical sediment profiles of Eh,%H2O and various particulates).
ALL EH DATA TO ADD +244 mV to correct to hydrogen electrode.

SEDIMENT PROFILES

STATION	DATE	TIME	TOTAL DEPTH (M)	CORE DEPTH (CM)	Eh	%H2O (%)	SEDIMENT ANALYSIS,% PC	PN	PP	SI	CHLORO (mg/m2)
R-64	25-JUNE-85	1600		H2O	160						
				SED/H2O	-210						
				1	-235		3.6	0.46	0.078		32.12
				2	-240						
				3	-295						
				4	-332						
				5	-345						
				6	-362						
				7	-396						
				8	-405						
R-78	27-JUNE-85	1200		H2O	110						
				SED/H2O	-156						
				1	-245		3.83	0.48	0.087		26
				2	-166						
				3	-245						
				4	-350						
				5	-232						
				6	-393						
				7	-365						
				8	-365						
STIL.PD	26-JUNE-85	1600		H2O	100						
				SED/H2O	120						
				1	100		3.68	0.24	0.074		19.89
				2	28						
				3	-57						
				4	-43						
				5	105						
				6	-79						

Data Table No. 4-1

LONG-TERM BIOMONITORING PROGRAM SEDIMENT-WATER EXCHANGE COMPONENT

SEDIMENT-WATER FLUXES

SEDFLUX (Nutrient and oxygen concentrations in the sediment microcosms at SONE stations)

STATION	DATE	CORE NO.	CORE VOL (ML)	CORE H20 HEIGHT (CM)	TIME (SUM)	TIME OF SAMPLE HR	MIN	DELTA T (min)	DO (MG/l)	NH4 (uM-N)	NO3+NO2 (uM-N)	DIP (uM-P)	SI(OH)4 (uM-SI)
ST.LEO	27-AUG-84	BLACK		5.1	0	15	30			36.2	2.01	3.74	109
				5.1	30	16	0	30		37.5	1.97	3.86	108
				5.1	60	16	30	30		39.9	2.33	4.21	113
				5.1	96	17	6	36		44.2	2.4	3.92	118
				5.1	129	17	39	33		43.8	3.48	4.27	121
				5.1	162	18	12	33		44.7	2.3	4.18	125
				5.1	416	22	26	254		53.1	2.58	3.5	
ST.LEO	27-AUG-84	BLUE		10	0	15	25			19.5	1.31	1.81	80
				10	30	15	55	30		20.1	0.95	1.81	82
				10	60	16	25	30		22	1.18	1.93	86
				10	100	17	5	40		22.1	0.93	1.94	86
				10	134	17	39	34		23.2	1.32	1.98	91
				10	167	18	12	33		24.1	1.64	2.32	93
				10	416	22	21	249		29.4	1.6	2.02	112
ST.LEO	27-AUG-84	GREEN		7.7	0	15	25	0		25.5	1.99	2.73	98
				7.7	30	15	55	30		25	1.7	3.06	101
				7.7	60	16	25	30		25.9	2.87	3.36	104
				7.7	100	17	5	40		26.3	1.52	3.26	111
				7.7	134	17	39	34		28.1	1.57	3.29	111
				7.7	167	18	12	33		28.4	1.75	3.25	115
				7.7	415	22	20	248		33.2	2.09	2.67	127

St. Leonard Station: First Run

No. 4-2

LONG-TERM BIOMONITORING PROGRAM SEDIMENT-WATER EXCHANGE COMPONENT

SEDIMENT-WATER FLUXES

STATION	DATE	CORE NO.	CORE VOL (ML)	CORE H20 HEIGHT (CM)	TIME (SUM)	TIME OF SAMPLE HR	MIN	DELTA T (min)	DO (MG/l)	NH4 (uM-N)	NO3+NO2 (uM-N)	DIP (uM-P)	SI(OH)4 (uM-SI)
ST.LEO	31-AUG-84	1	1080	7.714285	0	10	30		4.66				
			1080	7.714285	30	11	0	30	4.5				
			1080	7.714285	80	11	50	50	4.3				
			1080	7.714285	110	12	20	30	4.1				
			1080	7.714285	140	12	50	30	3.94				
			1080	7.714285	185	13	35	45	3.62				
ST.LEO	31-AUG-84	2	880	6.285714	0	10	30		4.78				
			880	6.285714	30	11	0	30	4.73				
			880	6.285714	80	11	50	50	4.59				
			880	6.285714	110	12	20	30	4.48				
			880	6.285714	140	12	50	30	4.4				
			880	6.285714	185	13	35	45	4.4				
			880	6.285714	255	14	45	70	3.97				
ST.LEO	31-AUG-84	3	895	6.392857	0	10	30		4.33				
			895	6.392857	30	11	0	30	3.93				
			895	6.392857	80	11	50	50	3.23				
			895	6.392857	110	12	20	30	2.82				
			895	6.392857	140	12	50	30	2.26				
			895	6.392857	185	13	35	45	1.52				

St. Leonard Station: Second Run

No. 4-3

LONG-TERM BIOMONITORING PROGRAM SEDIMENT-WATER EXCHANGE COMPONENT

SEDIMENT-WATER FLUXES

STATION	DATE	CORE NO.	CORE VOL (ML)	CORE H2O HEIGHT (CM)	TIME (SUM)	TIME OF SAMPLE HR	MIN	DELTA T (min)	DO (MG/l)	NH4 (uM-N)	NO3+NO2 (uM-N)	DIP (uM-P)	SI(OH)4 (uM-SI)
BU.VISTA	27-AUG-84	RED		6.7	0	15	38			7.8	1.95	3.66	101
				6.7	37	16	15	37		9	2.87	3.92	108
				6.7	66	16	44	29		11.2	2.33	4.04	111
				6.7	102	17	20	36		12.4	4.5	4.26	110
				6.7	135	17	53	33		14.3	2.89	4.25	116
				6.7	165	18	23	30		15.5	2.47	4.36	115
				6.7	416	22	34	251		24.1	3.4	4.86	136
BU.VISTA	27-AUG-84	WHITE		7.3	0	15	38			3.8	1.11	3.74	95
				7.3	37	16	15	37		5	1.07	3.88	99
				7.3	67	16	45	30		6	2.37	3.93	101
				7.3	103	17	21	36		7.8	1.52	4.03	105
				7.3	137	17	55	34		9.4	1.25	4.23	108
				7.3	167	18	25	30		10.2	1.54	4.35	107
				7.3	414	22	32	247		18.6	1.11	4.62	124
BU.VISTA	27-AUG-84	SILVER		7.5	0	15	38			9.1	1.55	3.58	99
				7.5	37	16	15	37		10.5	1.82	3.76	103
				7.5	68	16	46	31		11.2	2.82	3.96	106
				7.5	105	17	23	37		11.9	6.72	4.11	108
				7.5	139	17	57	34		12.1	2.88	4.07	112
				7.5	169	18	27	30		12.9	2.4	4.11	114
				7.5	410	22	28	241		17.8	3.53	4.49	130

Buena Vista Station: First Run

No. 4-4

LONG-TERM BIOMONITORING PROGRAM SEDIMENT-WATER EXCHANGE COMPONENT

SEDIMENT-WATER FLUXES

STATION	DATE	CORE NO.	CORE VOL (ML)	CORE H2O HEIGHT (CM)	TIME (SUM)	TIME OF SAMPLE HR	MIN	DELTA T (min)	DO (MG/l)	NH4 (uM-N)	NO3+NO2 (uM-N)	DIP (uM-P)	SI(OH)4 (uM-SI)
BU.VISTA	31-AUG-84	RED	1560	11.14285	0	9	26		5.77				
			1560	11.14285	24	9	50	24	5.4				
			1560	11.14285	59	10	25	35	4.99				
			1560	11.14285	99	11	5	40	4.45				
			1560	11.14285	139	11	45	40	3.77				
			1560	11.14285	169	12	15	30	3.34				
			1560	11.14285	202	12	48	33	2.83				
			1560	11.14285	246	13	32	44	2.11				
BU.VISTA	31-AUG-84	BLUE	1470	10.5	0	9	27		5.37				
			1470	10.5	23	9	50	23	4.96				
			1470	10.5	58	10	25	35	4.39				
			1470	10.5	98	11	5	40	3.67				
			1470	10.5	138	11	45	40	3				
			1470	10.5	168	12	15	30	2.44				
			1470	10.5	201	12	48	33	1.89				
			1470	10.5	245	13	32	44	1.23				
BU.VISTA	31-AUG-84	GREEN	1610	11.5	0	9	27		5.44				
			1610	11.5	23	9	50	23	5.28				
			1610	11.5	58	10	25	35	5.05				
			1610	11.5	98	11	5	40	4.7				
			1610	11.5	138	11	45	40	4.43				
			1610	11.5	168	12	15	30	4.11				
			1610	11.5	201	12	48	33	3.79				
			1610	11.5	245	13	32	44	3.26				

Buena Vista Station: Second Run

LONG-TERM BIOMONITORING PROGRAM SEDIMENT-WATER EXCHANGE COMPONENT

SEDIMENT-WATER FLUXES

STATION	DATE	CORE NO.	CORE VOL (ML)	CORE H20 HEIGHT (CM)	TIME (SUM)	TIME OF SAMPLE HR	MIN	DELTA T (min)	DO (MG/l)	NH4 (uM-N)	NO3+NO2 (uM-N)	DIP (uM-P)	SI(OH)4 (uM-SI)
HORN.PT	29-AUG-84	SILVER	1150	8.214285	0	12	0		3.95	9.7	0.8	0.89	74.6
			1150	8.214285	56	12	56	56	3.45	12.1	0.84	0.6	84.8
			1150	8.214285	116	13	56	60	3.15	2.4	0.94	0.45	82.5
			1150	8.214285	176	14	56	60	2.51	1.5	0.99	0.46	85.8
			1150	8.214285	245	16	5	69	2.23	2.5	0.68	0.43	86.7
			1150	8.214285	305	17	5	60		2.1	0.62	0.37	88.1
HORN.PT	29-AUG-84	WHITE	960	6.857142	0	12	0		4.15	16.6	1.42	1.62	81.9
			960	6.857142	56	12	56	56	2.3	12.7	1.17	1.11	94.5
			960	6.857142	116	13	56	60	0.66	2.3	1.62	0.83	104
			960	6.857142	178	14	58	62	0.66	0.4	0.47	0.7	111
			960	6.857142	245	16	5	67	0.58	0.7	0.51	0.97	117
			960	6.86	310	17	10	65		0.4	1.09	1.64	120
HORN.PT	29-AUG-84	RED	940	6.714285	0	12	0		5.05	13.9	0.67	1.08	81
			940	6.714285	56	12	56	56	3.7	5.3	0.86	0.77	81
			940	6.714285	116	13	56	60	2.25	5	1.17	0.4	91
			940	6.714285	180	15	0	64	1.18	0.4	1.16	0.44	98
			940	6.714285	245	16	5	65	1.53	0.4	0.86	0.47	100
			940	6.714285	314	17	14	69		0.5	0.52	0.38	102

No. 4-6

LONG-TERM BIOMONITORING PROGRAM SEDIMENT-WATER EXCHANGE COMPONENT

SEDIMENT-WATER FLUXES

STATION	DATE	CORE NO.	CORE VOL (ML)	CORE H20 HEIGHT (CM)	TIME (SUM)	TIME OF SAMPLE HR	MIN	DELTA T (min)	DO (MG/l)	NH4 (uM-N)	NO3+NO2 (uM-N)	DIP (uM-P)	SI(OH)4 (uM-SI)
WIND.HL	29-AUG-84	1	1255	8.964285	0	14	35		5.74	7.9	0.78	1.59	42.9
			1255	8.964285	47	15	22	47	6.09	9.7	1.39	1.53	55.6
			1255	8.964285	117	16	32	70	6.04	12.6	1.35	1.46	53.5
			1255	8.964285	195	17	50	78	5.9	13.3	2.76	1.44	54.2
			1255	8.964285	255	18	50	60	5.55	13	3.1	1.39	55.9
			1255	8.964285	315	19	50	60	4.87	12.6	2.53	1.14	62.7
WIND.HL	29-AUG-84	2	0	0	0	14	35		5.76	10	0.82	1.67	44.8
			1074	7.671428	50	15	25	50	5.96	14	1.73	1.83	49.2
			1074	7.671428	119	16	34	69	5.61	17.8	1.5	1.85	53.2
			1074	7.671428	195	17	50	76	5.34	19	1.4	1.68	60.4
			1074	7.671428	255	18	50	60	5.02	21.7	2.16	1.56	58.7
			1074	7.671428	323	19	58	68	4.45	23.8	2.33	1.5	63.3
WIND.HL	29 AUG 84	3	655	4.678571	0	14	35		5.84	49.6	2.78	2.93	72.4
			655	4.678571	50	15	25	50	5.87	45.4	3.22	2.68	74.2
			655	4.678571	123	16	38	73	5.33	54.2	2.79	2.4	85.5
			655	4.678571	195	17	50	72	4.91	54.6	5.25	2.35	95.6
			655	4.678571	255	18	50	60	4.44	60.7	3.16	2.35	106
			655	4.678571	295	19	30	40	3.57	60.5	3.12	1.9	110
			655	4.678571	315	19	50	20	3.5	59.3	3.48	1.8	113

No. 4-7

LONG-TERM BIOMONITORING PROGRAM SEDIMENT-WATER EXCHANGE COMPONENT

SEDIMENT-WATER FLUXES

STATION	DATE	CORE NO.	CORE VOL (ML)	CORE H2O HEIGHT (CM)	TIME (SUM)	TIME OF SAMPLE HR	MIN	DELTA T (min)	DO (MG/l)	NH4 (uM-N)	NO3+NO2 (uM-N)	DIP (uM-P)	SI(OH)4 (uM-SI)
RAG.PT	28-AUG-84	RED	850	6.071428	0	13	17		2.91	97.2	1.7	11.2	81.4
			850	6.071428	62	14	19	62	2.85	128	1.42	11.3	94.3
			850	6.071428	120	15	17	58	2.74	144	0.96	11	108
			850	6.071428	176	16	13	56	2.56	155	0.95	11.8	118
			850	6.071428	250	17	27	74	2.02	173	1.22	14.3	126
			850	6.071428	296	18	13	46	1.41	165	0.69	13.7	139
			850	6.071428	331	18	48	35	1.41	164	1.55	14.1	139
			850	6.071428	369	19	26	38	0.54	157	1.1	13.1	142
RAG.PT	28-AUG-84	WHITE	950	6.785714	0	13	17		3.56	34.4	1.42	5.1	70
			950	6.785714	65	14	22	65	3.48	52.2	1.12	6.9	81
			950	6.785714	125	15	22	60	2.82	62.8	0.62	7.4	98
			950	6.785714	179	16	16	54	2.3	65.7	0.8	8.5	94
			950	6.785714	252	17	29	73	1.54	65.2	0.67	9.3	104
			950	6.785714	300	18	17	48	1.15	56.8	0.69	9.6	108
			950	6.785714	371	19	28	71		35.6	0.52	7.8	118
RAG.PT	28-AUG-84	SILVER	860	6.142857	0	13	18		3.63	30	0.92	4.1	72
			860	6.142857	67	14	25	67	2.84	49.7	0.91	6.7	86
			860	6.142857	126	15	24	59	1.79	64	0.93	9.2	99
			860	6.142857	185	16	23	59	1.11	69.4	0.69	10.6	108
			860	6.142857	254	17	32	69	0.19	73.5	0.38	11.8	119
			860	6.142857	301	18	19	47	0.12	74	0.7	12.5	128
			860	6.142857	372	19	30	71	0.05	70.1	1.08	13	135

No. 4-8

LONG-TERM BIOMONITORING PROGRAM SEDIMENT-WATER EXCHANGE COMPONENT

SEDIMENT-WATER FLUXES

STATION	DATE	CORE NO.	CORE VOL (ML)	CORE H2O HEIGHT (CM)	TIME (SUM)	TIME OF SAMPLE HR	MIN	DELTA T (min)	DO (MG/l)	NH4 (uM-N)	NO3+NO2 (uM-N)	DIP (uM-P)	SI(OH)4 (uM-SI)
MD.PT	28-AUG-84	GREEN	960	6.857142	0	18	56		6.25	12.8	35.8	2.89	44.3
			960	6.857142	64	20	0	64	5.4	14.8	35.5	2.52	52.6
			960	6.857142	120	20	56	56	5.2	12.8	35.1	1.79	79.6
			960	6.857142	178	21	54	58	4.55	14.1	33.6	1.62	67.3
MD.PT	28-AUG-84	BLUE	820	5.857142	0	19	0		5.1	34	36.1	2.48	51.4
			820	5.857142	60	20	0	60	4.35	34	28.5	1.86	55.5
			820	5.857142	116	20	56	56	4	33.4	31.7	1.42	61.7
			820	5.857142	174	21	54	58	3.6	32.5	25.2	0.96	64.9
MD.PT	28-AUG-84	BLACK	1100	7.857142	0	19	0		4.95	9.5	36	1.28	49.4
			1100	7.857142	60	20	0	60	4.35	12.6	35.1	0.87	56.2
			1100	7.857142	116	20	56	56	3.95	11.3	33.6	0.73	60.5
			1100	7.857142	174	21	54	58	3.65	9.4	32	0.48	64

No. 4-9

LONG-TERM BIOMONITORING PROGRAM SEDIMENT-WATER EXCHANGE COMPONENT

SEDIMENT-WATER FLUXES

STATION	DATE	CORE NO.	CORE VOL (ML)	CORE H20 HEIGHT (CM)	TIME (SUM)	TIME OF SAMPLE HR	MIN	DELTA T (min)	DO (MG/l)	NH4 (uM-N)	NO3+NO2 (uM-N)	DIP (uM-P)	SI(OH)4 (uM-SI)
PT.NO.PT	28-AUG-84	GREEN	900	6.428571	0	11	25		4.6	19.8	0.71	1.13	64.3
			900	6.428571	79	12	44	79	4.6	20	1.25	0.79	69.2
			900	6.428571	138	13	43	59	4.8	18.5	1	0.59	81.2
			900	6.428571	197	14	42	59	4.5	18	0.76	0.51	87
			900	6.428571	259	15	44	62	4.35	13.2	0.99	0.4	89.7
			900	6.428571	319	16	44	60	4.4	10.1	1.19	0.39	94.4
PT.NO.PT	28-AUG-84	BLUE	980	7	0	11	25		4.15	16.4	0.67	1.02	62.8
			980	7	79	12	44	79	4	15.5	0.94	0.75	69
			980	7	138	13	43	59	4	14.2	0.97	0.63	75
			980	7	197	14	42	59	3.75	11.4	0.86	0.34	80.6
			980	7	259	15	44	62	3.45	7.9	0.74	0.3	85.4
			980	7	319	16	44	60	3.5	5.5	1.36	0.47	92.6
PT.NO.PT	28-AUG-84	BLACK	1130	8.071428	0	11	25		3.6	23.1	0.84	1.34	66.4
			1130	8.071428	79	12	44	79	3.5	20.8	1.36	0.86	73.5
			1130	8.071428	138	13	43	59	3.75	16.6	0.98	0.5	79.7
			1130	8.071428	197	14	42	59	3.25	12.4	1.18	0.35	84.9
			1130	8.071428	259	15	44	62	3.3	7.4	1.35	0.3	89.5
			1130	8.071428	319	16	44	60	3.25	4.4	1.11	0.31	94.5

No. 4-10

LONG-TERM BIOMONITORING PROGRAM SEDIMENT-WATER EXCHANGE COMPONENT

SEDIMENT-WATER FLUXES

STATION	DATE	CORE NO.	CORE VOL (ML)	CORE H20 HEIGHT (CM)	TIME (SUM)	TIME OF SAMPLE HR	MIN	DELTA T (min)	DO (MG/l)	NH4 (uM-N)	NO3+NO2 (uM-N)	DIP (uM-P)	SI(OH)4 (uM-SI)
R-64	29-AUG-84	GREEN	900	6.428571	0	9	25		4.34	37.5	1.09	1.74	59.8
			900	6.428571	49	10	14	49	2.82	36.4	2.04	1.85	71.6
			900	6.428571	122	11	27	73	0.37	29.1	1.21	1.17	98
			900	6.428571	170	12	15	48	0.07	27.4	0.46	1.4	100
			900	6.428571	230	13	15	60	0.03	27.5	0.28	1.84	114
			900	6.428571	290	14	15	60	0.02	22.1	0.21	1.74	123
R-64	29-AUG-84	BLUE	1000	7.142857	0	9	25		3.15	38	0.93	2.84	67
			1000	7.142857	49	10	14	49	2.94	43	1.02	2.8	76
			1000	7.142857	125	11	30	76	2.03	40	0.69	2.07	89
			1000	7.142857	172	12	17	47	1.28	31.6	0.93	1.44	96
			1000	7.142857	233	13	18	61	0.1	15.9	0.38	0.72	106
			1000	7.142857	294	14	19	61	0.16	12.4	0.4	0.51	117
R-64	29-AUG-84	BLACK	945	6.75	0	9	25		3.84	28.9	0.76	2.16	67
			945	6.75	49	10	14	49	3.14	33.2	0.73	2.15	76
			945	6.75	127	11	32	78	2.37	32.3	0.68	1.77	86
			945	6.75	174	12	19	47	1.88	28	0.6	1.58	93
			945	6.75	236	13	21	62	1.11	18.1	0.48	1.18	103
			945	6.75	297	14	22	61	0.57	9.1	0.38	1.01	111

LONG-TERM BIOMONITORING PROGRAM SEDIMENT-WATER EXCHANGE COMPONENT

SEDIMENT-WATER FLUXES

STATION	DATE	CORE NO.	CORE VOL (ML)	CORE H20 HEIGHT (CM)	TIME (SUM)	TIME OF SAMPLE HR	MIN	DELTA T (min)	DO (MG/l)	NH4 (uM-N)	NO3+NO2 (uM-N)	DIP (uM-P)	SI(OH)4 (uM-SI)
TOM.PT	30-AUG-84	RED	1055	7.535714	0	11	17		3.61	26.6	4.65	2.22	61.9
			1055	7.535714	63	12	20	63	3.84	28.7	4.74	1.53	61.9
			1055	7.535714	123	13	20	60	3.41	24.9	4.41	0.96	64
			1055	7.535714	183	14	20	60	2.36	15.3	4.38	0.39	69.3
			1055	7.535714	273	15	50	90	1.13	3.2	4.21	0.41	73
TOM.PT	30-AUG-84	WHITE	1000	7.142857	0	11	17		3.38	20.4	3.71	1.85	61.6
			1000	7.142857	63	12	20	63	2.64	10.6	3.92	0.67	61.1
			1000	7.142857	123	13	20	60	1.54	0.4	2.65	0.32	63.5
			1000	7.142857	183	14	20	60	0.6	0.4	0.17	0.29	70
			1000	7.142857	278	15	55	95	0.22	0.4	0.83	0.3	74.8
TOM.PT	30-AUG-84	SILVER	990	7.071428	0	11	17		3.51	28.8	4.83	2.67	61.4
			990	7.071428	66	12	23	66	2.95	24.1	4.42	1.51	66.9
			990	7.071428	123	13	20	57	2.43	18.8	4.29	0.86	67.9
			990	7.071428	188	14	25	65	1.67	7.9	8.44	1	74.1
			990	7.071428	283	16	0	95	0.96	0.7	1.13	0.5	80

LONG-TERM BIOMONITORING PROGRAM SEDIMENT-WATER EXCHANGE COMPONENT

SEDIMENT-WATER FLUXES

STATION	DATE	CORE NO.	CORE VOL (ML)	CORE H2O HEIGHT (CM)	TIME (SUM)	TIME OF SAMPLE HR	MIN	DELTA T (min)	DO (MG/I)	NH4 (uM-N)	NO3+NO2 (uM-N)	DIP (uM-P)	SI(OH)4 (uM-SI)
STIL.PD	30-AUG-84	GREEN	1115	7.964285	0	8	45		5.2	21.1	47	0.75	52.2
			1115	7.964285	40	9	25	40	4.65	22.5	46.4	0.61	55.1
			1115	7.964285	100	10	25	60	3.9	19.9	43.6	0.32	60.6
			1115	7.964285	160	11	25	60	3.1	18.3	42.9	0.24	60.5
			1115	7.964285	235	12	40	75	3.32	18.3	41.6	0.19	63.7
			1115	7.964285	295	13	40	60	2.95	15.6	41.4	0.13	69.1
STIL.PD	30-AUG-84	BLUE	910	6.5	0	8	45		5.4	21.5	46.3	0.55	53.2
			910	6.5	40	9	25	40	4.35	21	45.5	0.27	58
			910	6.5	100	10	25	60	3.9	18.9	43	0.21	62.7
			910	6.5	160	11	25	60	1.8	15.6	39.4	0.12	69.7
			910	6.5	235	12	40	75	1.4	14.4	35.1	0.09	75.9
			910	6.5	295	13	40	60	1.25	13.4	32	0.11	81.3
STIL.PD	30-AUG-84	BLACK	920	6.571428	0	8	45		5.95	25.8	47.5	0.46	52.2
			920	6.571428	40	9	25	40	5.1	24.5	47.6	0.25	55.7
			920	6.571428	100	10	25	60	4	19.6	46.7	0.15	61
			920	6.571428	160	11	25	60	2.65	14.5	45.2	0.11	62.2
			920	6.571428	235	12	40	75	1.88	10.1	43.2	0.1	63.8
			920	6.571428	295	13	40	60	1.7	6.1	40.6	0.1	68.5

BIOMONITORING PROGRAM: SEDIMENT OXYGEN AND NUTRIENT EXCHANGES(SONE)
SEDFLUX (Nutrient and oxygen concentrations in the sediment microcosms at SONE stations)

STATION	DATE	CO NO	CORE VOL (ML)	CORE H2O HEIGHT (M)	TIME (SUM)	TIME OF SAMPLE HR	MIN	DELTA (min)	DO (MG/	AA VIAL NO.	NH4 (uM-N)	NO3+N (uM-N	DIP (uM-P)	SI(OH)4 (uM-SI)
ST.LEO	17-OCT-84	RE	1795	0.1291	0	15	55	0	7.6	156	7.8	4.18	0.63	28
				0.0000	30	16	25	30	7.5	160	7.7	4.38	0.65	28.5
				0.0000	60	16	55	30	7.3	164	8.5	4.95	0.71	29.7
				0.0000	121	17	56	61	7	168	7.9	5.06	0.7	30.7
				0.0000	155	18	30	34	6.9	172	8.8	5.34	0.68	30.3
				0.0000	185	19	0	30	6.8	176	7.8	5.7	0.74	32
				0.0000	235	19	50	50	6.6					
		WH	2145	0.1543	0	15	55	0	7.5	157	8	4.47	0.65	26.7
				0.0000	30	16	25	30	7.4	161	8.3	4.36	0.74	27.3
				0.0000	60	16	55	30	7.3	165	8.5	4.57	0.68	27.9
				0.0000	121	17	56	61	7.1	169	8.8	4.79	0.73	29.1
				0.0000	155	18	30	34	7	173	8.7	5.08	0.74	28.7
				0.0000	185	19	0	30	6.9	177	8.9	4.97	0.73	29.8
				0.0000	235	19	50	50	6.8					
		BL	1965	0.1414	0	15	55	0	7.8	158	8	4.15	0.64	28.3
				0.0000	30	16	25	30	7.7	162	8.2	4.36	0.73	29.4
				0.0000	60	16	55	30	7.6	166	8.2	4.47	0.71	29.7
				0.0000	121	17	56	61	7.4	170	8.4	4.62	0.79	30.6
				0.0000	155	18	30	34	7.3	174	8.6	4.95	0.75	31.9
				0.0000	185	19	0	30	7.2	178	8.9	4.96	0.81	30.8
				0.0000	235	19	50	50	6.9					
		BLANK1		0.0000	0	15	55	0	8.1	155	8.6	4.08	0.52	26.7
				0.0000	30	16	25	30	8.1	159	7.7	3.99	0.59	26.1
				0.0000	60	16	55	30	8.2	163	7.8	4.07	0.54	26.2
				0.0000	121	17	56	61	8.3	167	7.8	4	0.57	26.1
				0.0000	175	18	50	54	8.2	171	7.8	4.14	0.69	25.6
				0.0000	185	19	0	10	8.2	175	8	4.1	0.53	26

BIOMONITORING PROGRAM: SEDIMENT OXYGEN AND NUTRIENT EXCHANGES(SONE)
SEDFLUX (Nutrient and oxygen concentrations in the sediment microcosms at SONE stations)

STATION	DATE	CO NO	CORE VOL (ML)	CORE H2O HEIGHT (M)	TIME (SUM)	TIME OF SAMPLE HR	MIN	DELTA (min)	DO (MG/	AA VIAL NO.	NH4 (uM-N)	NO3+N (uM-N	DIP (uM-P)	SI(OH)4 (uM-SI)
BU.VISTA	17-OCT-84	RE	1945	0.1399	0	12	8	0	7.6	130	8.7	3.1	1.52	49
				0.0000	50	12	58	50	7.4	134	8.9	3.43	1.55	45.6
				0.0000	106	13	54	56	7.1	140	10.7	3.5	1.58	49.7
				0.0000	146	14	34	40	6.9	144	9.3	3.58	1.51	48.8
				0.0000	176	15	4	30	6.8	148	8.8	3.7	1.61	46.6
				0.0000	207	15	35	31	6.6	152	10.2	3.33	1.91	52.3
		WH	1910	0.1374	0	12	8	0	7.2	131	8.8	3.08	1.58	46.7
				0.0000	50	12	58	50	7	135	8.9	3.33	1.6	48.5
				0.0000	106	13	54	56	6.8	141	8.9	3	1.36	48.9
				0.0000	146	14	34	40	6.6	145	9.2	3.73	1.58	51.7
				0.0000	176	15	4	30	6.5	149	9.3	3.9	1.61	50.3
				0.0000	207	15	35	31	6.5	153	9.5	4.12	1.6	52.5
		BL	1905	0.1371	0	12	8	0	6.9	132	8.8	3.15	1.48	46.5
				0.0000	50	12	58	50	6.6	136	9	3.15	1.5	48.5
				0.0000	106	13	54	56	6.7	142	9.6	3.48	1.6	44
				0.0000	146	14	34	40	6.5	146	10.6	3.47	1.57	47.8
				0.0000	176	15	4	30	6.5	150	10.2	3.66	1.57	48
				0.0000	207	15	35	31	6.4	154	10.1	4.04	1.64	39.1
		BL	940	0.0676	0	12	8	0	7.9	129	9	2.98	1.44	46.9
				0.0000	50	12	58	50	7.9	133	8.4	2.97	1.48	46.3
				0.0000	106	13	54	56	7.9	139	7.9	2.05	1.07	44.4
				0.0000	146	14	34	40	7.9	143	8.7	2.72	1.36	30.3
				0.0000	176	15	4	30	8.0	147	9.4	3.1	1.43	46.2
				0.0000	207	15	35	31	8.0	151	9.6	3.02	1.4	42.8

No. 4-15

BIOMONITORING PROGRAM: SEDIMENT OXYGEN AND NUTRIENT EXCHANGES(SONE)
SEDFLUX (Nutrient and oxygen concentrations in the sediment microcosms at SONE stations)

STATION	DATE	CO NO	CORE VOL (ML)	CORE H2O HEIGHT (M)	TIME (SUM)	TIME OF SAMPLE HR	TIME OF SAMPLE MIN	DELTA (min)	DO (MG/	AA VIAL NO.	NH4 (uM-N)	NO3+N (uM-N	DIP (uM-P)	SI(OH)4 (uM-SI)
HORN.PT	15-OCT-84	RE	2075	0.1493	0	18	20	0						
				0.0000	30	18	50	30	8.7	33	3.3	2.24	0.38	26.8
				0.0000	60	19	20	30	8.5	38	4.8	2.27	0.38	19.6
				0.0000	90	19	50	30	8.4	42	5.8	2.31	0.62	25.2
				0.0000	130	20	30	40	8.2	46	6.1	2.62	0.44	25.7
				0.0000	160	21	0	30	8.0	50	7.9	2.33	0.91	21.7
				0.0000	197	21	37	37	7.9					
				0.0000	250	22	30	53	7.6					
		WH	1950	0.1403	0	18	20	0	8.6	30	3	2.25	0.23	24.2
				0.0000	30	18	50	30	8.4	34	3.9	2.29	0.24	18.2
				0.0000	60	19	20	30	8.3	39	5.4	2.45	0.25	24.2
				0.0000	90	19	50	30	8.1	43	3.5	1.89	0.32	18.6
				0.0000	130	20	30	40	7.9	47	4.4	2.26	0.35	27.3
				0.0000	160	21	0	30	7.7	51	5.3	2.9	0.3	15.6
				0.0000	197	21	37	37	7.6					
				0.0000	250	22	30	53	7.4					
		BL	1850	0.1331	0	18	20	0	8.7	31	2.7	1.7	0.18	24
				0.0000	30	18	50	30	8.5	35	3.3	2.49	0.27	26.1
				0.0000	60	19	20	30	8.3	40	4.3	2.41	0.29	28.2
				0.0000	90	19	50	30	8.3	44	4	2.66	0.35	29.1
				0.0000	130	20	30	40	7.4	48	5.2	2.92	0.43	26
				0.0000	160	21	0	30	7.3	52	10	3.03	0.41	24.7
				0.0000	250	21	57							
				0.0000		22	30	90	7.2					
		BL	940	0.0676	0	18	20	0	9.3	32	1.2	1.75	0.27	24.7
				0.0000	30	18	50	30	9.3	36	1.5	1.42	0.13	24.7
				0.0000	60	19	20	30	9.3	37	1.3	1.79	0.19	20.4
				0.0000	90	19	50	30	9.2	41	1.2	1.46	0.16	22.7
				0.0000	130	20	30	40	9.2	45	1.3	1.89	0.17	18.2
				0.0000	160	21	0	30	9.2	49	1.5	1.4	0.19	24.7
				0.0000	197	21	37	37	9.1					
				0.0000	250	22	30	53	9.1					

BIOMONITORING PROGRAM: SEDIMENT OXYGEN AND NUTRIENT EXCHANGES(SONE)
SEDFLUX (Nutrient and oxygen concentrations in the sediment microcosms at SONE stations)

STATION	DATE	CO NO	CORE VOL (ML)	CORE H2O HEIGHT (M)	TIME (SUM)	TIME OF SAMPLE HR	TIME OF SAMPLE MIN	DELTA (min)	DO (MG/	AA VIAL NO.	NH4 (uM-N)	NO3+N (uM-N	DIP (uM-P)	SI(OH)4 (uM-SI)
WIND.HIL	15-OCT-84	RE	1515	0.1090										
				0.0000	0	14	13	0	7.6	8	7.4	6.07	1.18	40.6
				0.0000	30	14	43	30	7.3	12	9.8	6.07	1.22	39.4
				0.0000	60	15	13	30	7.1	16	10.3	6.05	1.14	44.3
				0.0000	90	15	43	30	6.9	20	11.7	6.03	1.16	43
				0.0000	120	16	13	30	6.7	24	14.2	5.98	1.17	45.3
				0.0000	164	16	57	44	6.4					
				0.0000	192	17	25	28	6.2					
				0.0000	224	17	57	32	6.0					
		WH	1460	0.1050	0	13	43	0	8.1	4	4.1	6.7	1.22	41.4
				0.0000	30	14	13	30	8	9	5.7	6.34	1.3	36.1
				0.0000	60	14	43	30	7.6	13	7.4	6.38	1.34	37.4
				0.0000	90	15	13	30	7.3	17	9.4	6.39	1.39	42.7
				0.0000	120	15	43	30	7.1	21	9.8	6.39	1.39	47.1
				0.0000	150	16	13	30	6.9	25	11.2	5.96	1.36	38.3
				0.0000	194	16	57	44						
				0.0000	222	17	25	28	6.4					
				0.0000	254	17	57	32	6.3					
		BL	1490	0.1072	0	13	43	0	8.1	5	9.2	6.1	1.34	43.9
				0.0000	30	14	13	30	7.7	10	11.6	6.24	1.41	46.9
				0.0000	60	14	43	30	7.4	14	13.7	6.12	1.46	50.3
				0.0000	90	15	13	30	7.1	18	16.7	6.12	1.44	53.1
				0.0000	120	15	43	30	6.9	22	16.8	5.52	1.38	53.9
				0.0000	150	16	13	30	6.6	26	17.9	6.12	1.43	57.8
				0.0000	194	16	57	44	6.4					
				0.0000	222	17	25	28	6.3					
				0.0000	254	17	57	32	5.9					
		BL	940	0.0676	0	13	43	0	8.8	6	1.6	6.09	1.02	37.6
				0.0000	30	14	13	30	8.6	7	1.1	6.07	1.07	38.9
				0.0000	60	14	43	30	8.6	11	1.3	5.93	1.05	41.2
				0.0000	90	15	13	30	8.5	15	1.2	5.94	1.09	40.9
				0.0000	120	15	43	30	8.4	19	1.3	6.02	1.09	41.3
				0.0000	150	16	13	30	8.6	23	0.9	6.03	1.01	39.5
				0.0000	194	16	57	44	8.6					
				0.0000	222	17	25	28	8.6					
				0.0000	254	17	57	32	8.7					

No. 4-17

BIOMONITORING PROGRAM: SEDIMENT OXYGEN AND NUTRIENT EXCHANGES(SONE)
SEDFLUX (Nutrient and oxygen concentrations in the sediment microcosms at SONE stations)

STATION	DATE	CO NO	CORE VOL (ML)	CORE H20 HEIGHT (M)	TIME (SUM)	TIME OF SAMPLE HR	MIN	DELTA (min)	DO (MG/	AA VIAL NO.	NH4 (uM-N)	NO3+N (uM-N	DIP (uM-P)	SI(OH)4 (uM-SI)
RAG.PT	18-OCT-84	RE	2100	0.1511	0	10	48	0	6.6	208	10.3	2.3	0.27	16
				0.0000	30	11	18	30	6.5	212	11.4	2.34	0.32	16.3
				0.0000	60	11	48	30	6.4	216	12.6	2.54	0.96	16.7
				0.0000	94	12	22	34	6.3	220	13	2.56	0.34	17
				0.0000	189	13	57	95	5.9	224	15.2	2.78	0.28	20.5
				0.0000	222	14	30	33	5.8	228	16	2.83	0.26	20.9
		WH	2280	0.1640	0	10	48	0	6.8	209	10.1	2.19	0.3	14.5
				0.0000	30	11	18	30	6.6	213	10.9	2.39	0.35	15.7
				0.0000	60	11	48	30	6.5	217	11.5	2.49	0.51	13.6
				0.0000	94	12	22	34	6.4	221	13.1	2.4	0.49	16.8
				0.0000	189	13	57	95	6.1	225	14.2	2.47	0.26	18.9
				0.0000	222	14	30	33	6	229	14.4	2.97	0.46	20.4
		BL	2300	0.1655	0	10	48	0	6.9	210	10.5	2.3	0.27	15.7
				0.0000	30	11	18	30	6.8	214	11.2	2.33	0.34	16.4
				0.0000	60	11	48	30	6.7	218	11.9	2.39	0.27	16.8
				0.0000	94	12	22	34	6.6	222	12.2	2.47	0.33	17.5
				0.0000	189	13	57	95	6.2	226	13.9	2.69	0.23	19.5
				0.0000	222	14	30	33	6.1	230	14.8	3.22	0.36	20.7
		BLANK1		0.0000	0	10	48	0	6.9	207	8.8	2.31	0.26	13
				0.0000	30	11	18	30	7.0	211	9.2	2.43	0.32	12.5
				0.0000	60	11	48	30	7.0	215	8.9	2.35	0.82	12.8
				0.0000	94	12	22	34	7.1	219	9.8	2.3	0.32	14.3
				0.0000	189	13	57	95	7.1	223	9.5	2.3	0.24	13
				0.0000	222	14	30	33	7.1	227	8.6	2.33	0.25	12.9

No. 4-18

BIOMONITORING PROGRAM: SEDIMENT OXYGEN AND NUTRIENT EXCHANGES(SONE)
SEDFLUX (Nutrient and oxygen concentrations in the sediment microcosms at SONE stations)

STATION	DATE	CO NO	CORE VOL (ML)	CORE H20 HEIGHT (M)	TIME (SUM)	TIME OF SAMPLE HR	MIN	DELTA (min)	DO (MG/	AA VIAL NO.	NH4 (uM-N)	NO3+N (uM-N	DIP (uM-P)	SI(OH)4 (uM-SI)
MD.PT	18-OCT-84	RE	2550	0.1835	0	15	42	0	7.2	234	8	31.4	1.52	34.8
				0.0000	30	16	12	30	7.5	238	8.9	31.1	1.58	31.3
				0.0000	60	16	42	30	7.4	242	8.2	31.5	1.51	31.8
				0.0000	90	17	12	30	7.3	246	8.2	31.6	1.52	31
				0.0000	120	17	42	30	7.1	250	8.5	31.4	1.55	31.2
				0.0000	150	18	12	30	7.1	254	7.9	31.6	1.55	28.3
		WH	2485	0.1788	0	15	42	0	7.3	235	7.9	30.7	1.49	30.9
				0.0000	30	16	12	30	7.2	239	8.3	31	1.54	33
				0.0000	60	16	42	30	7.2	243	8	31	1.5	33
				0.0000	90	17	12	30	7.1	247	8.3	31.3	1.66	33.4
				0.0000	120	17	42	30	6.9	251	8.6	31.2	1.58	33.7
				0.0000	150	18	12	30	6.9	255	7.7	31.2	1.52	34
		BL	2525	0.1817	0	15	42	0	7.2	236	7.7	30.7	1.47	33.8
				0.0000	30	16	12	30	7.3	240	8.1	31	1.43	35
				0.0000	60	16	42	30	7.2	244	7.9	30.9	2.09	34.2
				0.0000	90	17	12	30	7.2	248	7.4	31	1.48	34.3
				0.0000	120	17	42	30	7.1	252	7.5	30.9	1.45	35.2
				0.0000	150	18	12	30	7.0	256	8.2	31.1	1.51	30.9
		BLANK		0.0000	0	15	42	0	7.5	233	8.6	29.6	1.42	35.3
				0.0000	30	16	12	30	7.6	237	8.3	29.6	1.5	34.2
				0.0000	60	16	42	30	7.5	241	8.3	29.7	1.67	34.6
				0.0000	90	17	12	30	7.5	245	8.3	29.8	1.4	34.1
				0.0000	120	17	42	30	7.6	249	7.5	29.6	1.34	35.2
				0.0000	150	18	12	30	7.5	253	8	29.7	1.26	36.4

BIOMONITORING PROGRAM: SEDIMENT OXYGEN AND NUTRIENT EXCHANGES(SONE)
SEDFLUX (Nutrient and oxygen concentrations in the sediment microcosms at SONE stations)

STATION	DATE	CO NO	CORE VOL (ML)	CORE H20 HEIGHT (M)	TIME (SUM)	TIME OF SAMPLE HR	MIN	DELTA (min)	DO (MG/	AA VIAL NO.	NH4 (uM-N)	NO3+N (uM-N	DIP (uM-P)	SI(OH)4 (uM-SI)
PT.NO.PT	17-OCT-84	RE	2400	0.1727	0	19	15	0	8	180	8.5	1.84	0.25	13.7
				0.0000	35	19	50	35	7.8	186	9.1	1.78	0.22	14.8
				0.0000	95	20	50	60	7.6	190	9.3	1.92	0.23	16.2
				0.0000	133	21	28	38	7.5	194	9.8	2.01	0.22	17.1
				0.0000	165	22	0	32	7.4	198	9.6	2.45	0.27	17.6
				0.0000	195	22	30	30	7.2	202	9.9	2.19	0.21	18.2
		WH	1900	0.1367	0	19	15	0	7.7	181	9.4	1.49	0.26	15.2
				0.0000	35	19	50	35	7.5	187	9.9	1.58	0.27	16.3
				0.0000	95	20	50	60	7.3	191	10.7	1.72	0.24	18.1
				0.0000	133	21	28	38	7.2	195	11.3	2.04	0.26	18.9
				0.0000	165	22	0	32	7.0	199	11.6	1.96	0.25	19.8
				0.0000	195	22	30	30	6.9	203	12.5	2.34	0.27	20.6
		BL	2210	0.1590	0	19	15	0	7.5	182	9.6	1.66	0.24	15.5
				0.0000	35	19	50	35	7.4	188	10.2	1.8	0.25	17
				0.0000	95	20	50	60	7.1	192	10.8	2.07	0.23	18.6
				0.0000	133	21	28	38	7	196	11.2	2.26	0.24	19.6
				0.0000	165	22	0	32	6.8	200	11.6	2.13	0.22	20.6
				0.0000	195	22	30	30	6.7	204	12.2	2.25	0.21	21.5
		BLANK2		0.0000	0	19	15	0	8.2	179	8.4	1.25	0.27	13.2
				0.0000	35	19	50	35	8.1	185	8.2	1.34	0.26	13.2
				0.0000	95	20	50	60	8.1	189	8.3	1.52	0.28	13.6
				0.0000	133	21	28	38	8.2	193	8.6	1.27	0.26	13.3
				0.0000	165	22	0	32	8.1	197	8.2	1.28	0.26	13.4
				0.0000	195	22	30	30	8.1	201	8.1	1.36	0.28	13.4

BIOMONITORING PROGRAM: SEDIMENT OXYGEN AND NUTRIENT EXCHANGES(SONE)
SEDFLUX (Nutrient and oxygen concentrations in the sediment microcosms at SONE stations)

STATION	DATE	CO NO	CORE VOL (ML)	CORE H2O HEIGHT (M)	TIME (SUM)	TIME OF SAMPLE HR	MIN	DELTA (min)	DO (MG/	AA VIAL NO.	NH4 (uM-N)	NO3+N (uM-N	DIP (uM-P)	SI(OH)4 (uM-SI)
R-64	16-OCT-84	RE	1845	0.1327	0	18	27	0	7.1	102	13.8	3.13	0.54	22.1
				0.0000	31	18	58	31	6.8	106	14.4	3	0.48	24.1
				0.0000	68	19	35	37	6.6	112	15.2	2.95	0.45	26.7
				0.0000	106	20	13	38	6.4	116	17.9	3.07	0.55	27.5
				0.0000	148	20	55	42	6.2	120	16.6	2.96	0.46	29.9
				0.0000	208	21	55	60	5.9	124	17.6	2.9	0.45	31.6
		WH	1800	0.1295	0	18	27	0	7.0	103	13.9	2.46	0.66	22.8
				0.0000	31	18	58	31	6.8	107	16.4	2.45	0.6	24.2
				0.0000	68	19	35	37	6.6	113	15.5	2.68	0.54	27.1
				0.0000	106	20	13	38	6.5	117	16.3	2.45	0.52	27.8
				0.0000	148	20	55	42	6.3	121	16.6	2.57	0.51	28.2
				0.0000	208	21	55	60	6.0	125	18.5	2.53	0.59	34.3
		BL	1670	0.1201	0	18	27	0	7.1	104	13.6	2.9	0.4	21.3
				0.0000	31	18	58	31		108	13.7	2.83	0.42	22.2
				0.0000	68	19	35	37	6.8	114	14.1	3.07	0.45	25.3
				0.0000	106	20	13	38	6.6	118	15.3	3.03	0.44	27.2
				0.0000	148	20	55	42	6.5	122	15.1	2.99	0.4	29.2
				0.0000	208	21	55	60	6.3	126	16.9	3.12	0.45	32.9
		BLANK2		0.0000	0	18	27	0	7.4	101	12.2	2	0.51	18.6
				0.0000	31	18	58	31	7.8	105	14.2	2.21	0.45	18.6
				0.0000	68	19	35	37	7.6	111	12.2	2.44	0.49	19.2
				0.0000	106	20	13	38	7.6	115	12.9	2.14	0.46	18.1
				0.0000	148	20	55	42	7.8	119	12.4	2.2	0.43	19.1
				0.0000	208	21	55	60	7.9	123	12.1	2.27	0.41	18.7

At time of scanning 1/16/2007, no page was found for No. 4-21

BIOMONITORING PROGRAM: SEDIMENT OXYGEN AND NUTRIENT EXCHANGES(SONE)
SEDFLUX (Nutrient and oxygen concentrations in the sediment microcosms at SONE stations)

STATION	DATE	CO NO	CORE VOL (ML)	CORE H2O HEIGHT (M)	TIME (SUM)	TIME OF SAMPLE HR	TIME OF SAMPLE MIN	DELTA (min)	DO (MG/	AA VIAL NO.	NH4 (uM-N)	NO3+N (uM-N	DIP (uM-P)	SI(OH)4 (uM-SI)
STIL.PD	16-OCT-84	RE	2025	0.1457	0	10	5	0	8.4	56	6.9	29.4	0.31	25.7
				0.0000	40	10	45	40	8.4	60	7.3	29.4	0.35	25.6
				0.0000	70	11	15	30	8.2	64	7.6	29.5	0.38	25.6
				0.0000	143	12	28	73	7.9	69	8.8	29.5	0.47	27.7
				0.0000	183	13	8	40	7.8	74	9.2	29.4	0.35	27.6
				0.0000	213	13	38	30	7.7	78	9.5	28.9	0.37	23.1
		WH	2050	0.1475	0	10	5	0	8	57	7.7	29.8	0.32	26.2
				0.0000	40	10	45	40	7.9	61	7.3	30.2	0.35	23.6
				0.0000	70	11	15	30	7.8	65	7.5	29.5	0.36	22.5
				0.0000	143	12	28	73	7.5	70	8.5	29.6	0.33	21.9
				0.0000	183	13	8	40	7.4	75	8.9	29.7	0.4	23
				0.0000	213	13	38	30	7.4	79	9.4	24.6	0.36	12.5
		BL	2090	0.1504	0	10	5	0	8	58	7	29.8	0.32	26.6
				0.0000	40	10	45	40	7.9	62	8.1	29.8	0.32	26.1
				0.0000	70	11	15	30	7.8	66	9.1	29.4	0.32	27.2
				0.0000	143	12	28	73	7.7	71	8.3	29.7	0.3	25.9
				0.0000	183	13	8	40						
				0.0000	213	13	38	30	7.4	80	9.3	17.2	0.3	27.2
		BL	940	0.0676	0	10	5	0	8.8	55	5.3	29.2	0.42	24.7
				0.0000	40	10	45	40	8.8	59	5.2	28.5	0.25	25.4
				0.0000	70	11	15	30	8.8	63	5.1	29.7	0.37	17.2
				0.0000	143	12	28	73	8.7	68	4.8	29	0.3	16.7
				0.0000	183	13	8	40	8.8	73	5.2	18	0.21	23.9
				0.0000	213	13	38	30	7.9	77	5.3	28.5	0.3	23.6

BIOMONITORING PROGRAM: SEDIMENT OXYGEN AND NUTRIENT EXCHANGES(SONE)
SEDFLUX (Nutrient and oxygen concentrations in the sediment microcosms at SONE stations)

STATION	DATE	CO NO	CORE VOL (ML)	CORE H2O HEIGHT (M)	TIME (SUM)	TIME OF SAMPLE HR	MIN	DELTA (min)	DO (MG/	AA VIAL NO.	NH4 (uM-N)	NO3+N (uM-N	DIP (uM-P)	SI(OH)4 (uM-SI)
ST.LEO	6-MAY-85	BL	A1	0.0000	0	10	40	0	7.3					
				0.0000	15	10	55	15		2	5.1	6.6	0.37	8.5
				0.0000	50	11	30	35	6.6	6	5.6	6.6	0.27	7.4
				0.0000	121	12	41	71	6.7	12	5.1	6.6	0.22	7.4
				0.0000	170	13	30	49	6.6	17	5.1	6.5	0.23	7.8
				0.0000	200	14	0	30	6.7	21	5.5	6.7	0.61	7.9
				0.0000	245	14	45	45	6.9	29	5.4	6.6	0.26	8.3
		GR	2750	0.1978	0	10	40	0	6.4					
				0.0000	22	11	2	22		3	5.8	6.1	0.19	12.2
				0.0000	50	11	30	28	6.0	8	6.4	6.2	0.21	15.8
				0.0000	121	12	41	71	5.3	13	6.8	6.2	0.23	19.3
				0.0000	170	13	30	49	4.9	18	7.3	6.3	0.25	22
				0.0000	200	14	0	30	4.8	22	7.9	6.4	0.38	24.3
				0.0000	245	14	45	45	4.3	30	8.6	6.2	0.28	26.9
		RE	2650	0.1906	0	10	40	0	6.3					
				0.0000	25	11	5	25		4	5.5	6.4	0.2	13.2
				0.0000	50	11	30	25	6.2	9	7	6.3	0.24	19.8
				0.0000	121	12	41	71	5.6	14	6.4	6.3	0.24	19.6
				0.0000	170	13	30	49	5.2	19	7.5	6.3	0.27	22.4
				0.0000	200	14	0	30	4.9	23	8.3	6.4	0.27	23.9
				0.0000	245	14	45	45	4.6	31	8.3	6.3	0.31	26.5
		BL	2590	0.1863	0	10	40	0	6.4					
				0.0000	29	11	9	29		5	5.9	6.2	0.24	14.1
				0.0000	50	11	30	21	5.9	10	5.9	6.2	0.27	15.9
				0.0000	121	12	41	71	5.2	15	6.6	6.1	0.25	20.8
				0.0000	170	13	30	49	4.7	20	7	6.1	0.25	23.9
				0.0000	200	14	0	30	4.5	24	7.5	6.2	0.29	25.6
				0.0000	245	14	45	45	2.7	32	7.8	6.1	0.27	27.9

No. 4-24

BIOMONITORING PROGRAM: SEDIMENT OXYGEN AND NUTRIENT EXCHANGES(SONE)
SEDFLUX (Nutrient and oxygen concentrations in the sediment microcosms at SONE stations)

STATION	DATE	CO CORE NO VOL (ML)	CORE H2O HEIGHT (M)	TIME (SUM)	TIME OF SAMPLE HR	MIN	DELTA (min)	DO (MG/	AA VIAL NO.	NH4 (uM-N)	NO3+N (uM-N	DIP (uM-P)	SI(OH)4 (uM-SI)
BU.VISTA	6-MAY-85	BLANK	0.0000	0	14	25	0	8.3	25	0.5	1.6	0.89	27.2
			0.0000	45	15	10	45	8.4	33	0.7	1.5	1.15	26.5
			0.0000	75	15	40	30	8.4	37	0.9	1.4	0.94	24.7
			0.0000	105	16	10	30	8.3	41	1.3	1.4	1.03	25.8
			0.0000	135	16	40	30	8.2	45	0.6	1.5	1.05	22.5
			0.0000	205	17	50	70	8.1	50	0.6	1.5	0.83	24.8
		GR 3022	0.2174	0	14	25	0		26	1.9	1.7	1.95	30
			0.0000	45	15	10	45	7.6	34	1.1	1.8	1.02	29
			0.0000	75	15	40	30	7.4	38	1.3	2.1	1.17	33.9
			0.0000	105	16	10	30	7.2	42	2.3	1.9	2.37	30.4
			0.0000	135	16	40	30	7.1	46	1.8	2.1	1.15	30.7
			0.0000	205	17	50	70	6.7	51	2.4	2.1	1.32	31.2
		RE 2510	0.1806	0	14	25	0		27	0.9	1.5	0.92	28.4
			0.0000	45	15	10	45	7.1	35	1.3	1.7	1.26	30.4
			0.0000	75	15	40	30	6.8	39	2.4	2.1	1.06	30.3
			0.0000	105	16	10	30	6.7	43	2	2	1.02	31.2
			0.0000	135	16	40	30	6.5	47	2.5	1.8	1.27	31.6
			0.0000	205	17	50	70	6.2	52	2.7	2.2	1.21	33.2
		BL 2422	0.1742	0	14	25	0		28	1.7	2.4	1.38	31.7
			0.0000	45	15	10	45	7.6	36	3.2	2.3	2.33	34.1
			0.0000	75	15	40	30	7.3	40	6.6	2.5	2.75	36.5
			0.0000	105	16	10	30	6.7	44	3	2.4	1.46	34.4
			0.0000	135	16	40	30	6.8	48	3.9	2.3	1.46	35.1
			0.0000	205	17	50	70	6.2	53	4.7	3	1.48	43.2

BIOMONITORING PROGRAM: SEDIMENT OXYGEN AND NUTRIENT EXCHANGES(SONE)
SEDFLUX (Nutrient and oxygen concentrations in the sediment microcosms at SONE stations)

STATION	DATE	CO CORE NO	CORE VOL (ML)	H2O HEIGHT (M)	TIME (SUM)	TIME OF SAMPLE HR	MIN	DELTA (min)	DO (MG/	AA VIAL NO.	NH4 (uM-N)	NO3+N (uM-N	DIP (uM-P)	SI(OH)4 (uM-SI)
HORN PT.	7-MAY-85	BLANK		0.0000	0	12	16	0	7.2	107	2.9	6.1	0.34	2.7
				0.0000	28	12	44	28	7.5	111	2.5	6.4	0.37	2.7
				0.0000	59	13	15	31	7.3	115	2.5	6.1	0.14	2.7
				0.0000	89	13	45	30	7.4	119	2.7	6.3	0.28	5.7
				0.0000	124	14	20	35	7.5	123	2.7	6.2	0.28	2.6
				0.0000	174	15	10	50	7.5	127	2.9	6.4	0.34	4.7
		GR	2350	0.1691	0	12	16	0	7.5	108	3.4	5.9	0.41	6.9
				0.0000	28	12	44	28	7.4	112	3.9	5.8	0.34	9.4
				0.0000	59	13	15	31	7.1	116	4.4	5.7	0.33	10.8
				0.0000	89	13	45	30	6.7	120	5.1	5.7	0.22	12.6
				0.0000	124	14	20	35	6.4	124	6	5.7	0.65	18.2
				0.0000	174	15	10	50	6.0	128	6.7	5.5	0.32	19.3
		RE	2150	0.1547	0	12	16	0	7.1	109	3.5	5.9	0.31	9.7
				0.0000	28	12	44	28	6.9	113	4	5.9	0.38	10.8
				0.0000	59	13	15	31	6.5	117	4.7	5.7	0.36	12.9
				0.0000	89	13	45	30	6.3	121	5.1	5.7	0.41	15.6
				0.0000	124	14	20	35	5.9	125	5.5	6	0.41	17
				0.0000	174	15	10	50	5.5	129	6.7	5.6	0.58	21
		BL	2352	0.1692	0	12	16	0	7.8	110	3.5	6.1	0.48	8.5
				0.0000	28	12	44	28	7.7	114	4.2	6.2	0.49	9.8
				0.0000	59	13	15	31	7.5	118	4.9	5.8	0.53	14.1
				0.0000	89	13	45	30	7.2	122	5.1	5.8	0.5	15.5
				0.0000	124	14	20	35	6.9	126	5.9	5.7	0.58	17.7
				0.0000	174	15	10	50	6.5	130	7	5.6	0.55	21.1

No. 4-26

BIOMONITORING PROGRAM: SEDIMENT OXYGEN AND NUTRIENT EXCHANGES(SONE)
SEDFLUX (Nutrient and oxygen concentrations in the sediment microcosms at SONE stations)

STATION	DATE	CO NO	CORE VOL (ML)	CORE H2O HEIGHT (M)	TIME (SUM)	TIME OF SAMPLE HR	MIN	DELTA (min)	DO (MG/	AA VIAL NO.	NH4 (uM-N)	NO3+N (uM-N	DIP (uM-P)	SI(OH)4 (uM-SI)
WIND.HIL	7-MAY-85	BLANK		0.0000	0	8	40	0	6.8	81	1.7	24.9	0.68	8.1
				0.0000	30	9	10	30	6.9	85	1.4	24.8	0.7	8.3
				0.0000	70	9	50	40	7.0	90	1.8	24.6	0.72	12.2
				0.0000	100	10	20	30	6.9	94	1.3	24.6	0.65	14.1
				0.0000	130	10	50	30	7.0	98	1.4	24.6	0.68	8.4
				0.0000	185	11	45	55	5.1	103	2.2	24.9	0.68	8
		GE	2884	0.2075	0	8	40	0	7.1	82	1.2	24	0.7	9.5
				0.0000	30	9	10	30	6.6	86	2.5	23.8	0.64	11.3
				0.0000	70	9	50	40	6.1	91	1.6	24.6	0.66	12.1
				0.0000	100	10	20	30	5.7	95	1.7	24.2	0.82	13
				0.0000	130	10	50	30	5.4	99	1.8	24	0.79	14.6
				0.0000	185	11	45	55	4.9	104	2.1	24.2	0.86	17.7
		RE	2542	0.1829	0	8	40	0	7.0	83	1.7	24	1.29	10.6
				0.0000	30	9	10	30	6.5	87	5.2	23.6	0.73	11.9
				0.0000	70	9	50	40	5.8	92	1.5	23.8	0.79	20.4
				0.0000	100	10	20	30	5.4	96	1.8	23.7	0.81	16.8
				0.0000	130	10	50	30	5.1	100	1.9	23.7	0.83	15.4
				0.0000	185	11	45	55	4.3	105	2.1	24	0.86	21.9
		BL	2800	0.2014	0	8	40	0	7.1	84	1.4	26.3	0.77	8.7
				0.0000	30	9	10	30	6.5	88	1.6	24.2	0.67	11.6
				0.0000	70	9	50	40	5.9	93	3.2	24.7	0.8	14.1
				0.0000	100	10	20	30	5.4	97	2.2	24.7	0.76	15.7
				0.0000	130	10	50	30	5.2	101	2.5	25.1	0.87	16.2
				0.0000	185	11	45	55	4.4	106	3	25.4	0.89	18.4

BIOMONITORING PROGRAM: SEDIMENT OXYGEN AND NUTRIENT EXCHANGES(SONE)
SEDFLUX (Nutrient and oxygen concentrations in the sediment microcosms at SONE stations)

STATION	DATE	CO NO	CORE VOL (ML)	CORE H2O HEIGHT (M)	TIME (SUM)	TIME OF SAMPLE HR	TIME OF SAMPLE MIN	DELTA (min)	DO (MG/	AA VIAL NO.	NH4 (uM-N)	NO3+N (uM-N	DIP (uM-P)	SI(OH)4 (uM-SI)
RAG.PT	9-MAY-85	BLANK		0.0000	0	9	0	0	4.2	211	8	5.6	0.19	10.2
				0.0000	50	9	50	50	4.4	215	8.1	6.7	0.21	10.2
				0.0000	100	10	40	50	4.4	219	7.8	5.5	0.2	12.1
				0.0000	160	11	40	60	4.6	223	8.2	5.7	0.27	10.7
				0.0000	227	12	47	67	4.4	237	7.5	6.1	0.18	10.9
				0.0000	280	13	40	53	3.8	245	8	5.8	0.2	14.4
		BR	2650	0.1906	0	9	0	0	4.6	212	10	5.3	0.43	13.1
				0.0000	50	9	50	50	4.3	216	12.4	5.4	0.59	21.9
				0.0000	100	10	40	50	3.8	220	15.2	4.7	0.6	20
				0.0000	160	11	40	60	3.3	225	17.3	4.7	0.96	21.1
				0.0000	227	12	47	67	2.8	238	19.9	4	0.8	23.8
				0.0000	280	13	40	53	2.4	246	21.7	3.6	1.07	26
		RE	2700	0.1942	0	9	0	0	3.8	213	9	5.6	0.29	11.9
				0.0000	50	9	50	50	3.6	217	9.9	5.6	0.22	15.8
				0.0000	100	10	40	50	3.3	221	11.2	5.1	0.27	14.9
				0.0000	160	11	40	60	3.0	226	12.4	4.9	0.24	16
				0.0000	227	12	47	67	2.7	239	14.7	4.5	0.54	18.2
				0.0000	280	13	40	53	2.5	247	15.5	4.3	0.41	20.8
		BL	2920	0.2101	0	9	0	0	3.6	214	10.1	5.3	0.33	12.7
				0.0000	50	9	50	50	3.3	218	11.4	5.1	0.48	19
				0.0000	100	10	40	50	3.0	222	13.4	4.8	0.55	18.2
				0.0000	160	11	40	60	2.7	228	14.8	4.6	0.51	21.5
				0.0000	227	12	47	67	2.3	240	16.4	4.2	0.77	22.8
				0.0000	280	13	40	53	2.0	248	17.7	4	0.75	25.2

BIOMONITORING PROGRAM: SEDIMENT OXYGEN AND NUTRIENT EXCHANGES(SONE)
SEDFLUX (Nutrient and oxygen concentrations in the sediment microcosms at SONE stations)

STATION	DATE	CO CORE NO	CORE VOL (ML)	H2O HEIGHT (M)	TIME (SUM)	TIME OF SAMPLE HR	MIN	DELTA (min)	DO (MG/	AA VIAL NO.	NH4 (uM-N)	NO3+N (uM-N	DIP (uM-P)	SI(OH)4 (uM-SI)
MD.PT	9-MAY-85	BLANK		0.0000	0	12	5	0	6.9	229	5.3	42.9	0.85	28.4
				0.0000	30	12	35	30	7.0	233	5.1	42.8	0.77	29.1
				0.0000	65	13	10	35	6.4	241	5	42.7	0.75	29.9
				0.0000	115	14	0	50	6.1	249	5.4	43.3	0.86	28.8
				0.0000	145	14	30	30	6.3	253	5.7	42.9	2.03	35.5
				0.0000	205	15	30	60	6.2	257	6.2	42.5	0.8	30.3
		BR	2075	0.1493	0	12	5	0	6.9	230	5.3	42.6	0.85	31.3
				0.0000	30	12	35	30	6.7	234	5.5	42.7	0.82	29.8
				0.0000	65	13	10	35	6.5	242	7	42.4	1.14	33.7
				0.0000	115	14	0	50	6.3	250	6.4	42.6	0.95	32.5
				0.0000	145	14	30	30	6.1	254	7	42.5	0.94	40.2
				0.0000	205	15	30	60	5.9	258	7.9	41.9	1.57	42.3
		RE	2750	0.1978	0	12	5	0	6.4	231	5.4	42.4	0.87	31.1
				0.0000	30	12	35	30	6.3	235	6.9	42.3	0.82	31.6
				0.0000	65	13	10	35	5.9	243	6.5	42	0.92	30.3
				0.0000	115	14	0	50	5.7	251	7	42	0.89	34.7
				0.0000	145	14	30	30	5.6	255	10.4	41.9	2.75	42.1
				0.0000	205	15	30	60	5.3	259	7.4	41.8	0.89	35.2
		BL	2640	0.1899	0	12	5	0	6.4	232	6.3	42.7	0.82	32.6
				0.0000	30	12	35	30	6.2	236	7	42.4	1.57	34.1
				0.0000	65	13	10	35	6.1	244	6.9	42.7	0.93	31.4
				0.0000	115	14	0	50	5.8	252	7.9	42.6	0.9	33.2
				0.0000	145	14	30	30	5.6	256	8.6	42.2	2.13	39.1
				0.0000	205	15	30	60	5.4	260	8.7	42.1	0.88	34.8

No. 4-29

BIOMONITORING PROGRAM: SEDIMENT OXYGEN AND NUTRIENT EXCHANGES(SONE)
SEDFLUX (Nutrient and oxygen concentrations in the sediment microcosms at SONE stations)

STATION	DATE	CO NO	CORE VOL (ML)	CORE H2O HEIGHT (M)	TIME (SUM)	TIME OF SAMPLE HR	MIN	DELTA (min)	DO (MG/	AA VIAL NO.	NH4 (uM-N)	NO3+N (uM-N	DIP (uM-P)	SI(OH)4 (uM-SI)
PT.NO.PT	8-MAY-85	BLANK		0.0000	0	18	10	0	6.2	185	6.7	8.5	0.19	8
				0.0000	30	18	40	30	6.2	189	6.6	8.2	0.17	8.3
				0.0000	80	19	30	50	6.2	193	6.2	8.7	0.32	7.9
				0.0000	130	20	20	50	6.3	197	7	8.3	0.16	7.8
				0.0000	180	21	10	50	6.4	201	6.6	8.2	0.17	8.2
				0.0000	230	22	0	50	6.4	205	6.1	8.4	0.28	8
		GR	2850	0.2050	0	18	10	0	5.8	186	6.9	7.8	0.18	9.1
				0.0000	30	18	40	30	5.8	190	7.7	7.5	0.19	10.7
				0.0000	80	19	30	50	5.7	194	8.6	7.5	0.24	12.2
				0.0000	130	20	20	50	5.5	198	9.8	7.3	0.51	16.2
				0.0000	180	21	10	50	5.3	202	9.9	7.1	0.2	16.2
				0.0000	230	22	0	50	5.2	206	10.6	7.1	0.56	18
		RE	2830	0.2036	0	18	10	0	5.8	187	7.8	8	0.14	12.5
				0.0000	30	18	40	30	5.7	191	7.5	8.2	0.14	10.1
				0.0000	80	19	30	50	5.5	195	8.7	7.8	0.18	13.5
				0.0000	130	20	20	50	5.4	199	9.1	7.5	0.2	14.3
				0.0000	180	21	10	50	5.2	203	9.9	7.5	0.2	16.4
				0.0000	230	22	0	50	5	207	11.4	7.4	0.2	17.6
		BL	2903	0.2088	0	18	10	0	6.4	188	7	8.4	0.13	9.5
				0.0000	30	18	40	30	6.3	192	7.5	7.9	0.15	9.9
				0.0000	80	19	30	50	6.2	196	7.6	8	0.17	11.7
				0.0000	130	20	20	50	6.0	200	7.9	7.8	0.19	15.3
				0.0000	180	21	10	50	5.9	204	8	7.6	0.16	14
				0.0000	230	22	0	50	5.8	208	8.5	7.5	0.2	14.8

BIOMONITORING PROGRAM: SEDIMENT OXYGEN AND NUTRIENT EXCHANGES(SONE)
SEDFLUX (Nutrient and oxygen concentrations in the sediment microcosms at SONE stations)

STATION	DATE	CO CORE NO VOL (ML)	CORE H2O HEIGHT (M)	TIME (SUM)	TIME OF SAMPLE HR	MIN	DELTA (min)	DO (MG/	AA VIAL NO.	NH4 (uM-N)	NO3+N (uM-N	DIP (uM-P)	SI(OH)4 (uM-SI)
R-64	6-MAY-85	BLANK	0.0000	0	19	10	0	5.5	55	5.4	9.5	0.14	5.4
			0.0000	30	19	40	30	5.5	59	5.9	8.4	0.1	4.8
			0.0000	60	20	10	30	5.6	63	6	9.2	0.1	5.5
			0.0000	90	20	40	30	5.6	67	5.6	9	0.16	4.1
			0.0000	120	21	10	30	4.4	71	5.9	9.4	0.16	4.8
			0.0000	130	21	20	10	5.6					
			0.0000	180	22	10	50	5.7	75	6	9.3	0.12	4.7
		GR 2842	0.2045	0	19	10	0	5.6	56	6.2	9.1	0.1	7.5
			0.0000	30	19	40	30	5.5	60	6.4	9.1	0.12	6.6
			0.0000	60	20	10	30	5.5	64	6.9	9.3	0.21	8.6
			0.0000	90	20	40	30	5.3	68	6.7	9.3	0.2	8.3
			0.0000	120	21	10	30	5.2	72	7.6	8.8	0.1	8.4
			0.0000	180	22	10	60	5.0	76	8.3	8.6	0.1	10.3
		RE 2701	0.1943	0	19	10	0	7.1	57	8.2	9.6	0.18	9.2
			0.0000	30	19	40	30	6.5	61	8.3	9.2	0.17	10.2
			0.0000	60	20	10	30	6.5	65	8.2	9	0.17	10.3
			0.0000	90	20	40	30	6.5	69	9.8	8.8	0.19	24.3
			0.0000	120	21	10	30	6.5	73	9.9	9	0.25	14.4
			0.0000	180	22	10	60	6.4	77	11.1	8.3	0.16	16.9
		BL 2134	0.1535	0	19	10	0	6.2	58	6.8	9.1	0.11	7.7
			0.0000	30	19	40	30	6.1	62	7.8	9.1	0.13	8.9
			0.0000	60	20	10	30	5.8	66	8.1	9.1	0.14	13
			0.0000	90	20	40	30	5.8	70	9	8.8	0.16	10.7
			0.0000	120	21	10	30	5.8	74	9.5	8.7	0.13	13
			0.0000	180	22	10	60	5.6	78	11.4	8.7	0.17	15.3

BIOMONITORING PROGRAM: SEDIMENT OXYGEN AND NUTRIENT EXCHANGES(SONE)
SEDFLUX (Nutrient and oxygen concentrations in the sediment microcosms at SONE stations)

STATION	DATE	CO CORE NO VOL (ML)	CORE H2O HEIGHT (M)	TIME (SUM)	TIME OF SAMPLE HR	MIN	DELTA (min)	DO (MG/	AA VIAL NO.	NH4 (uM-N)	NO3+N (uM-N	DIP (uM-P)	SI(OH)4 (uM-SI)
R-78	7-MAY-85	BLANK	0.0000	0	18	55	0	5.5	133	4.9	13.6	0.19	6.7
			0.0000	30	19	25	30	5.5	137	4.8	13.4	0.16	2.6
			0.0000	65	20	0	35	5.4	141	5.9	14.1	0.72	3.5
			0.0000	100	20	35	35	5.5	145	5.1	13.6	0.21	2.6
			0.0000	130	21	5	30		150	4.8	13.8	0.19	2.9
			0.0000	190	22	5	60		153	4.7	13.7	0.17	3.1
		GR 2177	0.1566	0	18	55	0	6.3	134	6	13.2	0.27	4.9
			0.0000	30	19	25	30	6.1	138	6.4	13.4	0.24	5.9
			0.0000	65	20	0	35	5.5	142	6.9	13.5	0.27	5.7
			0.0000	100	20	35	35	5.5	146	7.6	13.1	0.24	5.1
			0.0000	130	21	5	30	5.7	149	9.5	13	0.27	7
			0.0000	190	22	5	60	5.3	154	9.3	12.2	0.19	7.7
		RE 2288	0.1646	0	18	55	0	6.3	135	5.3	13.5	0.21	8.7
			0.0000	30	19	25	30	6.2	139	5.9	13.3	0.19	3.9
			0.0000	65	20	0	35	6.0	143	6.8	13.1	0.17	3.9
			0.0000	100	20	35	35	5.9	147	6.9	13.2	0.26	4.3
			0.0000	130	21	5	30	5.7	151	7.9	12.8	0.22	7.9
			0.0000	190	22	5	60	5.5	155	8	12.8	0.21	5.4
		BL 1987	0.1429	0	18	55	0	6.0	136	6	13.3	0.23	5.1
			0.0000	30	19	25	30	5.8	140	7	13.5	0.36	5.3
			0.0000	65	20	0	35	5.6	144	8	12.9	0.24	8.1
			0.0000	100	20	35	35	5.5	148	8.8	12.7	0.22	6.9
			0.0000	130	21	5	30	5.3	152	9.7	12.6	0.24	8
			0.0000	190	22	5	60	5.1	156	10.9	12.6	0.21	10.6

BIOMONITORING PROGRAM: SEDIMENT OXYGEN AND NUTRIENT EXCHANGES(SONE)
SEDFLUX (Nutrient and oxygen concentrations in the sediment microcosms at SONE stations)

STATION	DATE	CO CORE NO VOL (ML)	CORE H2O HEIGHT (M)	TIME (SUM)	TIME OF SAMPLE HR	MIN	DELTA (min)	DO (MG/	AA VIAL NO.	NH4 (uM-N)	NO3+N (uM-N	DIP (uM-P)	SI(OH)4 (uM-SI)
STIL.PD	8-MAY-85	BLANK	0.0000	0	8	45	0	8.5	159	5.9	51.8	0.2	5.6
			0.0000	30	9	15	30	8.4	163	5.8	57.8	0.31	9.9
			0.0000	60	9	45	30	8.3	167	5.7	57.1	0.29	7.9
			0.0000	90	10	15	30	8.3	171	4.5	57.4	0.25	6.9
			0.0000	120	10	45	30	8.4	175	5.4	57.3	0.34	7
			0.0000	190	11	55	70	8.4	179	4.5	57.4	0.3	7.3
		GR 2725	0.1960	0	8	45	0	8.2	160	5.4	55.2	0.31	16
			0.0000	30	9	15	30	8.1	164	6.4	56	0.39	8
			0.0000	60	9	45	30	7.8	168	7.3	49.5	0.41	8.7
			0.0000	90	10	15	30	7.4	172	7.2	57	0.49	12.6
			0.0000	120	10	45	30	6.9	176	9.7	56	0.55	10.6
			0.0000	190	11	55	70	6.0	180	12.8	55.5	1.14	14.4
		RE 2550	0.1835	0	8	45	0	8.5	161	4.7	57.1	0.26	7.9
			0.0000	30	9	15	30	8.3	165	4.6	56	0.24	9.9
			0.0000	60	9	45	30	8.0	169	5	56.3	0.26	9
			0.0000	90	10	15	30	7.6	173	5.1	55.5	0.27	12.1
			0.0000	120	10	45	30	7.5	177	5.5	55.4	0.27	11.3
			0.0000	190	11	55	70	7.0	181	5.5	55.3	0.29	14.6
		BL 2450	0.1763	0	8	45	0	8.6	162	4.8	56.6	0.22	8.9
			0.0000	30	9	15	30	8.4	166	4.9	55.7	0.27	8.2
			0.0000	60	9	45	30	8.2	170	4.9	55.8	0.25	10.8
			0.0000	90	10	15	30	8	174	5.8	55.1	0.34	10.9
			0.0000	120	10	45	30	7.4	178	5.8	55.2	0.28	10.4
			0.0000	190	11	55	70	7.3	182	5.5	54.5	0.38	11.7

BIOMONITORING PROGRAM: SEDIMENT OXYGEN AND NUTRIENT EXCHANGES(SONE)
SEDFLUX (Nutrient and oxygen concentrations in the sediment microcosms at SONE stations)

STATION	DATE	CO NO	CORE VOL (ML)	CORE H2O HEIGHT (M)	TIME (SUM)	TIME OF SAMPLE HR	TIME OF SAMPLE MIN	DELTA (min)	DO (MG/	AA VIAL NO.	NH4 (uM-N)	NO3+N (uM-N	DIP (uM-P)	SI(OH)4 (uM-SI)
ST.LEO	25-JUNE-8	BLANK		0.0000	0	12	40	0	3.8	103	8.7	1.73	0.19	63
				0.0000	30	13	10	30	3.9	110	8.8	1.89	0.26	59.3
				0.0000	55	13	35	25	4.0	114	8.7	1.87	0.21	58.7
				0.0000	90	14	10	35	4.0	121	8.7	1.94	0.25	57.6
				0.0000	115	14	35	25	4.1	125	8.8	1.81	0.37	57
				0.0000	155	15	15	40	4.2	129	9	1.91	0.23	57.6
		RE	2725	0.1960	0	12	40	0	3.6	104	9.3	2.22	0.25	61.8
				0.0000	30	13	10	30	3.2	111	9.6	2.68	0.27	62.5
				0.0000	55	13	35	25	2.8	115	9.6	2.45	0.25	63
				0.0000	90	14	10	35	2.5	122	9.6	2.64	0.39	63.7
				0.0000	115	14	35	25	2.2	126	10.6	2.88	0.61	65.2
				0.0000	155	15	15	40	1.9	130	10.3	3.42	0.46	67.7
		GR	2850	0.2050	0	12	40	0	4	105	9.1	2.16	0.19	60.6
				0.0000	30	13	10	30	3.6	112	9.4	2.52	0.32	61.8
				0.0000	55	13	35	25	3.3	116	9.4	2.7	0.35	62.8
				0.0000	90	14	10	35	3.0	123	9.5	2.84	0.33	63.3
				0.0000	115	14	35	25	2.8	127	9.8	3.3	0.35	65.7
				0.0000	155	15	15	40	2.5	131	9.8	3.57	0.32	65.4
		BL	2650	0.1906	0	12	40	0	3.6	106	9.5	2.23	0.47	63.2
				0.0000	30	13	10	30	3.2	113	9.2	2.35	0.32	63.1
				0.0000	55	13	35	25	3.0	117	9.3	2.55	0.35	63.6
				0.0000	90	14	10	35	2.7	124	9.4	2.89	0.37	63.7
				0.0000	115	14	35	25	2.4	128	10.6	2.92	0.83	66.2
				0.0000	155	15	15	40	2.1	132	10.6	3.28	0.39	67

BIOMONITORING PROGRAM: SEDIMENT OXYGEN AND NUTRIENT EXCHANGES(SONE)
SEDFLUX (Nutrient and oxygen concentrations in the sediment microcosms at SONE stations)

STATION	DATE	CO NO	CORE VOL (ML)	CORE H2O HEIGHT (M)	TIME (SUM)	TIME OF SAMPLE HR	MIN	DELTA (min)	DO (MG/	AA VIAL NO.	NH4 (uM-N)	NO3+N (uM-N	DIP (uM-P)	SI(OH)4 (uM-SI)
BU.VISTA	25-JUNE-8	BLANK		0.0000	0	10	55	0	4.2	85	1.5	0.99	1.41	92
				0.0000	30	11	25	30	4.3	90	1.4	0.3	1.72	94
				0.0000	60	11	55	30	4.4	95	1.7	0.31	1.85	89
				0.0000	90	12	25	30	4.4	99	1.2	0.73	1.45	89
		RE	2650	0.1906	0	10	55	0	4.6	86	1.1	0.7	1.61	93
				0.0000	30	11	25	30	4.5	91	2	0.32	2.09	92
				0.0000	60	11	55	30	4.4	96	1.9	0.53	1.59	93
				0.0000	90	12	25	30	4.4	100	2.4	0.49	1.62	92
				0.0000	120	12	55	30	4.3	107	4.3	0.46	2.39	94
				0.0000	175	13	50	55	4.1	118	4.4	1.11	1.73	86
		GR	2710	0.1950	0	10	55	0	4.5	87	1	0.23	1.95	91
				0.0000	30	11	25	30	4.4	92	1.3	0.45	1.76	96
				0.0000	60	11	55	30	4.3	97	1.7	0.35	1.6	92
				0.0000	90	12	25	30	4.3	101	2.5	0.7	1.71	94
				0.0000	120	12	55	30	4.1	108	2.9	0.57	1.7	90
				0.0000	175	13	50	55	3.9	119	4.5	0.49	1.71	90
		BL	2700	0.1942	0	10	55	0	4.3	88	1.9	0.58	1.67	96
				0.0000	30	11	25	30	4.1	93	2.8	0.61	1.71	94
				0.0000	60	11	55	30	4	98	3.9	0.65	2.1	94
				0.0000	90	12	25	30	3.8	102	4.8	0.49	1.92	95
				0.0000	120	12	55	30	3.7	109	5.9	0.54	1.82	97
				0.0000	175	13	50	55	3.4	120	7.4	0.72	2.02	93

BIOMONITORING PROGRAM: SEDIMENT OXYGEN AND NUTRIENT EXCHANGES(SONE)
SEDFLUX (Nutrient and oxygen concentrations in the sediment microcosms at SONE stations)

STATION	DATE	CO NO	CORE VOL (ML)	CORE H2O HEIGHT (M)	TIME (SUM)	TIME OF SAMPLE HR	MIN	DELTA (min)	DO (MG/	AA VIAL NO.	NH4 (uM-N)	NO3+N (uM-N	DIP (uM-P)	SI(OH)4 (uM-SI)
HORN PT.	26-JUNE-B	BLANK		0.0000	0	9	40	0	5.6	161	3.2	2.04	0.41	52.7
				0.0000	30	10	10	30	5.6	165	3.8	1.74	0.4	53
				0.0000	50	10	30	20	5.6	169	3.2	1.72	0.46	51.5
				0.0000	70	10	50	20	5.6	173	3.2	2.16	0.32	51.6
				0.0000	90	11	10	20	5.7	177	3.3	1.92	0.36	52.8
				0.0000	130	11	50	40	5.7	181	3.2	1.71	0.32	51.2
		RE	2875	0.2068	0	9	40	0	4.9	162	3.8	2.29	0.39	57
				0.0000	30	10	10	30	4.6	166	4.8	2.55	0.44	58.1
				0.0000	50	10	30	20	4.3	170	5	3.3	0.4	62.2
				0.0000	70	10	50	20	4.1	174	5.2	3.12	0.47	61
				0.0000	90	11	10	20	3.9	178	5.8	3.3	0.39	61.4
				0.0000	130	11	50	40	3.4	182	6.6	3.83	0.66	64.3
		GR	3035	0.2183	0	9	40	0	5.2	163	3.8	2.06	0.61	57
				0.0000	30	10	10	30	4.7	167	4.6	2.4	0.47	57.5
				0.0000	50	10	30	20	4.5	171	4.6	2.46	0.53	58.9
				0.0000	70	10	50	20	4.2	175	5.2	2.79	0.6	59.4
				0.0000	90	11	10	20	3.9	179	5.8	3.38	0.65	60.8
				0.0000	130	11	50	40	3.3	183	6.6	3.85	0.61	62.3
		BL	2940	0.2115	0	9	40	0	4.9	164	5.1	2.15	0.54	59.5
				0.0000	30	10	10	30	4.4	168	5	2.7	0.32	59.4
				0.0000	50	10	30	20	4.2	172	5.6	2.56	0.31	59.6
				0.0000	70	10	50	20	3.9	176	5.9	3	0.41	62.7
				0.0000	90	11	10	20	3.7	180	6.1	3.11	0.44	62.2
				0.0000	130	11	50	40	3.2	184	7.4	3.29	0.42	64.5

BIOMONITORING PROGRAM: SEDIMENT OXYGEN AND NUTRIENT EXCHANGES(SONE)
SEDFLUX (Nutrient and oxygen concentrations in the sediment microcosms at SONE stations)

STATION	DATE	CO NO	CORE VOL (ML)	CORE H2O HEIGHT (M)	TIME (SUM)	TIME OF SAMPLE HR	TIME OF SAMPLE MIN	DELTA (min)	DO (MG/	AA VIAL NO.	NH4 (uM-N)	NO3+N (uM-N	DIP (uM-P)	SI(OH)4 (uM-SI)
RAG.PT	24-JUNE-88	BLANK		0.0000	0	11	40	0	0.2	3	18.8	0.45	1.49	41.9
				0.0000	30	12	10	30	0.4	7	18.4	0.25	1.52	42.2
				0.0000	60	12	40	30	0.6	11	18.6	0.32	1.48	42
				0.0000	100	13	20	40	0.6	15	19	0.46	1.66	42.6
				0.0000	160	14	20	60	0.8	19	18.4	0.51	1.38	43.8
				0.0000	285	16	25	125	1.3	33	17.5	0.26	1.11	41.8
		RE	3215	0.2313	0	11	40	0	0.3	4	19.6	0.32	1.73	42.8
				0.0000	30	12	10	30	0.3	8	20.5	0.14	1.71	44.2
				0.0000	60	12	40	30	0.3	12	21.4	0.17	1.88	45.5
				0.0000	100	13	20	40	0.3	16	21.9	0.25	1.99	46.3
				0.0000	160	14	20	60	0.2	20	22.9	0.25	2.05	47.1
				0.0000	285	16	25	125	0.1	34	25.1	0.52	2.25	50.8
		GR	3270	0.2353	0	11	40	0	0.3	5	20.1	0.17	1.72	43.5
				0.0000	30	12	10	30	0.4	9	21.1	0.25	1.83	44.6
				0.0000	60	12	40	30	0.4	13	22.2	0.16	2.02	45.2
				0.0000	100	13	20	40	0.4	17	23.1	0.26	2.32	48.6
				0.0000	160	14	20	60	0.3	21	24.7	0.58	2.23	48.3
				0.0000	285	16	25	125	0.2	35	27.7	0.22	2.55	50.9
		BL	3255	0.2342	0	11	40	0	0.1	6	20.4	0.33	1.71	43.8
				0.0000	30	12	10	30	0.2	10	21.7	0.28	1.95	45.5
				0.0000	60	12	40	30	0.2	14	22.9	0.26	1.91	45.6
				0.0000	100	13	20	40	0.2	18	24.2	0.35	2.04	47.3
				0.0000	160	14	20	60	0.2	22	25.8	0.11	2.15	48.1
				0.0000	285	16	25	125	0.0	36	29.1	0.2	2.44	50.8

BIOMONITORING PROGRAM: SEDIMENT OXYGEN AND NUTRIENT EXCHANGES(SONE)
SEDFLUX (Nutrient and oxygen concentrations in the sediment microcosms at SONE stations)

STATION	DATE	CO NO	CORE VOL (ML)	CORE H2O HEIGHT (M)	TIME (SUM)	TIME OF SAMPLE HR	TIME OF SAMPLE MIN	DELTA (min)	DO (MG/	AA VIAL NO.	NH4 (uM-N)	NO3+N (uM-N	DIP (uM-P)	SI(OH)4 (uM-SI)
MD.PT	4-JUNE-85	BLANK		0.0000	0	15	35	0	5.3	25	6.7	31.2	1.46	41.5
				0.0000	30	16	5	30	5.5	29	4.9	31.1	1.38	39.1
				0.0000	65	16	40	35	6.0	37	5.3	30.6	1.39	39.6
				0.0000	95	17	10	30	6.2	41	5.6	30.6	1.61	42.9
				0.0000	125	17	40	30		45	5.1	30.7	1.47	39.2
				0.0000	155	18	10	30	5	49	5	31.1	1.32	38.4
				0.0000	235	19	30	80	5.2	55	5.1	31.6	1.37	40.9
		RE	2550	0.1835	0	15	35	0	4.3	26	5.3	30.8	1.38	42.1
				0.0000	30	16	5	30	4.3	30	5.3	31	1.49	43.6
				0.0000	65	16	40	35	4.3	38	5.5	30.8	1.43	42.1
				0.0000	95	17	10	30	4.3	42	5.7	29	1.35	48.5
				0.0000	125	17	40	30	4.3	46	6.1	31.2	1.46	42.7
				0.0000	155	18	10	30	4.2	50	5.9	30.4	1.49	44.9
				0.0000	235	19	30	80	4.2	56	6.3	30.6	1.57	45.7
		GR	2780	0.2000	0	15	35	0	4.5	27	4.9	30.6	1.27	43
				0.0000	30	16	5	30	4.4	31	5.5	30.7	1.43	44.4
				0.0000	65	16	40	35	4.4	39	5.4	30.8	1.43	44.2
				0.0000	95	17	10	30	4.3	43	5.3	28.1	1.3	42.1
				0.0000	125	17	40	30	4.3	47	5.6	30.7	1.5	43.8
				0.0000	155	18	10	30	4.3	51	6.1	30.5	1.37	45.4
				0.0000	235	19	30	80	4.1	57	5.9	30.2	1.51	46.2
		BL	2790	0.2007	0	15	35	0	4.2	28	5.1	30.7	1.42	44.1
				0.0000	30	16	5	30	4.2	32	5.3	30.7	1.54	44.8
				0.0000	65	16	40	35	4.1	40	5.6	30.7	1.5	42.2
				0.0000	95	17	10	30	4.0	44	6	30.7	1.61	40.7
				0.0000	125	17	40	30	4.0	48	6.1	30.7	1.54	43.6
				0.0000	155	18	10	30	3.9	52	6.2	30.4	1.59	44.2
				0.0000	235	19	30	80	3.8	58	6.4	30.7	1.61	45.5

BIOMONITORING PROGRAM: SEDIMENT OXYGEN AND NUTRIENT EXCHANGES(SONE)
SEDFLUX (Nutrient and oxygen concentrations in the sediment microcosms at SONE stations)

STATION	DATE	CO CORE NO	CORE VOL (ML)	CORE H2O HEIGHT (M)	TIME (SUM)	TIME OF SAMPLE HR	TIME OF SAMPLE MIN	DELTA (min)	DO (MG/	AA VIAL NO.	NH4 (uM-N)	NO3+N (uM-N	DIP (uM-P)	SI(OH)4 (uM-SI)
PT.NO.PT24	-JUNE-8	BLANK		0.0000	0	20	25	0	1.1	59	12.7	1.13	1.48	39.6
				0.0000	30	20	55	30	1.9	63	12.7	1.21	1.41	40.1
				0.0000	76	21	41	46	2.1	67	13.1	1.86	1.38	40
				0.0000	120	22	25	44	2.5	71	13.2	1	1.41	39.8
				0.0000	165	23	10	45	2.7	75	13.8	1.58	1.43	39.7
				0.0000	225	24	10	60	2.9	79	13.7	1.61	1.33	40.9
		RE	2900	0.2086	0	20	25	0	2.1	60	13.4	1.14	0.47	42.6
				0.0000	30	20	55	30	2.0	64	14.5	0.68	0.54	43.8
				0.0000	75	21	40	45	1.9	68	16.5	0.78	0.8	53.2
				0.0000	120	22	25	45	1.8	72	18.3	0.6	0.87	48.8
				0.0000	165	23	10	45	1.6	76	19.9	0.95	1.05	58.4
				0.0000	225	24	10	60	1.3	80	21.5	0.84	1.13	63.7
		GR	2890	0.2079	0	20	25	0	2.6	61	12.9	0.55	0.47	42.6
				0.0000	30	20	55	30	2.3	65	13.7	0.94	0.57	44
				0.0000	75	21	40	45	2.3	69	15.7	0.76	0.64	53.1
				0.0000	120	22	25	45	2.3	73	16.7	1.62	0.93	48.8
				0.0000	165	23	10	45	2.2	77	18.2	0.96	0.92	51.8
				0.0000	225	24	10	60	1.9	81	19.8	0.77	0.96	57.6
		BL	3130	0.2252	0	20	25	0	2.2	62	12.6	0.54	0.41	41.2
				0.0000	30	20	55	30	2.3	66	13.2	0.58	0.47	43
				0.0000	75	21	40	45	2.2	70	14.6	1.13	0.59	48.4
				0.0000	120	22	25	45	2.1	74	16.6	0.83	0.64	49.5
				0.0000	165	23	10	45	2.0	78	16.6	0.74	0.65	53.2
				0.0000	225	24	10	60	1.9	82	18.3	0.71	0.8	57.1

BIOMONITORING PROGRAM: SEDIMENT OXYGEN AND NUTRIENT EXCHANGES(SONE)
SEDFLUX (Nutrient and oxygen concentrations in the sediment microcosms at SONE stations)

STATION	DATE	CO CORE NO	VOL (ML)	CORE H2O HEIGHT (M)	TIME (SUM)	TIME OF SAMPLE HR	MIN	DELTA (min)	DO (MG/	AA VIAL NO.	NH4 (uM-N)	NO3+N (uM-N	DIP (uM-P)	SI(OH)4 (uM-SI)
R-64	25-JUNE-88	BLANK		0.0000	0	18	5	0	0.4	135	24	0.9	0.42	46
				0.0000	30	18	35	30	0.7	139	22.3	0.94	0.59	45.9
				0.0000	60	19	5	30	0.8	143	22.3	1.24	0.61	45.9
				0.0000	100	19	45	40	0.9	147	22.3	0.89	0.51	48.6
				0.0000	160	20	45	60	1.1	151	23.4	1.27	0.92	46
				0.0000	220	21	45	60	1.2	155	22.1	0.84	0.42	46.5
		RE	2780	0.2000	0	18	5	0	0.8	136	22.5	0.89	0.66	50.7
				0.0000	30	18	35	30	0.8	140	22.7	0.89	0.59	48.7
				0.0000	60	19	5	30	0.8	144	23.8	1.19	0.66	50.5
				0.0000	100	19	45	40	0.7	148	25.2	1.49	0.87	52.2
				0.0000	160	20	45	60	0.6	152	27.3	0.76	1.04	58.9
				0.0000	220	21	45	60	0.5	156	29	0.55	1.27	61.8
		GR	2470	0.1777	0	18	5	0	0.8	137	21.6	1.26	0.63	47.4
				0.0000	30	18	35	30	0.7	141	24	0.8	0.92	50.8
				0.0000	60	19	5	30	0.7	145	26.3	1.28	1.42	55.7
				0.0000	100	19	45	40	0.6	149	28.5	0.99	1.7	58.8
				0.0000	160	20	45	60	0.5	153	31.5	0.7	2.53	66.6
				0.0000	220	21	45	60	0.4	157	33.8	0.74	3	69.3
		BL	2645	0.1903	0	18	5	0	0.8	138	22.2	1.02	0.55	48
				0.0000	30	18	35	30	0.9	142	23.6	1.26	1.04	51.2
				0.0000	60	19	5	30	0.9	146	25.2	0.65	1.3	54.5
				0.0000	100	19	45	40	0.7	150	26.5	0.62	1.7	58.2
				0.0000	160	20	45	60	0.8	154	28.1	0.39	2.22	64.4
				0.0000	220	21	45	60	0.7	158	28.8	0.49	2.67	67.9

BIOMONITORING PROGRAM: SEDIMENT OXYGEN AND NUTRIENT EXCHANGES(SONE)
SEDFLUX (Nutrient and oxygen concentrations in the sediment microcosms at SONE stations)

STATION	DATE	CO NO	CORE VOL (ML)	CORE H2O HEIGHT (M)	TIME (SUM)	TIME OF SAMPLE HR	MIN	DELTA (min)	DO (MG/	AA VIAL NO.	NH4 (uM-N)	NO3+N (uM-N	DIP (uM-P)	SI(OH)4 (uM-SI)
R-78	27-JUNE-8	BLANK		0.0000	0	13	55	0	1.1	209	22	0.89	0.41	48.4
				0.0000	40	14	35	40	1.2	213	21.9	1.01	0.5	47.4
				0.0000	100	15	35	60	1.3	217	21.8	1.21	0.59	47.5
				0.0000	160	16	35	60	1.5	221	22.2	0.87	0.49	47.4
				0.0000	220	17	35	60	1.6	225	21.7	2.06	0.49	48.1
				0.0000	280	18	35	60	1.7	229	22.4	0.84	0.54	48
		RE	2050	0.1475	0	13	55	0	1.2	210	24.3	0.89	0.65	51.4
				0.0000	40	14	35	40	1.4	214	25.3	0.83	0.88	53.8
				0.0000	100	15	35	60	1.5	218	26.3	0.57	0.76	58.8
				0.0000	160	16	35	60	1.6	222	28.1	0.85	0.85	60.8
				0.0000	220	17	35	60	1.6	226	28.7	1.45	0.92	63.6
				0.0000	280	18	35	60	1.6	230	29.5	1.53	0.93	67.2
		GR	2520	0.1813	0	13	55	0	0.9	211	24.1	0.94	0.62	50
				0.0000	40	14	35	40	0.9	215	25.4	0.78	0.73	52.4
				0.0000	100	15	35	60	0.8	219	26.7	0.62	0.76	54.7
				0.0000	160	16	35	60	0.7	223	28.4	1	0.9	57.6
				0.0000	220	17	35	60	0.6	227	29.6	1.36	0.95	59.9
				0.0000	280	18	35	60	0.6	231	30.4	0.56	0.97	62.2
		BL	2500	0.1799	0	13	55	0	0.4	212	24	0.78	0.51	49.1
				0.0000	40	14	35	40	0.4	216	24.5	0.54	0.55	50.5
				0.0000	100	15	35	60	0.4	220	24	0.69	0.59	51.1
				0.0000	160	16	35	60	0.4	224	25.6	1.53	0.63	53.9
				0.0000	220	17	35	60	0.4	228	25.9	1.04	0.59	55
				0.0000	280	18	35	60	0.3	232	26.3	1.4	0.73	56.2

BIOMONITORING PROGRAM: SEDIMENT OXYGEN AND NUTRIENT EXCHANGES(SONE)
SEDFLUX (Nutrient and oxygen concentrations in the sediment microcosms at SONE stations)

STATION	DATE	CO CORE NO	CORE VOL (ML)	H2O HEIGHT (M)	TIME (SUM)	TIME OF SAMPLE HR	TIME OF SAMPLE MIN	DELTA (min)	DO (MG/	AA VIAL NO.	NH4 (uM-N)	NO3+N (uM-N	DIP (uM-P)	SI(OH)4 (uM-SI)
STIL.PD	26-JUNE-8	BLANK		0.0000	0	18	20	0	5.6	187	5.1	38.4	0.51	38.8
				0.0000	30	18	50	30	5.6	191	4.7	38.2	0.53	34.3
				0.0000	60	19	20	30	5.7	195	4.9	38.6	0.57	39.3
				0.0000	100	20	0	40	5.8	199	5	38.4	0.55	37.8
				0.0000	155	20	55	55	5.9	203	4.9	38.3	0.51	36.7
		RE	2975	0.2140	0	18	20	0	5.3	188	5	38.4	0.52	40.2
				0.0000	30	18	50	30	5.2	192	5	38.3	0.56	38.8
				0.0000	60	19	20	30	5.1	196	5	38	0.54	39.7
				0.0000	100	20	0	40	4.9	200	5.1	38	0.56	41.7
				0.0000	155	20	55	55	4.7	204	5.8	38.4	0.59	39.1
		GR	2900	0.2086	0	18	20	0	5.0	189	5.1	38.3	0.53	40.3
				0.0000	30	18	50	30	5	193	5.6	38	0.55	39.2
				0.0000	60	19	20	30	4.8	197	6	38	0.57	41.3
				0.0000	100	20	0	40	4.6	201	6.8	38.2	0.59	41.9
				0.0000	155	20	55	55	4.4	205	6.5	38.1	0.55	41.2
r		BL	3100	0.2230	0	18	20	0	4.9	190	5	38.5	0.51	40.2
				0.0000	30	18	50	30	4.9	194	4.8	38.4	0.53	39.5
				0.0000	60	19	20	30	4.8	198	4.9	38.6	0.93	39.4
				0.0000	100	20	0	40	4.8	202	4.8	38.2	0.55	41.8
				0.0000	155	20	55	55	4.6	206	4.9	38.4	0.58	39.2

Data Table No. 5-1.

IOMONITORING PROGRAM: SEDIMENT OXYGEN AND NUTRIENT EXCHANGES (SONE) COMPONENT
SONEFLX (Summary of sediment water exchanges expressed in units of mass/m2/time.

					gO2/m2/d			ug-atN/m2/h			ug-atN/m2/h			ug-atP/m2/h			ug-atSi/m2/h	
			CORE DEPTH	O2 FLX			NH4 FLX			NO3 FLX			PO4 FLX			SI FLX		
STATION	DATE	NO	(m)	m	r2	flux	m	r2	flux	m	r2	flux	m	r2	flux	m	r2	flux
BU.VISTA	270884	1	0.067	ND	ND	0.0	0.0392	0.99	157.6	0.0027	0.62	10.9	0.0026	0.92	10.5	0.0784	0.97	315.2
		2	0.073	ND	ND	0.0	0.0361	0.99	158.1	0.0007	0.04	3.1	0.0021	0.90	9.2	0.0676	0.98	296.1
		3	0.075	ND	ND	0.0	0.0202	0.99	90.9	0.0042	0.71	18.9	0.0020	0.86	9.0	0.0741	0.99	333.5
		T	0.072	ND	ND	0.0	0.0319	0.75	137.8	0.0021	0.13	9.1	0.0022	0.83	9.5	0.0733	0.86	316.7
ST.LEO	270884	1	0.051	ND	ND	0.0	0.0574	0.90	175.6	0.0052	0.34	15.9	0.0027	0.57	8.3	0.1089	0.96	333.2
		2	0.100	ND	ND	0.0	0.0271	0.95	162.6	0.0021	0.26	12.6	0.0026	0.76	15.6	0.0771	0.96	462.6
		3	0.070	ND	ND	0.0	0.0206	0.87	86.5	-0.0027	0.12	-11.3	0.0026	0.50	10.9	0.1029	0.97	432.2
		T	0.074	ND	ND	0.0	0.0318	0.05	141.2	0.0013	0.01	5.8	0.0024	0.02	10.7	0.0929	0.16	412.5
HORN.PT	290884	1	0.082	-0.0078	0.98	-0.9	-0.0588	0.72	-289.3	0.0011	0.98	5.4	-0.0024	0.81	-11.8	0.0526	0.62	258.8
		2	0.069	ND	ND	0.0	ND	ND	0.0	ND	ND	0.0	ND	ND	0.0	ND	ND	0.0
		3	0.061	-0.0022	0.99	-0.2	-0.0675	0.86	-247.1	0.0029	0.88	10.6	-0.0038	0.84	-13.9	0.1024	0.91	374.8
		T	0.071	-0.0149	0.81	-1.5	-0.0632	0.79	-269.2	0.0021	0.71	8.9	-0.0031	0.78	-13.2	0.0783	0.62	333.6
WIND.HIL	290884	1	0.090	-0.0042	0.81	-0.5	0.0096	0.50	51.8	0.0062	0.66	33.5	-0.0012	0.77	-6.5	0.0235	0.47	126.9
		2	0.077	-0.0053	0.97	-0.6	0.0344	0.98	158.9	0.0027	0.49	12.5	-0.0014	0.92	-6.5	0.0500	0.90	231.0
		3	0.047	ND	ND	0.0	ND	ND	0.0	ND	ND	0.0	ND	ND	0.0	ND	ND	0.0
		T	0.079	-0.0047	0.76	-0.5	0.0226	0.25	107.1	0.0044	0.48	20.9	-0.0013	0.38	-6.2	0.0370	0.68	175.4
RAG.PT	280884	1	0.067	ND	ND	0.0	ND	ND	0.0	ND	ND	0.0	ND	ND	0.0	ND	ND	0.0
		2	0.068	-0.0087	0.97	-0.9	0.1770	0.93	722.2	0.0021	0.72	8.6	0.0146	0.96	59.6	0.1196	0.93	488.0
		3	0.061	-0.0137	0.99	-1.2	0.1702	0.90	622.9	0.0021	0.75	7.7	0.0239	0.93	87.5	0.1711	0.99	626.2
		T	0.068	-0.0100	0.79	-1.0	0.1694	0.91	691.2	0.0019	0.62	7.8	0.0211	0.85	86.1	0.1457	0.87	594.5
MD.PT	280884	1	0.069	-0.0040	0.96	-0.4	0.0035	0.07	14.4	-0.0118	0.85	-48.6	-0.0077	0.95	-31.7	0.1292	0.99	531.8
		2	0.059	-0.0084	0.97	-0.7	ND	ND	0.0	-0.0233	0.98	-81.9	-0.0087	0.99	-30.6	0.0807	0.98	283.7
		3	0.079	-0.0074	0.98	-0.8	-0.0026	0.02	-12.3	ND	ND	0.0	-0.0044	0.96	-20.8	0.0833	0.98	392.8
		T	0.069	-0.0081	0.49	-0.8	0.0011	.00	4.6	-0.0173	0.76	-71.6	-0.0068	0.36	-28.2	0.0982	0.92	406.5

No. 5-2.

BIOMONITORING PROGRAM: SEDIMENT OXYGEN AND NUTRIENT EXCHANGES (SONE) COMPONENT
SONEFLX (Summary of sediment water exchanges expressed in units of mass/m2/time.

					gO2/m2/d			ug-atN/m2/h			ug-atN/m2/h			ug-atP/m2/h			ug-atSi/m2/h
			CORE DEPTH	O2 FLX			NH4 FLX			NO3 FLX			PO4 FLX			SI FLX		
STATION	DATE	NO	(m)	m	r2	flux	m	r2	flux	m	r2	flux	m	r2	flux	m	r2	flux
PT.NO.PT	280884	1	0.064	-0.0009	0.43	-0.1	-0.0312	0.82	-119.8	0.0007	0.13	2.7	-0.0023	0.90	-8.8	0.0992	0.96	380.9
		2	0.070	-0.0023	0.90	-0.2	-0.0362	0.94	-152.0	0.0013	0.37	5.5	-0.0020	0.76	-8.4	0.0927	0.99	389.3
		3	0.080	-0.0013	0.52	-0.1	-0.0625	0.98	-300.0	0.0007	0.18	3.4	-0.0032	0.84	-15.4	0.0884	0.99	424.3
		T	0.072	-0.0015	0.10	-0.2	-0.0433	0.75	-187.1	0.0009	0.19	3.9	-0.0025	0.79	-10.8	0.0934	0.95	403.5
R-64	290884	1	0.064	ND	ND	0.0	ND	ND	0.0	ND	ND	0.0	ND	ND	0.0	ND	ND	0.0
		2	0.071	-0.0117	0.95	-1.2	-0.1050	0.80	-447.3	-0.0021	0.70	-8.9	-0.0090	0.97	-38.3	0.1678	0.99	714.8
		3	0.068	-0.0109	0.99	-1.1	-0.0707	0.71	-288.5	-0.0013	0.95	-5.3	-0.0042	0.97	-17.1	0.1469	0.99	599.4
		T	0.068	-0.0113	0.92	-1.1	-0.0878	0.70	-358.2	-0.0017	0.66	-6.9	-0.0066	0.86	-26.9	0.1571	0.99	641.0
TOM.PT	300884	1	0.075	-0.0099	0.86	-1.1	-0.0924	0.85	-415.8	-0.0019	0.84	-8.6	-0.0069	0.88	-31.1	0.0450	0.92	202.5
		2	0.071	ND	ND	0.0	ND	ND	0.0	ND	ND	0.0	ND	ND	0.0	ND	ND	0.0
		3	0.071	-0.0092	0.99	-0.9	-0.1049	0.98	-446.9	-0.0068	0.08	-29.0	-0.0069	0.80	-29.4	0.0648	0.98	276.0
		T	0.073	-0.0010	0.85	-0.1	-0.0992	0.89	-434.5	-0.0044	0.07	-19.3	-0.0069	0.81	-30.2	0.0055	0.83	24.1
STIL.PD	300884	1	0.079	-0.0074	0.85	-0.8	-0.0199	0.86	-94.3	-0.0201	0.92	-95.3	-0.0020	0.87	-9.5	0.0516	0.95	244.6
		2	0.065	-0.0148	0.91	-1.4	-0.0299	0.96	-116.6	-0.1273	0.67	-496.5	-0.0013	0.69	-5.1	0.0947	0.99	369.3
		3	0.065	-0.0151	0.95	-1.4	-0.0694	0.99	-270.7	-0.0236	0.94	-92.0	-0.0010	0.67	-3.9	0.0497	0.94	193.8
		T	0.069	-0.0124	0.80	-1.2	-0.0397	0.72	-164.4	-0.0570	0.32	-236.0	-0.0014	0.60	-5.8	0.0653	0.75	270.3
BU.VISTA	310884	1	0.111	-0.0148	0.99	-2.4	ND	ND	0.0	ND	ND	0.0	ND	ND	0.0	ND	ND	0.0
		2	0.105	-0.0171	0.99	-2.6	ND	ND	0.0	ND	ND	0.0	ND	ND	0.0	ND	ND	0.0
		3	0.115	-0.0087	0.99	-1.4	ND	ND	0.0	ND	ND	0.0	ND	ND	0.0	ND	ND	0.0
		T	0.110	-0.0135	0.80	-2.1	ND	ND	0.0	ND	ND	0.0	ND	ND	0.0	ND	ND	0.0
ST.LEO	310884	1	0.077	-0.0055	0.99	-0.6	ND	ND	0.0	ND	ND	0.0	ND	ND	0.0	ND	ND	0.0
		2	0.062	-0.0030	0.94	-0.3	ND	ND	0.0	ND	ND	0.0	ND	ND	0.0	ND	ND	0.0
		3	0.064	ND	ND	0.0	ND	ND	0.0	ND	ND	0.0	ND	ND	0.0	ND	ND	0.0
		T	0.069	0.5900	0.59	58.6	ND	ND	0.0	ND	ND	0.0	ND	ND	0.0	ND	ND	0.0

LONG-TERM BIOMONITORING PROGRAM: SEDIMENT OXYGEN AND NUTRIENT EXCHANGE(SONE) SUMMARY
SONEFLX(Summary of sediment-water exchanges expressed in units of mass/m2/time.

				g02/m2/d			ug-atN/m2/h			ug-atN/m2/h			ug-atP/m2/h			ug-atSi/m2/h		
			CORE DEPTH	O2 FLX			NH4 FLX			NO3 FLX			PO4 FLX			SI FLX		
STATION	DATE	NO	(cm)	m	r2	flux	m	r2	flux	m	r2	flux	m	r2	flu	m	r2	flux
ST.LEO	17OCT84	R	12.9	-0.00426	0.99	-0.8	0.00187	0.09	14	0.00760	0.94	59	0.00044	0.62	3	0.01909	0.9	148
		W	15.4	-0.00323	0.99	-0.7	0.00436	0.89	40	0.00366	0.87	34	0.00033	0.67	3	0.01529	0.93	141
		B	14.1	-0.00362	0.99	-0.7	0.00428	0.93	36	0.00435	0.96	37	0.00072	0.76	6	0.01548	0.82	131
BU.VISTA	17OCT84	R	14.0	-0.00473	0.99	-1.0	0.00480	0.47	40	0.00309	0.94	26	0.00029	0.25	2	0.01186	0.15	100
		W	13.7	-0.00473	0.99	-0.9	0.00331	0.88	27	0.00497	0.72	41	0.00008	0.24	1	0.02564	0.87	211
		B	13.7	-0.00193	0.9	-0.4	0.00799	0.78	66	0.00397	0.86	33	0.00069	0.79	6	0.003389	0.02	28
HORN.PT	15OCT84	R	14.9	-0.00467	0.99	-1.0	0.03114	0.94	279	0.00168	0.33	15	0.00065	0.91	6	-0.032	0.67	-286
		W	14.0	-0.00489	0.99	-1.0	0.00976	0.37	82	0.00240	0.19	20	0.00066	0.68	6	-0.01736	0.05	-146
		B	13.3	-0.00692	0.87	-1.3	0.01789	0.90	143	0.00720	0.84	57	0.00149	0.93	12	-0.002669	0.005	-21
WIND.HIL	15OCT84	R	10.9	-0.00713	0.99	-1.1	0.05166	0.96	338	-0.00073	0.86	-5	-0.00027	0.18	-2	0.04333	0.69	283
		W	10.5	-0.00894	0.99	-1.4	0.04742	0.98	299	-0.00337	0.64	-21	0.00097	0.7	6	0.02171	0.09	137
		B	10.7	-0.00793	0.97	-1.2	0.05914	0.94	380	-0.00720	0.74	-46	0.00032	0.17	2	0.08885	0.98	571
RAG.PT	18OCT84	R	15.1	-0.00372	0.99	-0.8	0.02441	0.98	221	0.00241	0.96	22	-0.00014	0.15	-1	0.02422	0.95	219
		W	16.4	-0.00372	0.99	-0.9	0.01959	0.94	193	0.00240	0.67	24	0.00009	0.005	1	0.02446	0.98	241
		B	16.5	-0.00337	0.99	-0.8	0.01834	0.99	182	0.00360	0.84	36	0.00006	0.01	1	0.02172	0.99	215
MD.PT	18OCT84	R	18.3	-0.00278	0.81	-0.7	-0.00162	0.06	-18	0.00190	0.33	21	0.00007	0.02	1	-0.032	0.75	-352
		W	17.9	-0.00290	0.96	-0.7	0.00019	.00	2	0.00324	0.71	35	0.00041	0.13	4	0.01714	0.76	184
		B	18.2	-0.00230	0.98	-0.6	0.00019	.00	2	0.00171	0.5	19	0.00026	0.29	3	0.007	0.32	76
PT.NO.PT	17OCT84	R	17.3	-0.00360	0.99	-0.9	0.00616	0.92	64	0.00272	0.67	28	0.00008	0.06	1	0.02281	0.99	236
		W	13.7	-0.00376	0.99	-0.7	0.01497	0.98	123	0.00400	0.9	33	0.00001	0.002	0	0.02737	0.99	224
		B	15.9	-0.00404	0.99	-0.9	0.01242	0.99	118	0.00304	0.87	29	0.00016	0.67	2	0.02975	0.99	284
R-64	16OCT84	R	13.3	-0.00576	0.99	-1.1	0.01830	0.99	146	-0.00080	0.53	-6	-0.00029	0.24	-2	0.0453	0.97	361
		W	12.9	-0.00451	0.99	-0.8	0.02090	0.98	162	0.00030	0.06	2	-0.00038	0.26	-3	0.04998	0.92	388
		B	12.0	-0.00360	0.97	-0.6	0.01563	0.92	113	0.00108	0.58	8	0.00013	0.17	1	0.05668	0.99	408
R-78	16OCT84	R	13.1	-0.00148	0.97	-0.3	0.00038	0.06	3	0.00844	0.71	66	0.00002	0.002	0	0.06877	0.84	540
		W	13.4	-0.00156	0.93	-0.3	0.00164	0.01	13	0.00667	0.94	54	0.00026	0.66	2	0.04505	0.72	362
		B	13.0	-0.00104	0.95	-0.2	0.00509	0.09	40	0.00766	0.99	60	-0.00001	0.009	0	0.02923	0.84	228
STIL.PD	16OCT84	R	14.6	-0.00360	0.98	-0.8	0.01283	0.99	112	-0.00148	0.31	-13	0.00027	0.17	2	-0.001406	0.004	-12
		W	14.7	-0.00291	0.99	-0.6	0.01223	0.99	108	-0.00154	0.18	-14	0.00020	0.35	2	-0.01606	0.52	-142
		B	15.0	-0.00277	0.95	-0.6	0.00902	0.86	81	-0.00098	0.096	-9	-0.00012	0.83	-1	0.001721	0.06	16

LONG-TERM BIOMONITORING PROGRAM: SEDIMENT OXYGEN AND NUTRIENT EXCHANGE(SONE) SUMMARY
SONEFLX(Summary of sediment-water exchanges expressed in units of mass/m2/time.

				gO2/m2/d			ug-atN/m2/h			ug-atN/m2/h			ug-atP/m2/h			ug-atSi/m2/h		
		CORE	DEPTH	O2 FLX			NH4 FLX			NO3 FLX			PO4 FLX			SI FLX		
STATION	DATE	NO	(cm)	m	r2	flux	m	r2	flux	m	r2	flux	m	r2	flx	m	r2	flux
ST.LEO	6MAY85	G	19.76	-0.008592	0.99	-2.44	0.01151	0.96	137	0.00074	0.39	9	0.00038	0.99	5	0.06245	0.99	741
		R	19.05	-0.00743	0.97	-2.03	0.01128	0.78	129	-0.00012	0.04	-1	0.00041	0.88	5	0.04915	0.85	562
		B	18.61	-0.009651	0.99	-2.58	0.00932	0.99	104	-0.00035	0.3	-4	0.00011	0.28	1	0.06423	0.99	718
BU.VISTA	6MAY85	G	21.72	-0.00568	0.99	-1.77	0.00781	0.68	102	0.00195	0.63	25	0.00157	0.82	21	0.00831	0.63	108
		R	18.04	-0.00544	0.96	-1.41	0.00888	0.78	96	0.00287	0.61	31	0.00109	0.3	12	0.02170	0.95	235
		B	17.41	-0.00848	0.92	-2.12	0.01310	0.88	137	0.00254	0.48	27	0.00050	0.9	5	0.02303	0.47	241
HORN.PT	7MAY85	G	16.89	-0.00923	0.99	-2.24	0.01971	0.99	200	-0.00196	0.88	-20	-0.00004	0.000	0	0.06190	0.98	627
		R	15.45	-0.00968	0.99	-2.15	0.01767	0.99	164	-0.00108	0.2	-10	0.00130	0.82	12	0.06575	0.99	610
		B	16.90	-0.00816	0.99	-1.98	0.01926	0.99	195	-0.00332	0.82	-34	0.00048	0.63	5	0.07369	0.98	748
WIND.HIL	7MAY85	G	20.73	-0.0122	0.99	-3.64	0.00193	0.09	24	0.00107	0.07	13	0.00112	0.7	14	0.04165	0.97	518
		R	18.28	-0.0144	0.99	-3.79	0.00250	0.59	27	0.00035	0.02	4	0.00080	0.94	9	0.05678	0.91	623
		B	20.12	-0.0143	0.99	-4.14	0.00788	0.53	95	-0.00098	0.008	-12	0.00094	0.62	11	0.05039	0.95	609
RAG.PT	9MAY85	G	19.05	-0.00819	0.99	-2.24	0.04158	0.99	475	-0.00641	0.93	-73	0.00208	0.82	24	0.03540	0.73	405
		R	19.41	-0.00473	0.99	-1.32	0.02424	0.99	282	-0.00503	0.97	-59	0.00114	0.88	13	0.02651	0.88	309
		B	20.99	-0.00557	0.99	-1.68	0.02722	0.99	343	-0.00472	0.99	-59	0.00148	0.87	19	0.03845	0.89	484
MD.PT	9MAY85	G	14.91	-0.00492	0.99	-1.05	0.01171	0.81	105	-0.00288	0.58	-26	0.00075	0.13	7	0.05976	0.81	535
		R	15.76	-0.00546	0.98	-1.55	0.00756	0.63	90	-0.00288	0.88	-34	0.00019	0.16	2	0.03759	0.43	446
		B	18.97	-0.00546	0.98	-1.49	0.01236	0.92	141	-0.00261	0.59	-30	0.00020	0.15	2	0.01813	0.27	206
PT.NO.PT	8MAY85	G	20.48	-0.00295	0.99	-0.87	0.01579	0.95	194	-0.00292	0.91	-36	0.00012	0.12	1	0.03920	0.95	482
		R	20.34	-0.003	0.99	-0.87	0.05720	0.94	698	-0.00332	0.84	-40	0.00030	0.82	4	0.02811	0.85	343
		B	20.86	-0.00286	0.99	-0.85	0.00557	0.93	70	-0.00331	0.83	-41	0.00024	0.66	3	0.02556	0.8	320
R-64	6MAY85	G	20.43	-0.0035	0.97	-1.02	0.01176	0.92	144	-0.00305	0.5	-37	-0.00010	0.18	-1	0.01652	0.75	203
		R	19.41	-0.000878	0.86	-0.24	0.01757	0.89	205	-0.00619	0.87	-72	0.00008	0.02	1	0.04483	0.96	522
		B	15.34	-0.00319	0.86	-0.70	0.02447	0.98	225	-0.00281	0.8	-26	0.00027	0.64	2	0.03981	0.82	366
R-78	7MAY85	G	15.65	-0.005373	0.99	-1.21	0.02006	0.88	188	-0.00551	0.68	-52	-0.00030	0.43	-3	0.01315	0.69	123
		R	16.44	-0.0043	0.99	-1.01	0.01479	0.92	146	-0.00370	0.84	-37	0.00013	0.3	1	0.01574	0.33	155
		B	14.28	-0.00472	0.99	-0.97	0.02575	0.99	221	-0.00481	0.76	-41	-0.00039	0.24	-3	0.02729	0.85	234
STIL.PD	8MAY85	G	19.59	-0.01172	0.98	-3.30	0.03849	0.94	452	0.00092	0.01	11	0.00193	0.98	23	0.03863	0.79	454
		R	18.33	-0.00802	0.98	-2.11	0.00517	0.84	57	-0.00864	0.73	-95	0.00021	0.72	2	0.03309	0.88	364
		B	17.61	-0.00707	0.93	-1.79	0.00499	0.52	53	-0.00996	0.88	-105	0.00075	0.75	8	0.01613	0.68	170

LONG-TERM BIOMONITORING PROGRAM: SEDIMENT OXYGEN AND NUTRIENT EXCHANGE(SONE) SUMMARY
ONEFLX(Summary of sediment-water exchanges expressed in units of mass/m2/time.

				gO2/m2/d			ug-atN/m2/h			ug-atN/m2/h			ug-atP/m2/h			ug-atSi/m2/h		
		CORE	DEPTH	O2 FLX			NH4 FLX			NO3 FLX			PO4 FLX			SI FLX		
TATION	DATE	NO	(cm)	m	r2	flux	m	r2	flux	m	r2	flux	m	r2	flx	m	r2	flux
ST.LEO	25JUNE85	R	19.59	-0.0107	0.99	-3.0	0.00735	0.7	86	0.00651	0.81	76	0.00203	0.64	24	0.03637	0.92	427
		G	20.48	-0.00948	0.99	-2.8	0.00446	0.9	55	0.00891	0.97	110	0.00064	0.37	8	0.03342	0.91	411
		B	19.05	-0.00963	0.99	-2.6	0.00918	0.64	105	0.00689	0.98	79	-0.00019	0.04	-2	0.02669	0.81	305
U.VISTA	25JUNE85	R	19.05	-0.00288	0.99	-0.8	0.02005	0.87	229	0.00246	0.31	28	0.00074	0.73	8	0.00667	0.14	76
		G	19.48	-0.00365	0.99	-1.0	0.02003	0.97	234	0.00154	0.35	18	-0.00099	0.29	-12	-0.01843	0.24	-215
		B	19.91	-0.00498	0.99	-1.4	0.03192	0.99	381	0.00040	0.09	5	0.00191	0.85	23	-0.00604	0.07	-72
HORN.PT	26JUNE85	R	20.66	-0.0111	0.99	-3.3	0.02041	0.98	253	0.01151	0.89	143	0.00018	0.03	2	0.05354	0.83	664
		G	21.81	-0.014	0.99	-4.4	0.02146	0.98	281	0.01434	0.95	188	0.00061	0.18	8	0.04310	0.98	564
		B	21.13	-0.013	0.99	-4.0	0.01807	0.9	229	0.00858	0.89	109	0.00125	0.63	16	0.04262	0.84	540
IND.HIL	NODATA																	
RAG.PT	24JUNE85	R	23.11	-0.00049	0.65	-0.2	0.01847	0.99	256	0.00098	0.56	14	0.00191	0.94	26	0.02616	0.98	363
		G	23.50	-0.00075	0.64	-0.3	0.02626	0.99	370	0.00046	0.09	7	0.00278	0.86	39	0.02577	0.89	363
		B	23.40	-0.00044	0.32	-0.1	0.02985	0.99	419	-0.00052	0.38	-7	0.00232	0.95	33	0.02319	0.97	326
MD.PT	24JUNE85	R	18.33	-0.00045	0.82	-0.1	0.00465	0.9	51	-0.00140	0.18	-15	0.00063	0.46	7	0.01411	0.66	155
		G	19.98	-0.00154	0.96	-0.4	0.00405	0.67	49	-0.00187	0.58	-22	0.00068	0.35	8	0.01164	0.45	140
		B	20.05	-0.00188	0.99	-0.5	0.00582	0.9	70	-0.00043	0.09	-5	0.00066	0.59	8	0.00576	0.08	69
PT.NO.PT	24JUNE85	R	20.84	-0.00342	0.98	-1.0	0.03691	0.99	462	-0.00042	0.03	-5	0.00308	0.96	38	0.09240	0.89	1156
		G	20.77	-0.00227	0.81	-0.7	0.03100	0.99	386	-0.00104	0.06	-13	0.00236	0.87	29	0.06444	0.98	803
		B	22.50	-0.00145	0.91	-0.5	0.02573	0.96	347	0.00054	0.05	7	0.00047	0.87	6	0.07036	0.98	950
R-64	25JUNE85	R	19.98	-0.0014	0.89	-0.4	0.03142	0.99	377	-0.00170	0.18	-20	0.00310	0.93	37	0.06011	0.89	721
		G	17.75	-0.00183	0.97	-0.5	0.05480	0.98	584	-0.00214	0.47	-23	0.01102	0.99	117	0.10280	0.98	1095
		B	19.01	-0.00102	0.55	-0.3	0.03010	0.95	343	-0.00326	0.65	-37	0.00935	0.99	107	0.09225	0.99	1052
R-78	27JUNE85	R	14.73	-0.00122	0.67	-0.3	0.01893	0.98	167	0.00275	0.59	24	0.00078	0.6	7	0.05502	0.99	487
		G	18.11	-0.00116	0.96	-0.3	0.02280	0.99	248	0.00014	0.002	1	0.00126	0.94	14	0.04307	0.99	468
		B	17.97	-0.00037	0.74	-0.1	0.00869	0.85	94	0.00277	0.55	30	0.00063	0.79	7	0.02587	0.98	279
TIL.PD	26JUNE85	R	21.38	-0.00447	0.99	-1.4	0.00488	0.72	63	-0.00033	0.009	-4	0.00038	0.76	5	0.00075	0.001	10
		G	20.84	-0.00396	0.99	-1.2	0.00988	0.77	124	-0.00040	0.03	-5	0.00060	0.99	8	0.01093	0.4	137
		B	22.28	-0.00407	0.98	-1.3	-0.00170	0.73	-23	-0.00101	0.17	-14	0.00042	0.98	6	-0.00013	0.000	-2

Data Table No. 6-1

LONG-TERM BIOMONITORING PROGRAM: VERTICAL FLUX PROGRAM
VFXPROF (Vertical water column profiles of temp.,salinity,oxygen and particulates)

STATION	DATE	TIME	TOTAL DEPTH (m)	SAMPLE DEPTH (m)	TEMP (C)	SALINITY (ppt)	DISSOLVED OXYGEN (mg/l)	PC (ug/l)	PN (ug/l)	PP (ug/l)	CHLORO (ug/l)	SESTON (mg/l)
R-64	23-JULY-84	1600	16.0	1	26.9	8.4	9.70	1829	276	25.2	22.9	13.2
				3	26.1	8.3	8.80					
				4				1124	190	19.8	15.3	11.5
				5	26.0	8.4	8.10					
				7	25.8	8.4	7.80					
				8				582	108	13.8	8.2	6.7
				9	25.8	8.5	7.30					
				10				641	118	16.1	7.4	16.6
				11	24.5	9.8	0.90					
				13	24.0	10.8	0.80					
				15	23.3	12.6	0.30	286	51	12.8	1.7	10.1
R-64	30-JULY-84	0900	16.0	1	24.2	7.0	7.75					
				2				1028	205	27.0	20.9	6.9
				3	24.4	7.0	7.75					
				5	24.2	7.0	7.70					
				6				975	202	25.3	19.1	6.6
				7	24.5	7.0	7.60					
				9	24.7	11.7	3.75	514	99	19.8	4.9	6.4
				11	23.9	16.3	0.25					
				12				262	44	9.4	1.9	5.4
				13	23.9	17.0	0.20					
				15	23.9	18.4	0.20	238	40	7.4	2.1	6.0
R-64	07-AUG-84	1220	16.8	1	26.0	7.0	9.30					
				3	26.0	7.0	8.90	1191	240	29.3	22.0	15.2
				5	25.5	7.9	7.40					
				6				679	141	23.0	5.7	10.2
				7	25.0	8.5	3.50					
				9	24.5	12.1	0.70	572	119	24.9	3.8	12.8
				11	24.0	13.1	0.60					
				12				382	70	14.0	1.6	7.9
				13	23.2	17.3	0.45					
				15	22.5	19.0	0.25	293	54	12.5	3.6	8.6
				16	22.5	19.1	0.25					
R-64	14-AUG-84	1203	16.8	1	28.0	8.1	7.35					
				2				1214	220	25.0	10.4	7.0
				3	27.5	8.0	7.50					
				5	27.5	8.3	5.10	1009	201	25.0	7.7	7.8
				7	26.3	9.4	1.90					
				8				464	81	22.9	1.8	8.0
				9	25.1	12.9	0.45					
				11	23.9	18.0	0.55	268	49	9.8	1.5	6.3
				13	23.1	18.5	0.45					
				15	23.0	18.9	0.45	253	45	11.1	0.9	6.2

LONG-TERM BIOMONITORING PROGRAM: VERTICAL FLUX PROGRAM
VFXPROF (Vertical water column profiles of temp.,salinity,oxygen and particulates)

STATION	DATE	TIME	TOTAL DEPTH (m)	SAMPLE DEPTH (m)	TEMP (C)	SALINITY (ppt)	DISSOLVED OXYGEN (mg/l)	PC (ug/l)	PN (ug/l)	PP (ug/l)	CHLORO (ug/l)	SESTON (mg/l)
R-64	22-AUG-84	0900	16.8	1	25.0	8.6	6.60					
				2				1011	217	24.6	8.0	7.0
				3	25.0	8.6	6.60					
				5	25.0	9.5	4.90					
				6				880	187	24.9	6.3	7.6
				7	25.0	13.0	2.55					
				9	25.0	15.0	0.20	635	124	24.0	4.4	7.4
				11	24.0	19.2	0.20					
				12				248	45	11.5	0.9	8.6
				13	24.0	21.0	0.20					
				15	24.0	21.0	0.20	213	50	12.5	1.1	8.0
R-64	30-AUG-84	1325	16.2	0	25.6	12.9	8.30					
				1				1503	254	37.5	7.5	8.0
				2	24.8	13.0	7.90					
				4	24.8	13.0	7.30					
				6	24.5	13.1	6.60	832	161	25.1	4.7	8.5
				8	24.3	13.1	6.00					
				9				519	102	20.3	2.0	13.8
				10	24.1	15.1	3.10					
				12	23.7	16.4	0.70					
				13				556	103	33.0	1.6	17.4
				14	23.6	17.2	0.40					
				16	23.6	18.7	0.30	417	79	25.5	1.3	18.0
R-64	17-SEPT-84	1830	17.7	1	22.5	14.5	9.90					
				2				1922	296	43.7	16.7	42.2
				3	22.7	14.4	9.90					
				5	22.7	14.3	9.60					
				7	22.7	14.5	9.20					
				8				1548	267	34.5	13.9	43.4
				9	22.7	14.4	8.80					
				11	22.6	14.4	8.60					
				13	22.5	14.8	7.90	976	157	27.5	9.9	21.2
				15	23.7	17.3	3.70					
				16				454	79	25.2	2.9	18.8
				17	24.1	18.3	1.90	754	120	32.3	3.8	23.8

LONG-TERM BIOMONITORING PROGRAM: VERTICAL FLUX PROGRAM
VFXPROF (Vertical water column profiles of temp.,salinity,oxygen and particulates)

STATION	DATE	TIME	TOTAL DEPTH (m)	SAMPLE DEPTH (m)	TEMP (C)	SALINITY (ppt)	DISSOLVED OXYGEN (mg/l)	PC (ug/l)	PN (ug/l)	PP (ug/l)	CHLORO (ug/l)	SESTON (mg/l)
R-64	24-SEPT-84	0940	17.6	1	22.1	14.1	8.70					
				2				956	167	20.0	6.0	19.3
				3	22.1	14.1	8.80					
				5	22.3	14.3	8.40					
				6				956	172	18.4	7.2	19.4
				7	22.2	14.6	7.90					
				9	22.3	14.4	7.70	1024	184	22.3	6.8	21.3
				11	22.3	15.1	6.90					
				13	22.5	15.6	5.20	615	118	23.7	2.9	23.4
				15	23.0	17.3	1.90					
				16				905	157	30.5	3.9	28.4
				17	23.3	18.0	0.90					
R-64	04-OCT-84	1000	19.0	1	18.5	12.3	9.10					
				2				615	126	17.2	5.3	14.3
				3	18.5	12.5	9.05					
				5	18.2	12.6	9.00	495	97	17.4	5.1	14.3
				7	18.2	12.6	8.20					
				9	18.5	13.0	7.90	344	70	12.4	3.3	8.2
				11	18.1	13.0	7.80					
				13	18.5	13.7	7.60					
				15	18.5	13.9	6.90	411	79	12.1	2.2	16.0
				17	19.0	14.1	6.00					
				19	19.6	14.8	5.70	581	96	17.2	2.2	15.2
R-64	16-OCT-84	1540	19.0	1	17.7	12.8	10.40	1271	212	27.0	6.9	15.3
				3	17.8	14.8	9.30					
				5	17.4	15.9	8.40	477	90	11.6	2.9	7.1
				7	17.3	16.1	8.30					
				9	17.8	16.5	8.10					
				11	18.0	17.3	6.90	345	62	10.6	2.0	7.4
				13	18.1	17.5	6.80					
				15	18.3	18.7	5.40	313	53	11.2	1.8	7.4
				17	18.4	19.6	5.10					
				19	18.7	18.4	4.70	629	101	21.3	2.0	28.1

BIOMONITORING; VERTICAL FLUX PROGRAM
VFXPROF (Vertical water column profiles of temp.,salinity,oxygen and particulates)

STATION	DATE	TIME	TOTAL DEPTH (m)	SAMPLE DEPTH (m)	TEMP (C)	SALINITY (ppt)	DISSOLVED OXYGEN (mg/l)	PC (ug/l)	PN (ug/l)	PP (ug/l)	CHLORO (ug/l)	SESTON (mg/l)
R-64	30-NOV-84	1000	18.0	1	11.0	14.5	10.90	395	65	10.6	2.6	5.2
				3	10.9	14.5	10.90					
				5	10.9	14.5	10.90	375	63	10.4	2.1	4.7
				7	10.9	14.5	10.90					
				9	10.9	14.7	10.80	367	63	10.2	2.3	9.4
				11	11.0	14.8	10.80					
				13	11.0	14.9	10.70	239	43	8.9	1.5	4.4
				15	11.0	15.0	10.70					
				17	11.2	15.2	10.20	847	122	22.2	2.6	22.7
R-64	17-DEC-84	0920	16.5	1	8.1	15.8	12.20	378	70	10.9	3.3	3.2
				3	8.1	17.1	12.20					
				5	8.1	17.4	12.00	378	73	9.5	3.7	2.9
				7	8.2	18.2	11.30					
				9	8.2	18.7	11.20	353	67	10.0	3.5	3.6
				11	8.2	18.9	11.80					
				13	8.4	19.8	10.30	391	76	11.1	3.1	3.8
				15	8.6	20.6	9.60					
				16	9.1	22.1	8.90	417	68	14.5	2.5	7.6
R-64	19-FEB-85	0940	18.6	1	1.5	13.5	14.20	1011	167	12.9	6.8	6.4
				3	1.2	14.0	14.20					
				4				1002	137	12.1	7.0	5.8
				5	1.2	14.0	14.20					
				7	1.0	14.3	14.10					
				9	1.0	15.0	13.50	1380	216	20.2	12.0	11.6
				11	1.0	15.5	13.00					
				12				1444	224	18.5	11.8	10.2
				13	1.2	16.0	12.60	1444	224			
				15	1.2	16.0	12.60					
				17	1.5	16.5	12.40	1964	300	30.6	16.4	17.5
R-64	5-MAR-85	0918	18.0	1	6.2	11.7	14.10	707	109	12.2	5.1	5.0
				3	5.8	11.6	14.20					
				5	5.5	11.7	14.20					
				7	5.7	13.2	14.00					
				9	5.5	13.2	14.00	968	144	11.5	8.1	8.6
				11	4.9	13.9	13.60	1000	153	13.5	9.0	7.2
				13	4.3	14.8	13.20	1585	235	17.4	14.2	14.3
				15	3.2	17.3	11.90					
				17	3.0	17.9	11.60	9203	1176	110.0	36.7	85.8

BIOMONITORING; VERTICAL FLUX PROGRAM
VFXPROF (Vertical water column profiles of temp.,salinity,oxygen and particulates)

STATION	DATE	TIME	TOTAL DEPTH (m)	SAMPLE DEPTH (m)	TEMP (C)	SALINITY (ppt)	DISSOLVED OXYGEN (mg/l)	PC (ug/l)	PN (ug/l)	PP (ug/l)	CHLORO (ug/l)	SESTON (mg/l)
R-64	1-APR-85	0940	17.7	1	9.1	10.2	13.00	1349	202	22.7	31.3	7.1
				3	9.0	10.2	13.00					
				5	8.8	10.1	12.80	1322	218	15.0	34.0	5.6
				7	8.8	10.2	12.80					
				9	7.5	12.1	12.10	1299	205	15.0	38.1	10.8
				11	7.5	12.6	10.10	1452	213	17.9	10.0	14.0
				13	7.5	14.0	9.90					
				15	7.5	14.0	9.60	1576	240	18.7	24.6	13.4
R-64	15-APR-85	1015	17.7	1	11.4	13.6	13.20	1622	227	13.3	29.2	13.1
				3	11.1	13.6	13.60					
				5	10.9	14.6	13.50	1520	221	14.4	32.4	12.3
				7	10.9	14.3	13.30					
				9	10.3	14.5	13.20	1387	212	13.3	19.7	11.6
				11	9.1	15.9	10.40					
				13	8.9	18.3	8.40	2448	386	22.8	54.8	20.4
				15	8.6	18.5	8.30					
				17	8.4	18.9	7.90	2210	348	20.1	41.5	16.7
R-64	30-APR-85	1035	17.7	1	16.7	12.4	11.00	1298	213	17.0	13.1	19.0
				3	16.3	12.6	11.00					
				5	16.1	12.9	10.80					
				6				1755	300	20.3	26.9	17.2
				7	15.2	14.1	9.30					
				9	12.0	20.7	5.90	1984	326	39.0	12.3	ND
				11	12.2	22.0	6.30					
				12				1033	173	17.3	11.7	24.3
				13	12.4	21.1	6.30					
				15	12.2	21.1	6.30	937	189	17.1	10.5	19.4
				16	12.4	22.2	6.30					
R-64	8-MAY-85	1150	17.5	1	16.8	11.2	9.12	729	116	11.0	10.3	8.2
				2	16.6	11.2	9.12					
				4	16.2	11.2	8.82	852	134	11.9	11.2	7.7
				6	15.4	12.0	7.52					
				8	15.0	12.6	6.52	875	152	14.4	13.9	7.6
				10	14.8	12.7	4.90					
				12	14.4	15.6	3.90	672	144	15.0	8.3	10.0
				14	14.0	16.0	3.70					
				16	13.8	16.2	3.70	855	164	20.0	7.8	15.6

BIOMONITORING; VERTICAL FLUX PROGRAM
VFXPROF (Vertical water column profiles of temp.,salinity,oxygen and particulates)

STATION	DATE	TIME	TOTAL DEPTH (m)	SAMPLE DEPTH (m)	TEMP (C)	SALINITY (ppt)	DISSOLVED OXYGEN (mg/l)	PC (ug/l)	PN (ug/l)	PP (ug/l)	CHLORO (ug/l)	SESTON (mg/l)
R-64	27-MAY-85	0830	17.5	1	19.8	12.4	7.92	917	162	16.1	5.6	7.6
				2	19.8	12.4	7.91					
				4	19.2	12.6	7.50					
				6	19.1	12.8	7.35					
				8	18.9	13.1	6.30	451	81	9.8	2.8	2.4
				10	18.5	14.3	5.34					
				11				403	74	9.9	1.9	3.9
				12	18.1	15.5	3.99					
				14	17.5	16.2	2.27	339	63	11.0	1.7	4.0
				16	17.4	16.8	1.94	400	62	13.1	2.0	5.4
R-64	5-JUN-85	1745	17.0	1	21.8	12.2	ND	2098	345	34.6	36.5	8.6
				2	21.8	12.2	8.30					
				4	21.5	12.4	7.30	972	163	16.0	12.8	7.1
				6	21.1	13.0	6.80					
				8	20.5	13.0	4.70	627	128	16.2	5.6	5.2
				10	19.5	14.8	3.00					
				12	19.5	17.0	2.80	363	58	70.0	3.0	7.1
				14	19.0	17.9	2.40					
				15	19.0	18.0	2.35	354	58	92.0	2.1	6.6
R-64	18-JUN-85	1100	17.0	1	23.6	13.2	9.10	1731	316	25.7	14.8	20.6
				2	23.1	13.1	9.10					
				4	22.9	13.5	8.31					
				6	22.8	13.8	7.95					
				8	22.5	14.0	7.15					
				10	22.6	14.2	5.00	980	166	15.4	6.8	6.6
				12	21.6	14.8	3.72	692	139	18.9	3.6	9.7
				14	21.8	15.7	1.85	715	133	11.5	3.3	11.0
				16	20.7	16.1	0.90	606	109	12.5	2.9	10.6
R-64	25-JUN-85	1540	17.5	1	25.7	13.8	9.85	2080	337	30.3	15.8	24.8
				2	24.3	13.0	9.60					
				4	24.0	13.2	8.60					
				6	23.9	13.2	8.35					
				8	23.8	13.2	8.12	1196	257	22.9	9.2	7.7
				10	23.5	13.3	6.50					
				12	22.4	14.0	3.05	751	173	28.7	4.8	16.9
				14	21.7	14.8	1.10	650	138	17.8	3.0	7.7
				16	21.6	15.5	0.55	513	92	20.7	2.0	7.7

LONG-TERM BIOMONITORING PROGRAM: VERTICAL FLUX PROGRAM
VFXPROF (Vertical water column profiles of temp.,salinity,oxygen and particulates)

STATION	DATE	TIME	TOTAL DEPTH (m)	SAMPLE DEPTH (m)	TEMP (C)	SALINITY (ppt)	DISSOLVED OXYGEN (mg/l)	PC (ug/l)	PN (ug/l)	PP (ug/l)	CHLORO (ug/l)	SESTON (mg/l)
TOM.PT	23-JULY-84	1120	15.8	1	28.3	4.8	7.70	1072	199	27.6	22.9	10.8
				3	26.2	4.9	8.10					
				5	25.9	5.0	6.60	674	120	23.4	11.9	8.9
				7	25.5	5.4	6.20					
				9	24.2	8.8	3.80	418	73	16.8	4.5	8.3
				11	23.8	9.7	1.20	300	50	16.3	1.5	8.0
				13	22.7	11.5	0.40					
				15	22.5	12.7	0.20	329	54	17.1	2.1	13.1
TOM.PT	30-JULY-84	1325	15.3	1	24.4	5.6	7.80					
				2				878	166	30.4	22.4	8.8
				3	24.2	5.8	7.15					
				5	24.4	7.7	4.10	498	108	20.4	10.9	6.6
				7	24.2	9.3	1.80					
				8				301	50	21.7	2.2	7.3
				9	23.4	12.2	0.20					
				11	22.9	14.4	0.20	220	43	9.1	9.1	5.8
				13	22.9	14.4	0.35					
				14				722	117	19.7	5.4	17.6
				15	22.7	14.7	0.30					
TOM.PT	07-AUG-84	1020	16.2	1	26.5	5.7	8.90					
				2				1556	277	36.3	24.4	11.4
				3	26.0	6.3	7.80					
				5	25.0	7.7	5.30					
				6				816	150	31.7	11.2	7.8
				7	24.0	12.5	0.40					
				9	23.2	14.6	0.25	358	64	28.1	2.1	9.8
				11	23.0	17.0	0.25	338	59	24.5	2.1	9.3
				13	23.0	17.0	0.25					
				15	23.0	17.0	0.20	426	72	26.7	2.7	6.5
TOM.PT	14-AUG-84	1007	16.8	1	27.0	7.5	7.80					
				2				2073	402	60.3	21.3	11.2
				3	27.0	7.5	7.40					
				5	27.1	7.7	7.20	903	183	31.7	8.6	4.9
				7	25.9	10.0	1.80					
				8				537	92	31.0	1.0	10.6
				9	24.8	13.5	0.75					
				11	24.2	14.8	0.50	439	71	37.0	3.0	7.7
				13	23.8	16.5	0.55					
				15	23.1	17.1	0.60	342	58	21.7	2.1	11.3

LONG-TERM BIOMONITORING PROGRAM: VERTICAL FLUX PROGRAM
VFXPROF (Vertical water column profiles of temp.,salinity,oxygen and particulates)

STATION	DATE	TIME	TOTAL DEPTH (m)	SAMPLE DEPTH (m)	TEMP (C)	SALINITY (ppt)	DISSOLVED OXYGEN (mg/l)	PC (ug/l)	PN (ug/l)	PP (ug/l)	CHLORO (ug/l)	SESTON (mg/l)
TOM.PT	22-AUG-84	1146	16.8	1	25.0	8.6	7.10					
				2				1284	250	29.6	9.8	15.2
				3	24.5	8.6	6.60	1174	238	30.1	9.1	15.4
				5	24.0	12.5	3.75					
				6				317	57	16.3	1.0	17.9
				7	24.0	15.5	0.75					
				9	23.0	19.4	0.30	449	68	23.7	1.3	17.2
				11	23.0	19.4	0.25					
				13	23.0	19.4	0.25					
				15	23.0	19.4	0.25	529	80	31.1	1.2	21.1
TOM.PT	30-AUG-84	1010	15.2	0	24.3	12.4	6.80	1287	247	50.2	10.2	17.2
				2	24.3	12.4	6.80					
				4	24.4	12.5	6.30	1002	189	42.3	6.2	17.6
				6	24.2	12.6	5.70					
				8	24.1	12.7	5.80					
				10	24.1	12.7	5.70					
				11				700	128	25.7	4.2	11.2
				12	24.2	13.5	4.60					
				14	23.2	16.5	3.30	711	113	26.8	2.1	10.4
				15	23.2	18.4	0.30	565	110	27.6	2.4	16.8
R-78	17-SEPT-84	2030	15.3	1	21.4	11.8	7.90	687	129	24.4	5.5	14.2
				3	21.6	12.1	7.60					
				5	21.8	12.8	6.80					
				6				572	103	21.7	4.3	12.6
				7	22.2	13.2	6.30					
				9	22.4	13.9	5.60					
				10				466	84	25.5	2.5	11.8
				11	23.2	15.6	2.80					
				13	23.5	16.7	1.20	424	72	17.3	1.1	15.6
				15	23.6	17.5	0.70	1072	165	58.7	3.9	55.2
R-78	24-SEPT-84	1300	15.0	1	23.5	11.4	8.60					
				2				1391	241	34.3	19.2	17.0
				3	23.1	11.5	6.90					
				5	22.9	12.1	6.60	1047	186	33.6	12.5	14.4
				7	22.5	12.3	6.70					
				8				1071	181	35.7	11.6	14.0
				9	22.5	12.6	6.60					
				11	22.5	12.6	6.50					
				12				1094	180	36.5	11.2	13.7
				13	22.5	12.8	5.60					
				15	22.7	13.0	3.20	1302	200	57.7	6.8	31.4

No. 6-9

LONG-TERM BIOMONITORING PROGRAM: VERTICAL FLUX PROGRAM
VFXPROF (Vertical water column profiles of temp.,salinity,oxygen and particulates)

STATION	DATE	TIME	TOTAL DEPTH (m)	SAMPLE DEPTH (m)	TEMP (C)	SALINITY (ppt)	DISSOLVED OXYGEN (mg/l)	PC (ug/l)	PN (ug/l)	PP (ug/l)	CHLORO (ug/l)	SESTON (mg/l)
R-78	04-OCT-84	1330	15.2	1	19.8	12.1	9.25					
				2				519	92	16.3	4.9	10.8
				3	19.0	11.7	8.30					
				5	18.9	11.6	7.90	329	59	12.8	2.6	8.0
				7	18.7	11.5	7.70					
				8				400	67	15.8	2.4	9.6
				9	18.8	11.8	7.50					
				11	18.8	11.9	7.40					
				12				439	73	18.6	2.2	10.8
				13	18.9	12.0	7.10					
				15	19.0	13.1	6.60	856	135	31.3	2.7	21.7
R-78	16-OCT-84	1100	16.4	1	17.7	12.1	8.30	812	172	28.0	9.9	13.0
				3	17.8	13.3	8.20					
				5	17.9	14.1	8.20	587	110	16.8	4.4	5.4
				7	17.9	14.7	7.70					
				9	18.0	13.5	7.20	514	80	15.7	3.0	7.4
				11	18.3	16.6	5.60					
				13	18.5	18.4	4.60	398	70	13.0	1.8	9.0
				15	18.6	18.8	4.20					
				16	18.8	18.9	4.00	581	98	27.7	3.6	37.0

BIOMONITORING; VERTICAL FLUX PROGRAM
VFXPROF (Vertical water column profiles of temp.,salinity,oxygen and particulates)

STATION	DATE	TIME	TOTAL DEPTH (m)	SAMPLE DEPTH (m)	TEMP (C)	SALINITY (ppt)	DISSOLVED OXYGEN (mg/l)	PC (ug/l)	PN (ug/l)	PP (ug/l)	CHLORO (ug/l)	SESTON (mg/l)
R-78	30-NOV-84	1200	17.0	1	11.5	13.2	11.20	667	127	17.5	2.7	5.6
				3	10.8	13.0	11.30					
				5	10.8	13.0	11.30	462	84	17.2	4.1	5.3
				7	10.8	13.1	11.20					
				9	10.8	13.2	10.90	373	72	16.4	3.0	5.4
				11	10.9	13.3	10.70					
				13	10.9	13.5	10.60	509	90	16.4	2.8	6.6
				15	11.0	13.9	10.30					
				16	11.1	14.6	9.80	1013	147	35.8	3.6	21.2
R-78	17-DEC-84	1150	15.9	1	7.8	9.7	11.60	577	101	20.7	5.2	4.2
				3	7.0	12.6	11.00					
				5	7.4	15.0	9.90	345	64	15.2	2.3	4.8
				7	7.4	16.7	9.80					
				9	7.6	18.3	9.50	349	66	14.5	2.3	4.0
				11	8.0	20.1	8.60	448	67	16.6	2.5	8.0
				13	8.3	20.8	8.40					
				15	8.4	21.0	8.20	1319	183	47.8	3.4	29.8
R-78	19-FEB-85	1156	17.4	1	2.2	10.0	14.40	1226	205	17.7	8.9	7.6
				3	1.2	10.5	14.40					
				5	1.2	11.2	14.20					
				6				1226	192	21.4	8.6	11.4
				7	1.2	12.5	13.80					
				9	1.0	13.0	13.60	1175	202	18.6	9.7	7.4
				11	1.5	14.0	13.40					
				12				1344	233	31.1	11.8	11.6
				13	1.0	14.8	12.40					
				15	1.0	15.0	12.20	2652	394	94.0	17.7	43.0
R-78	5-MAR-85	1210	17.0	1	7.1	7.9	13.70	941	152	18.2	7.1	6.2
				3	6.3	8.2	13.60					
				5	5.9	8.9	13.60	1380	234	26.2	12.2	9.6
				7	5.4	9.9	13.20					
				9	4.9	11.7	12.60	2105	356	31.2	20.9	9.5
				11	4.9	13.8	11.70					
				13	3.8	14.4	11.50	2806	478	40.5	26.6	18.3
				15	3.7	14.6	11.40					
				16	3.6	14.7	11.40	2998	499	64.0	28.8	30.6

BIOMONITORING; VERTICAL FLUX PROGRAM
VFXPROF (Vertical water column profiles of temp.,salinity,oxygen and particulates)

STATION	DATE	TIME	TOTAL DEPTH (m)	SAMPLE DEPTH (m)	TEMP (C)	SALINITY (ppt)	DISSOLVED OXYGEN (mg/l)	PC (ug/l)	PN (ug/l)	PP (ug/l)	CHLORO (ug/l)	SESTON (mg/l)
R-78	1-APR-85	1145	16.8	1	10.9	7.0	11.50	1194	190	20.5	7.9	7.6
				3	10.8	7.0	11.50					
				5	8.7	8.1	10.70	1649	296	25.9	27.4	10.3
				7	8.7	10.3	9.60					
				9	8.3	12.4	8.70	1851	327	23.8	36.3	12.7
				11	7.1	13.8	8.50					
				13	7.2	14.9	8.40	1883	315	26.4	29.2	14.4
				15	7.2	14.9	8.30	2187	354	31.8	41.8	19.2
R-78	15-APR-85	1325	17.0	1	11.3	7.0	11.50	1594	254	31.2	19.6	8.8
				3	10.9	8.5	11.40					
				5	10.0	10.5	10.90	1902	306	29.6	21.0	13.0
				7	9.1	14.8	10.70					
				9	8.8	15.8	10.40	2099	361	25.6	45.0	17.0
				11	8.6	16.1	10.20					
				13	8.5	17.7	8.40	2568	415	33.6	42.9	22.0
				15	8.4	18.9	5.60					
				17	8.0	19.6	5.20	1700	293	28.1	29.7	18.0
R-78	27-MAY-85	1115	16.5	1	20.6	8.6	7.75	1247	218	19.0	14.3	5.7
				2	19.9	9.3	7.15					
				4	19.5	9.9	6.50					
				6	19.0	10.8	6.15	433	67	ND	3.0	6.0
				8	18.0	12.5	4.24					
				9				460	85	14.3	3.6	5.2
				10	17.0	14.0	2.50					
				12	16.4	14.6	1.68	530	101	13.1	6.2	6.0
				14	16.1	14.8	1.51					
				16	16.0	15.1	1.33	500	95	15.0	3.5	6.2
R-78	5-JUN-85	1640	16.0	1	21.9	9.8	6.85	1185	210	26.3	15.4	15.0
				2	21.0	10.2	5.65					
				4	19.8	11.8	4.10	668	122	17.3	4.5	10.6
				6	19.0	13.0	2.60					
				7	18.5	13.5	1.90	504	91	16.5	2.8	7.0
				8	18.4	13.8	1.75					
				10	18.2	14.0	1.60	509	93	15.8	2.9	10.4
				12	18.2	14.2	1.45					
				14	17.9	15.2	0.75	777	109	25.9	4.7	15.6
R-78	18-JUN-85	1330	15.5	1	22.9	11.0	8.09	2232	413	37.6	24.9	14.4
				2	22.8	11.0	8.09					
				4	22.5	11.5	6.72					
				6	21.9	11.7	5.69					
				8	21.7	11.9	4.99	1235	227	28.6	13.0	13.4
				10	21.4	13.7	2.55	774	131	15.6	4.0	8.8
				12	20.4	14.8	1.75	793	130	21.7	4.3	9.5
				14	20.3	15.0	1.40	1025	157	23.4	4.5	16.1

BIOMONITORING; VERTICAL FLUX PROGRAM
VFXPROF (Vertical water column profiles of temp.,salinity,oxygen and particulates)

STATION	DATE	TIME	TOTAL DEPTH (m)	SAMPLE DEPTH (m)	TEMP (C)	SALINITY (ppt)	DISSOLVED OXYGEN (mg/l)	PC (ug/l)	PN (ug/l)	PP (ug/l)	CHLORO (ug/l)	SESTON (mg/l)
R-78	27-JUN-85	1045	16.8	1	22.5	10.8	7.48	1690	318	43.1	18.3	20.6
				2	22.5	10.8	7.42					
				4	22.6	10.9	7.20	1388	279	32.3	16.7	15.2
				6	22.5	11.1	6.52					
				8	22.4	12.5	4.72	1012	223	23.2	10.7	9.6
				10	22.3	14.0	2.38					
				12	21.8	14.5	1.90	820	163	22.2	4.9	16.8
				14	21.6	14.7	1.58					
				15	21.5	ND	0.92	692	128	27.2	4.0	17.7

Data Table No. 7-1

LONG-TERM BIOMONITORING PROGRAM: VERTICAL FLUX
VFXSEDS (description of particles in the surface 1 cm of the sediment column)

STATION	DATE	PC (%)	PN (%)	PP (%)	CHLORO (mg/m2)
R-64	23JULY84	3.11	0.43	0.059	19.6
	30JULY84	2.74	0.34	0.048	12.43
	7AUG84	3	0.37	0.054	19.21
	14AUG84	3.62	0.5	0.06	13.37
	22AUG84	3.78	0.51	0.064	16.01
	30AUG84	2.91	0.4	0.05	12.81
	17SEPT84	ND	ND	ND	ND
	24SEPT84	3.09	0.39	0.062	5.6
	4OCT84	2.4	0.3	0.051	5.82
	30NOV84	2.52	0.31	0.055	7.63
	17DEC84	3.89	0.39	0.059	7.41
	19FEB85	2.88	0.44	0.066	10.44
	5MAR85	3.42	0.49	0.073	12.33
	1APR85	3.29	0.39	0.055	33.7
	15APR85	2.66	0.34	0.056	54.2
	30APR85	2.66	0.34	0.057	68.9
	8MAY85	3.64	0.48	0.081	49.5
	27MAY85	2.74	0.36	0.055	34.57
	5JUN85	2.88	0.38	0.068	41.61
	18JUN85	2.92	0.39	0.063	42.83
	25JUN85	3.6	0.47	0.078	32.12

LONG-TERM BIOMONITORING PROGRAM: VERTICAL FLUX
VFXSEDS (description of particles in the surface 1 cm of the sediment column)

STATION	DATE	PC (%)	PN (%)	PP (%)	CHLORO (mg/m2)
TOM PT	23JULY84	3.39	0.43	0.090	19.6
	30JULY84	3.67	0.47	0.083	17.0
	7AUG84	3.53	0.44	0.078	19.2
	14AUG84	3.43	0.40	0.073	17.7
	22AUG84	3.83	0.49	0.089	18.5
	30AUG84	3.28	0.41	0.077	13.2
R-78	17SEPT84	ND	ND	ND	ND
	24SEPT84	3.05	0.32	0.087	5.7
	4OCT84	3.33	0.37	0.078	6.04
	30NOV84	1.83	0.14	0.053	5.38
	17DEC84	3.49	0.39	0.122	8.62
	19FEB85	3.65	0.38	0.085	12.13
	5MAR85	3.28	0.43	0.101	11.93
	1APR85	3.63	0.42	0.101	57.1
	15APR85	2.75	0.25	0.061	21
	7MAY85	ND	ND	ND	ND
	27MAY85	5.65	0.32	0.061	11.22
	5JUNE85	4.12	0.47	0.136	38.24
	18JUNE85	4.11	0.42	0.1	40.99
	27JUNE85	3.83	0.48	0.087	26

Data Table No. 8-1

LONG-TERM BIOMONITORING PROGRAM;VERTICAL FLUX PROGRAM
VFXDEPO (deposition rate of particulate to the top of the sediment trap cup at deployment depth)

STATION	DATE DEPLOY	TIME DEPLOY	DATE RETRIEVE	TIME RETRIEVE	TOTAL TIME (days)	TOTAL DEPTH (m)	CUP DEPTH (m)	SESTON (g/m2/d)	PC (mg/m2/d)	PN (mg/m2/d)	PP (mg/m2/d)	CHLORO (mg/m2/d)
TOM.PT	23-7-84	1315	30-7-84	1455	7.06	15.50	4.20	16.40	836.08	125.18	28.92	6.95
					7.06	15.50	4.20	18.46	940.98	129.73	28.30	7.73
					7.06	15.50	4.20	10.98	468.96	67.70	15.62	3.28
					7.06	15.50	4.20	12.54	654.79	93.94	16.74	5.18
					7.06	15.50	9.20	23.11	1063.77	147.49	38.92	10.39
					7.06	15.50	9.20	26.39	1184.54	158.35	40.00	11.15
					7.06	15.50	9.20	25.09	1163.97	157.60	39.23	9.53
					7.06	15.50	9.20	28.28	1144.75	143.14	40.25	8.37
					7.06	15.50	14.30	351.97	17667.97	2365.50	367.76	82.64
					7.06	15.50	14.30	422.28	20802.11	2791.64	461.40	98.49
					7.06	15.50	14.30	376.87	18673.40	2556.33	412.14	95.22
TOM.PT	30-7-84	1510	7-8-84	1100	7.90	16.00	4.70	8.39	865.27	81.95	12.89	2.67
					7.90	16.00	4.70	8.65	493.55	71.35	15.83	3.35
					7.90	16.00	9.70	17.91	988.39	140.00	30.06	3.07
					7.90	16.00	9.70	20.97	903.14	120.80	30.94	8.71
					7.90	16.00	14.80	312.92	14209.64	1898.53	326.37	58.11
					7.90	16.00	14.80	285.58	14150.12	1894.85	320.56	61.76
TOM.PT	7-8-84	1100	14-8-84	1030	7.00	16.20	4.90	8.68	689.41	106.38	19.33	2.16
					7.00	16.20	4.90	10.45	713.77	103.73	21.42	2.62
					7.00	16.20	9.90	13.80	755.93	106.86	21.03	3.24
					7.00	16.20	9.90	13.00	724.58	94.93	20.86	3.14
					7.00	16.20	15.00	209.68	10389.69	1401.98	219.61	26.67
					7.00	16.20	15.00	192.11	9870.91	1328.21	211.96	23.89
TOM.PT	14-8-84	1045	22-8-84	1200	8.08	16.20	4.90	15.50	1012.12	154.25	33.35	4.23
					8.08	16.20	4.90	15.57	1025.26	143.93	31.25	3.57
					8.08	16.20	9.90	17.80	692.42	99.12	34.96	3.17
					8.08	16.20	9.90	16.29	687.25	96.58	19.60	2.96
					8.08	16.20	15.00	253.70	12829.32	1790.90	282.07	31.65
					8.08	16.20	15.00	271.68	12759.04	1784.98	261.29	30.98
TOM.PT	22-8-84	1200	30-8-84	1113	7.96	15.35	2.48	10.69	949.16	162.66	25.46	3.58
					7.96	15.35	2.48	10.47	923.37	156.04	28.98	2.80
					7.96	15.35	7.77	19.95	1017.82	153.07	28.21	2.69
					7.96	15.35	7.77	22.04	1031.04	154.50	26.89	2.68
					7.96	15.35	13.52	310.22	15980.69	2096.68	346.47	26.99
					7.96	15.35	13.52	344.93	16139.16	2111.23	342.50	28.59

LONG-TERM BIOMONITORING PROGRAM: VERTICAL FLUX PROGRAM (VFX)
VFXDEPO (Deposition rate of particulates to the top of the sediment trap cup at deployment depth)

STATION	DATE DEPLOY	TIME DEPLOY	DATE RETRIEVE	TIME RETRIEVE	TOTAL TIME (days)	TOTAL DEPTH (m)	CUP DEPTH (m)	SESTON (g/m2/d)	PC (mg/m2/d)	PN (mg/m2/d)	PP (mg/m2/d)	CHLORO (mg/m2/d)
R-78	17SEPT84	21:00	24SEPT84	12:30	6.65	15.20	3.72	10.09	786.42	129.51	29.02	7.33
					6.65		3.72	10.03	717.00	115.46	25.19	7.10
					6.65		8.47	16.29	1066.58	150.25	39.57	8.82
					6.65		8.47	17.68	1185.16	175.26	39.18	8.23
					6.65		13.35	289.41	13440.42	1848.79	506.14	29.61
					6.65		13.35	319.75	12838.32	1928.97	590.69	35.00
R-78	24SEPT84	12:30	4OCT84	14:00	10.06	15.20	3.72	26.60	986.13	129.30	36.71	3.71
					10.06		3.72	24.15	1051.71	139.84	40.11	1.56
					10.06		8.47	35.93	1577.16	208.50	61.39	5.31
					10.06		8.47	41.68	1619.25	218.57	62.61	5.70
					10.06		13.35	445.75	17972.11	2399.41	646.83	31.26
					10.06		13.35	401.63	13729.65	2010.79	596.86	25.42
R-78	4OCT84	1400	16OCT84	12:30	11.94	15.83	4.35	10.07	423.51	65.60	15.72	2.32
					11.94		4.35	9.94	515.19	71.32	19.05	2.33
					11.94		9.10	22.77	909.35	148.29	35.78	3.84
					11.94		9.10	20.79	946.34	144.80	33.06	4.00
					11.94		13.98	280.65	11773.61	1424.64	403.26	20.34
					11.94		13.98	293.50	114910.79	1489.76	390.77	21.20
R-78	30NOV84	12.30	17DEC84	12:30	17.00	16.25	4.77	8.62	506.30	74.73	9.65	1.74
					17.00		4.77	8.15	441.71	63.99	16.36	1.61
					17.00		9.52	20.43	880.58	114.14	33.49	2.14
					17.00		9.52	20.33	878.69	115.19	33.69	2.32
					17.00		14.40	244.07	16525.73	3849.88	327.25	9.39
					17.00		14.40	250.52	9851.55	1242.88	341.44	17.44
R-78	19FEB85	1345	5MAR85	1200	13.95	17.40	5.92	5.28	840.54	121.99	12.20	8.61
					13.95		5.92	5.28	696.23	128.22	12.32	7.67
					13.95		10.67	10.38	882.21	129.54	19.37	7.11
					13.95		10.67	10.25	827.57	121.66	17.86	6.17
					13.95		15.55	226.69	11896.39	1560.98	299.95	44.52
					13.95		15.55	223.23	11251.29	1464.23	296.17	43.83
R-78	1APR85	1220 LOST,NOT RESET UNTIL^27MAY85										
R-78	27MAY85	1215	5JUNE85	1520	9.13	15.70	4.22	5.86	421.21	56.30	93.20	3.42
					9.13		4.22	5.51	445.23	50.03	94.54	2.78
					9.13		8.97	14.22	737.69	85.13	19.41	5.63
					9.13		8.97	16.91	842.52	90.12	18.45	5.56
					9.13		13.85	249.32	11161.87	1438.68	382.39	66.32
					9.13		13.85	236.55	14427.20	1779.00	347.81	40.56

LONG-TERM BIOMONITORING PROGRAM: VERTICAL FLUX PROGRAM (VFX)
VFXDEPO (Deposition rate of particulates to the top of the sediment trap cup at deployment depth)

STATION	DATE DEPLOY	TIME DEPLOY	DATE RETRIEVE	TIME RETRIEVE	TOTAL TIME (days)	TOTAL DEPTH (m)	CUP DEPTH (m)	SESTON (g/m2/d)	PC (mg/m2/d)	PN (mg/m2/d)	PP (mg/m2/d)	CHLORO (mg/m2/d)
R-78	5JUNE85	1520	18JUNE85	1450	12.98	15.75	4.27	5.14	492.87	65.62	10.95	3.18
					12.98		4.27	5.58	489.08	60.01	9.53	3.60
					12.98		9.02	9.29	636.75	74.14	18.25	3.74
					12.98		9.02	9.39	604.17	70.55	13.99	3.93
					12.98		13.90	110.70	5422.76	650.20	176.39	16.56
					12.98		13.90	117.59	5735.46	696.08	202.74	16.56
R-78	18JUNE85	1450	27JUNE85	1130	8.86	15.80	4.32	8.37	617.70	107.42	13.56	5.23
					8.86		4.32	7.33	607.70	105.74	12.97	4.85
					8.86		9.07	10.30	783.14	122.87	16.63	5.12
					8.86		9.07	11.04	737.80	111.68	17.33	5.80
					8.86		13.95	96.14	4494.51	593.94	15.15	13.41
					8.86		13.95	96.23	4948.06	620.08	14.95	14.85

R-78 NOT RESET VFXDEPO MONITORING DISCONTINUED AT THIS STATION.

LONG-TERM BIOMONITORING PROGRAM;VERTICAL FLUX PROGRAM
VFXDEPO (deposition rate of particulate to the top of the sediment trap cup at deployment depth)

STATION	DATE DEPLOY	TIME DEPLOY	DATE RETRIEVE	TIME RETRIEVE	TOTAL TIME (days)	TOTAL DEPTH (m)	CUP DEPTH (m)	SESTON (g/m2/d)	PC (mg/m2/d)	PN (mg/m2/d)	PP (mg/m2/d)	CHLORO (mg/m2/d)
R-64	23-7-84	1745	30-7-84	1010	6.70	16.00	3.80	2.74	423.88	70.71	8.98	6.57
					6.70	16.00	3.80	2.68	335.91	57.98	7.00	4.54
					6.70	16.00	3.80	1.17	145.08	23.83	3.76	1.78
					6.70	16.00	3.80	0.96	114.17	20.21	3.29	1.37
					6.70	16.00	7.80	3.97	389.14	61.53	8.31	3.78
					6.70	16.00	7.80	4.07	414.47	67.93	8.93	4.34
					6.70	16.00	7.80	2.45	235.31	35.66	6.52	1.97
					6.70	16.00	7.80	2.08	234.46	40.28	6.30	2.45
					6.70	16.00	13.70	128.09	6506.81	950.10	110.39	31.60
					6.70	16.00	13.70	105.77	5784.12	828.51	96.34	27.84
					6.70	16.00	13.70	108.27	5725.67	811.07	42.58	25.89
					6.70	16.00	13.70	106.19	5896.71	836.80	100.89	26.80
R-64	30-7-84	1045	7-8-84	1250	8.08	16.10	3.90	3.47	429.39	72.40	15.97	2.77
					8.08	16.10	3.90	3.78	553.94	96.21	13.16	3.16
					8.08	16.10	7.90	2.02	269.74	44.61	7.13	2.26
					8.08	16.10	7.90	2.35	239.49	38.25	6.01	1.91
					8.08	16.10	13.80	42.39	2350.97	353.48	45.53	12.40
					8.08	16.10	13.80	42.82	2288.54	345.94	46.07	12.03
R-64	7-8-84	1230	14-8-84	1230	7.00	16.50	4.30	2.68	531.16	86.07	13.44	1.96
					7.00	16.50	4.30	2.67	499.75	81.21	11.45	1.84
					7.00	16.50	8.30	3.40	438.07	70.26	9.51	2.10
					7.00	16.50	8.30	3.47	468.01	74.03	9.63	2.26
					7.00	16.50	14.20	20.80	1522.78	227.26	29.45	5.54
					7.00	16.50	14.20	26.76	1625.40	240.23	31.52	5.79
R-64	14-8-84	1230	22-8-84	910	6.90	16.80	4.60	6.95	745.93	130.14	19.82	2.74
					6.90	16.80	4.60	6.99	756.30	131.96	20.21	2.76
					6.90	16.80	8.60	8.14	549.84	87.21	13.09	2.40
					6.90	16.80	8.60	7.95	541.07	85.18	11.57	2.03
					6.90	16.80	14.50	62.56	3330.23	497.24	60.88	9.92
					6.90	16.80	14.50	63.31	2913.58	460.09	55.30	8.85
R-64	22-8-84	910	30-8-84	1400	8.21	16.80	4.60	16.76	1928.58	373.12	56.95	6.69
					8.21	16.80	4.60	10.71	1449.08	257.69	35.48	4.35
					8.21	16.80	8.60	10.19	844.04	150.69	20.26	2.27
					8.21	16.80	8.60	9.75	812.06	140.29	20.26	2.55
					8.21	16.80	14.50	193.54	8416.27	1260.23	160.00	18.68
					8.21	16.80	14.50	192.75	8334.28	1236.18	157.14	18.68

LONG-TERM BIOMONITORING PROGRAM: VERTICAL FLUX PROGRAM (VFX)
VFXDEPO (Deposition rate of particulates to the top of the sediment trap cup at deployment depth)

STATION	DATE DEPLOY	TIME DEPLOY	DATE RETRIEVE	TIME RETRIEVE	TOTAL TIME (days)	TOTAL DEPTH (m)	CUP DEPTH (m)	SESTON (g/m2/d)	PC (mg/m2/d)	PN (mg/m2/d)	PP (mg/m2/d)	CHLORO (mg/m2/d)
R-64	17SEPT84	1813	24SEPT84	0921	6.63	17.70	4.26	5.40	600.23	98.77	12.66	5.70
					6.63		4.26	5.42	584.95	94.16	11.22	5.90
					6.63		8.52	7.86	587.41	95.74	11.26	5.36
					6.63		8.52	6.91	607.86	90.72	11.72	5.48
					6.63		15.44	116.70	5955.38	872.89	126.62	20.67
					6.63		15.44	121.37	6294.38	961.74	131.01	28.90
R-64	24SEPT84	0930	4OCT84	1030	10.04	17.50	4.16	10.57	499.31	79.11	16.34	3.51
					10.04		4.16	15.73	491.21	76.71	16.34	3.72
					10.04		8.42	22.72	992.14	152.27	19.40	3.87
					10.04		8.42	27.78	742.28	126.13	20.27	4.53
					10.04		15.34	270.67	10518.54	1461.68	220.44	24.96
					10.04		15.34	314.53	11813.27	1641.30	259.00	29.80
R-64	4OCT84	1030	16OCT84	2115	12.45	17.60	4.62	6.13	483.02	78.66	12.61	6.08
					12.45		4.62	5.72	485.32	76.89	14.23	6.74
					12.45		9.67	9.44	611.45	91.33	15.22	4.89
					12.45		9.67	10.42	598.46	87.45	15.06	5.36
					12.45		15.05	153.73	5648.88	799.26	161.01	18.93
					12.45		15.05	154.65	5500.31	758.63	145.21	17.04
R-64	30NOV84	0945	17DEC84 LOST									
R-64	19FEB85	0930	5MAR85	0900	13.98	18.60	5.62	1.64	324.75	57.60	3.83	3.21
					13.98		5.62	1.97	377.52	53.83	5.58	3.26
					13.98		10.67	4.96	675.60	97.90	11.98	5.13
					13.98		10.67	5.02	648.54	107.17	8.16	5.07
					13.98		16.05	96.50	5126.45	665.92	94.75	35.33
					13.98		16.05	92.36	4946.67	672.46	97.26	28.49
R-64	1APRIL85	0915	15APRIL85	1000	14.03	17.70	4.72	5.63	879.98	111.70	11.07	16.98
					14.03		4.72	7.00	993.71	130.15	10.63	19.83
					14.03		9.77	13.19	1060.15	199.05	20.01	12.13
					14.03		9.77	11.75	1074.44	163.73	14.51	18.69
					14.03		15.15	57.52	2908.98	524.91	58.15	21.97
					14.03		15.15	59.65	2556.70	443.04	53.14	15.26
R-64	15APRIL85	1015	30APRIL85	TRAP LOST		17.70						
R-64	30APRIL85	1020	8MAY85	1130	8.05	17.60	4.62	3.90	760.98	94.00	3.04	8.01
					8.05		4.62	4.99	768.96	99.31	9.26	8.11
					8.05		9.67	17.87	1229.14	182.97	22.56	11.93
					8.05		9.67	18.03	1097.66	163.39	21.25	9.95
					8.05		15.05	93.71	11031.36	1650.62	102.43	32.57
					8.05		15.05	99.57	14294.71	2090.20	104.26	35.01

LONG-TERM BIOMONITORING PROGRAM: VERTICAL FLUX PROGRAM (VFX)
VFXDEPO (Deposition rate of particulates to the top of the sediment trap cup at deployment depth)

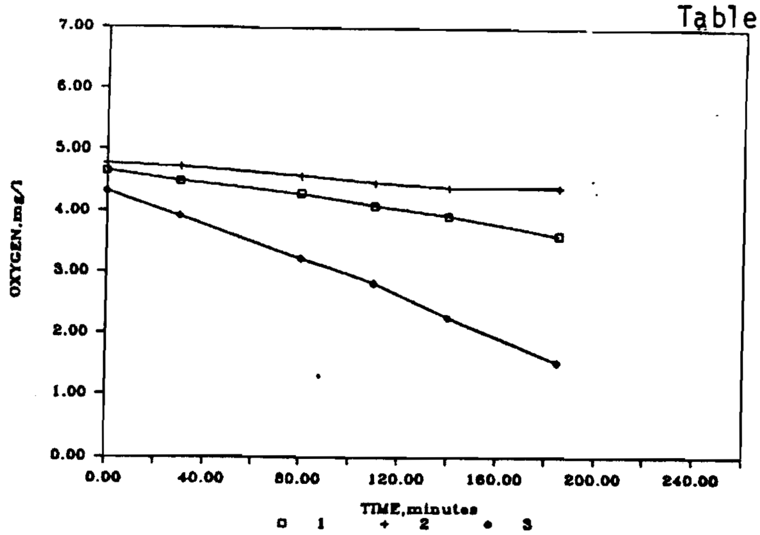
STATION	DATE DEPLOY	TIME DEPLOY	DATE RETRIEVE	TIME RETRIEVE	TOTAL TIME (days)	TOTAL DEPTH (m)	CUP DEPTH (m)	SESTON (g/m2/d)	PC (mg/m2/d)	PN (mg/m2/d)	PP (mg/m2/d)	CHLORO (mg/m2/d)
R-64	27MAY85	0900	5JUNE85	1730	9.35	17.05	4.07	3.47	462.90	76.18	83.50	4.45
					9.35		4.07	2.12	489.59	89.74	81.76	4.89
					9.35		9.12	3.66	372.55	55.73	69.43	3.30
					9.35		9.12	3.89	432.22	61.54	74.12	3.86
					9.35		14.50	34.71	1660.30	222.35	41.28	7.60
					9.35		14.50	35.84	1783.86	247.96	41.28	9.64
R-64	5JUNE85	1740	18JUNE85	1015	12.69	17.00	4.02	2.97	327.52	44.79	4.77	2.74
					12.69		4.02	3.94	491.34	77.63	6.64	2.66
					12.69		9.07	5.25	460.65	60.62	6.43	4.71
					12.69		9.07	4.91	507.93	75.07	7.47	4.96
					12.69		14.45	39.68	1541.77	184.98	31.80	8.99
					12.69		14.45	38.57	1555.39	190.37	30.42	8.83
R-64	18JUNE85	1025	25JUNE85	1630	7.25	17.25	4.27	6.78	527.65	83.85	8.83	4.40
					7.25		4.27	4.96	733.82	129.22	11.25	6.33
					7.25		9.32	6.05	617.43	100.18	9.68	5.05
					7.25		9.32	6.17	756.33	116.64	10.16	5.81
					7.25		14.70	30.91	1596.26	232.06	39.93	8.82
					7.25		14.70	32.12	2032.20	286.75	ND	8.37
R-64	25JUNE85	1700	11JULY85	1130	15.77	17.5	4.52	4.23	562.59	91.06	11.57	2.83
					15.77		4.52	4.45	514.25	78.15	9.46	3.59
					15.77		9.57	9.07	414.96	61.63	6.73	2.89
					15.77		9.57	8.32	448.82	63.17	12.60	2.80
					15.77		14.95	100.12	86.36	443.55	68.84	13.89
R-64	11JULY85	1210	24JULY85	1105	12.96	17.5	4.52	9.48	637.46	106.20	0.00 *	5.54
					12.96		4.52	18.88	634.35	117.03	0.00	5.82
					12.96		9.57	16.45	634.35	105.32	0.00	4.28
					12.96		9.57	14.69	662.50	116.08	0.00	3.76
					12.96		14.95	215.24	7718.48	1044.04	0.00	21.86
					12.96		14.95	203.39	6437.20	881.94	0.00	21.52
R-64	24JULY85	1130	30JULY85	1140	6.01	17.15	4.17	8.54	997.47	184.05	0.00	10.25
					6.01		4.17	10.95	814.15	149.46	0.00	9.87
					6.01		9.22	18.10	1243.55	225.36	0.00	10.95
					6.01		9.22	16.20	1110.00	191.64	0.00	10.84
					6.01		14.60	102.17	3737.22	563.54	0.00	21.89
					6.01		14.60	92.54	3488.51	522.23	0.00	23.06

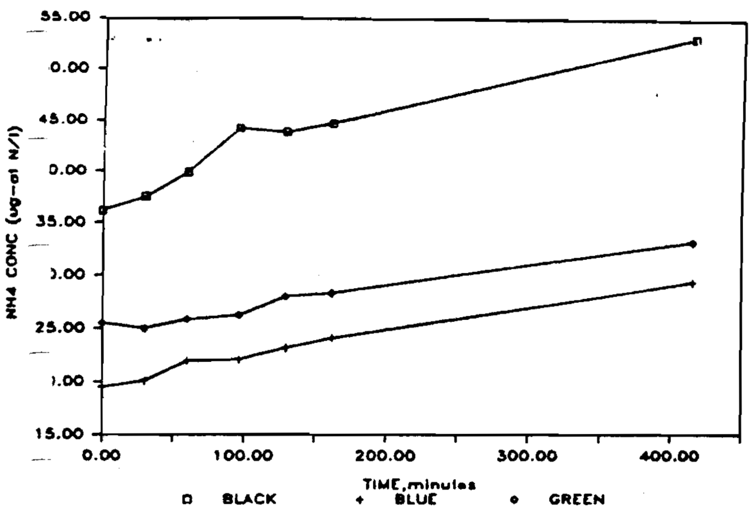
* DATA NOT YET AVAILABLE

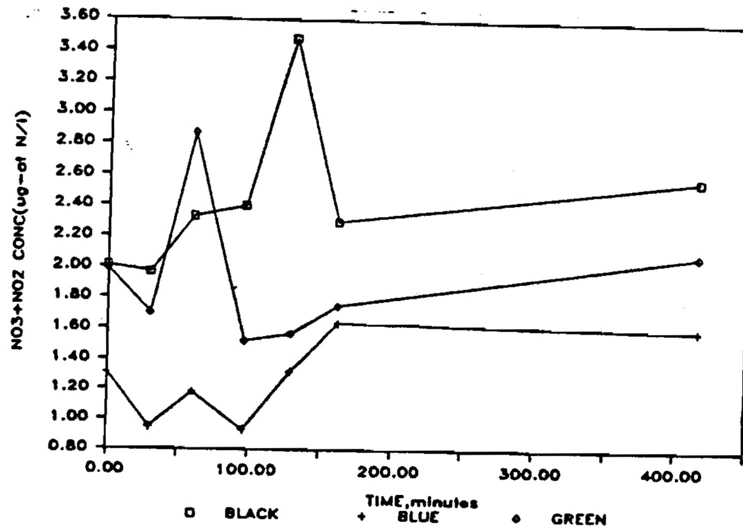
concentration vs time plots of oxygen and nutrients obtained from sediment microcosms used in SONE monitoring. See Data Table No.4 for tabular data and Data Table 5 for calculated flux data

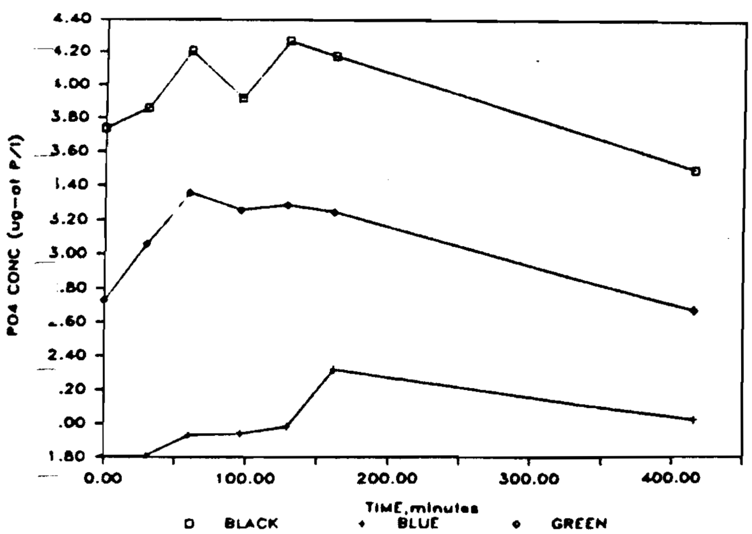
ECOSYSTEM PROCESSES

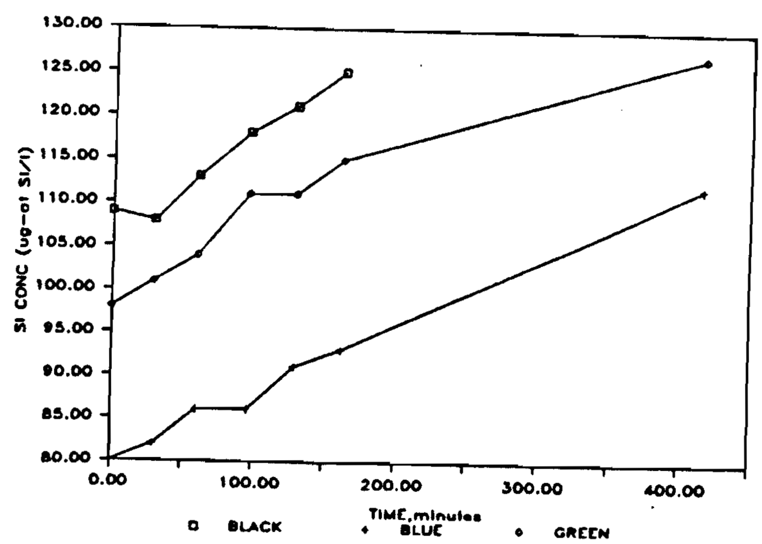
ST LEONARD AUG.1984





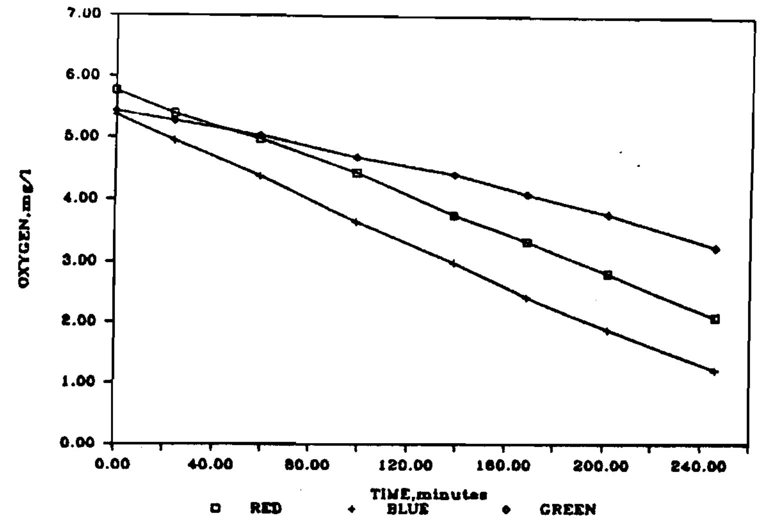


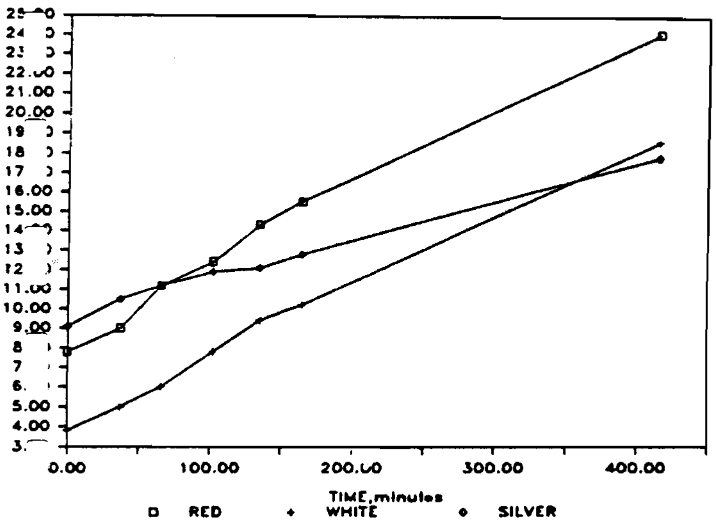


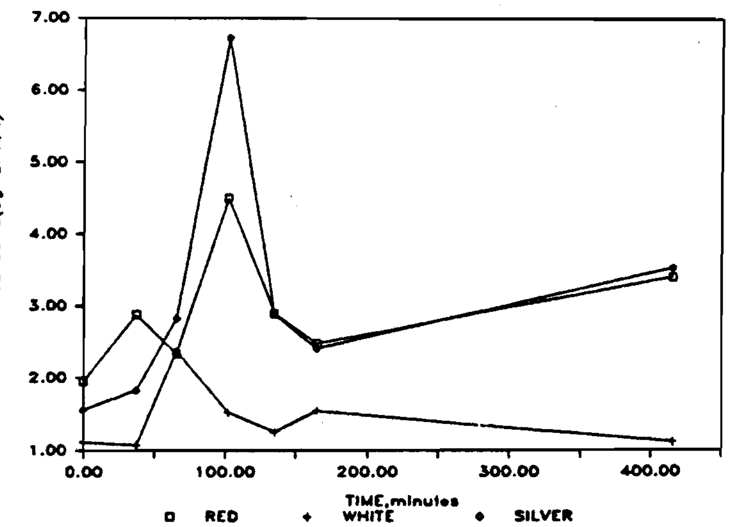


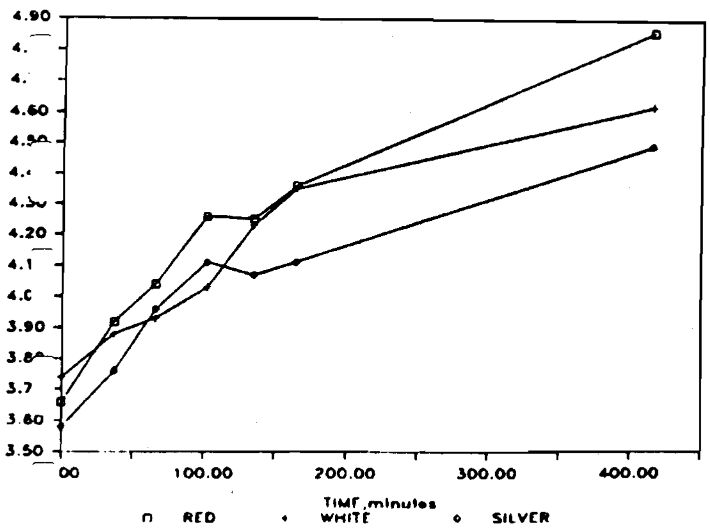
ECOSYSTEM PROCESSES

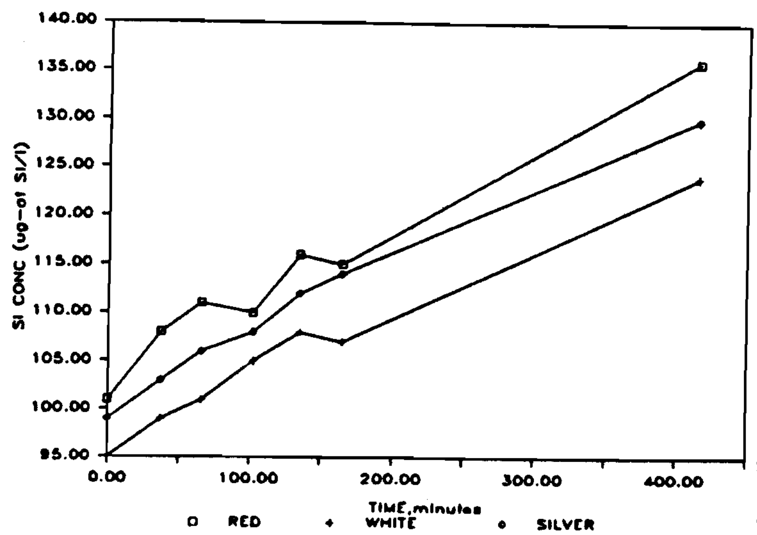
BUENA VISTA AUG.1984





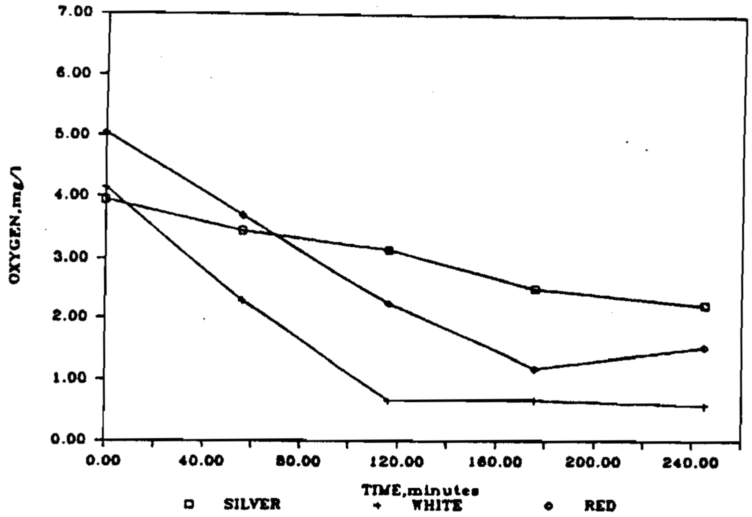


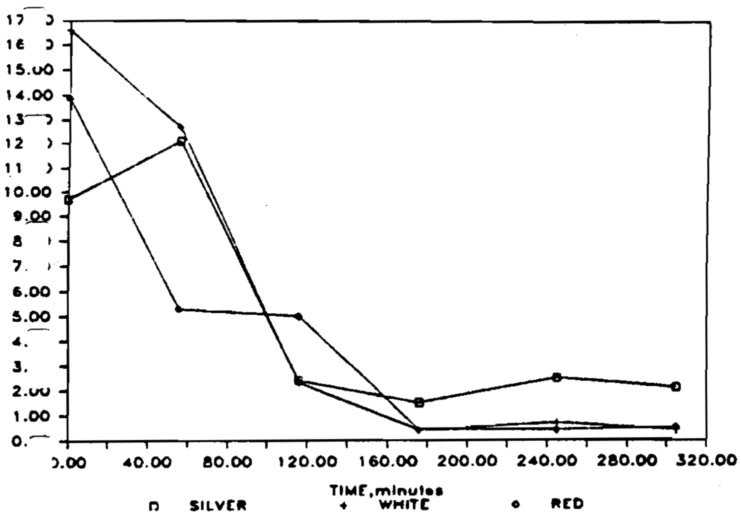


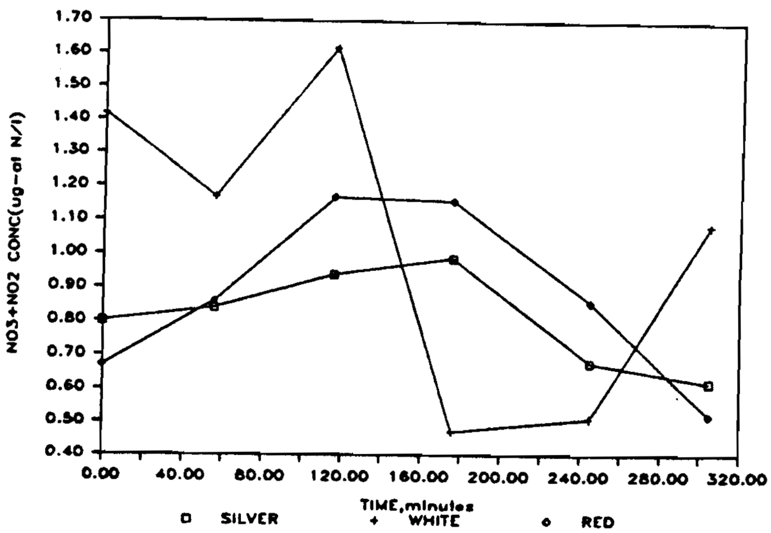


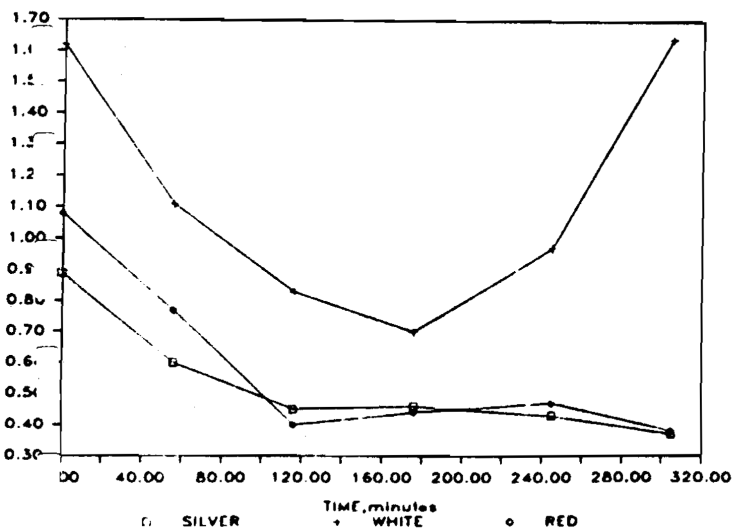
ECOSYSTEM PROCESSES

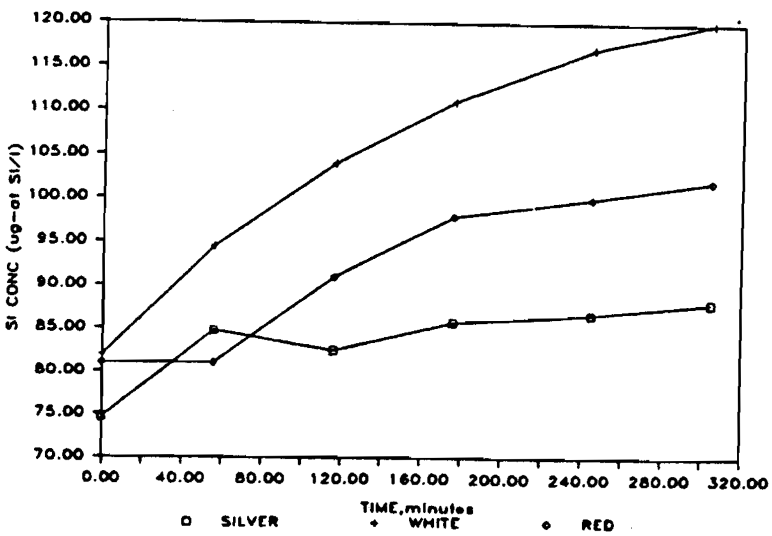
HORN PT AUG.1984



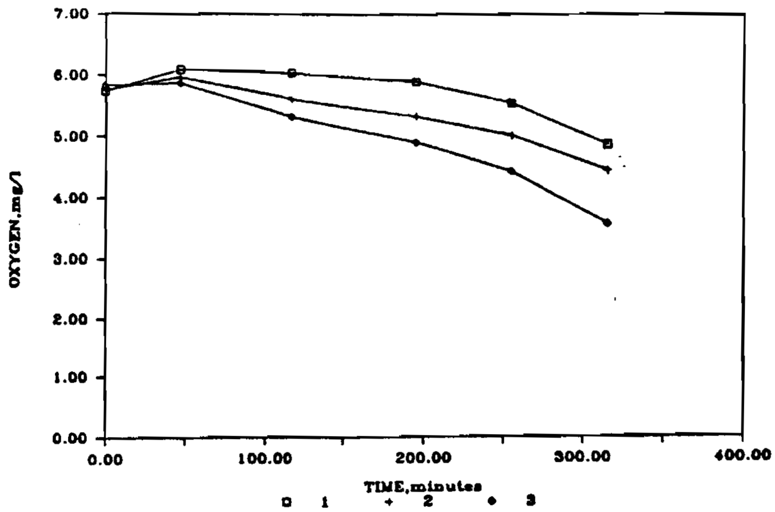


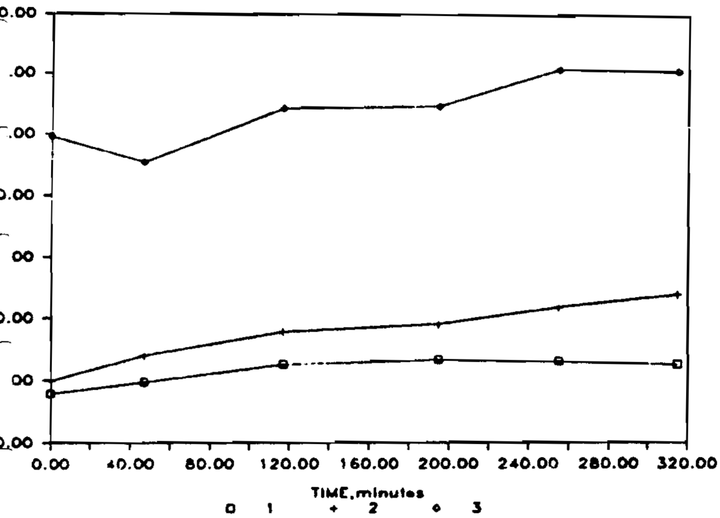


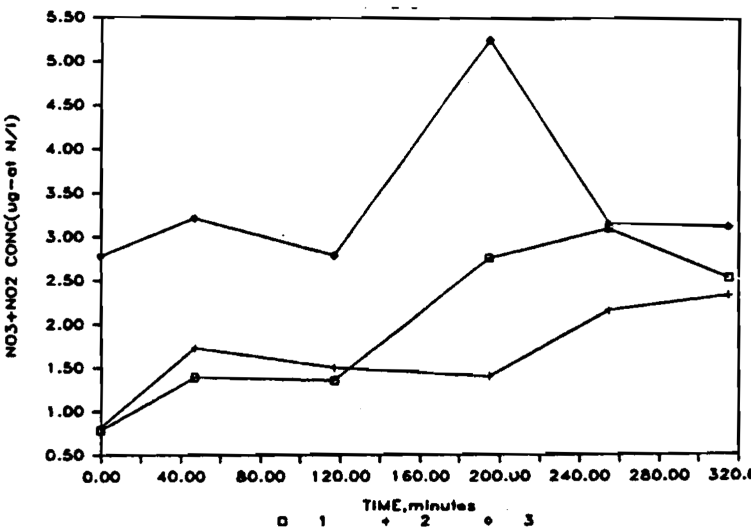


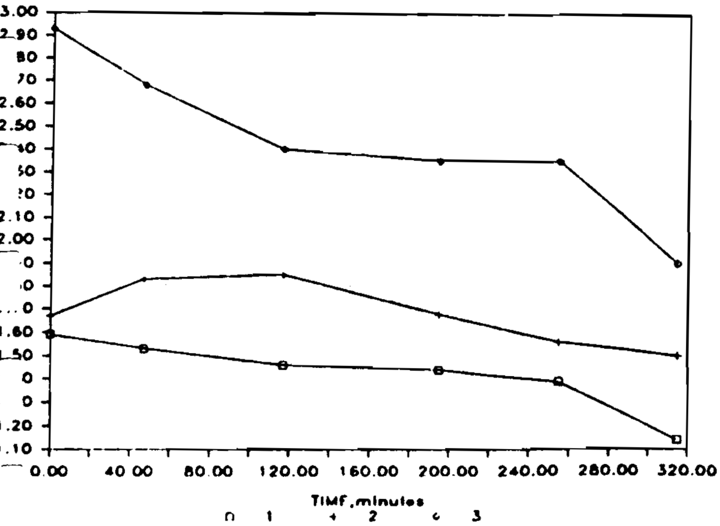


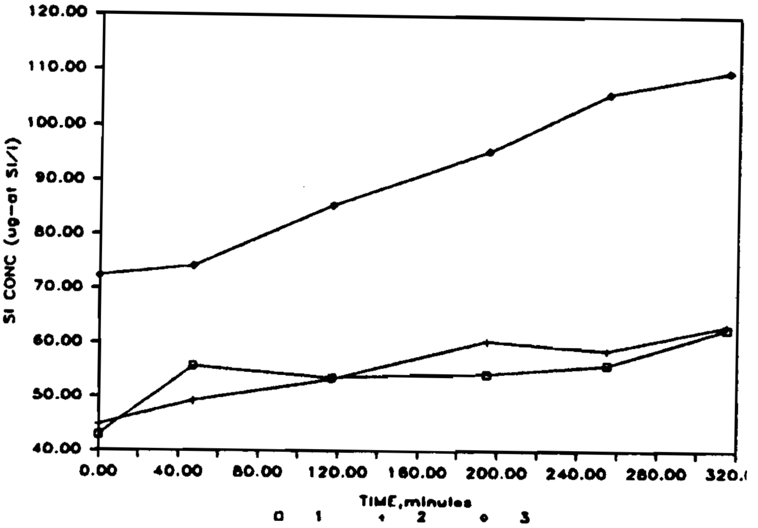
WINDY HILL AUG.1984



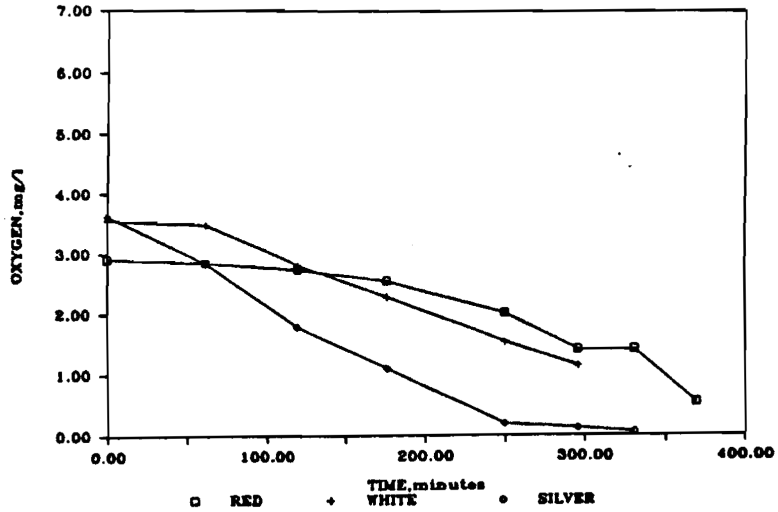


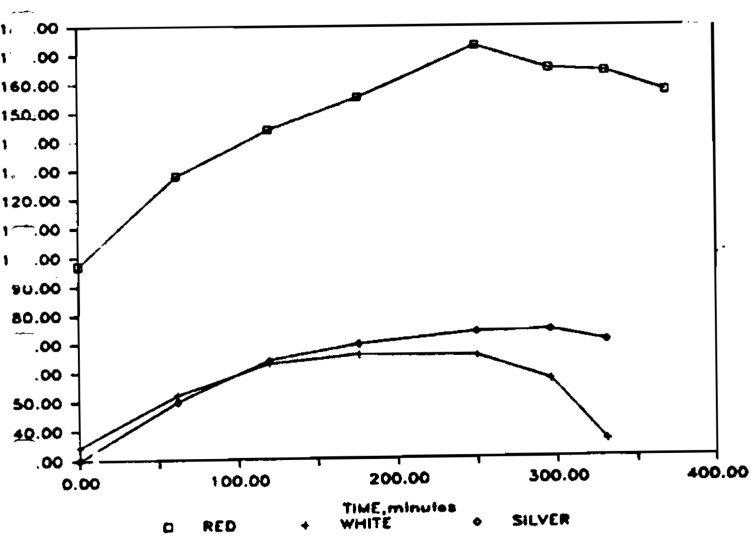


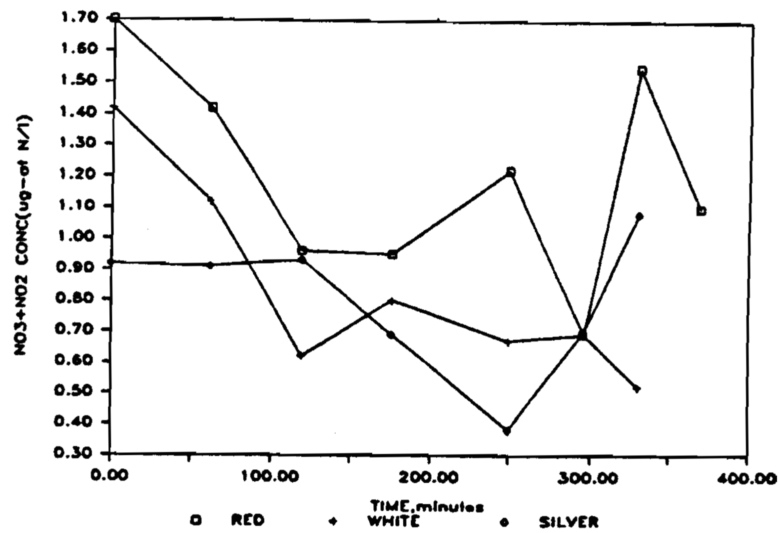


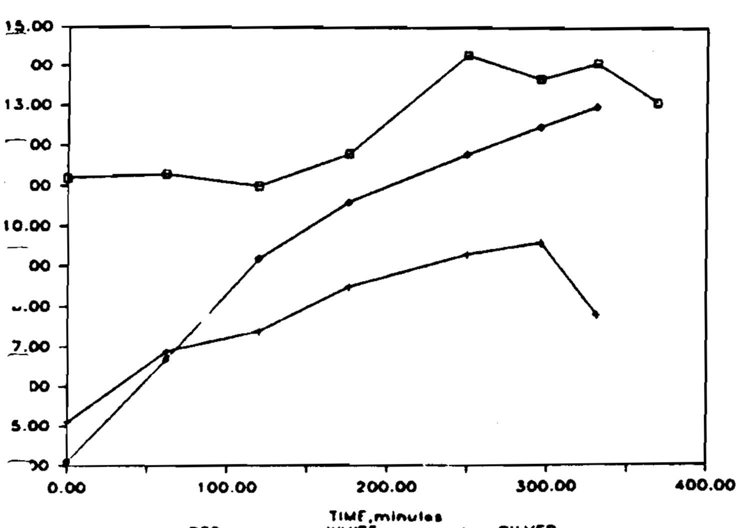


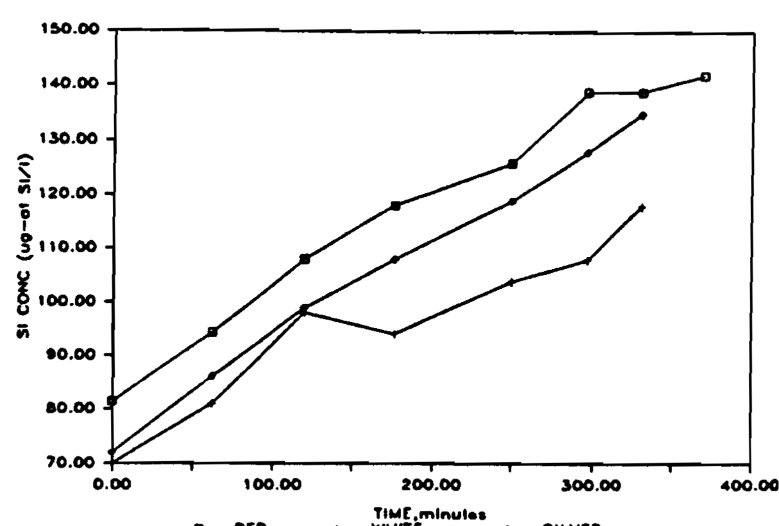
RAGGED PT.AUG.1984





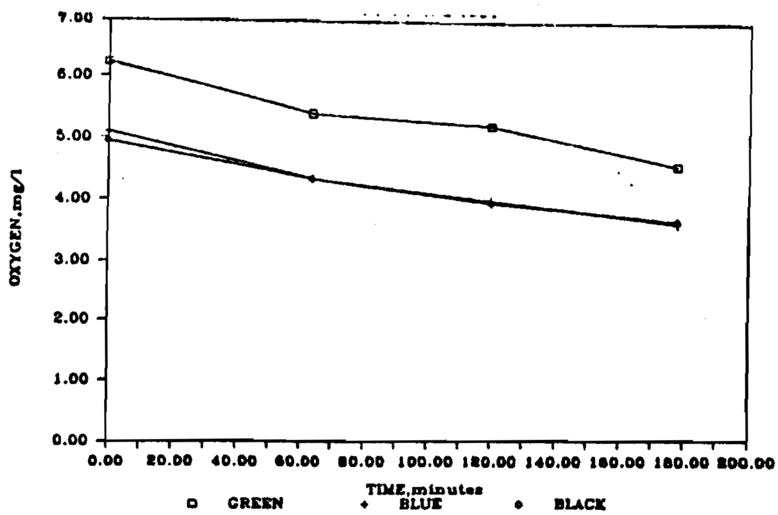


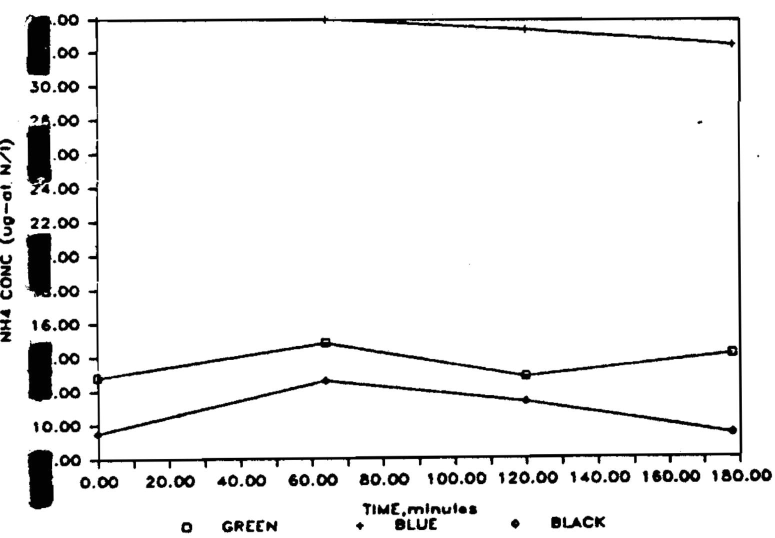


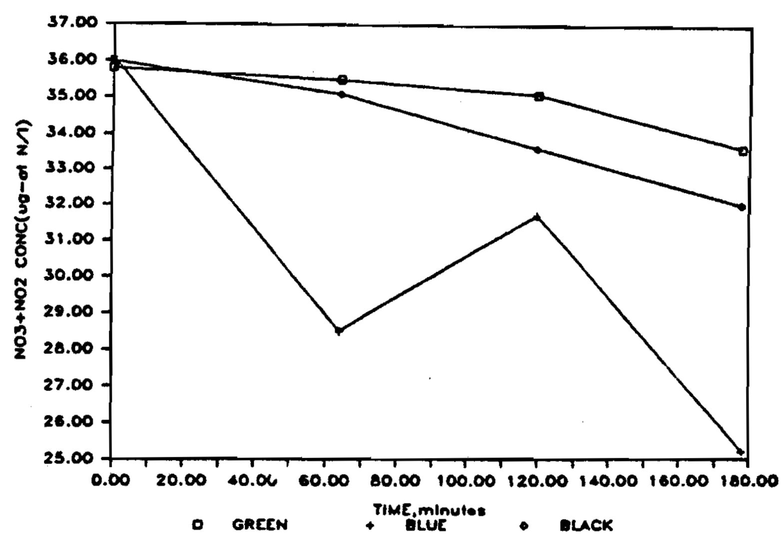


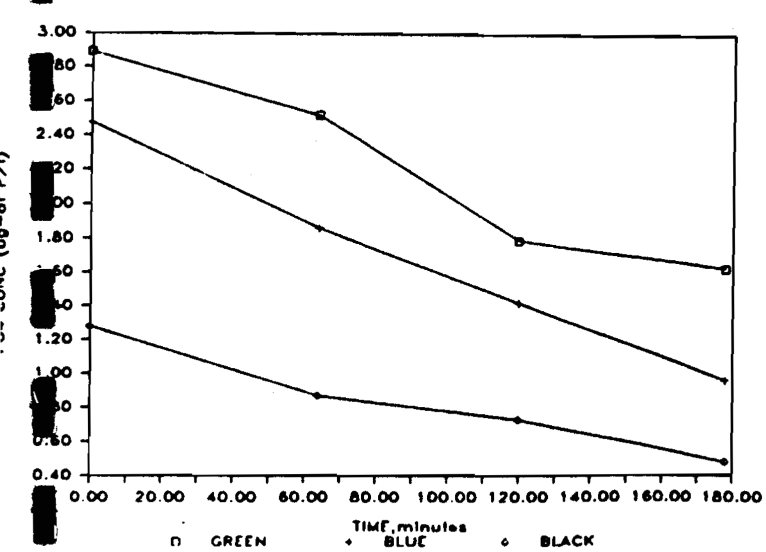
ECOSYSTEM PROCESSES

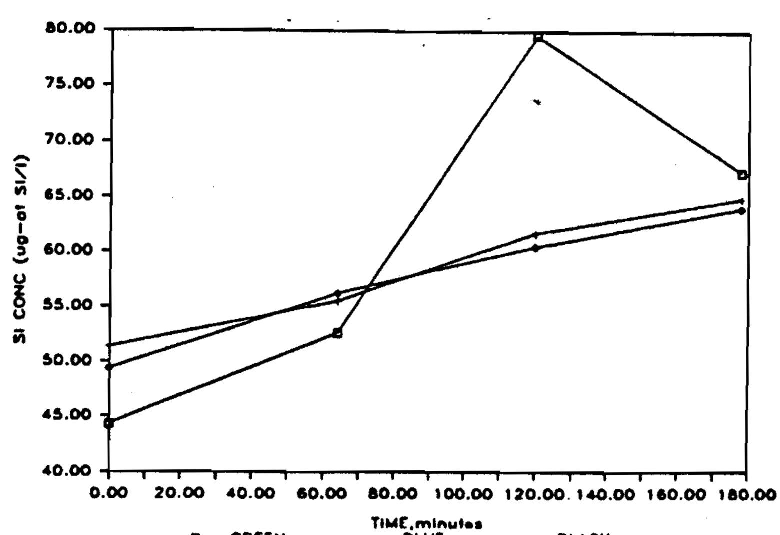
MD.PT.AUG.1984



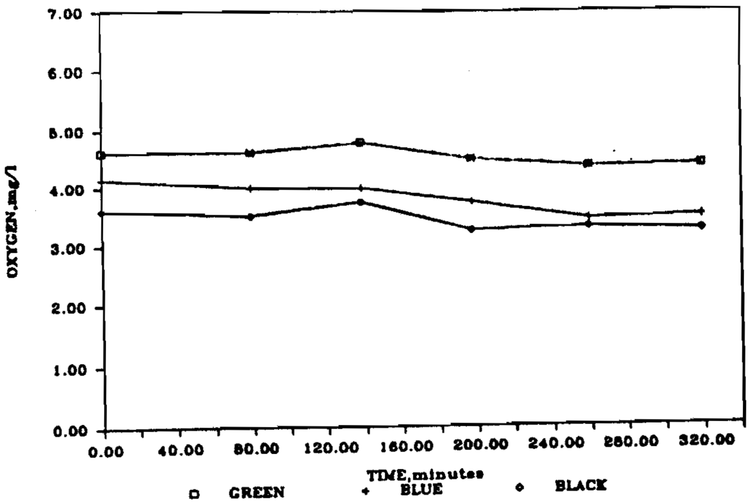


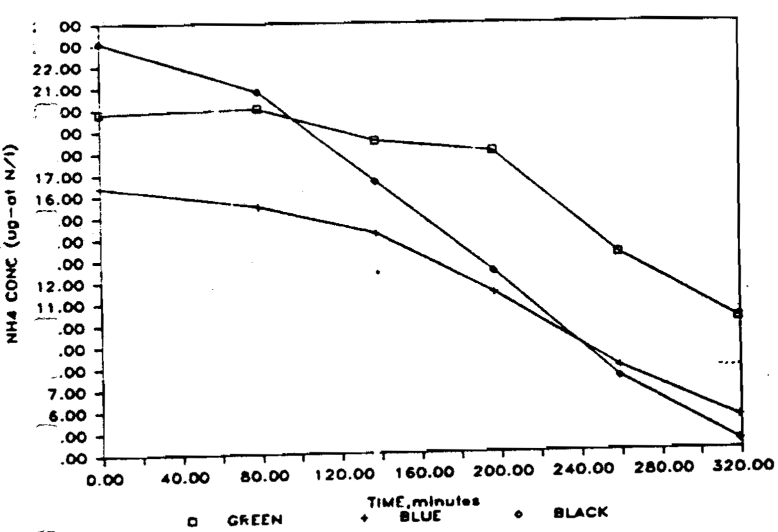


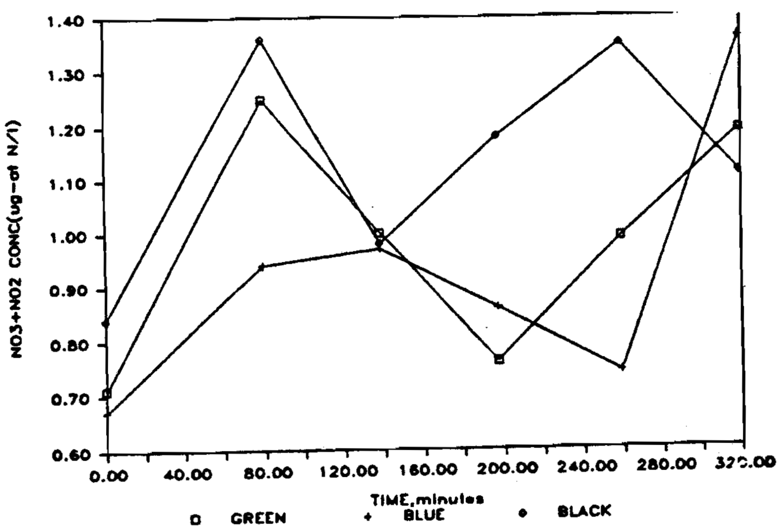


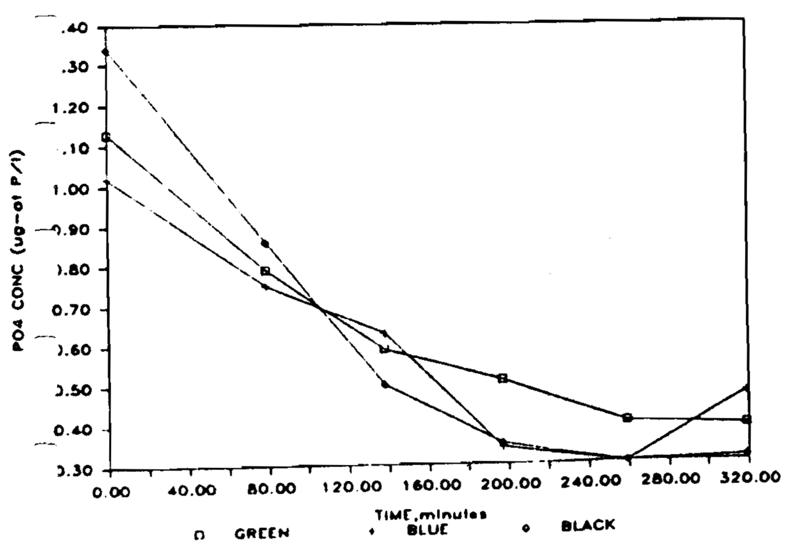


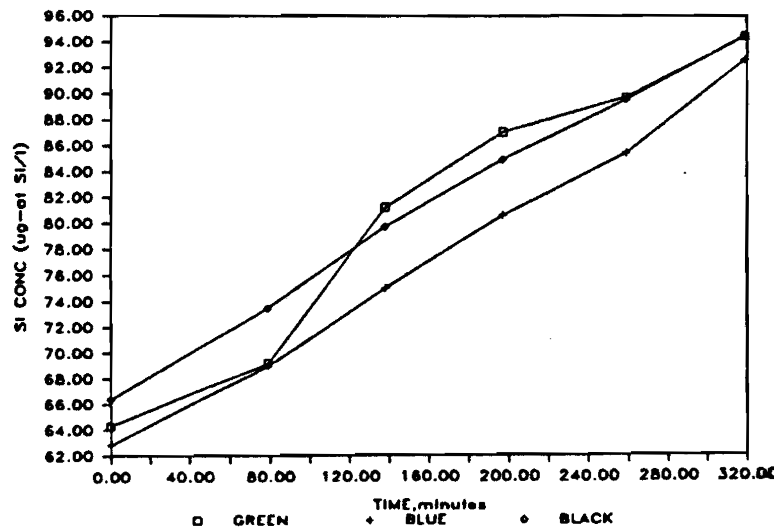
PT.NO PT.AUG 1984





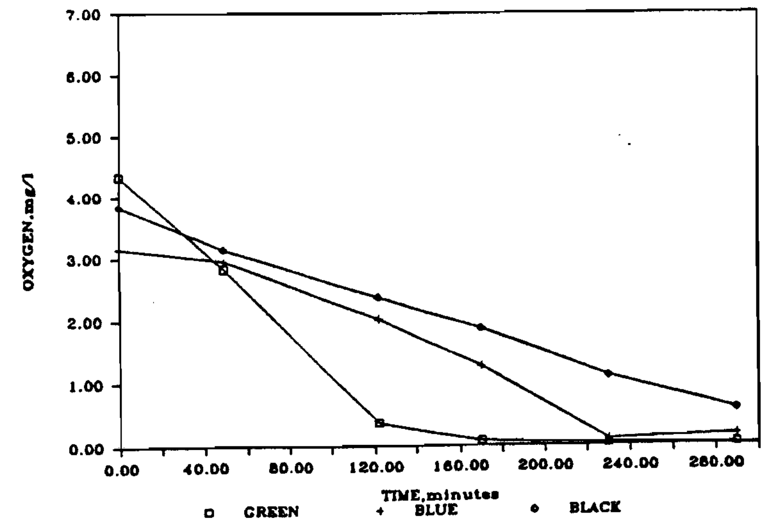


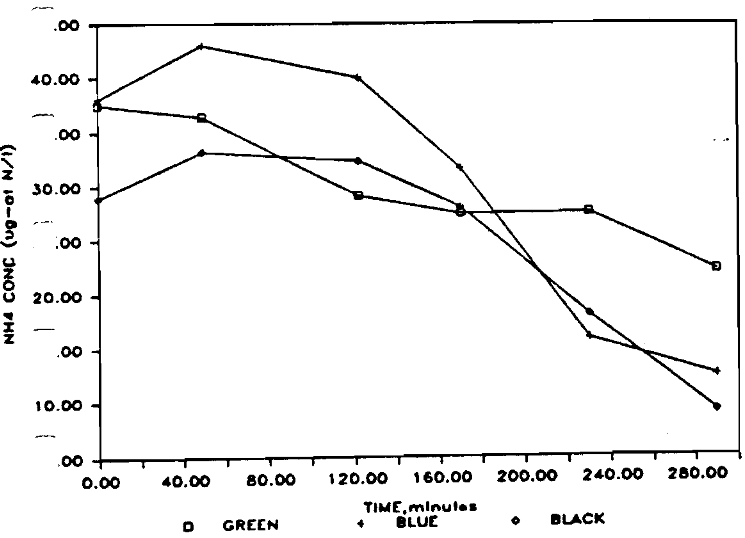


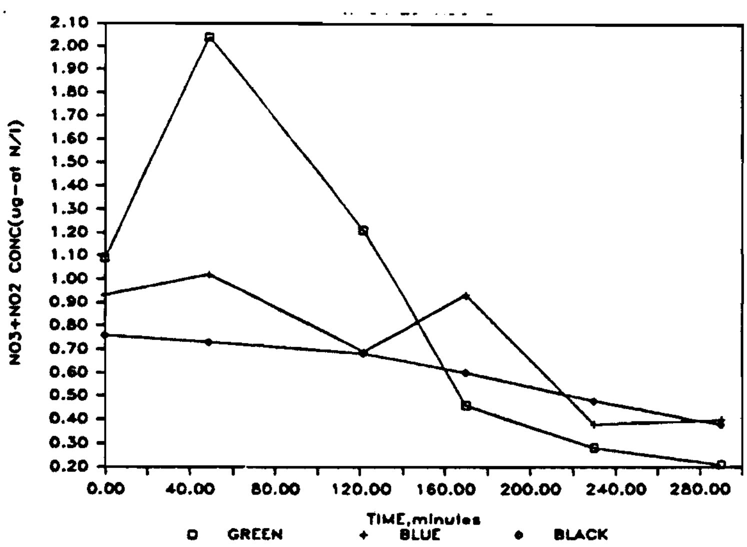


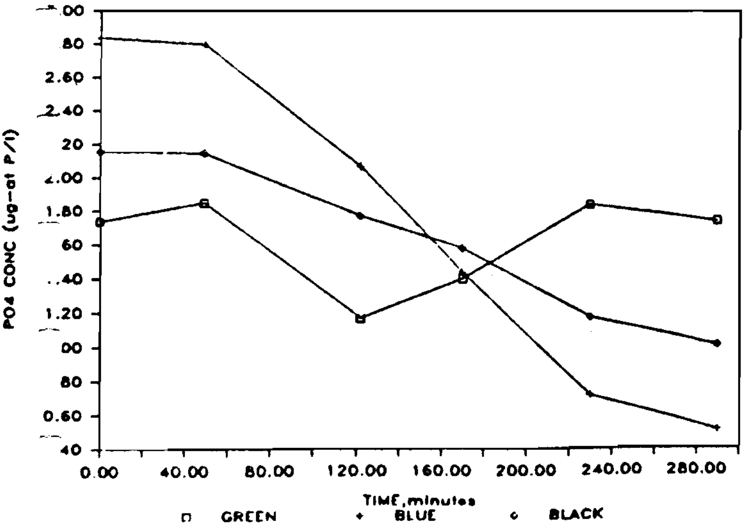
ECOSYSTEM PROCESSES

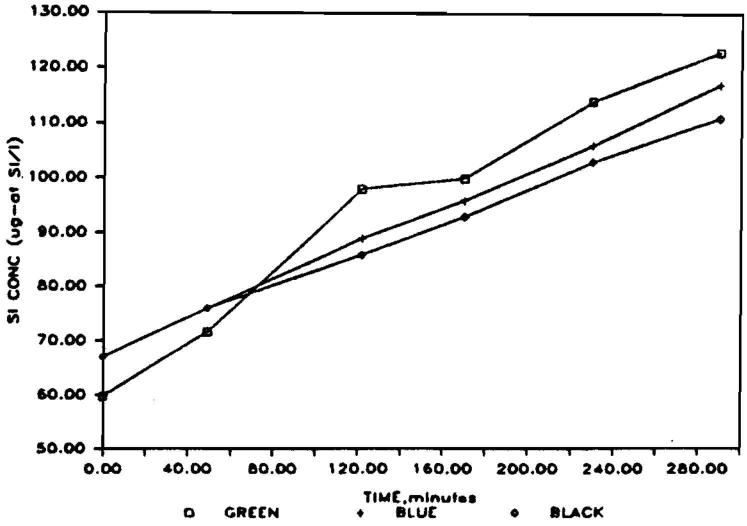
R-64 29-AUG-84





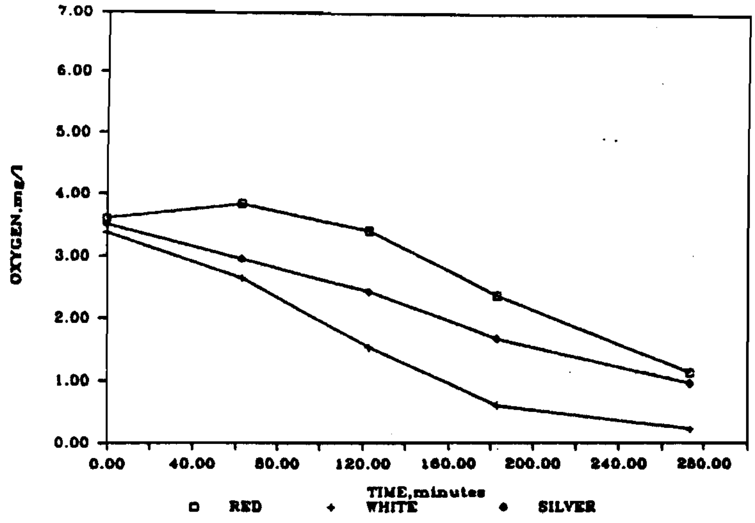


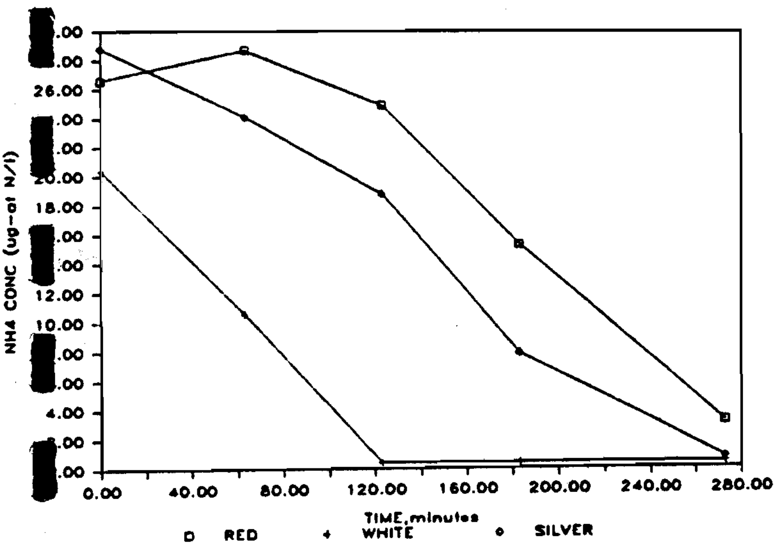


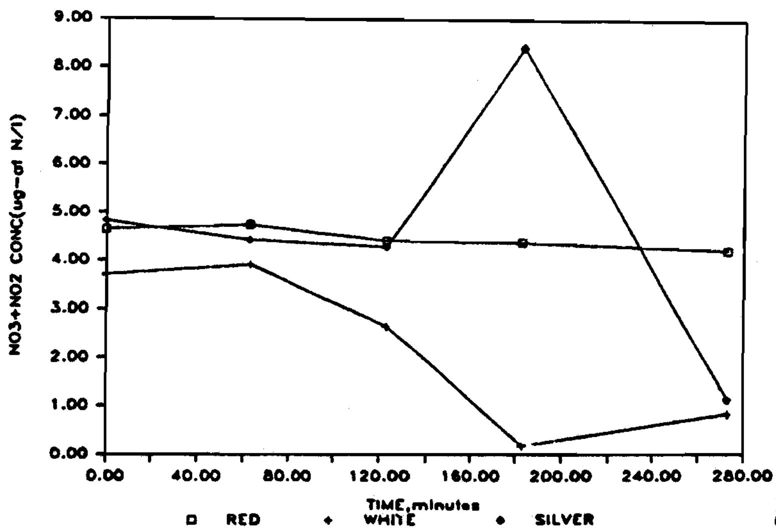


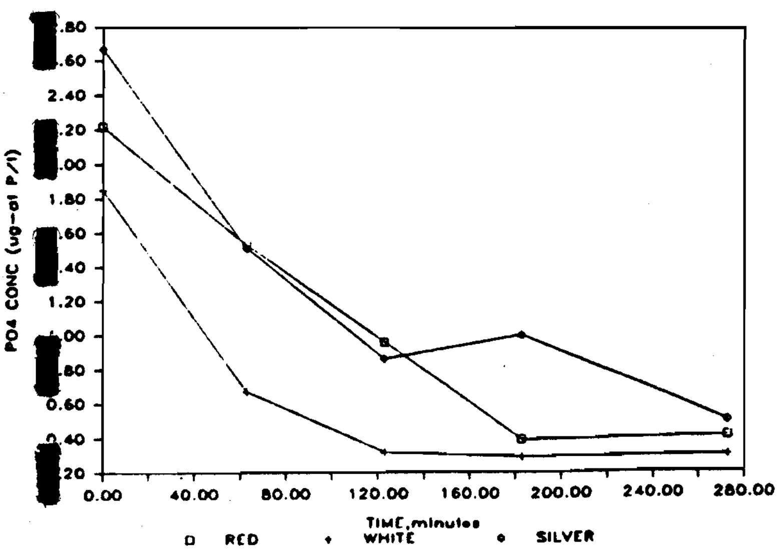
ECOSYSTEM PROCESSES

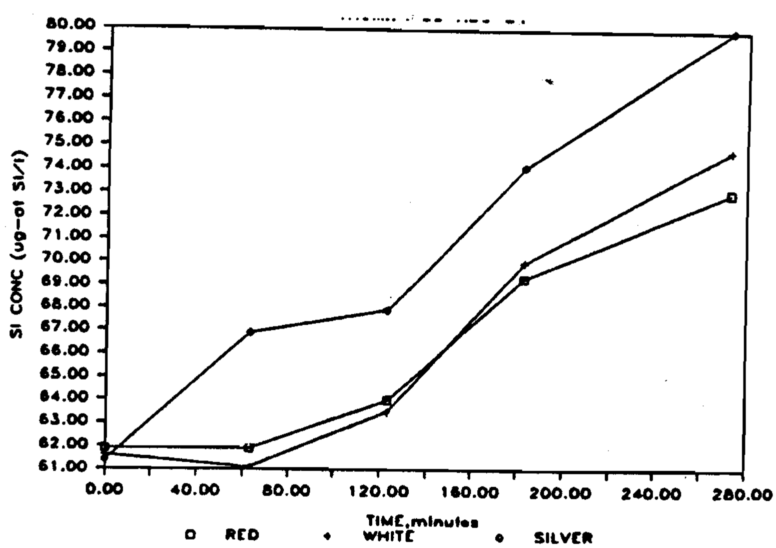
THOMAS PT AUG 1984





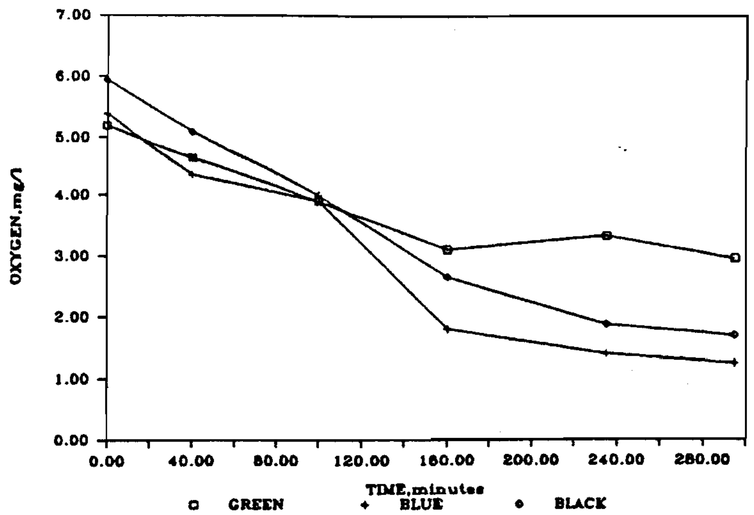


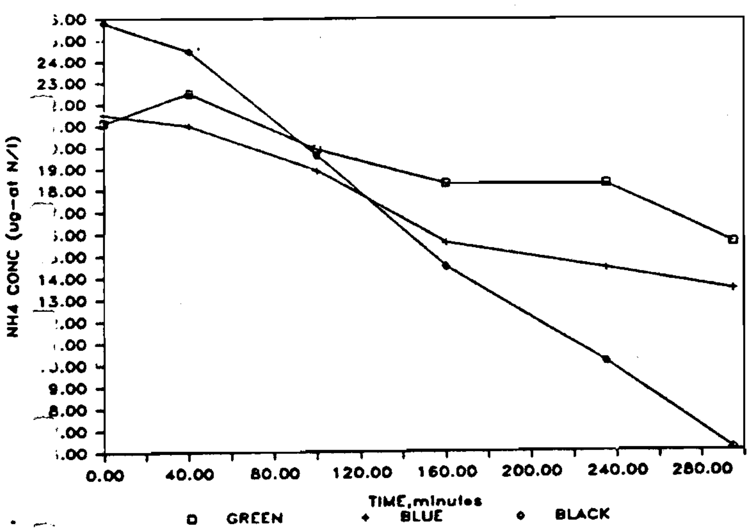


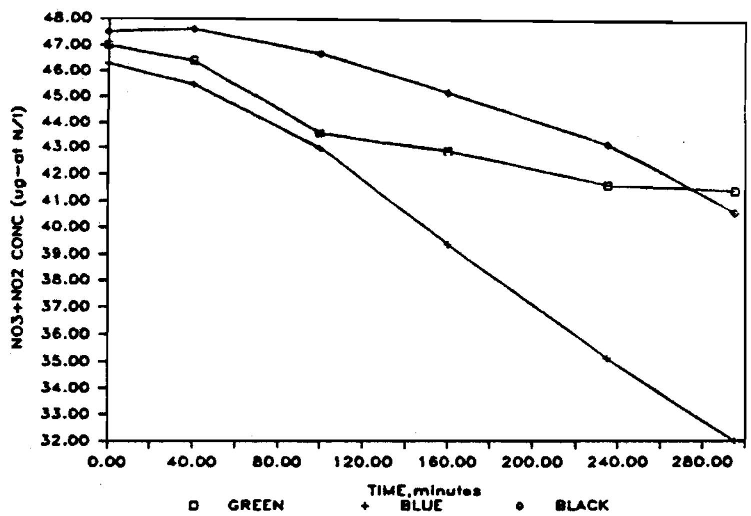


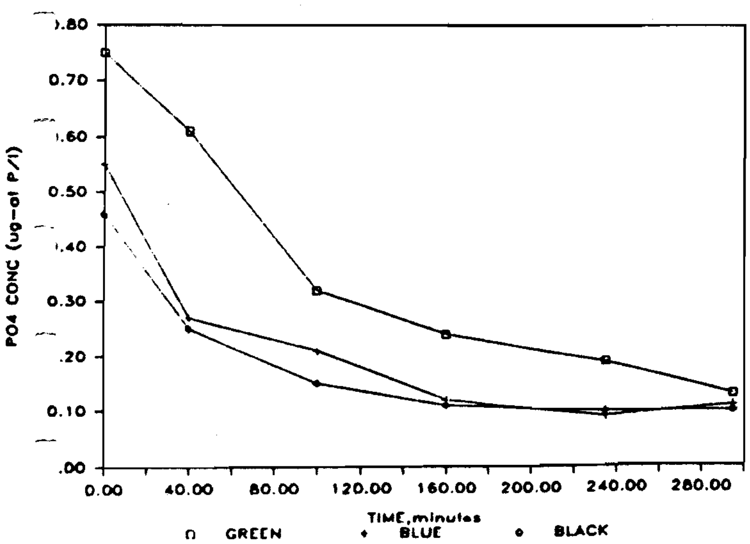
ECOSYSTEM PROCESSES

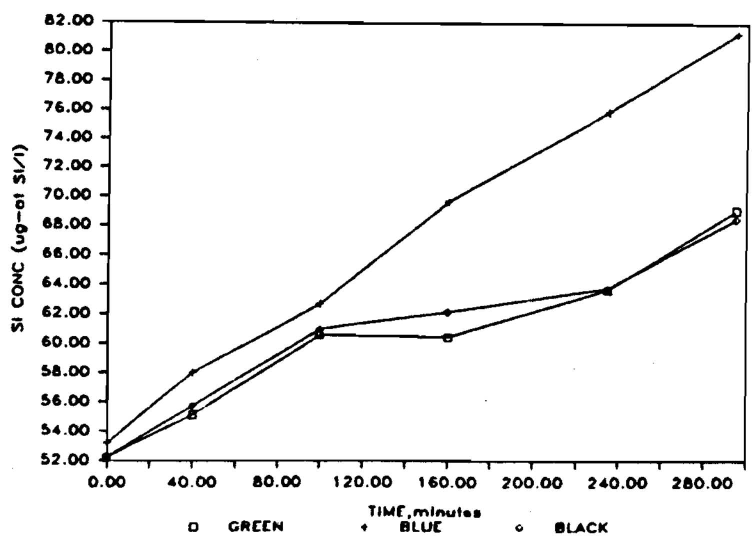
STILL POND AUG 1984

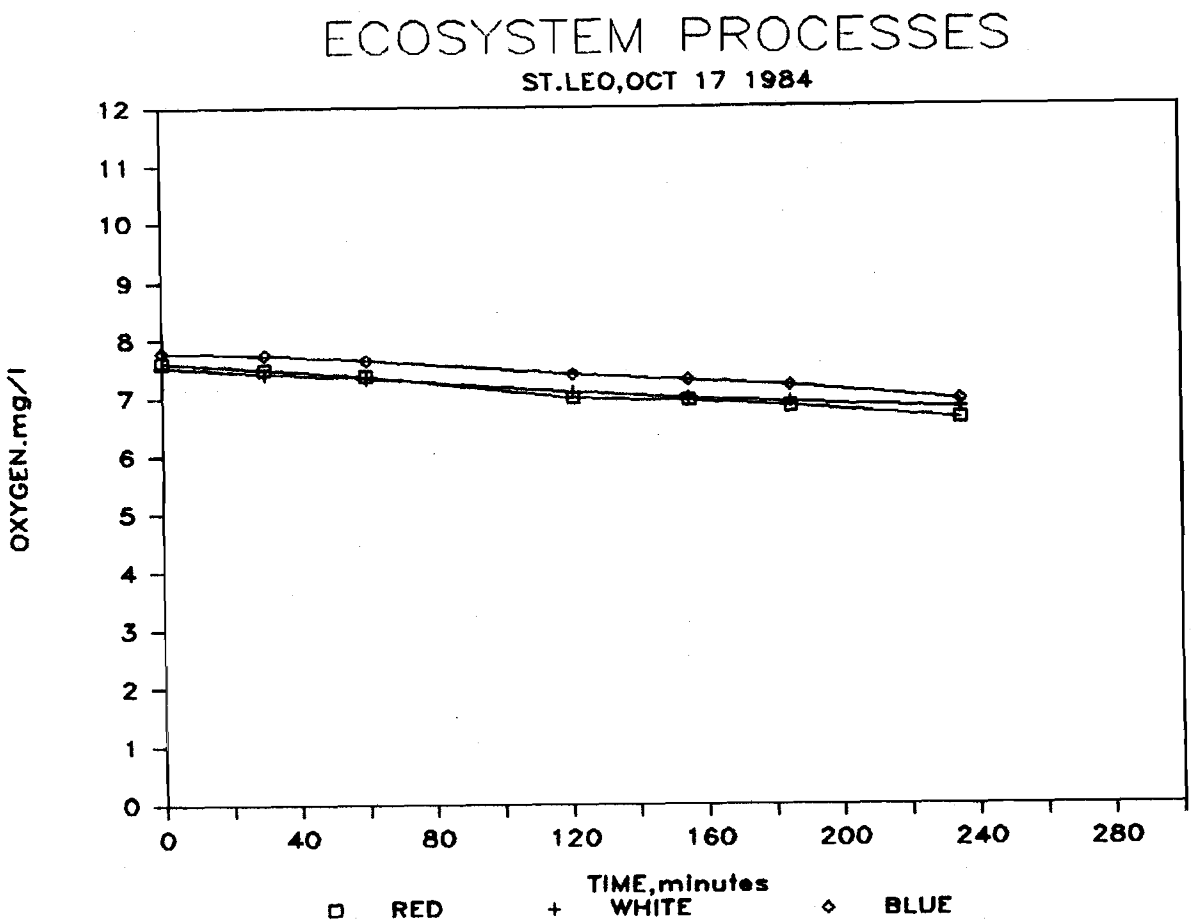




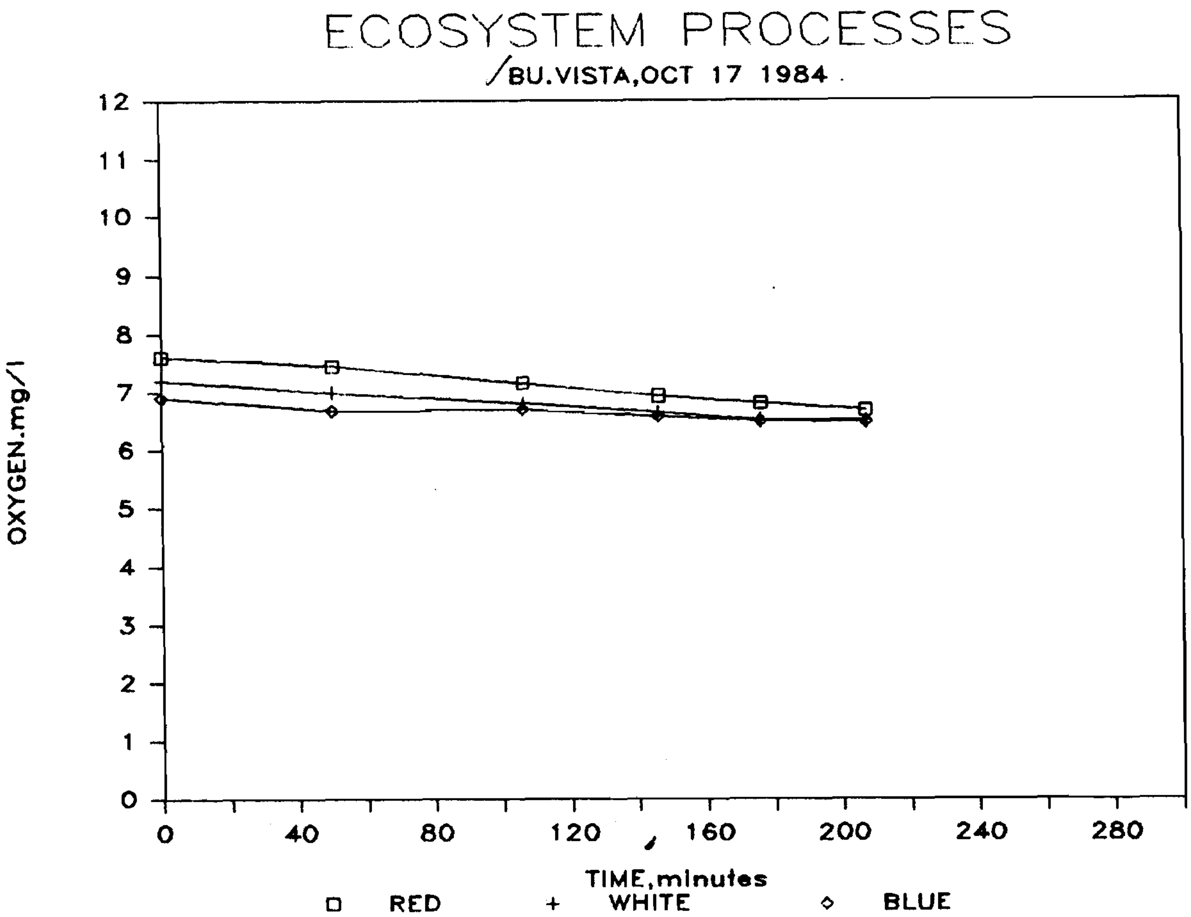




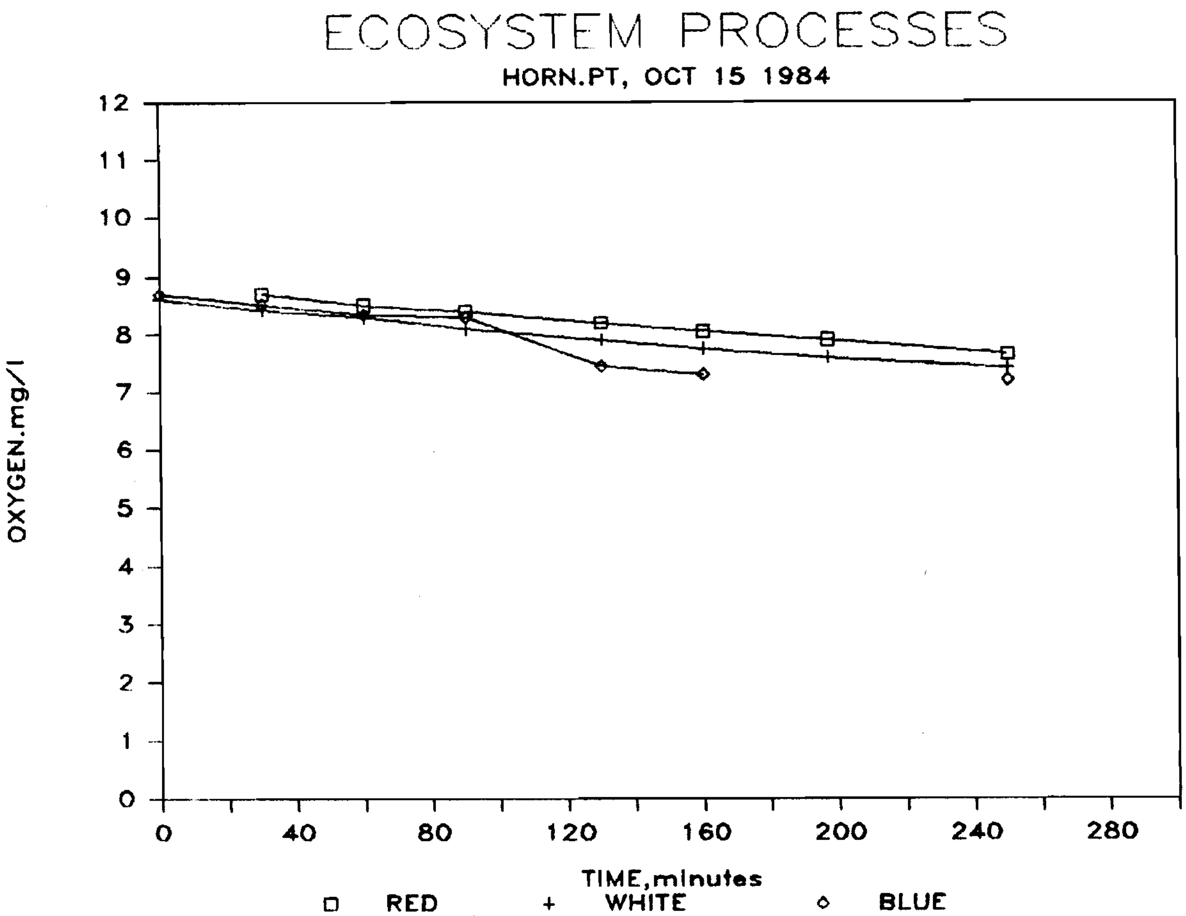


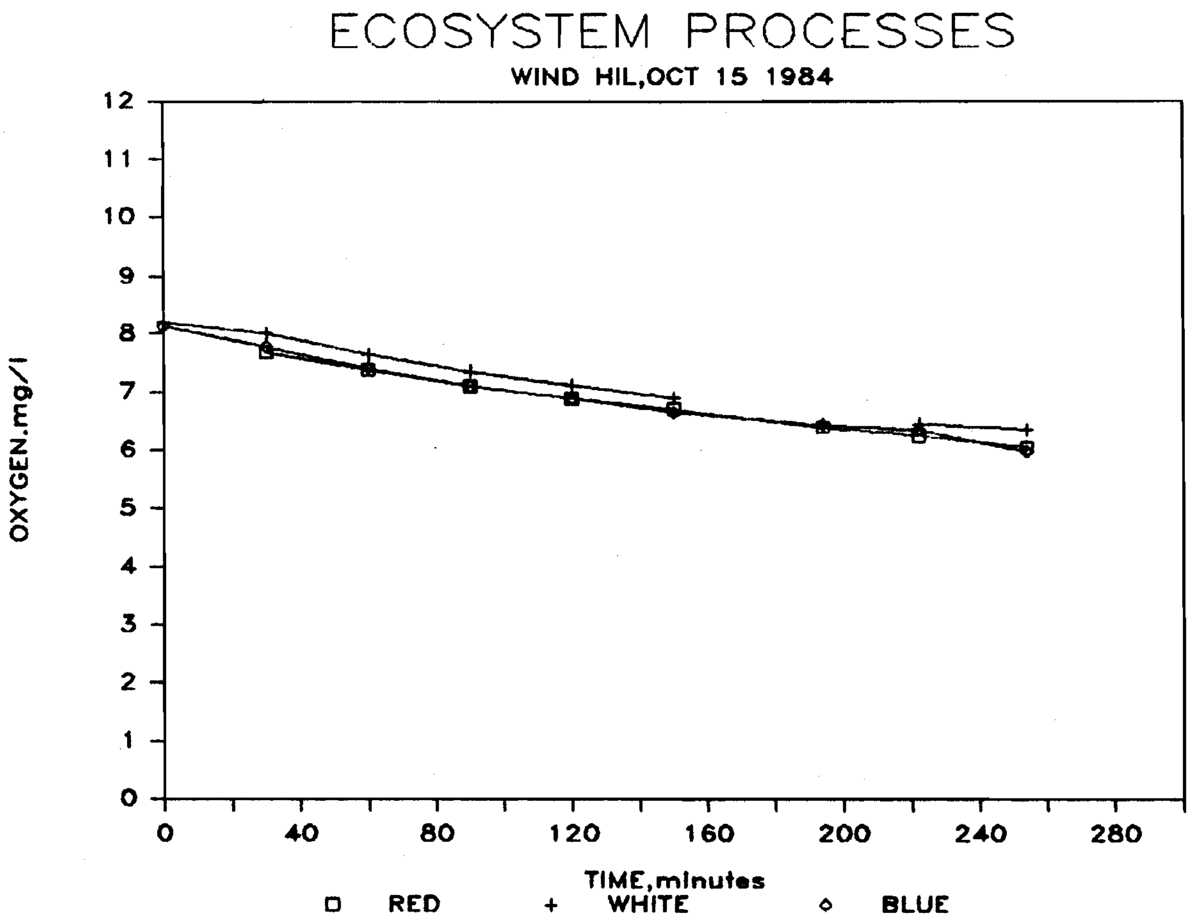

ECOSYSTEM PROCESSES
ST.LEO,OCT 17 1984
OXYGEN.mg/l
0
1
2
3
4
5
6
7
8
9
10
11
12
0
40
80
120
160
200
240
280
TIME,minutes
RED
WHITE
BLUE

No. 9-12

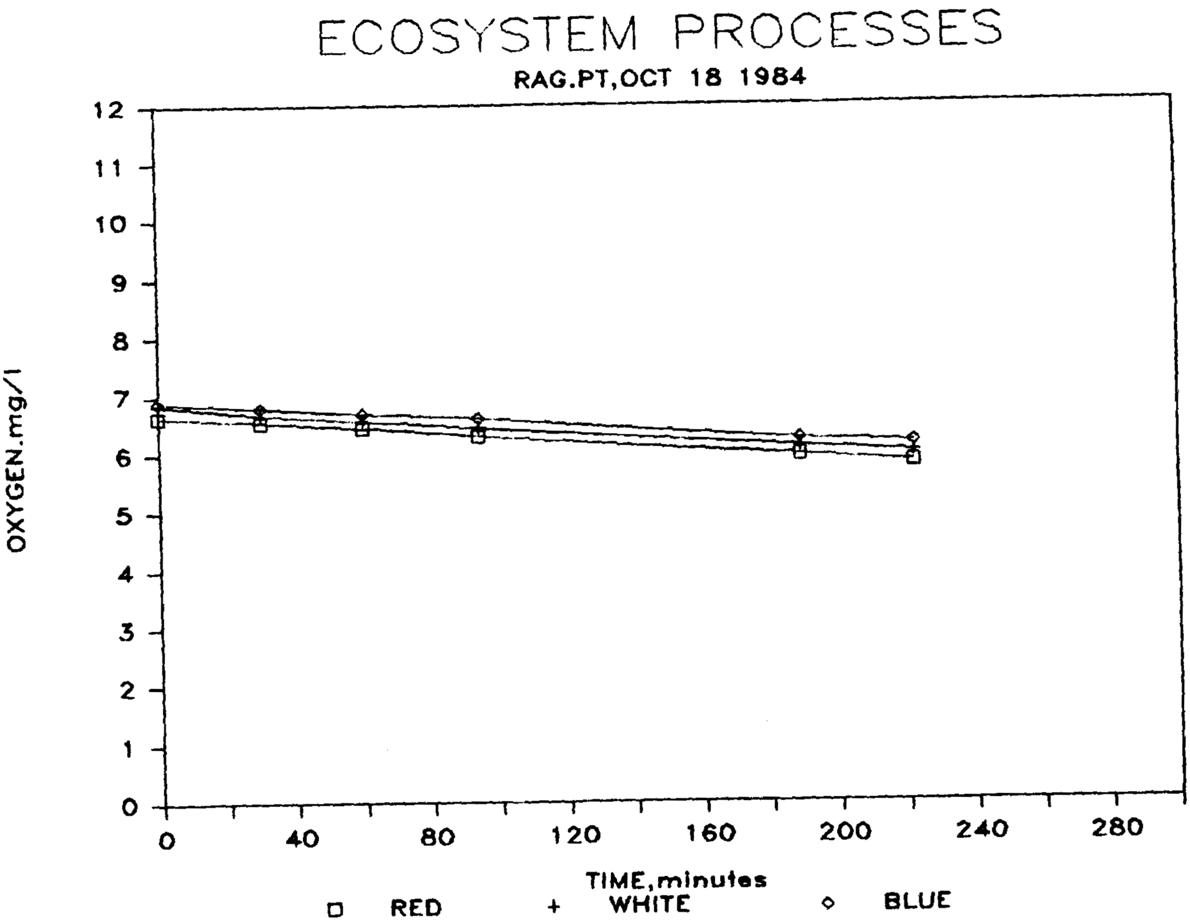


ECOSYSTEM PROCESSES
BU.VISTA,OCT 17 1984
OXYGEN.mg/l
12
11
10
9
8
7
6
5
4
3
2
1
0
0
40
80
120
160
200
240
280
TIME,minutes
RED
WHITE
BLUE


ECOSYSTEM PROCESSES
HORN.PT, OCT 15 1984
OXYGEN.mg/l
12
11
10
9
8
7
6
5
4
3
2
1
0
0
40
80
120
160
200
240
280
TIME,minutes
RED
WHITE
BLUE

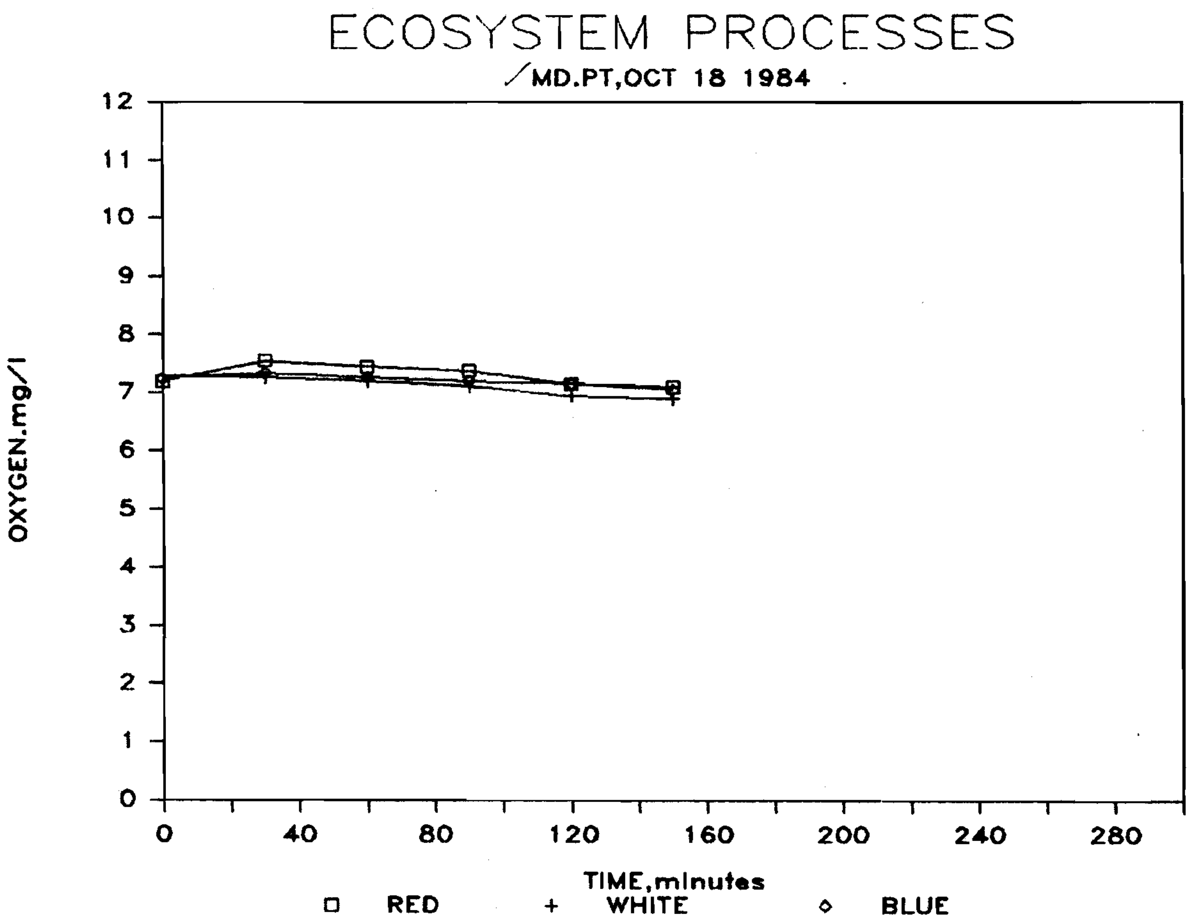

ECOSYSTEM PROCESSES
WIND HIL,OCT 15 1984
OXYGEN.mg/l
12
11
10
9
8
7
6
5
4
3
2
1
0
0
40
80
120
160
200
240
280
TIME,minutes
RED
WHITE
BLUE

No. 9-15

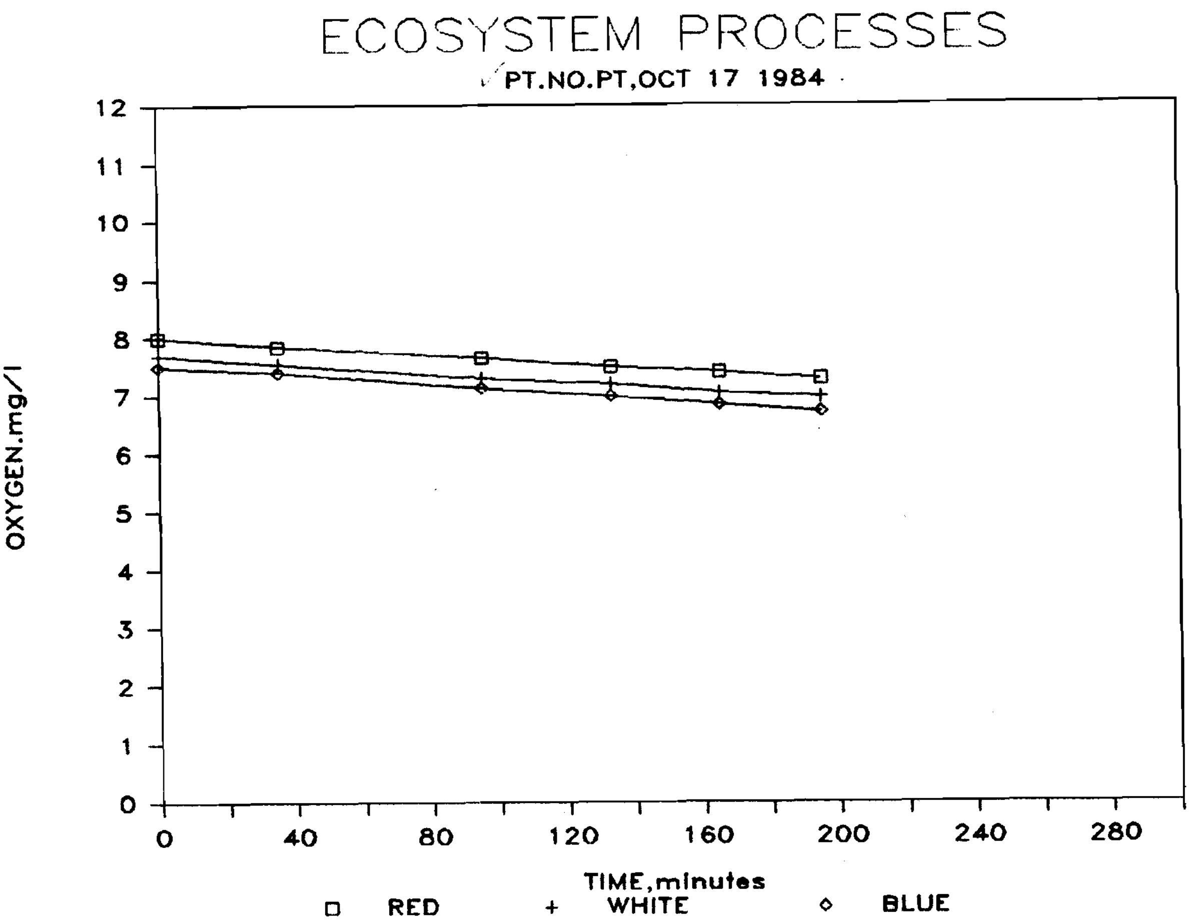


ECOSYSTEM PROCESSES
RAG.PT,OCT 18 1984
OXYGEN.mg/l
0
1
2
3
4
5
6
7
8
9
10
11
12
0
40
80
120
160
200
240
280
TIME,minutes
RED
WHITE
BLUE

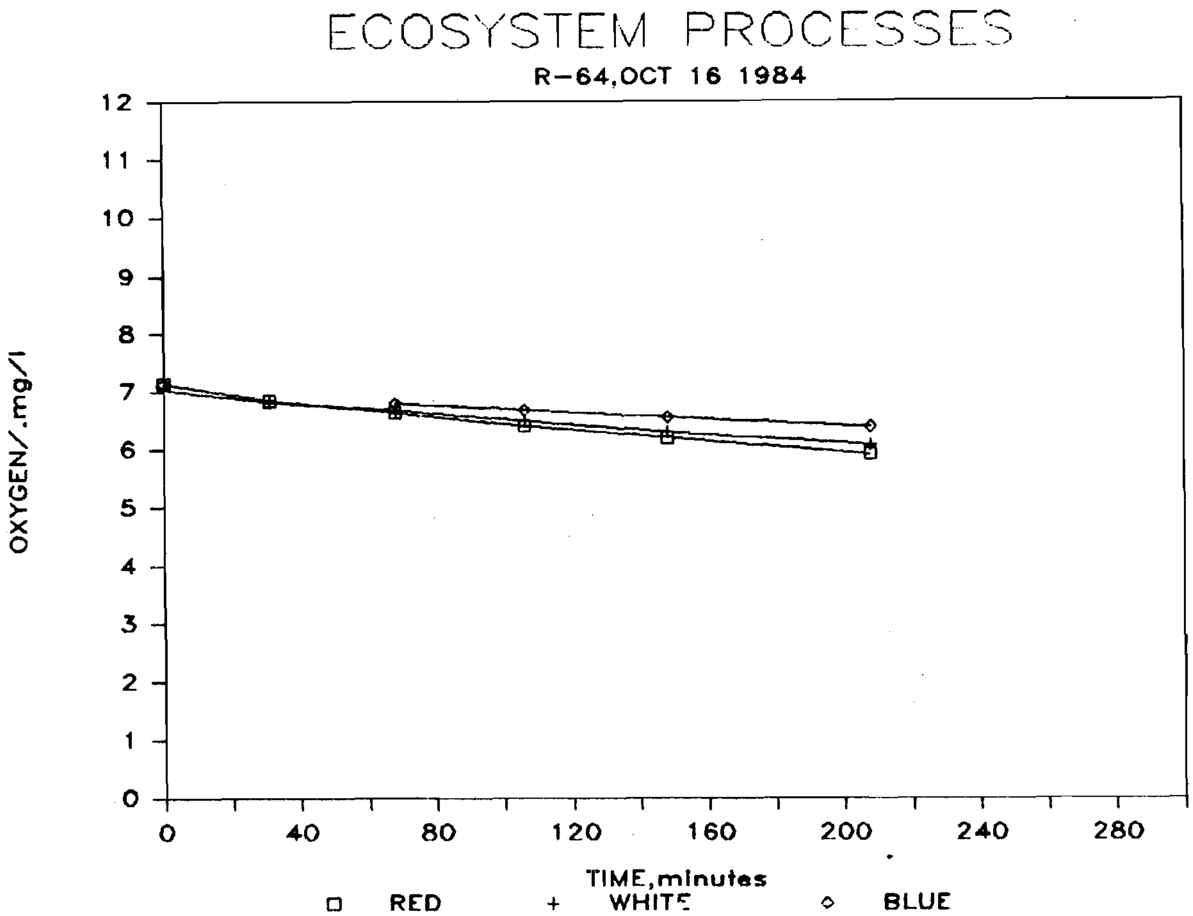
No. 9-16



ECOSYSTEM PROCESSES
MD.PT,OCT 18 1984
OXYGEN,mg/l
12
11
10
9
8
7
6
5
4
3
2
1
0
0
40
80
120
160
200
240
280
TIME,minutes
RED
WHITE
BLUE

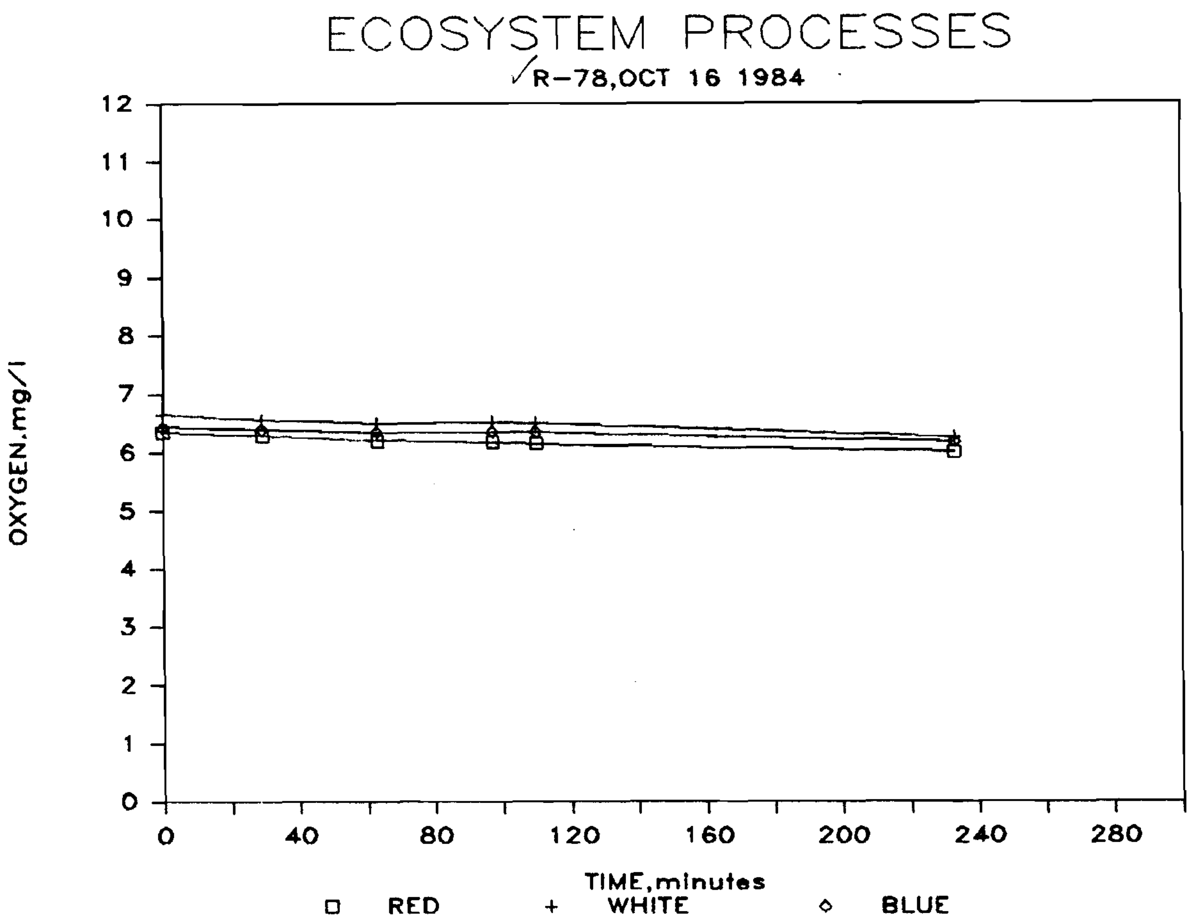

ECOSYSTEM PROCESSES
PT.NO.PT,OCT 17 1984
OXYGEN.mg/l
12
11
10
9
8
7
6
5
4
3
2
1
0
0
40
80
120
160
200
240
280
TIME,minutes
RED
WHITE
BLUE

No. 9-18

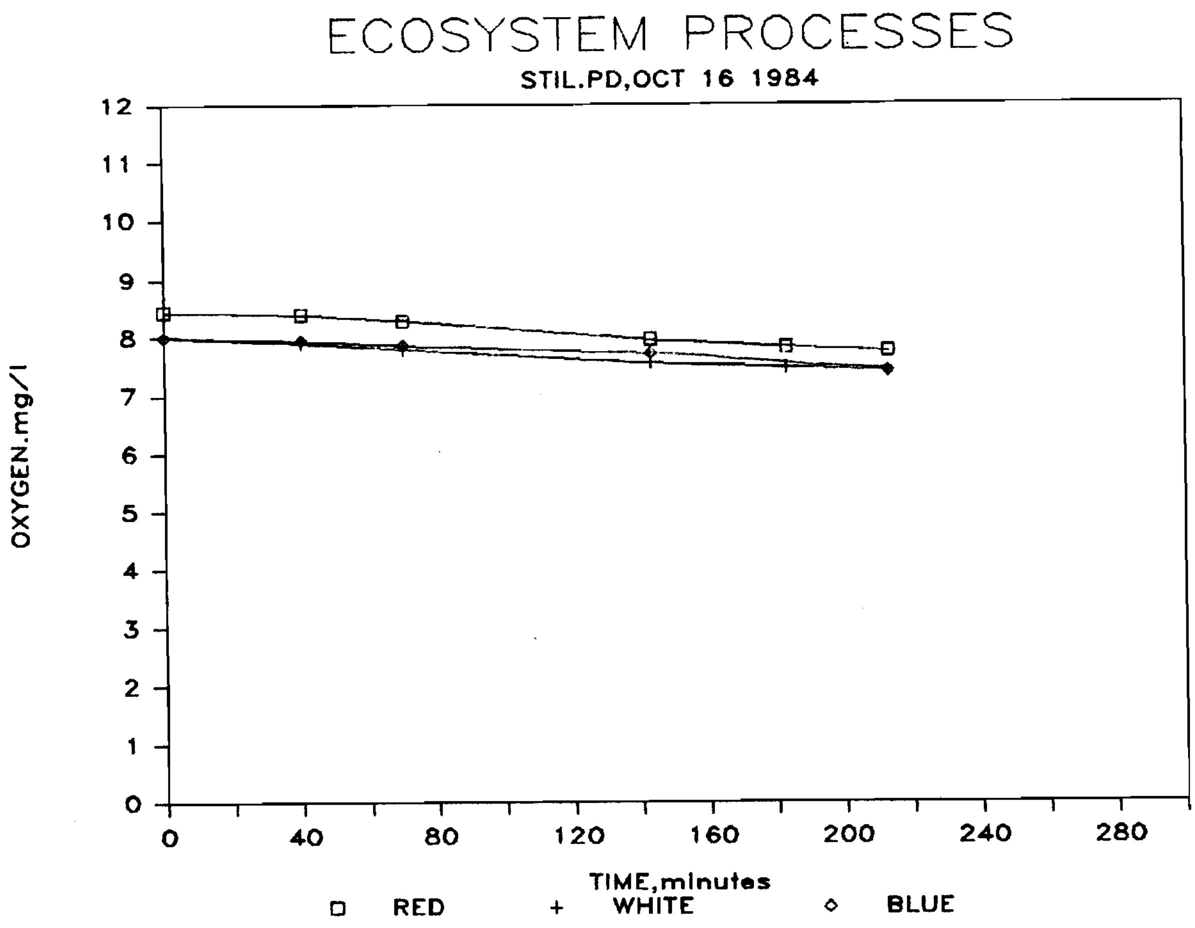


ECOSYSTEM PROCESSES
R-64,OCT 16 1984
OXYGEN/.mg/l
12
11
10
9
8
7
6
5
4
3
2
1
0
0
40
80
120
160
200
240
280
TIME,minutes
RED
WHITE
BLUE

No. 9-19

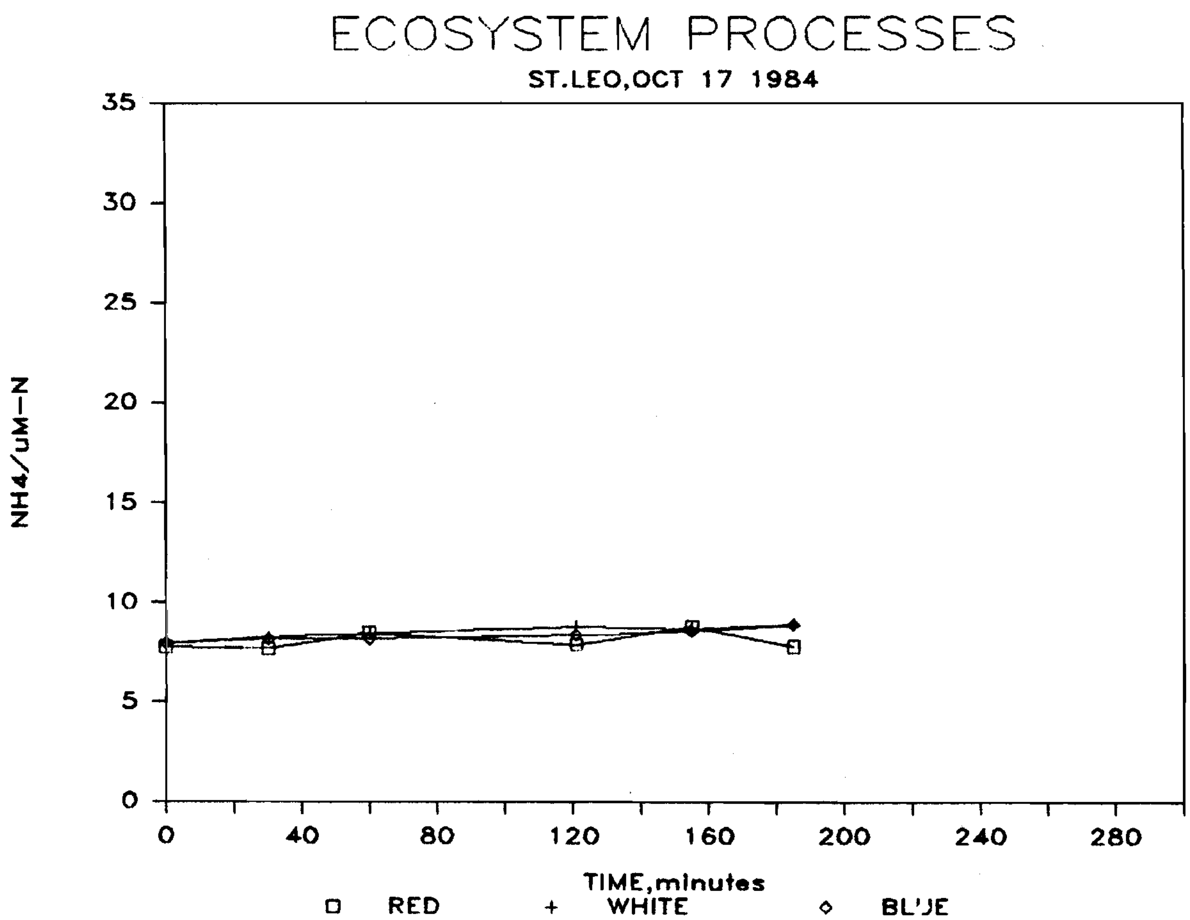


ECOSYSTEM PROCESSES
R-78,OCT 16 1984
OXYGEN.mg/l
0
1
2
3
4
5
6
7
8
9
10
11
12
0
40
80
120
160
200
240
280
TIME,minutes
RED
WHITE
BLUE

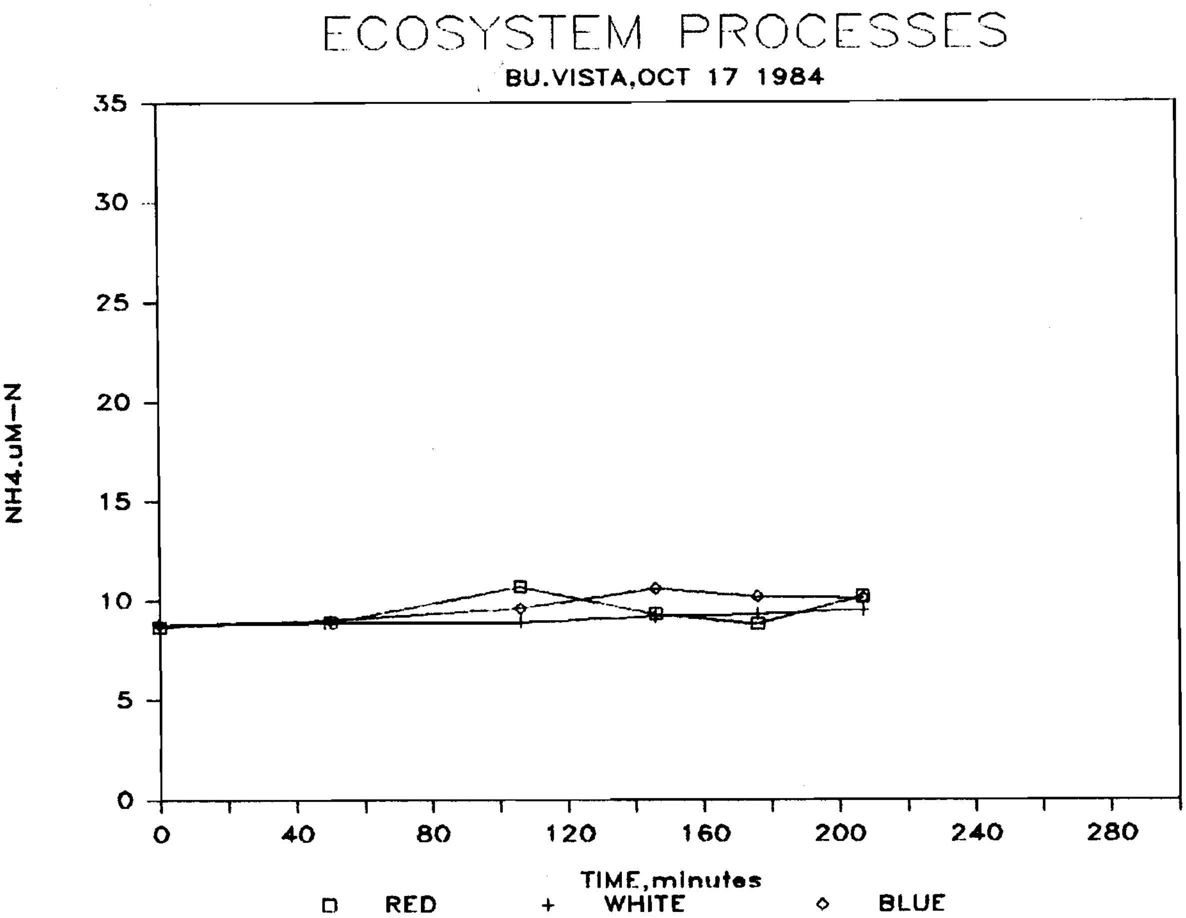


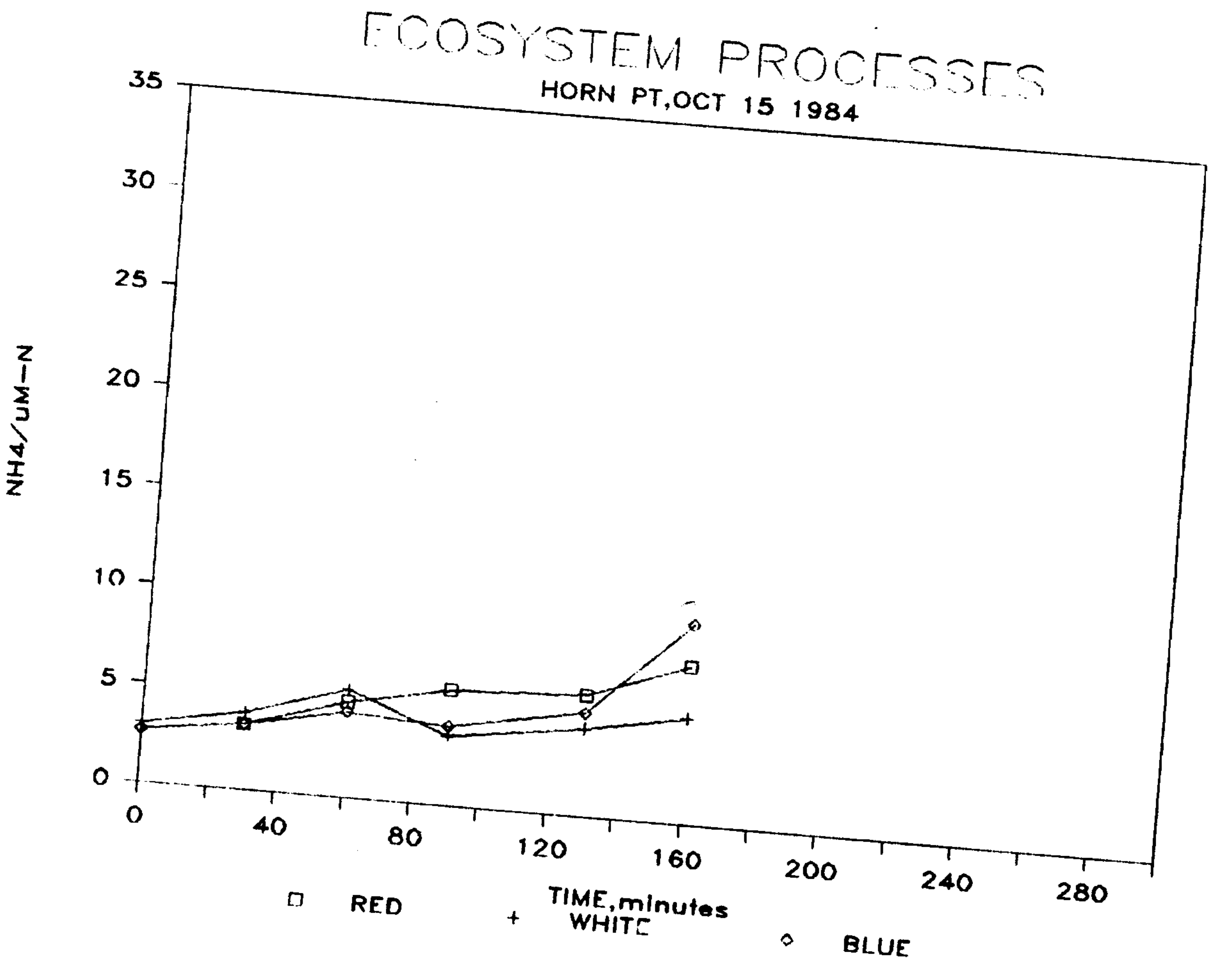
ECOSYSTEM PROCESSES
STIL.PD,OCT 16 1984
OXYGEN.mg/l
0
1
2
3
4
5
6
7
8
9
10
11
12
0
40
80
120
160
200
240
280
TIME,minutes
RED
WHITE
BLUE

No. 9-21

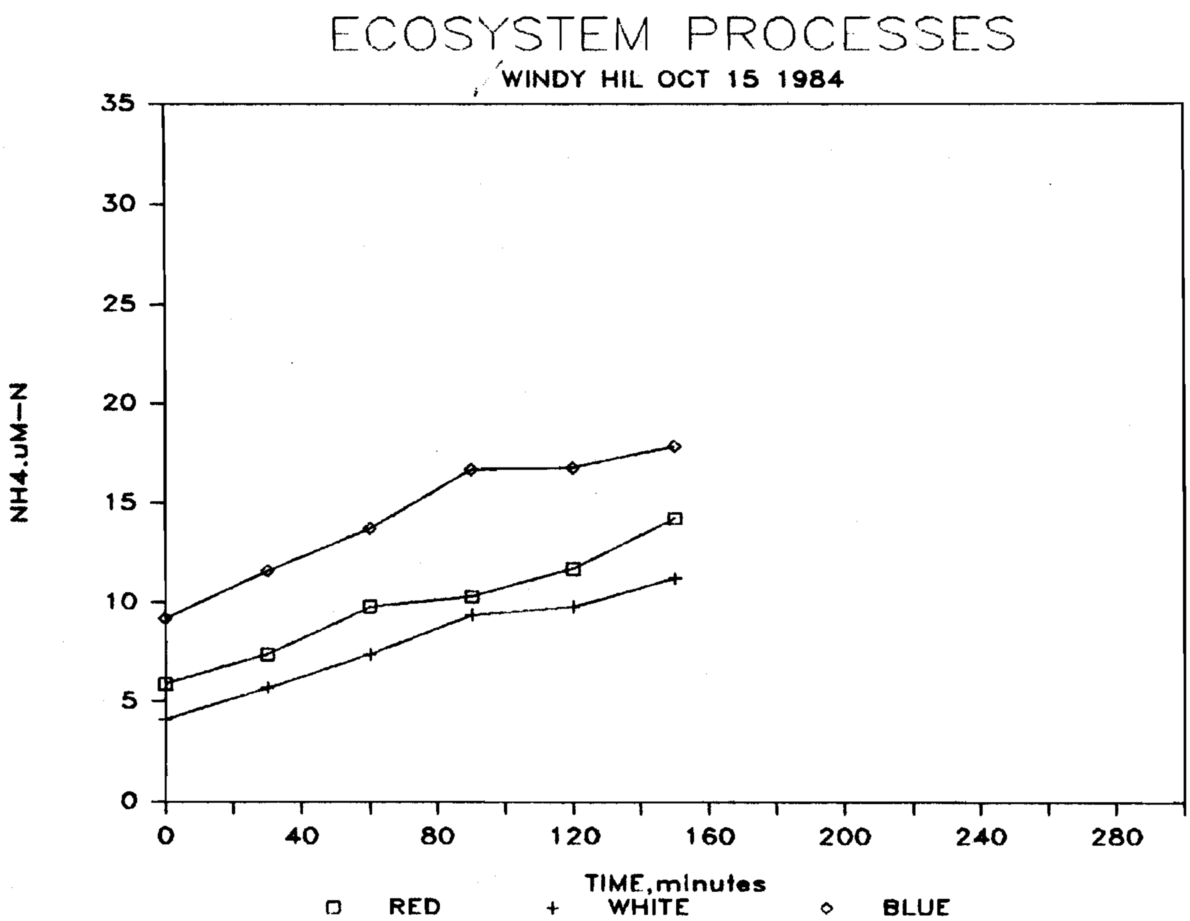


ECOSYSTEM PROCESSES
ST.LEO,OCT 17 1984
NH4/uM-N
35
30
25
20
15
10
5
0
0
40
80
120
160
200
240
280
TIME,minutes
RED
WHITE
BL'JE


ECOSYSTEM PROCESSES
BU.VISTA,OCT 17 1984
NH4.uM-N
35
30
25
20
15
10
5
0
0
40
80
120
160
200
240
280
TIME,minutes
RED
WHITE
BLUE

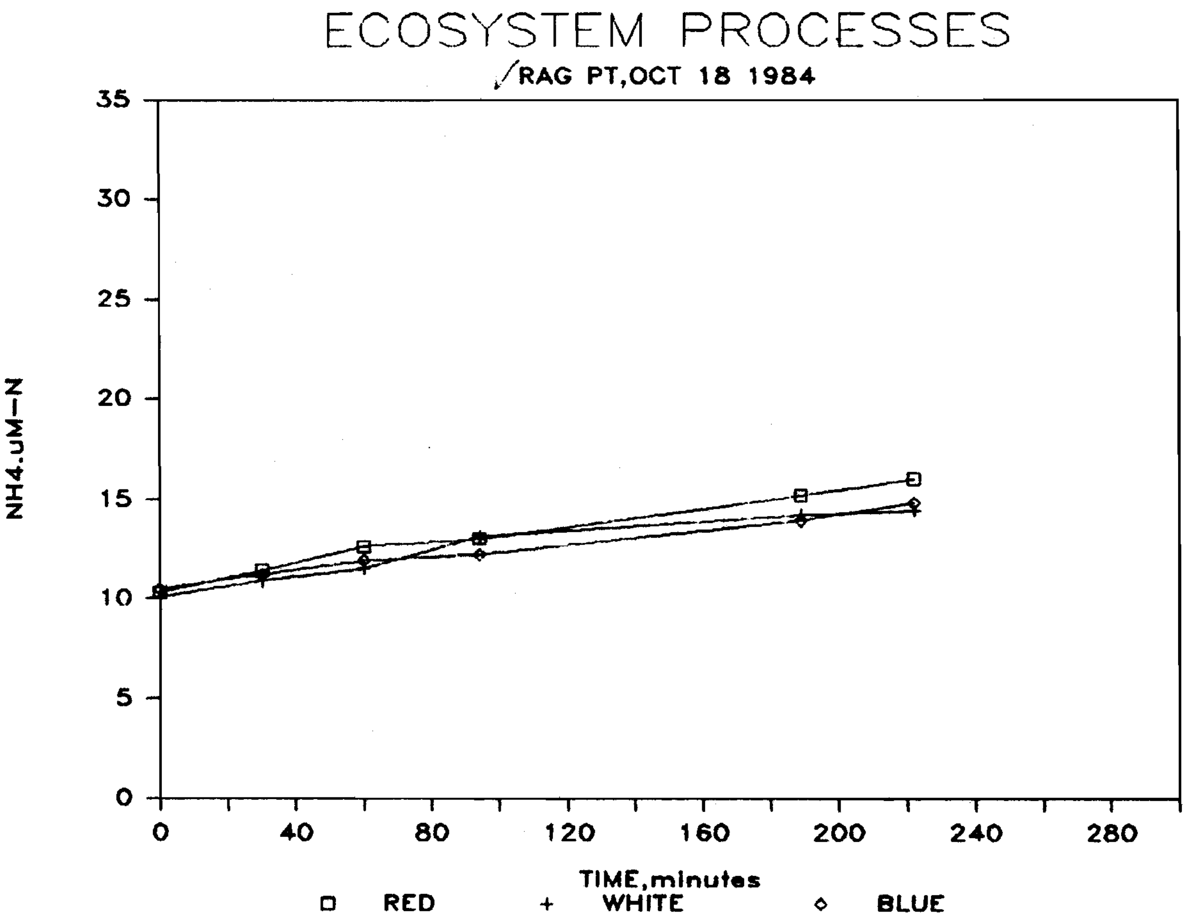

ECOSYSTEM PROCESSES
HORN PT,OCT 15 1984
35
30
25
20
15
10
5
0
NH4/uM-N
0
40
80
120
160
200
240
280
TIME,minutes
RED
WHITE
BLUE

No. 9-24

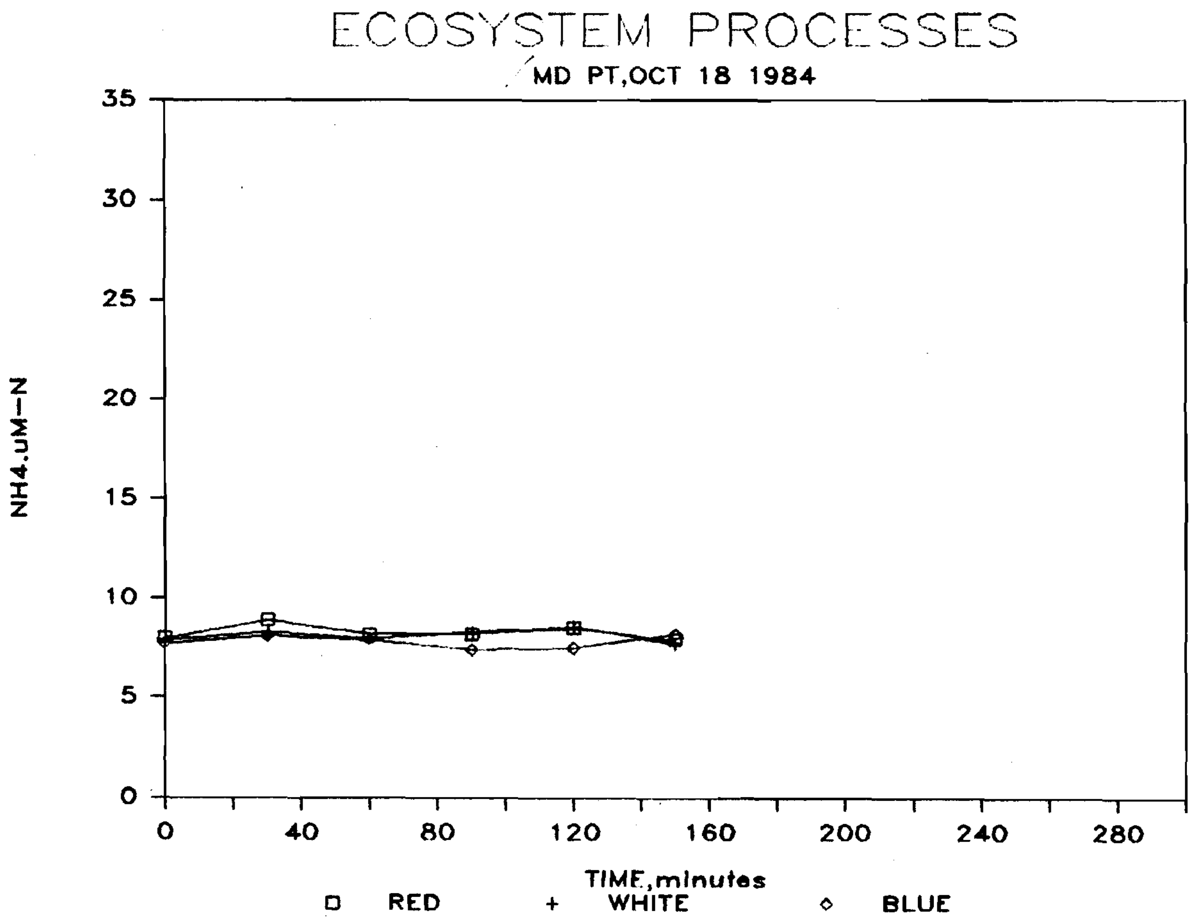


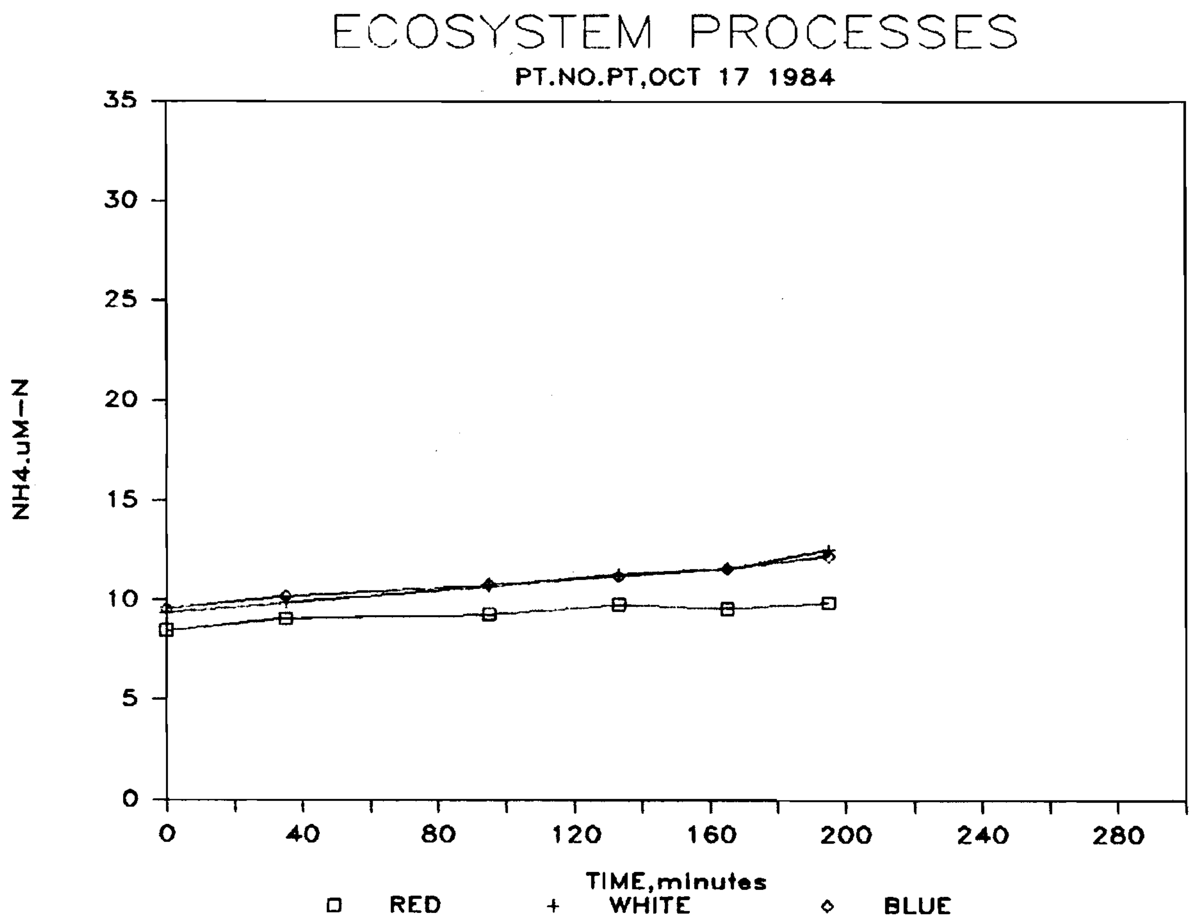
ECOSYSTEM PROCESSES
WINDY HIL OCT 15 1984
NH4.uM-N
35
30
25
20
15
10
5
0
0
40
80
120
160
200
240
280
TIME,minutes
RED
WHITE
BLUE

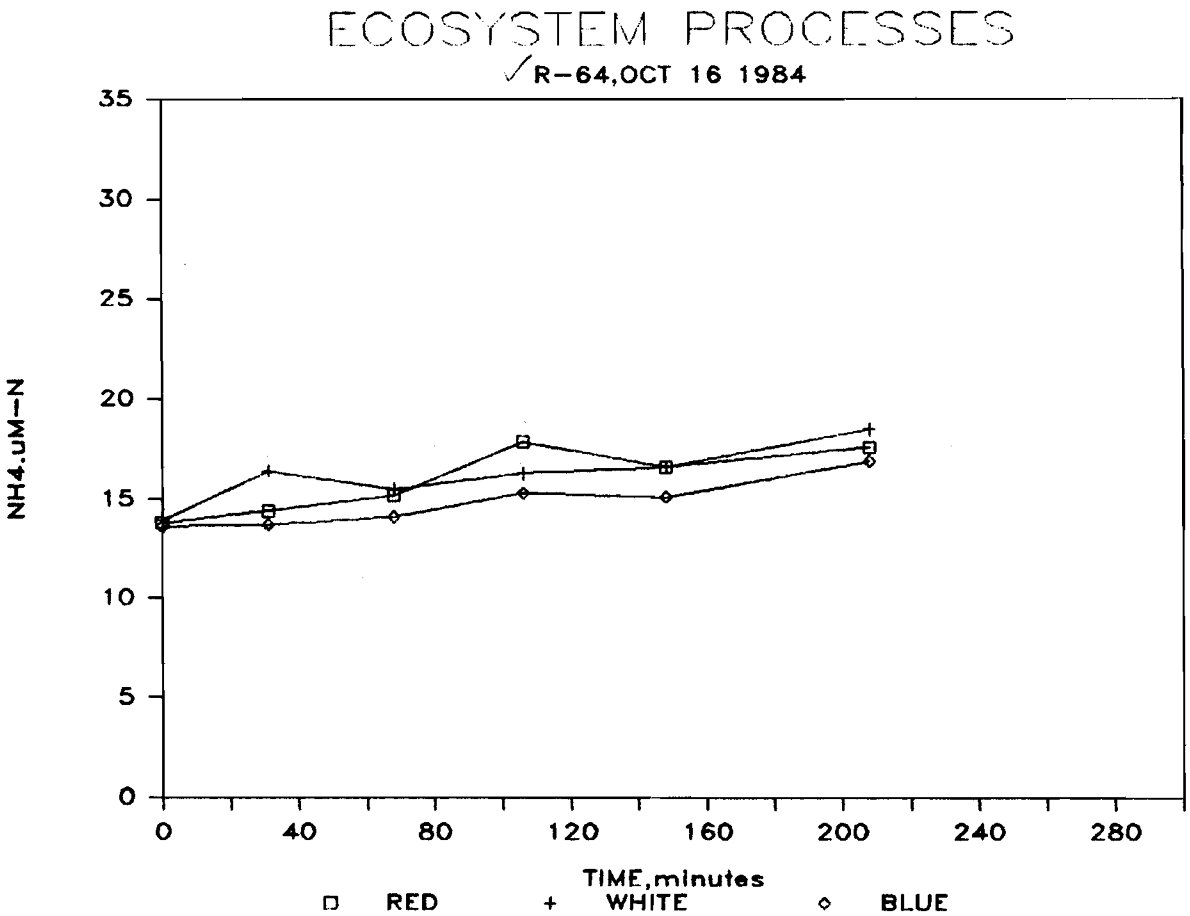
No. 9-25



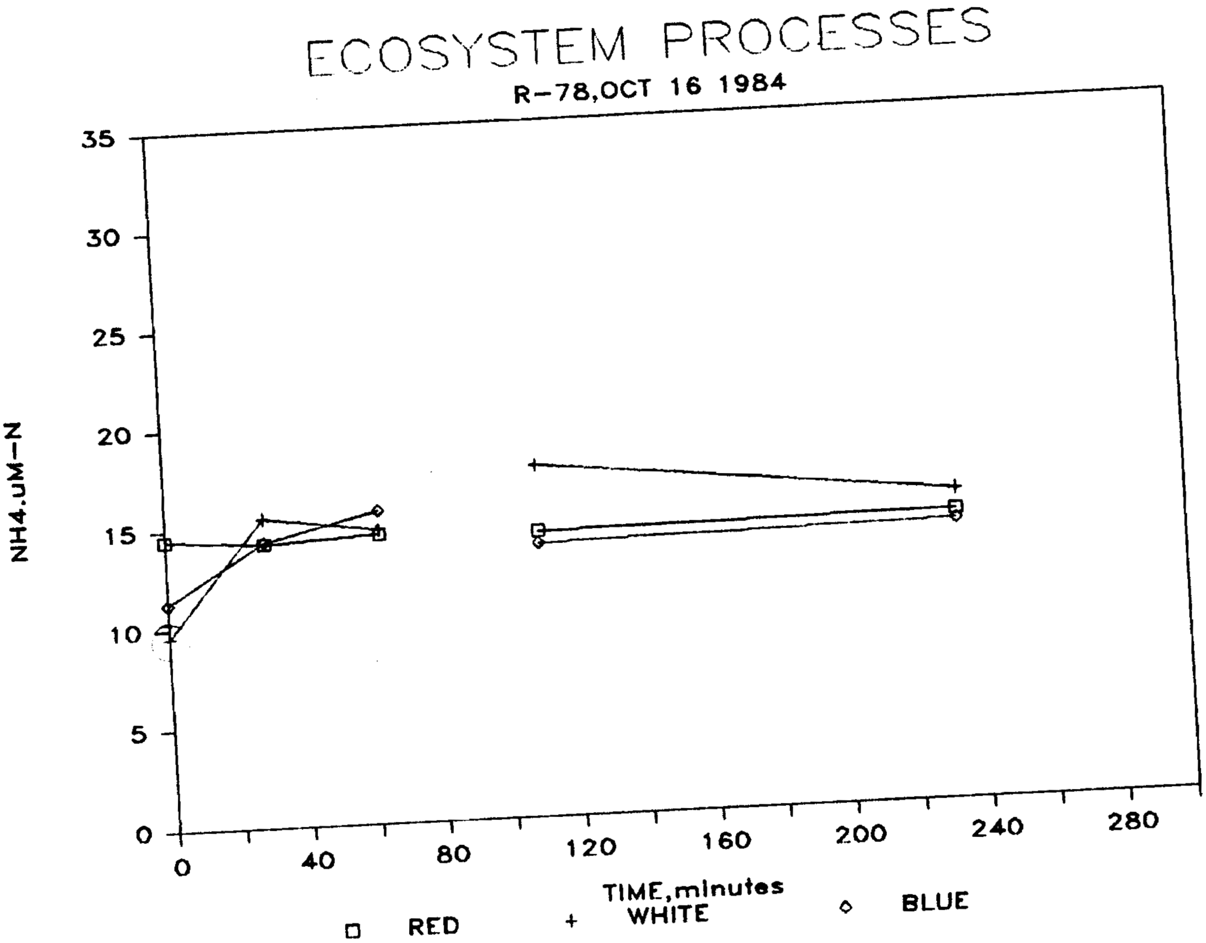
ECOSYSTEM PROCESSES
RAG PT,OCT 18 1984
NH4.uM-N
35
30
25
20
15
10
5
0
0
40
80
120
160
200
240
280
TIME,minutes
RED
WHITE
BLUE


ECOSYSTEM PROCESSES
MD PT,OCT 18 1984
NH4.uM-N
35
30
25
20
15
10
5
0
0
40
80
120
160
200
240
280
TIME,minutes
RED
WHITE
BLUE

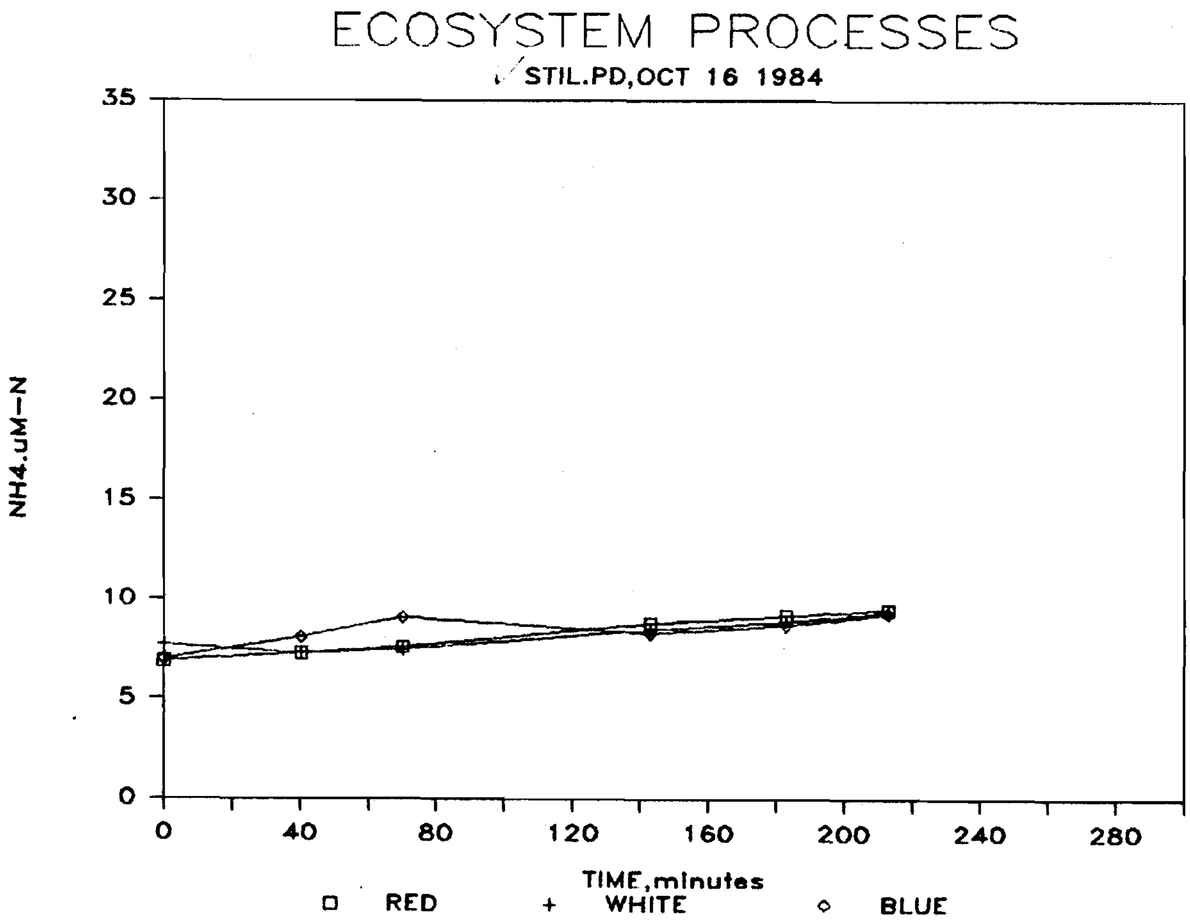

ECOSYSTEM PROCESSES
PT.NO.PT,OCT 17 1984
35
30
25
20
15
10
5
0
NH4.uM-N
0
40
80
120
160
200
240
280
TIME,minutes
RED
WHITE
BLUE

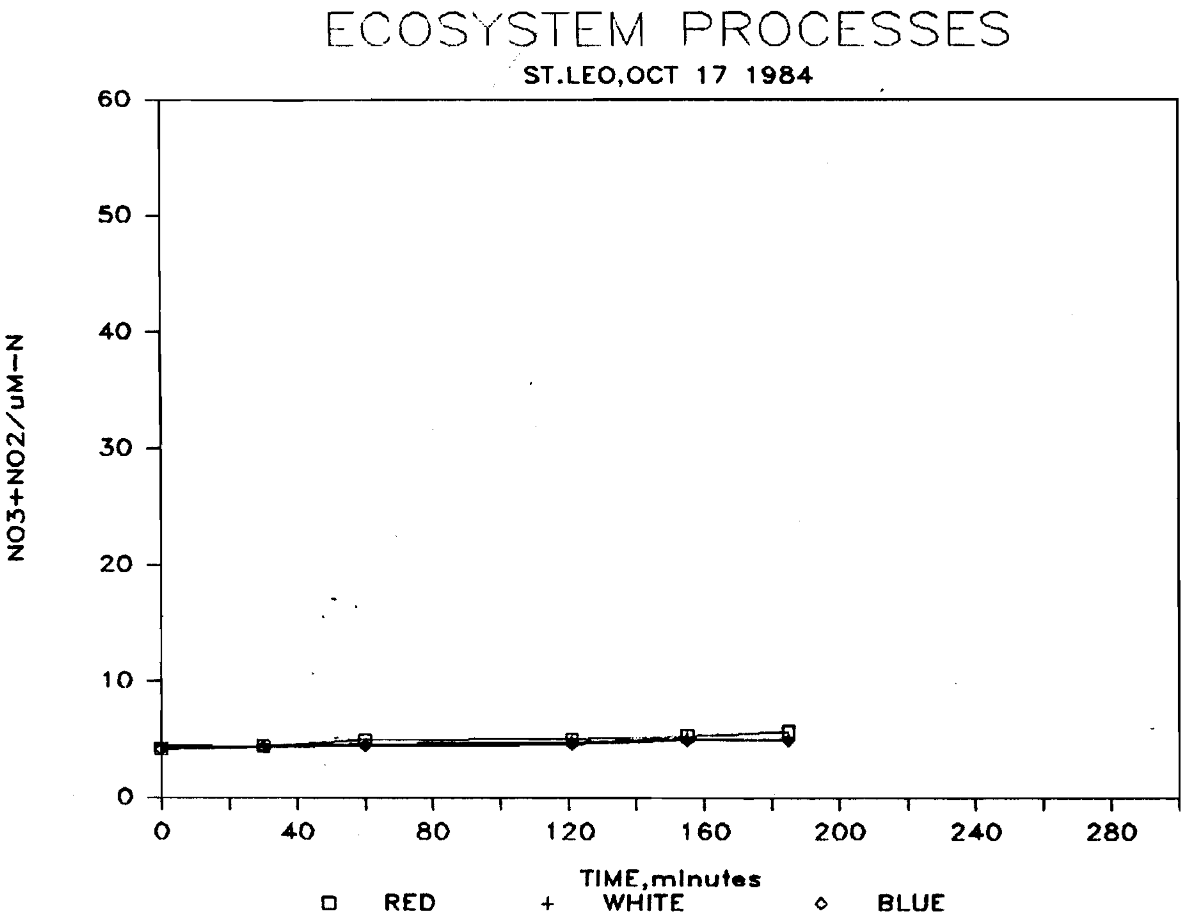

ECOSYSTEM PROCESSES
✓R-64,OCT 16 1984
NH4.uM-N
35
30
25
20
15
10
5
0
0
40
80
120
160
200
240
280
TIME,minutes
RED
WHITE
BLUE

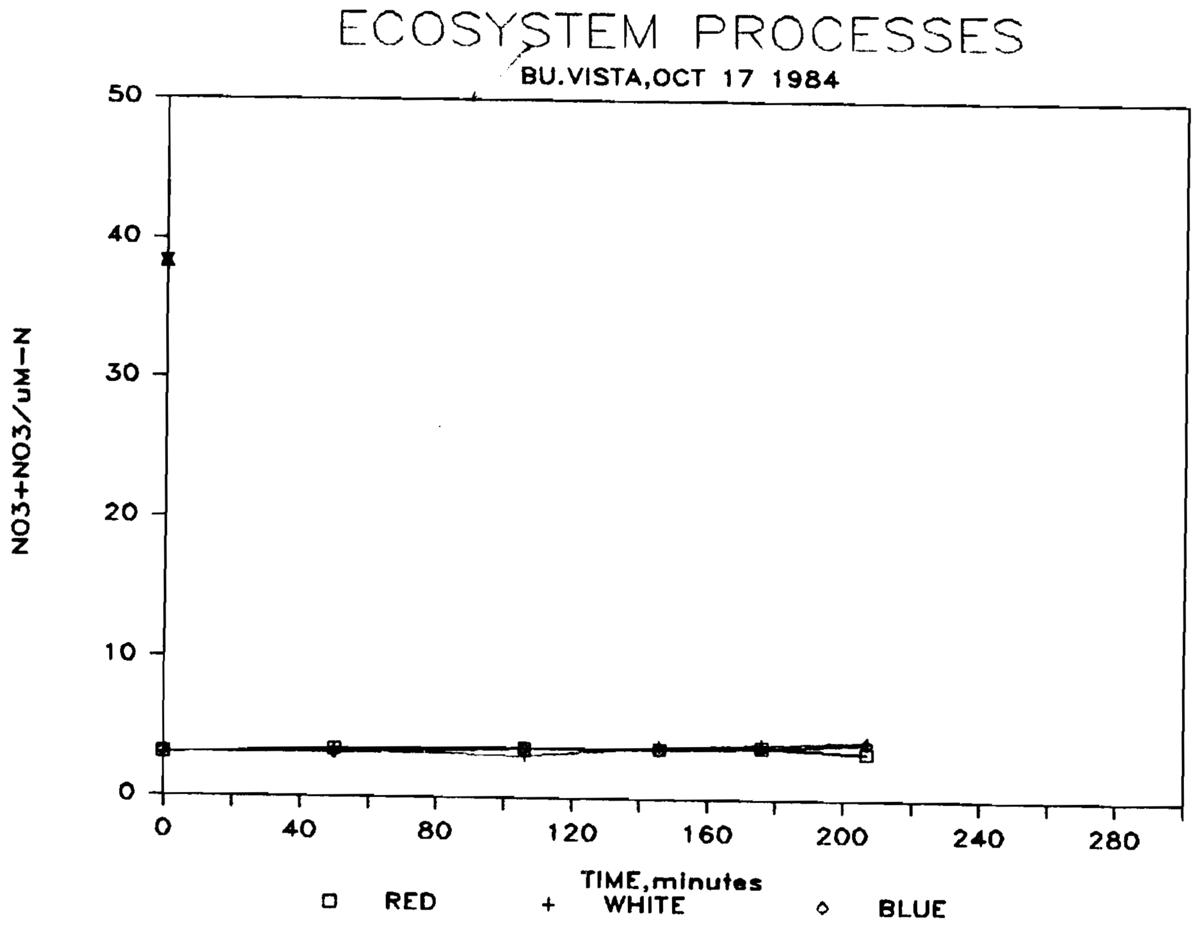
No. 9-29

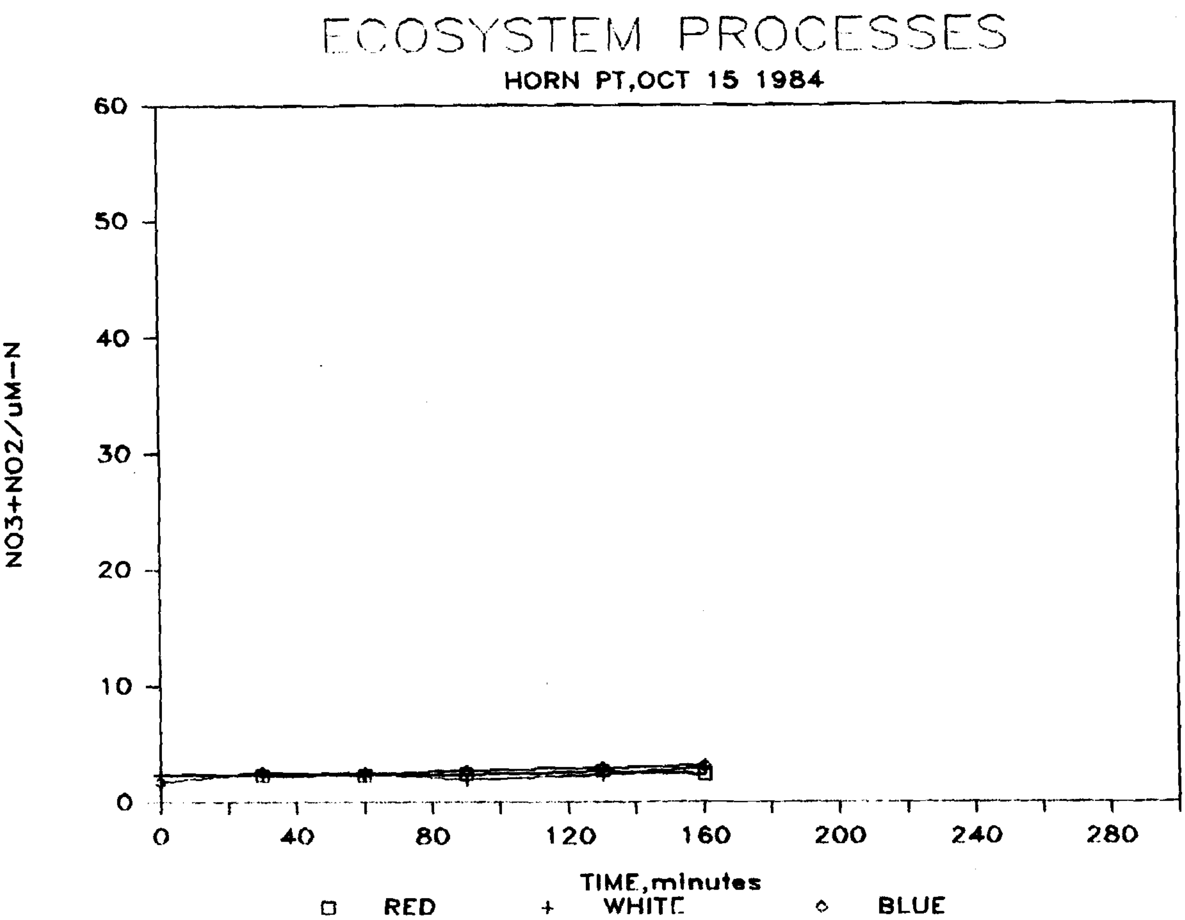


ECOSYSTEM PROCESSES
R-78,OCT 16 1984
NH4.uM-N
35
30
25
20
15
10
5
0
0
40
80
120
160
200
240
280
TIME,minutes
RED
WHITE
BLUE

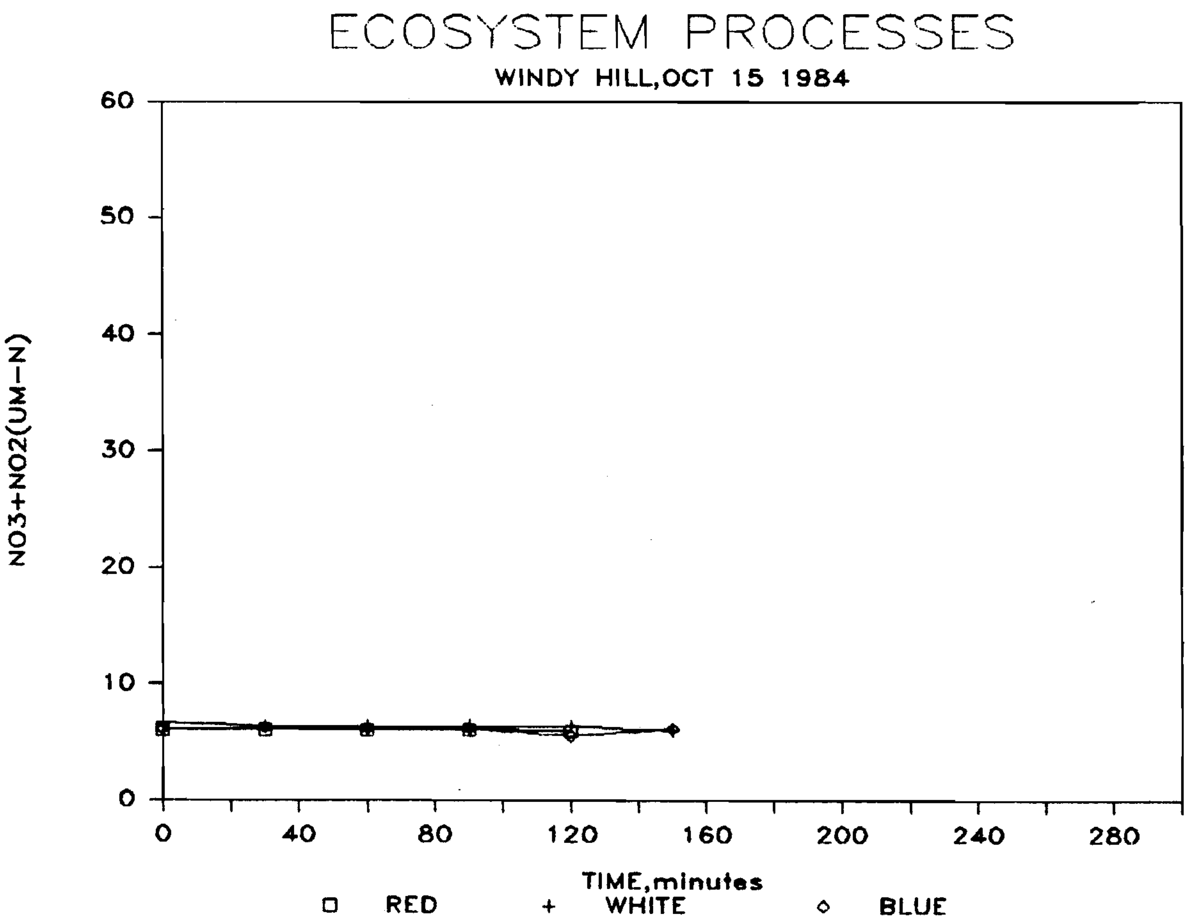

ECOSYSTEM PROCESSES
STIL.PD,OCT 16 1984
35
30
25
20
15
10
5
0
NH4.uM-N
0
40
80
120
160
200
240
280
TIME,minutes
RED
WHITE
BLUE


ECOSYSTEM PROCESSES
ST.LEO,OCT 17 1984
NO3+NO2/uM-N
60
50
40
30
20
10
0
0
40
80
120
160
200
240
280
TIME,minutes
RED
WHITE
BLUE


ECOSYSTEM PROCESSES
BU.VISTA,OCT 17 1984
NO3+NO3/uM-N
50
40
30
20
10
0
0
40
80
120
160
200
240
280
TIME,minutes
RED
WHITE
BLUE

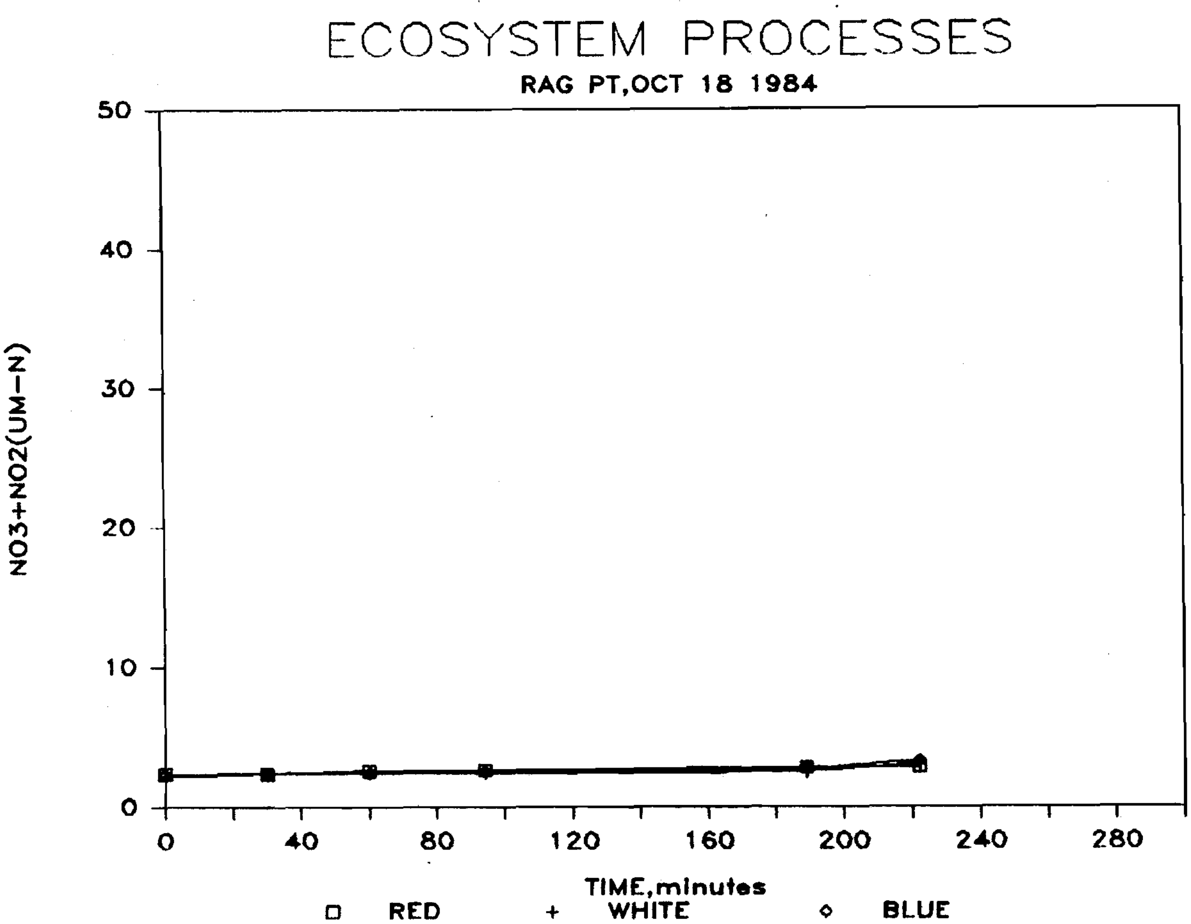

ECOSYSTEM PROCESSES
HORN PT,OCT 15 1984
NO3+NO2/uM-N
60
50
40
30
20
10
0
0
40
80
120
160
200
240
280
TIME,minutes
RED
WHITE
BLUE

No. 9-34

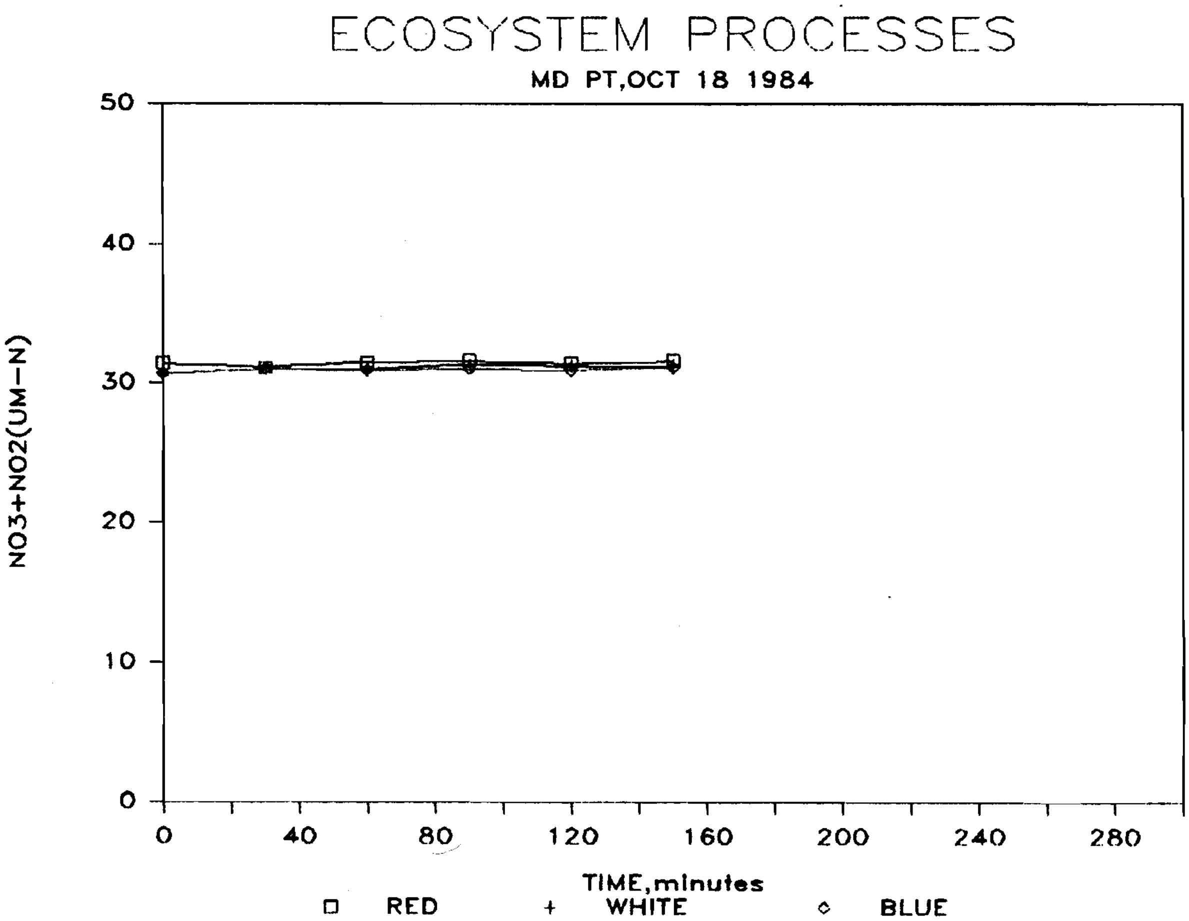


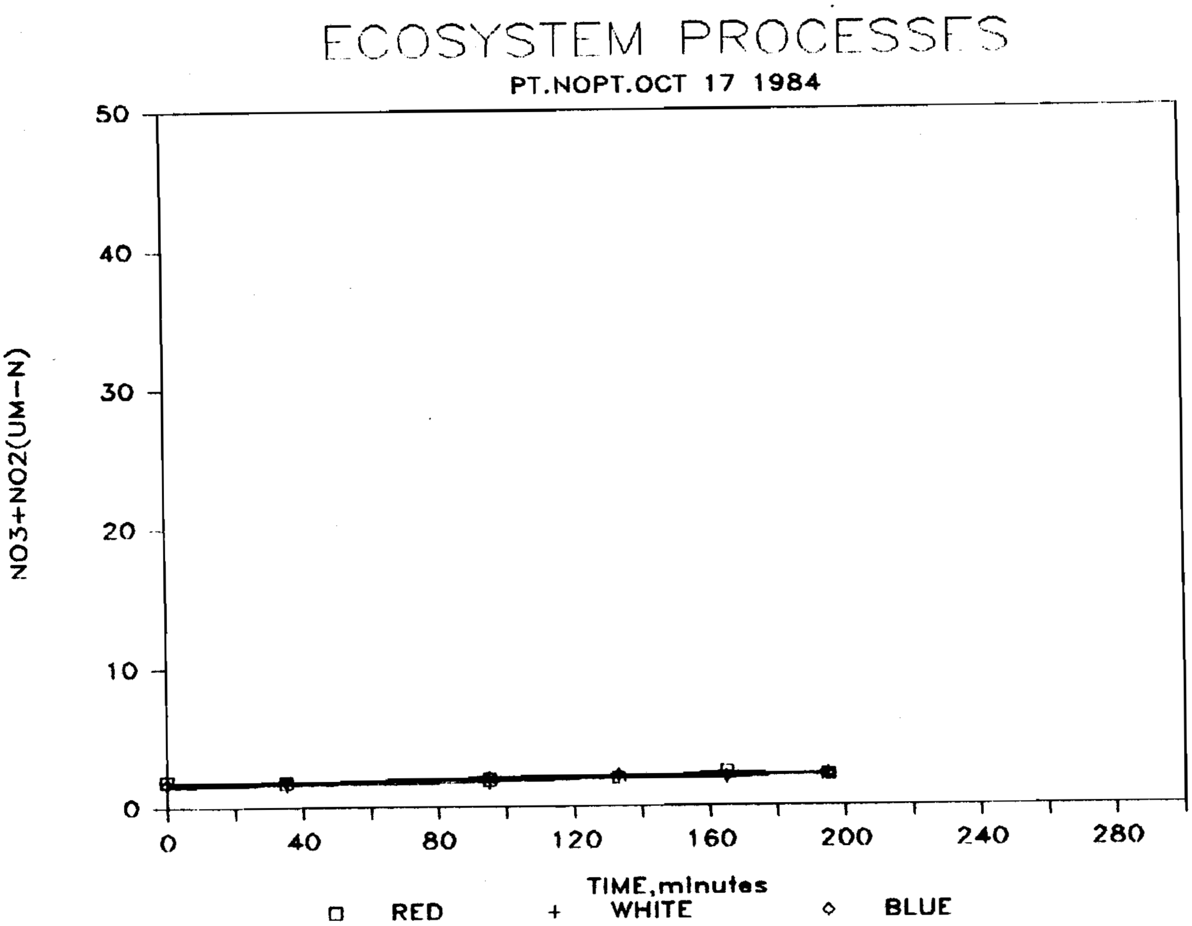
ECOSYSTEM PROCESSES
WINDY HILL,OCT 15 1984
NO3+NO2(UM-N)
60
50
40
30
20
10
0
0
40
80
120
160
200
240
280
TIME,minutes
RED
WHITE
BLUE

No. 9-35

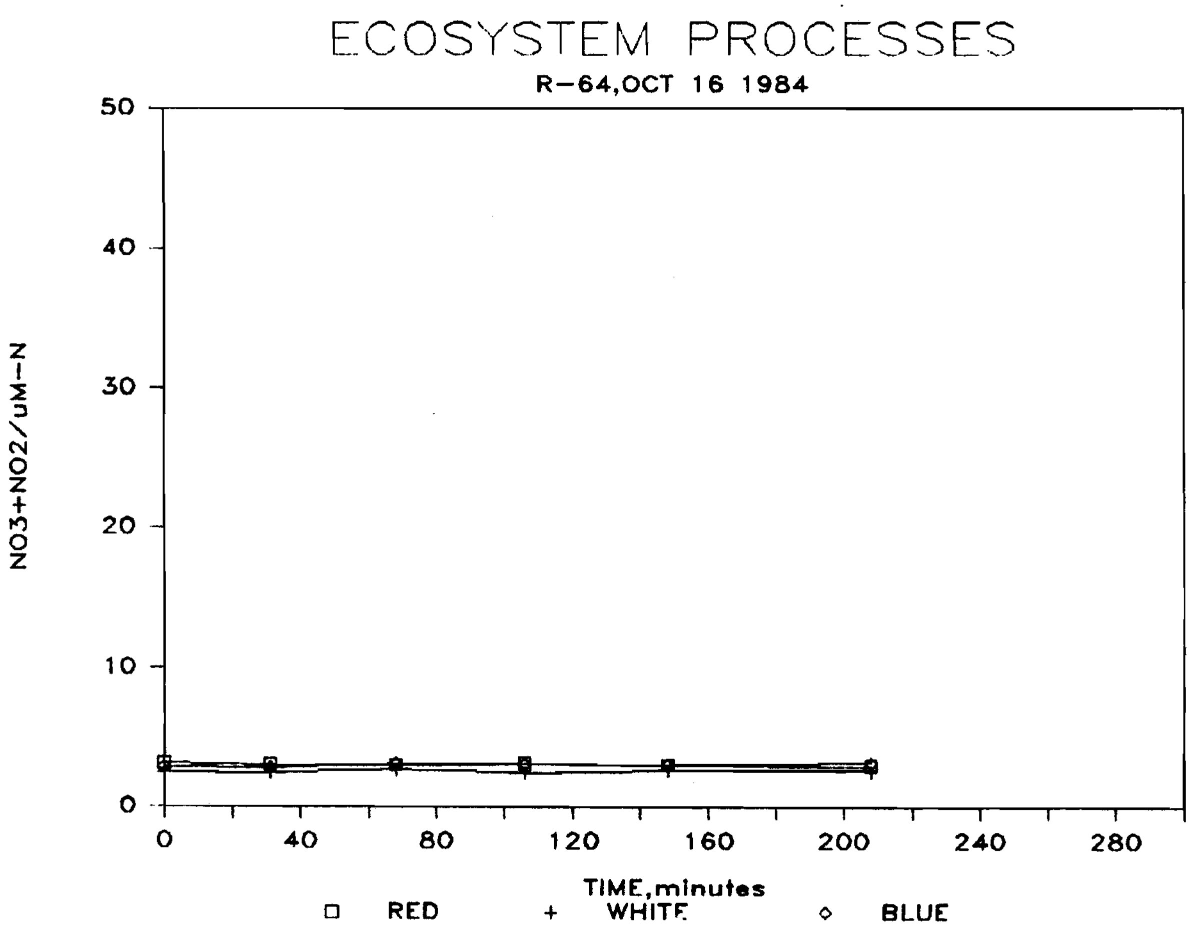


ECOSYSTEM PROCESSES
RAG PT,OCT 18 1984
50
40
30
20
10
0
NO3+NO2(UM-N)
0
40
80
120
160
200
240
280
TIME,minutes
RED
WHITE
BLUE

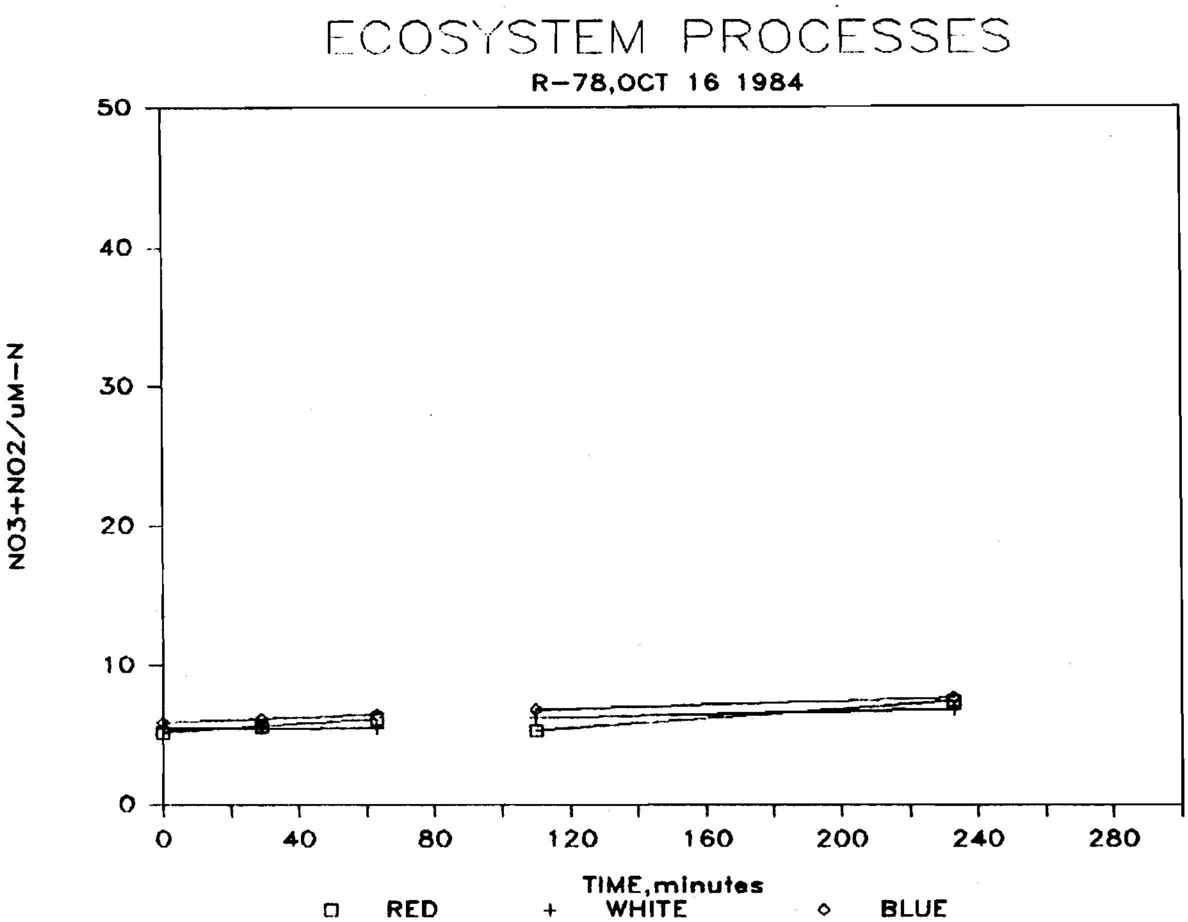

ECOSYSTEM PROCESSES
MD PT,OCT 18 1984
NO3+NO2(UM-N)
50
40
30
20
10
0
0
40
80
120
160
200
240
280
TIME,minutes
RED
WHITE
BLUE



ECOSYSTEM PROCESSES
PT.NOPT.OCT 17 1984
50
40
30
20
10
0
NO3+NO2(UM-N)
0
40
80
120
160
200
240
280
TIME,minutes
RED
WHITE
BLUE

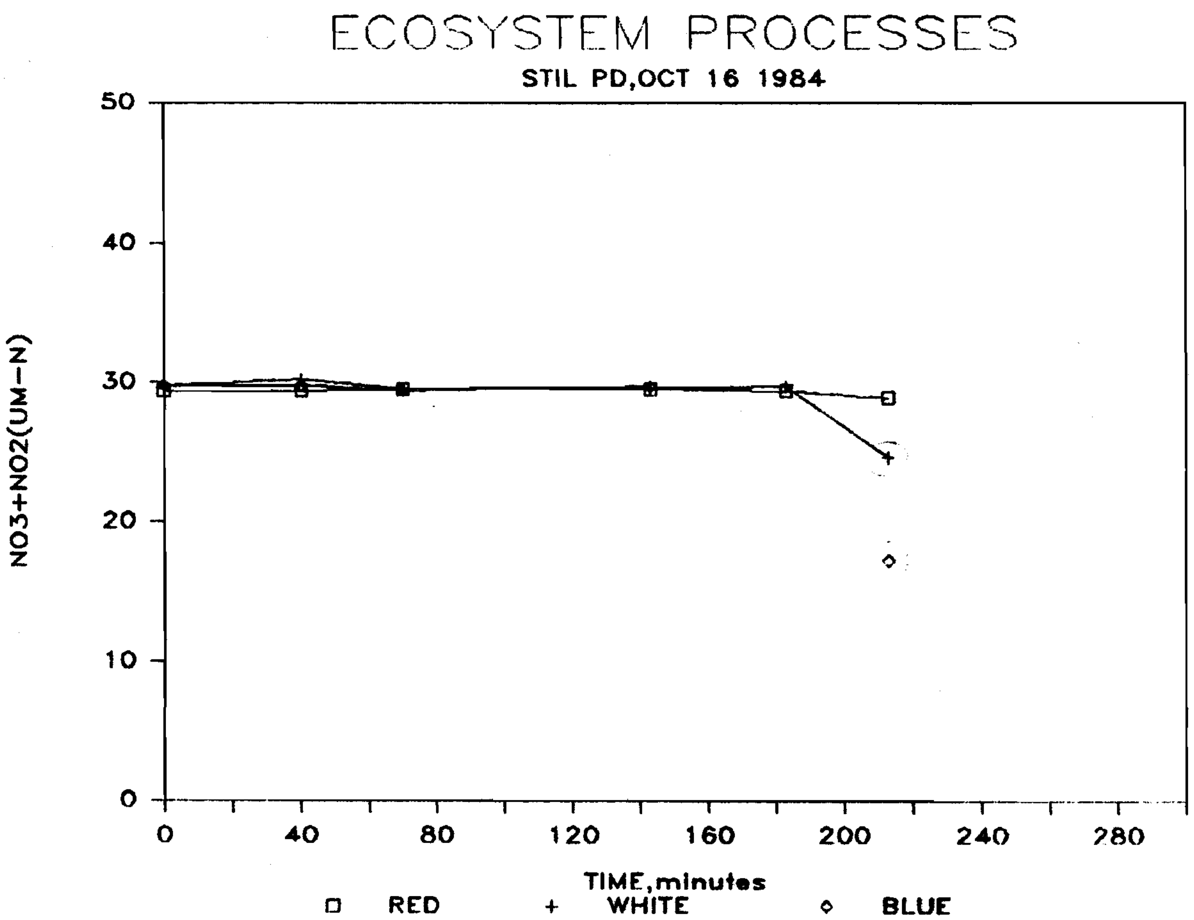

ECOSYSTEM PROCESSES
R-64,OCT 16 1984
50
40
30
20
10
0
NO3+NO2/uM-N
0
40
80
120
160
200
240
280
TIME,minutes
RED
WHITE
BLUE

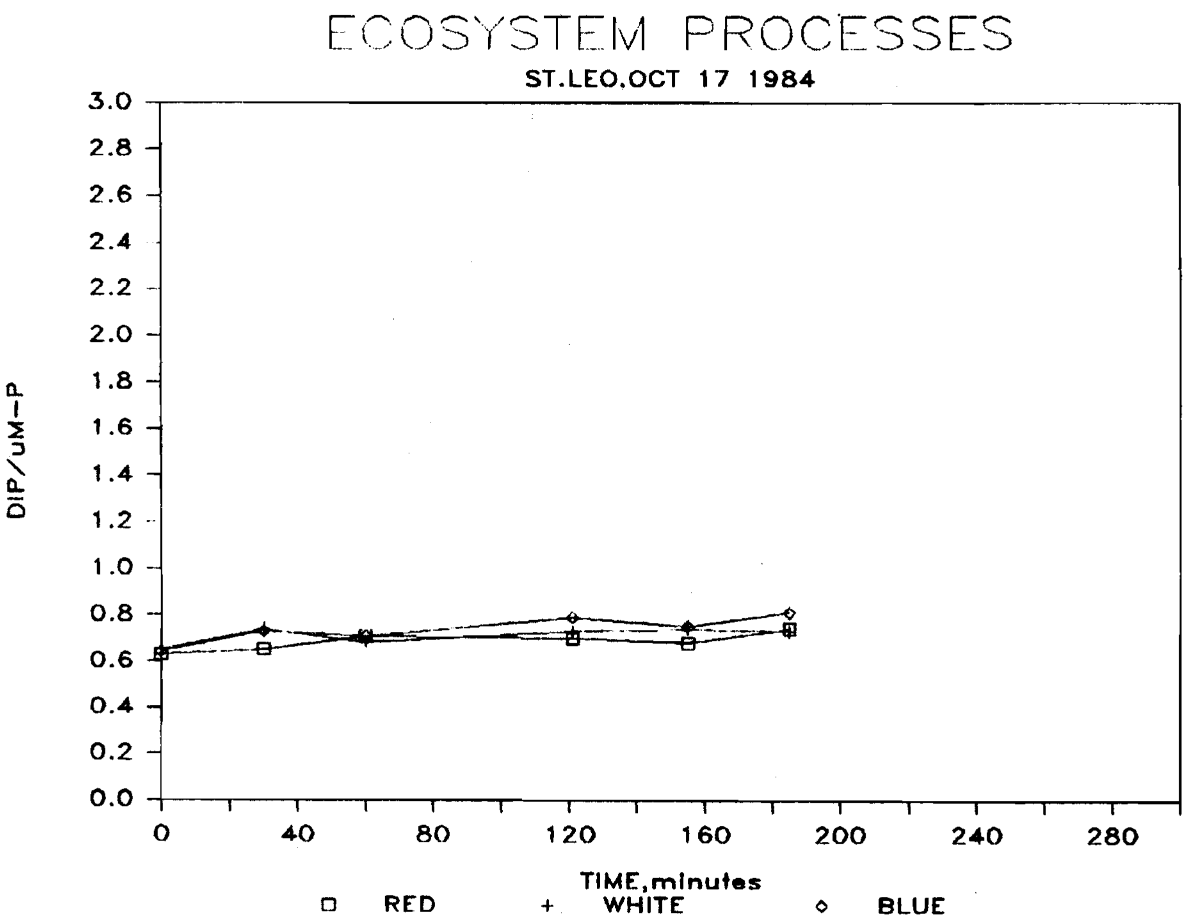
No. 9-39

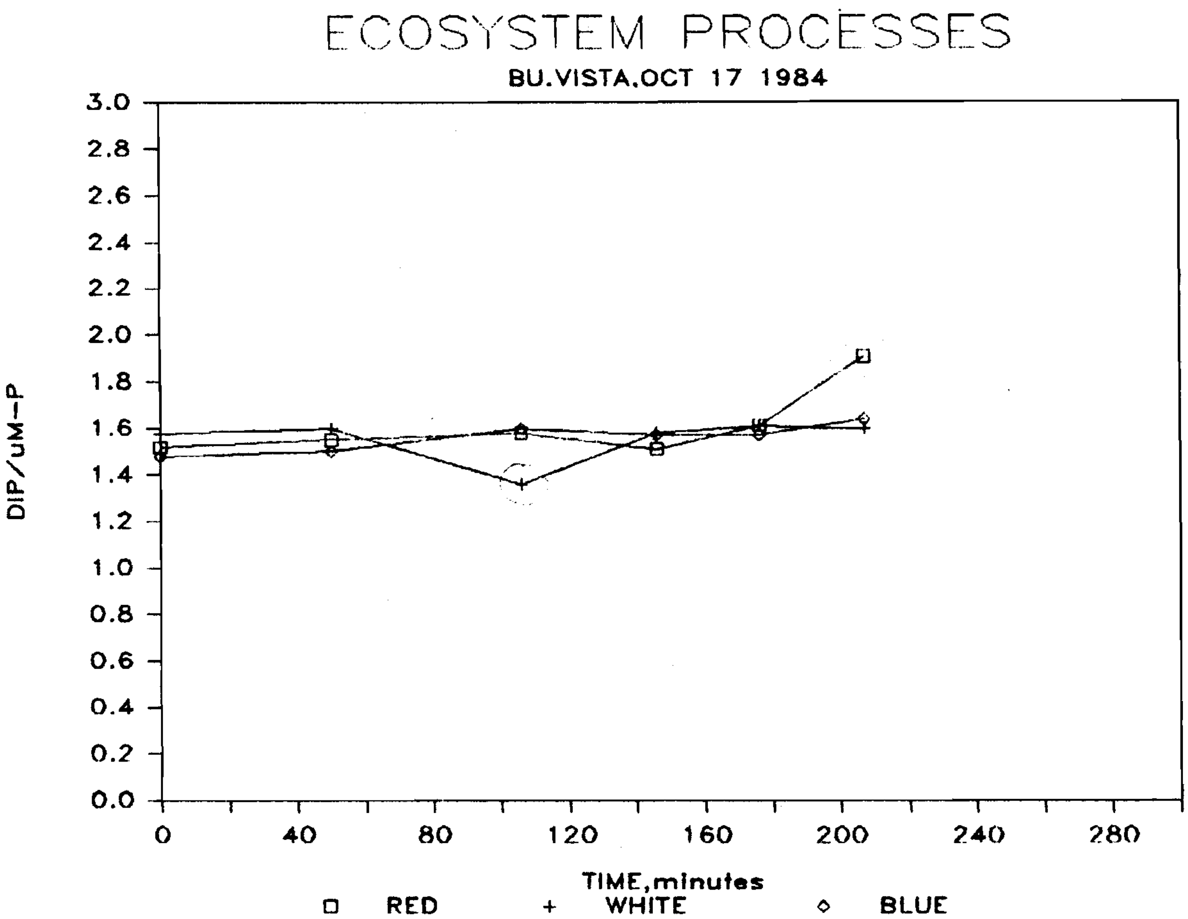


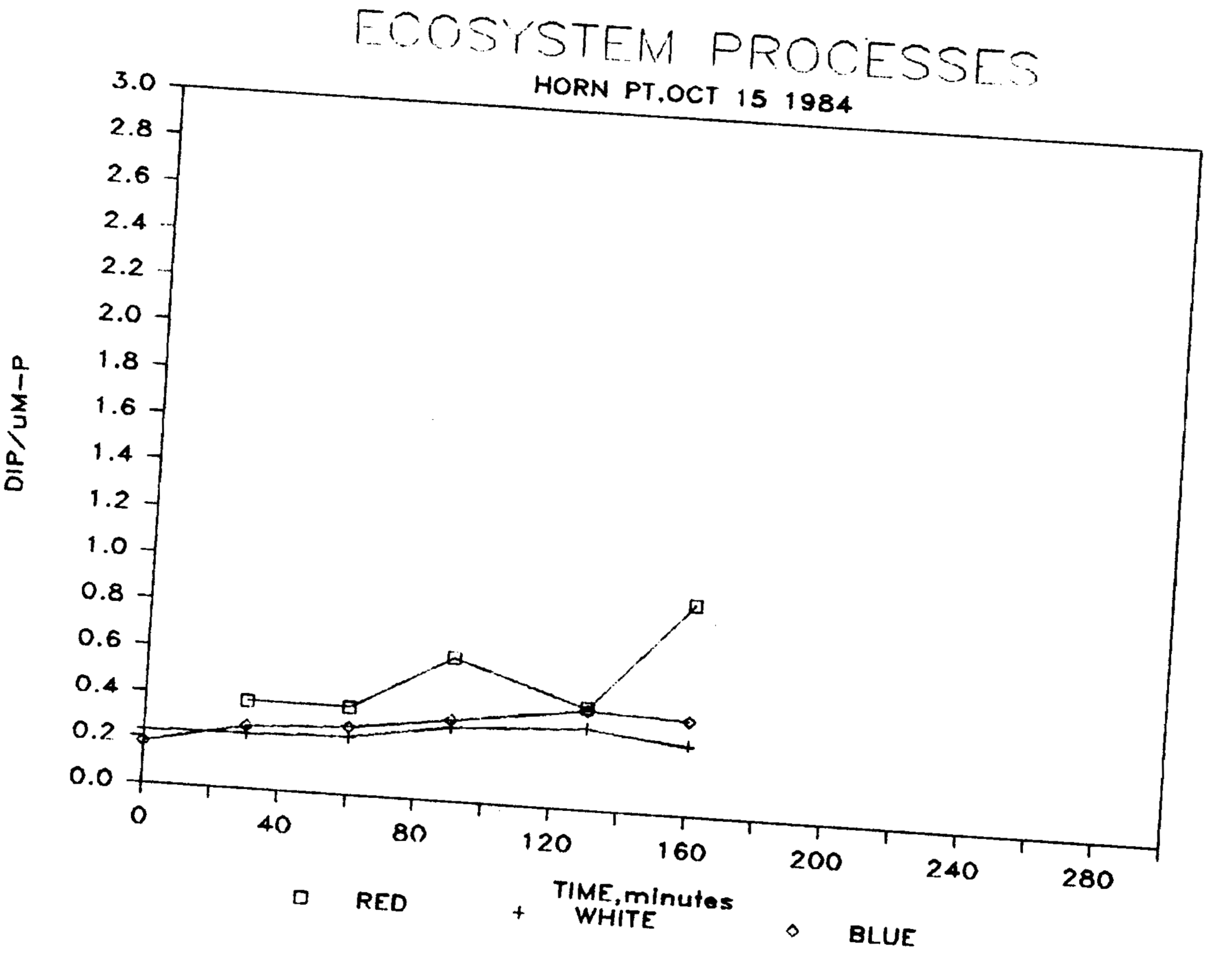
ECOSYSTEM PROCESSES
R-78,OCT 16 1984
NO3+NO2/uM-N
50
40
30
20
10
0
0
40
80
120
160
200
240
280
TIME,minutes
RED
WHITE
BLUE

No. 9-40

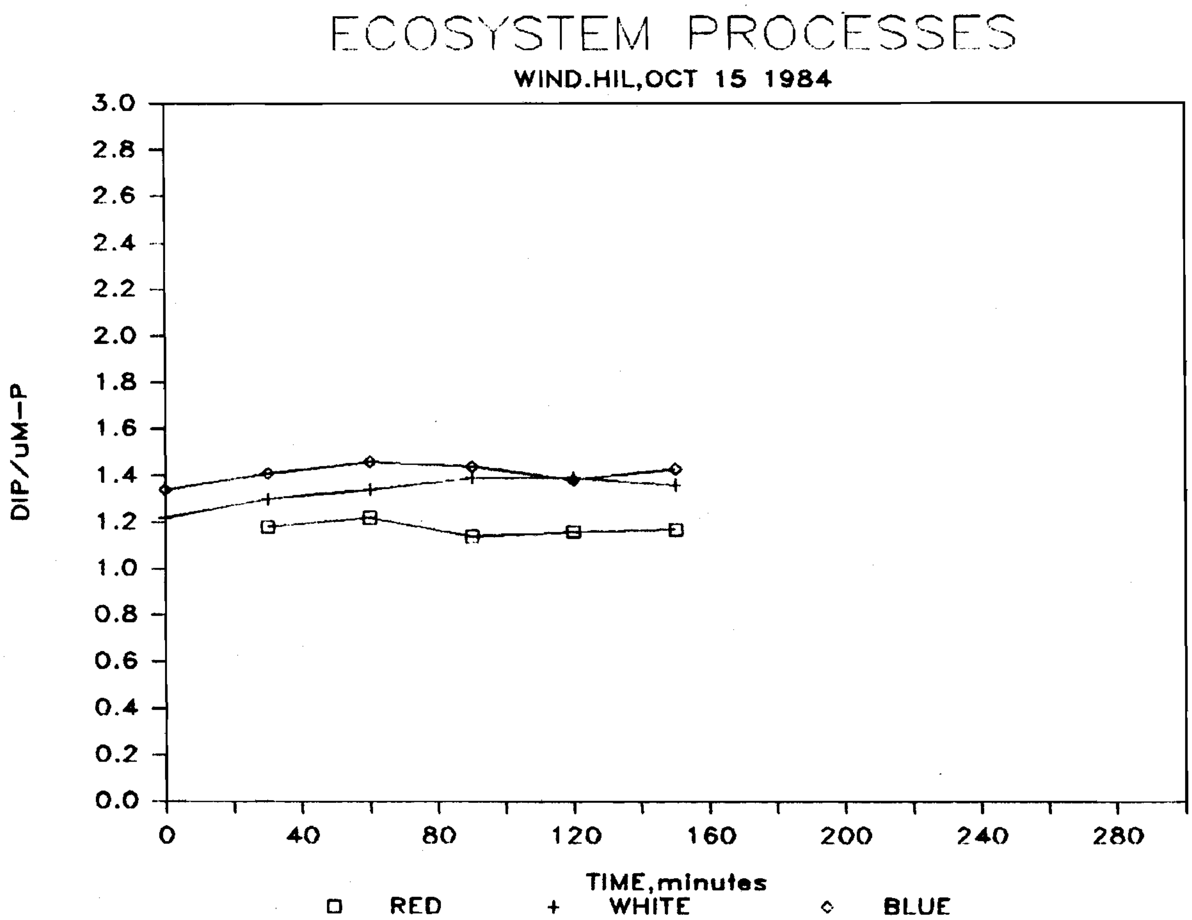

ECOSYSTEM PROCESSES
STIL PD,OCT 16 1984
NO3+NO2(UM-N)
50
40
30
20
10
0
0
40
80
120
160
200
240
280
TIME,minutes
RED
WHITE
BLUE


ECOSYSTEM PROCESSES
ST.LEO,OCT 17 1984
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
DIP/uM-P
0
40
80
120
160
200
240
280
TIME,minutes
RED
WHITE
BLUE

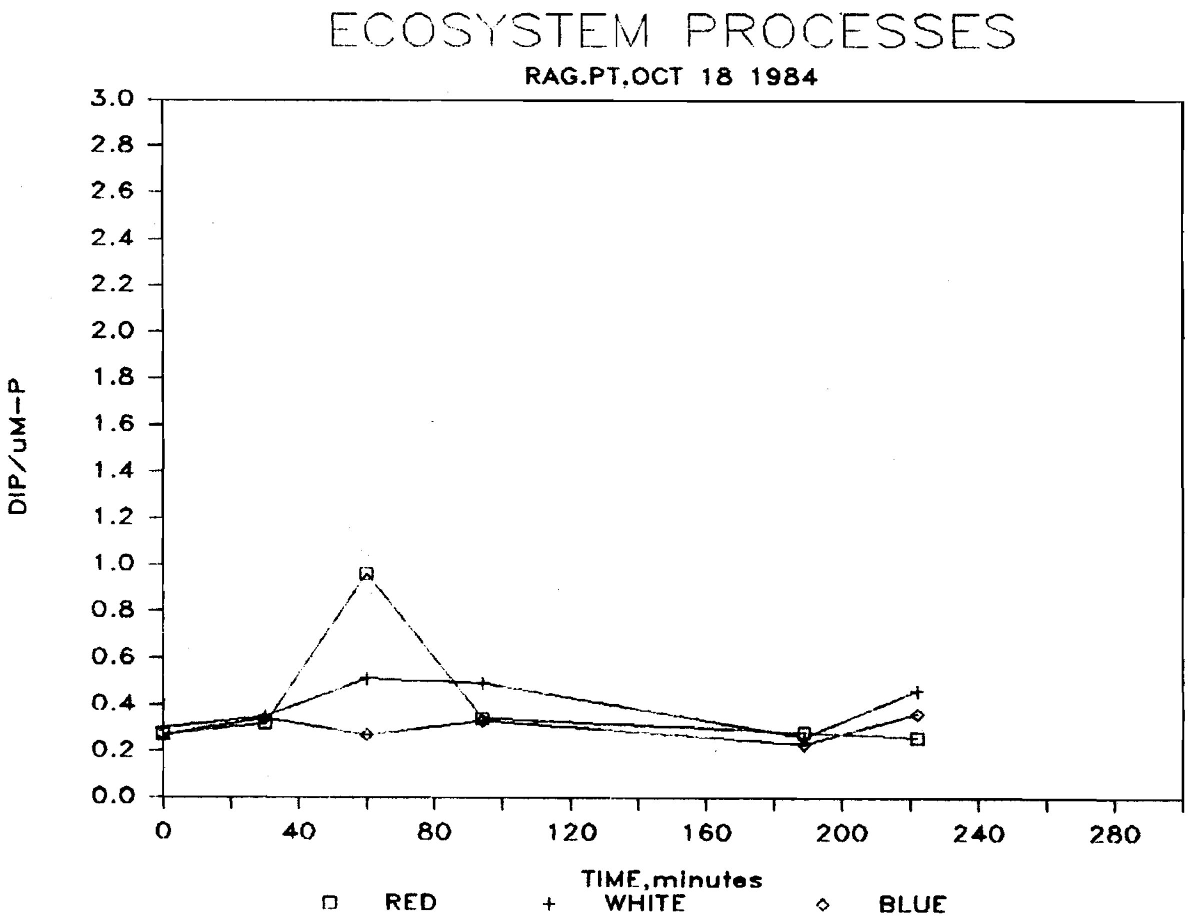

ECOSYSTEM PROCESSES
BU.VISTA.OCT 17 1984
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
DIP/uM-P
0
40
80
120
160
200
240
280
TIME,minutes
RED
WHITE
BLUE



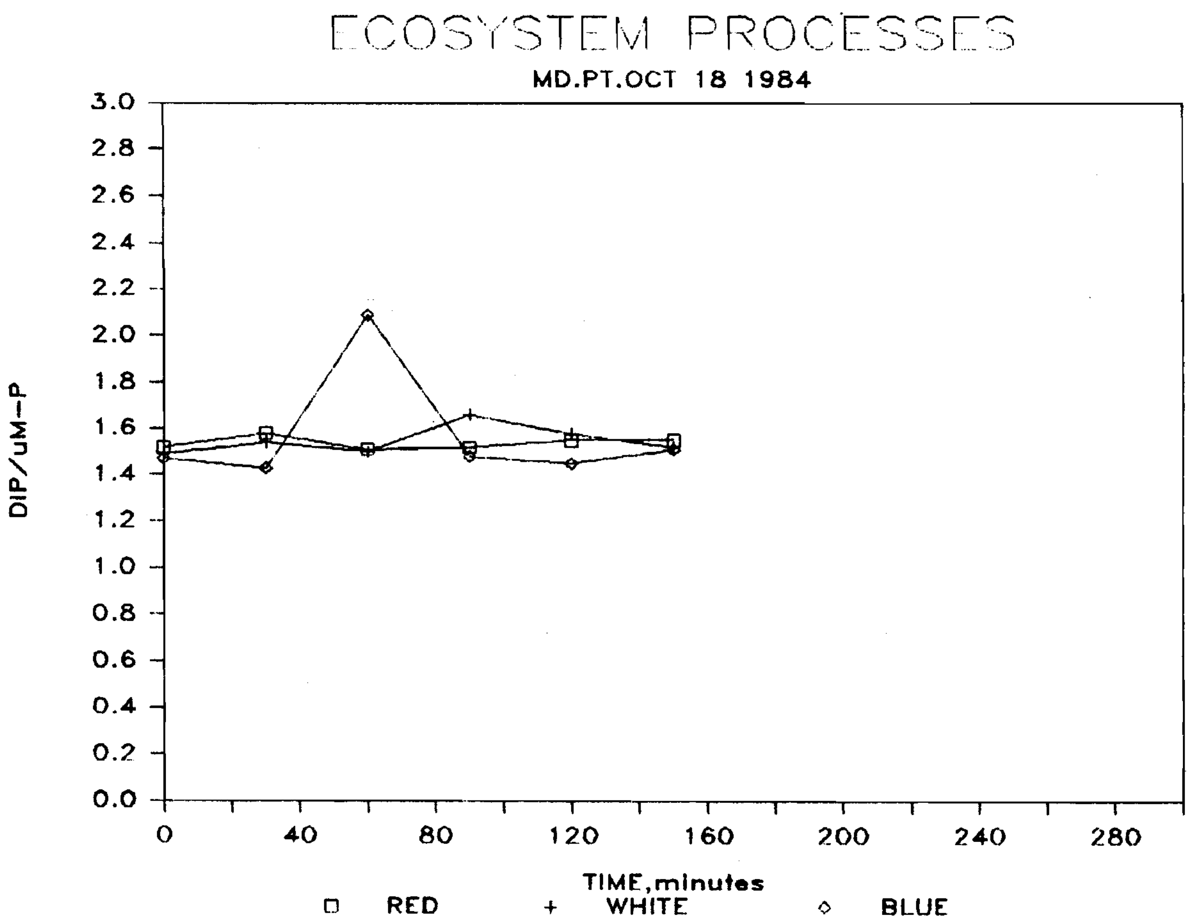
ECOSYSTEM PROCESSES
HORN PT,OCT 15 1984
DIP/uM-P
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
40
80
120
160
200
240
280
TIME,minutes
RED
WHITE
BLUE



ECOSYSTEM PROCESSES
WIND.HIL,OCT 15 1984
DIP/uM-P
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
40
80
120
160
200
240
280
TIME,minutes
RED
WHITE
BLUE

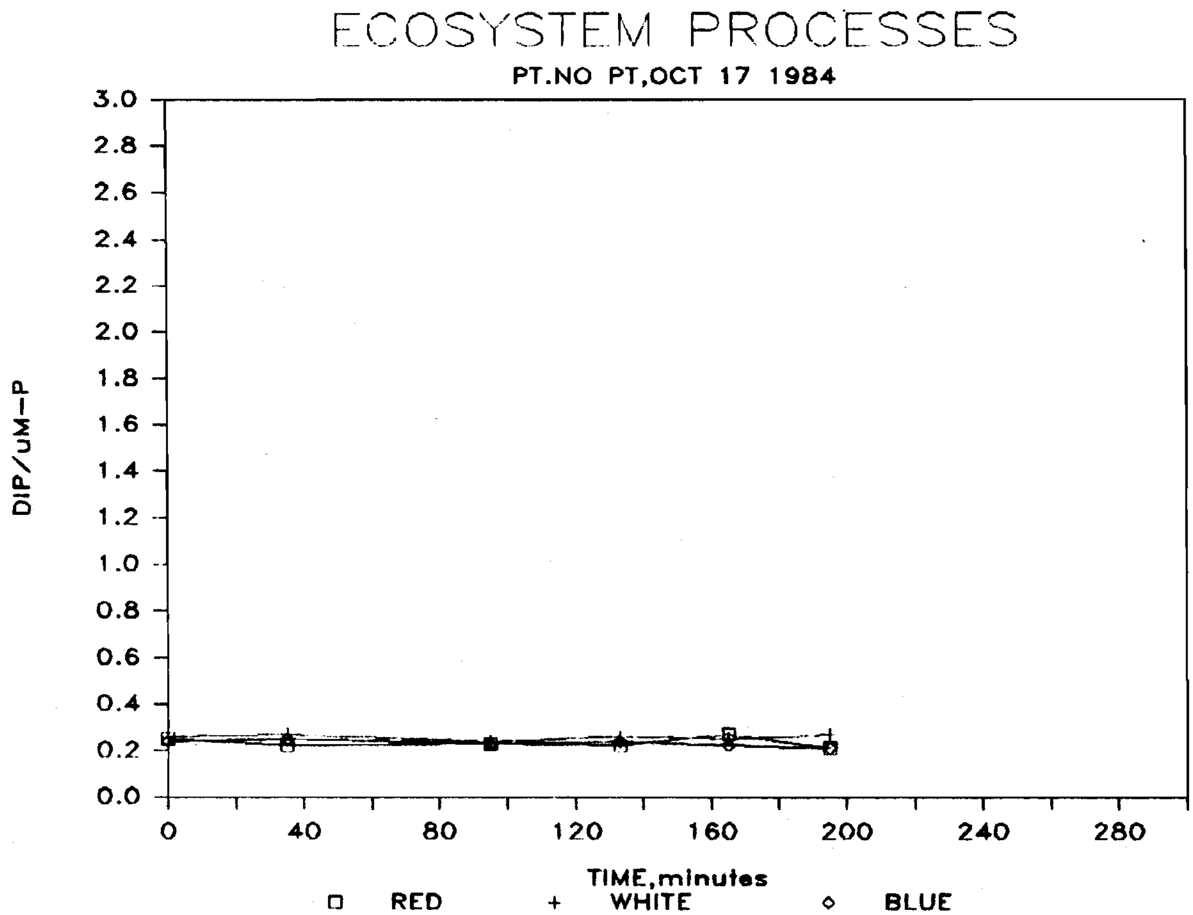

ECOSYSTEM PROCESSES
RAG.PT,OCT 18 1984
DIP/uM-P
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
40
80
120
160
200
240
280
TIME,minutes
RED
WHITE
BLUE

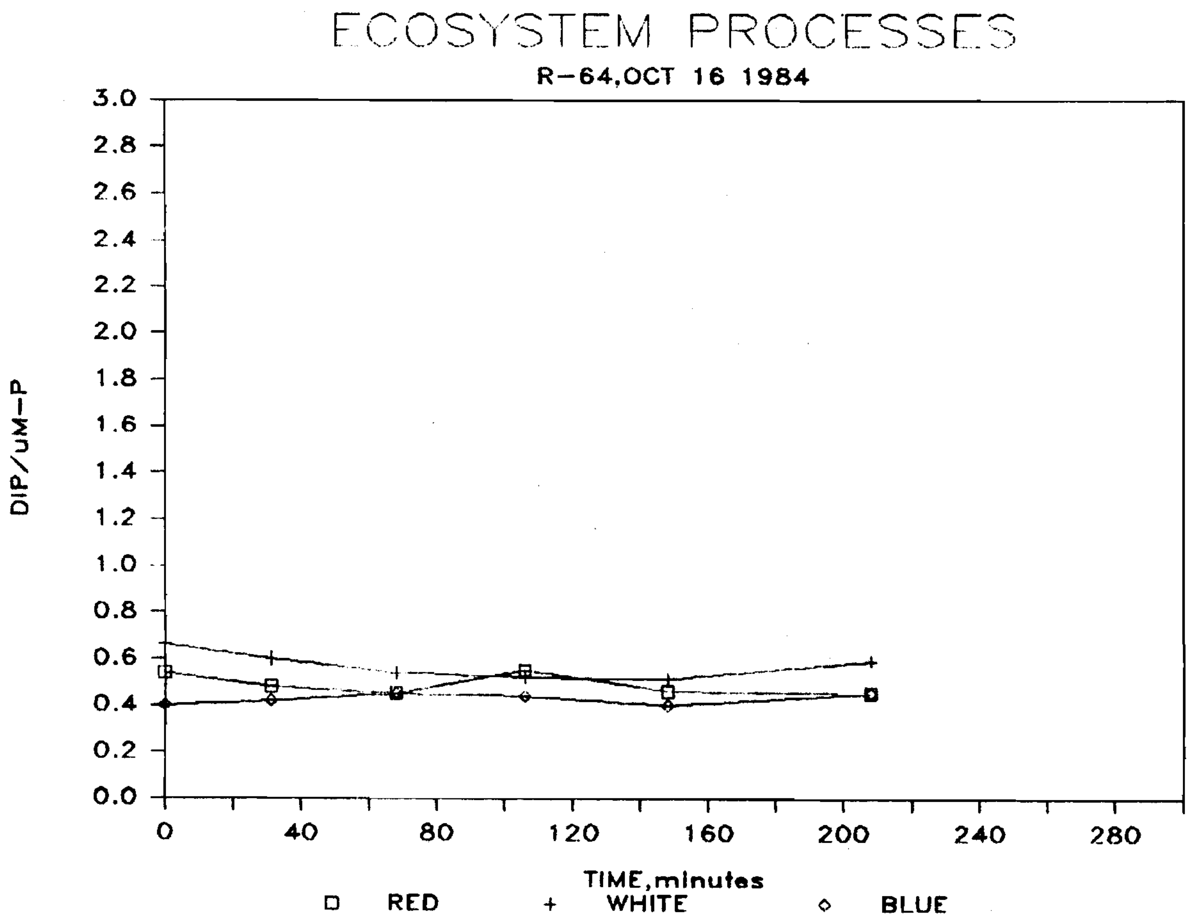
No. 9-46

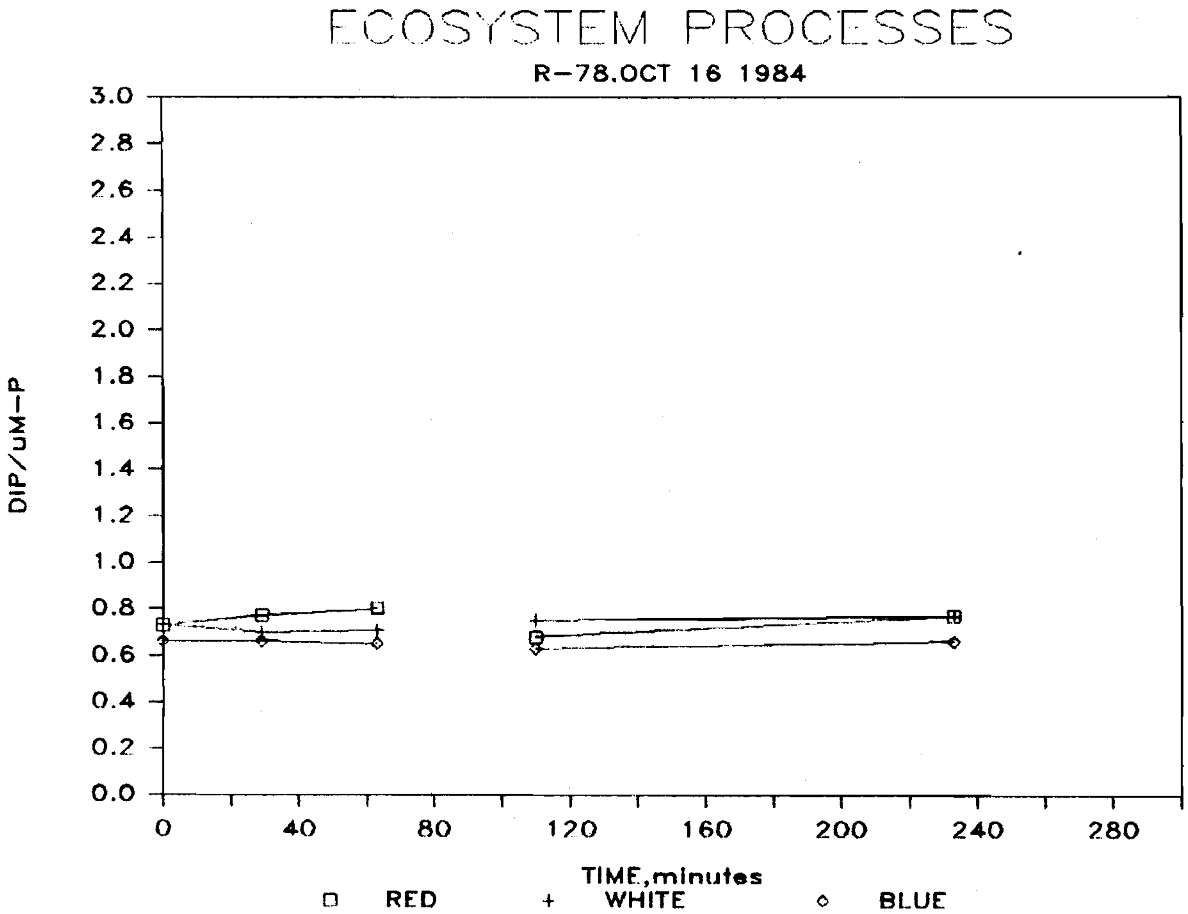


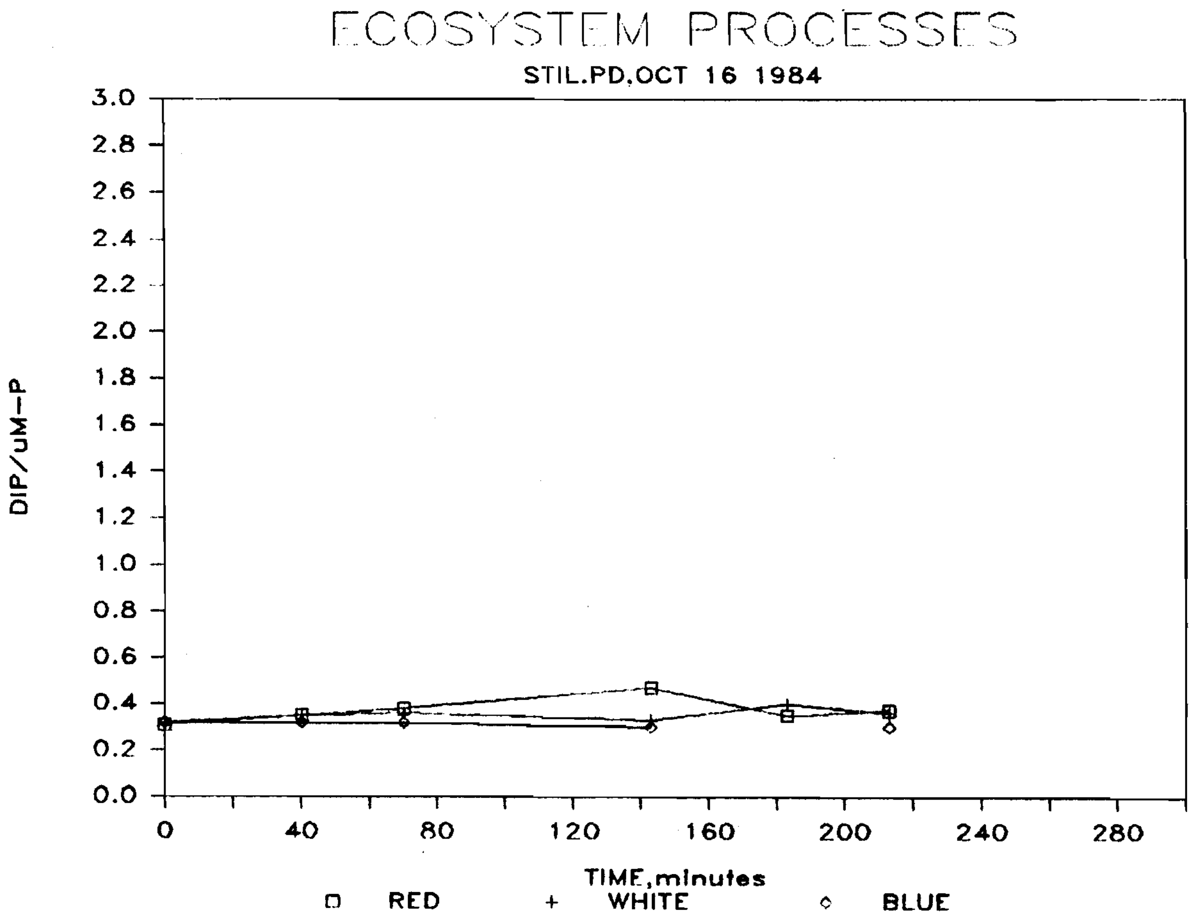
ECOSYSTEM PROCESSES
MD.PT.OCT 18 1984
DIP/uM-P
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
40
80
120
160
200
240
280
TIME,minutes
RED
WHITE
BLUE

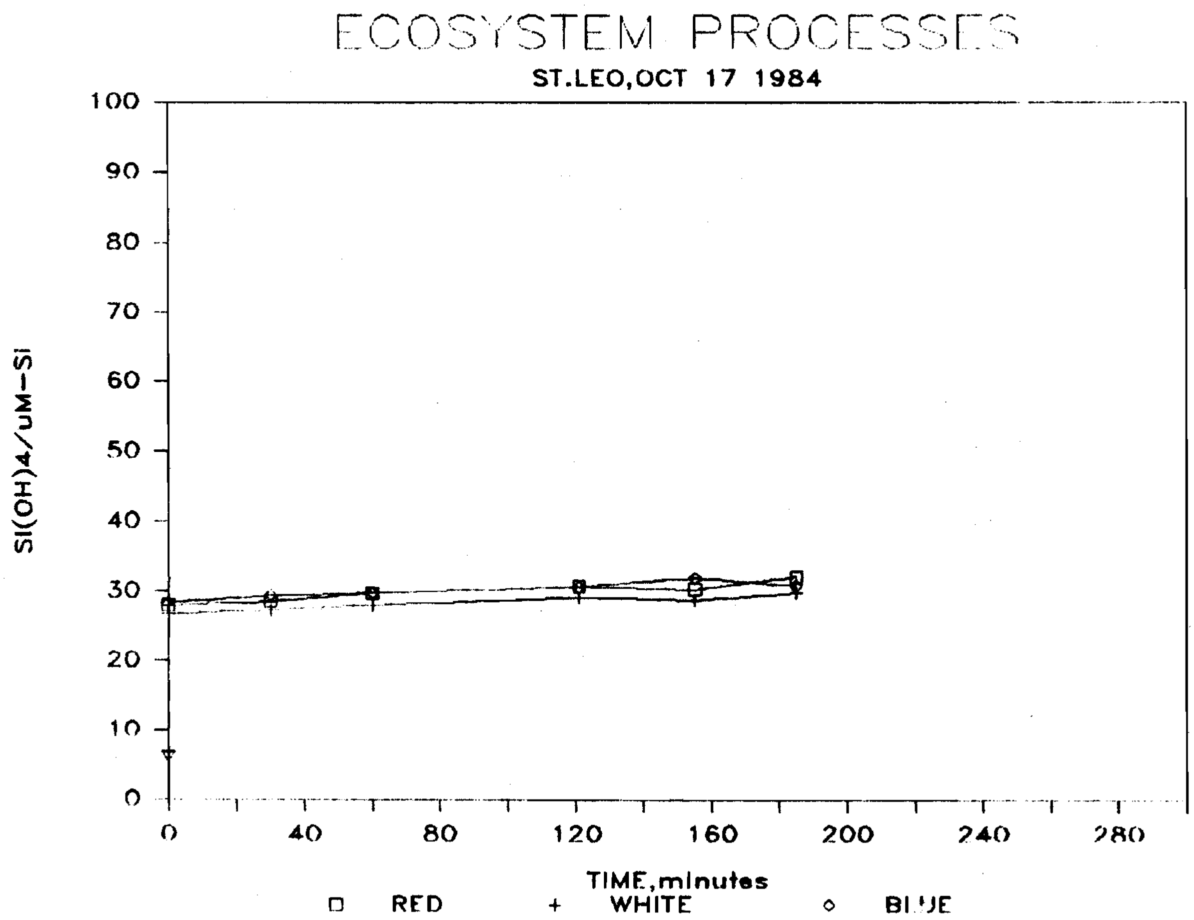
No. 9-47

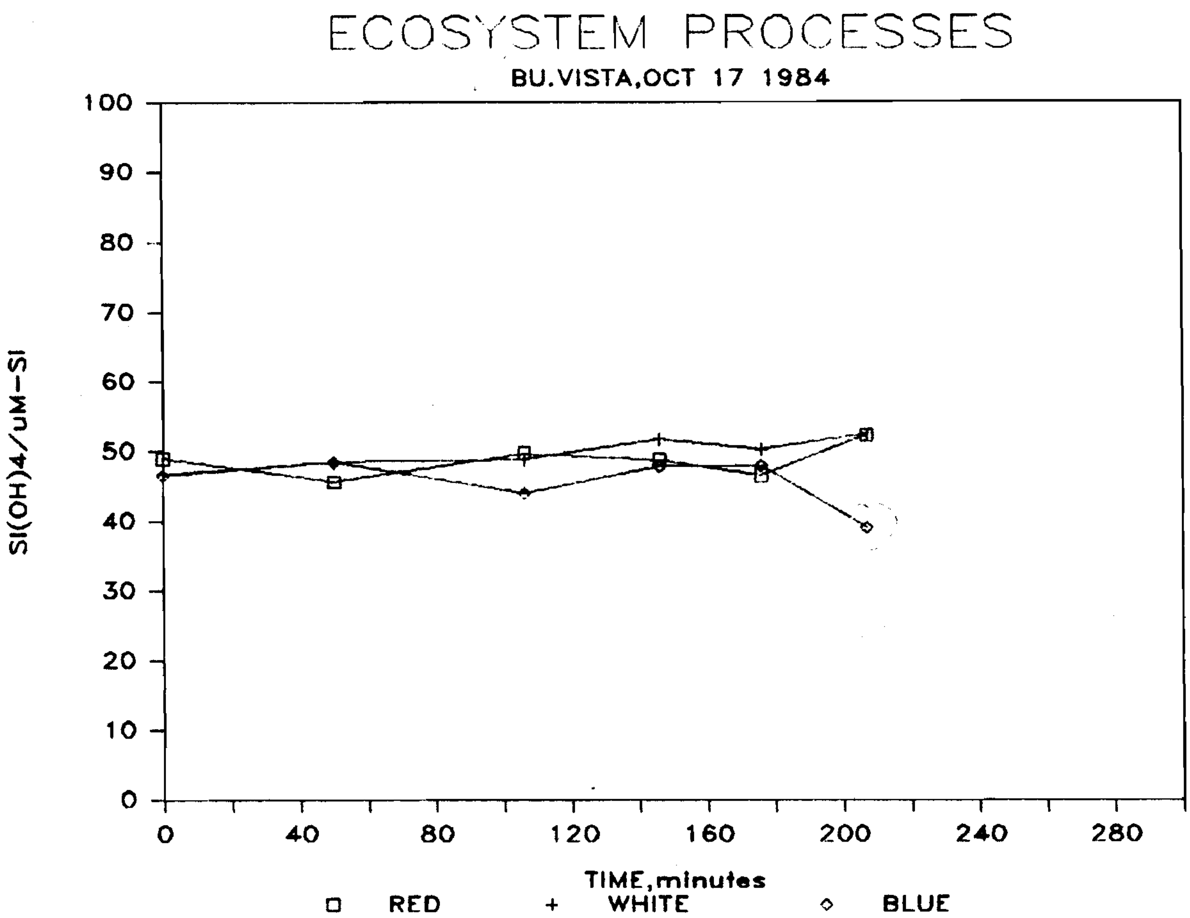

ECOSYSTEM PROCESSES
PT.NO PT,OCT 17 1984
DIP/uM-P
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
40
80
120
160
200
240
280
TIME,minutes
RED
WHITE
BLUE


ECOSYSTEM PROCESSES
R-64,OCT 16 1984
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
DIP/uM-P
0
40
80
120
160
200
240
280
TIME,minutes
RED
WHITE
BLUE

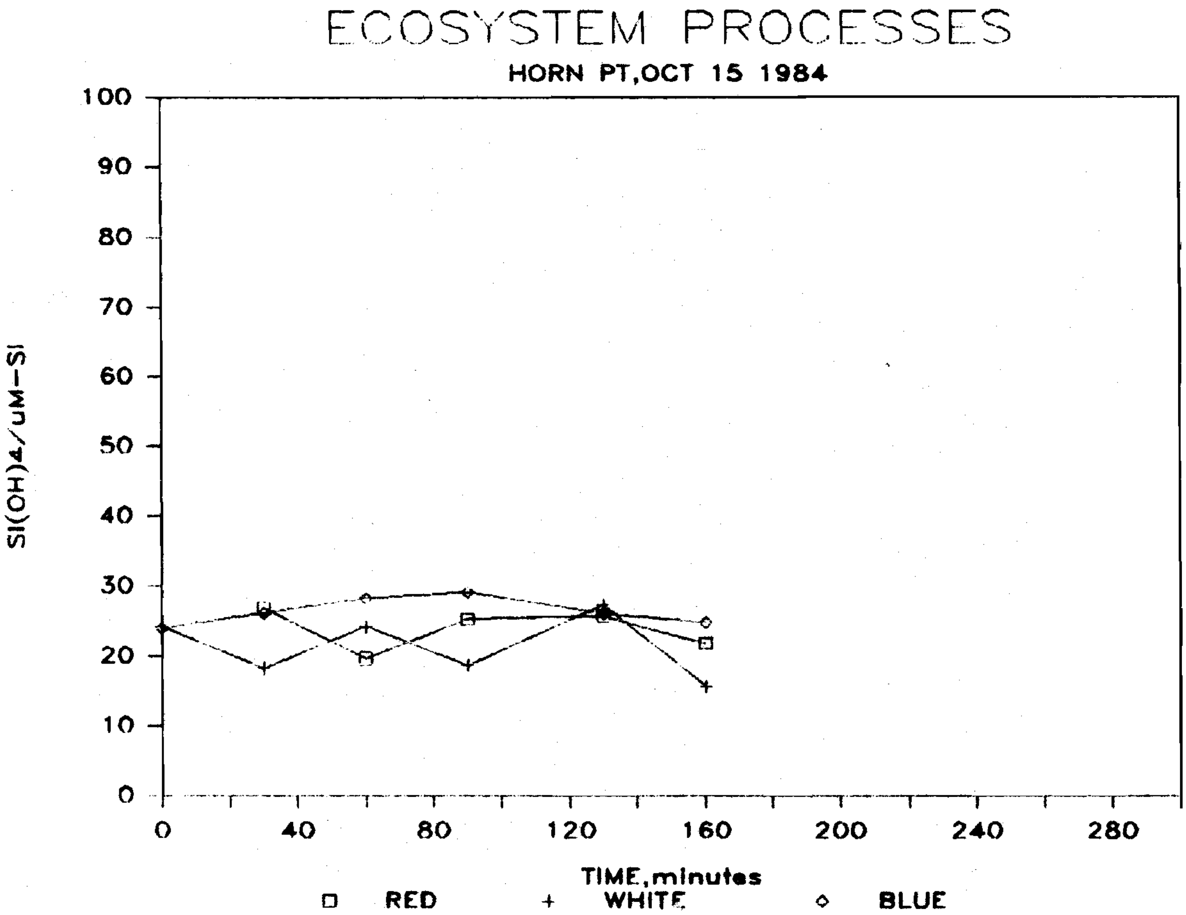

ECOSYSTEM PROCESSES
R-78.OCT 16 1984
DIP/uM-P
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
40
80
120
160
200
240
280
TIME,minutes
RED
WHITE
BLUE


ECOSYSTEM PROCESSES
STIL.PD,OCT 16 1984
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
DIP/uM-P
0
40
80
120
160
200
240
280
TIME,minutes
RED
WHITE
BLUE


ECOSYSTEM PROCESSES
ST.LEO,OCT 17 1984
SI(OH)4/uM-Si
100
90
80
70
60
50
40
30
20
10
0
0
40
80
120
160
200
240
280
TIME,minutes
RED
WHITE
BLUE


ECOSYSTEM PROCESSES
BU.VISTA,OCT 17 1984
100
90
80
70
60
50
40
30
20
10
0
SI(OH)4/uM-SI
0
40
80
120
160
200
240
280
TIME,minutes
RED
WHITE
BLUE

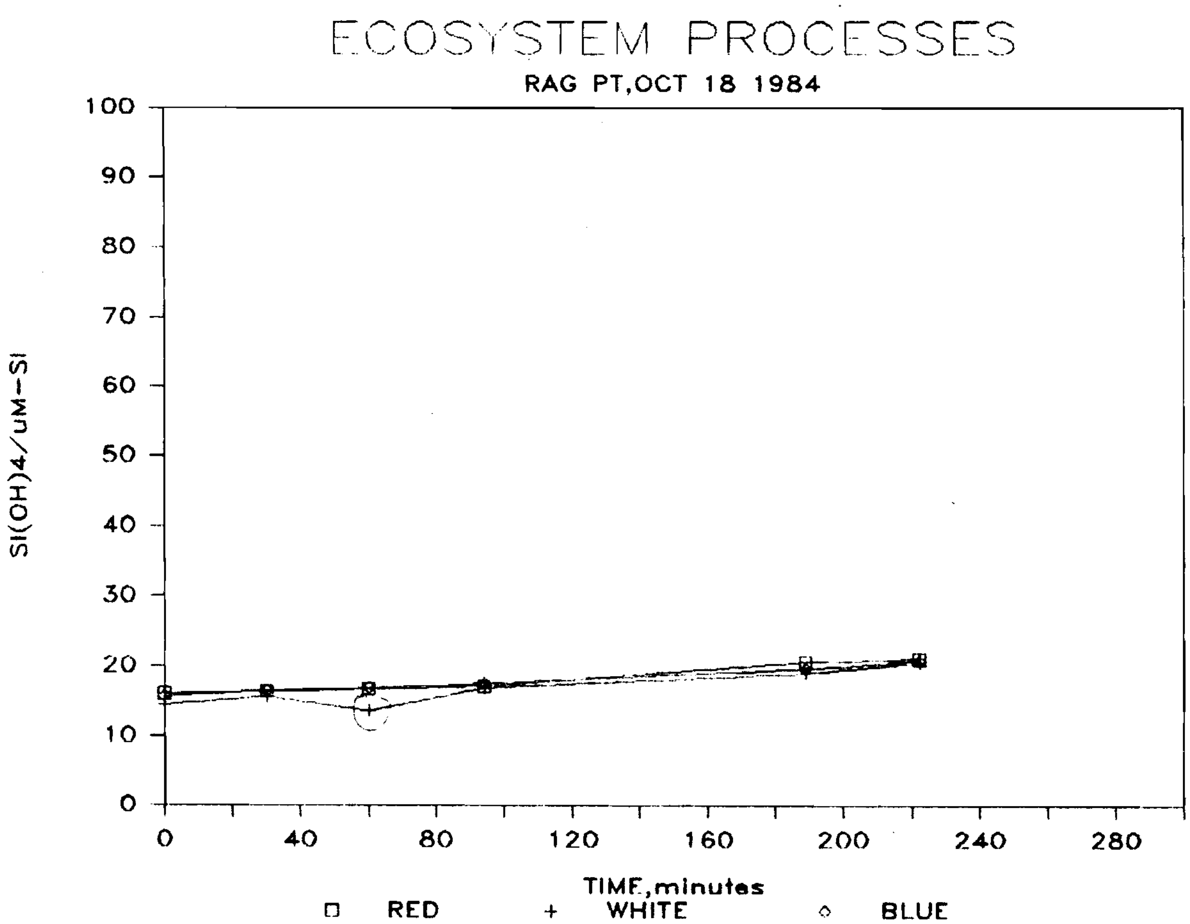
No. 9-53



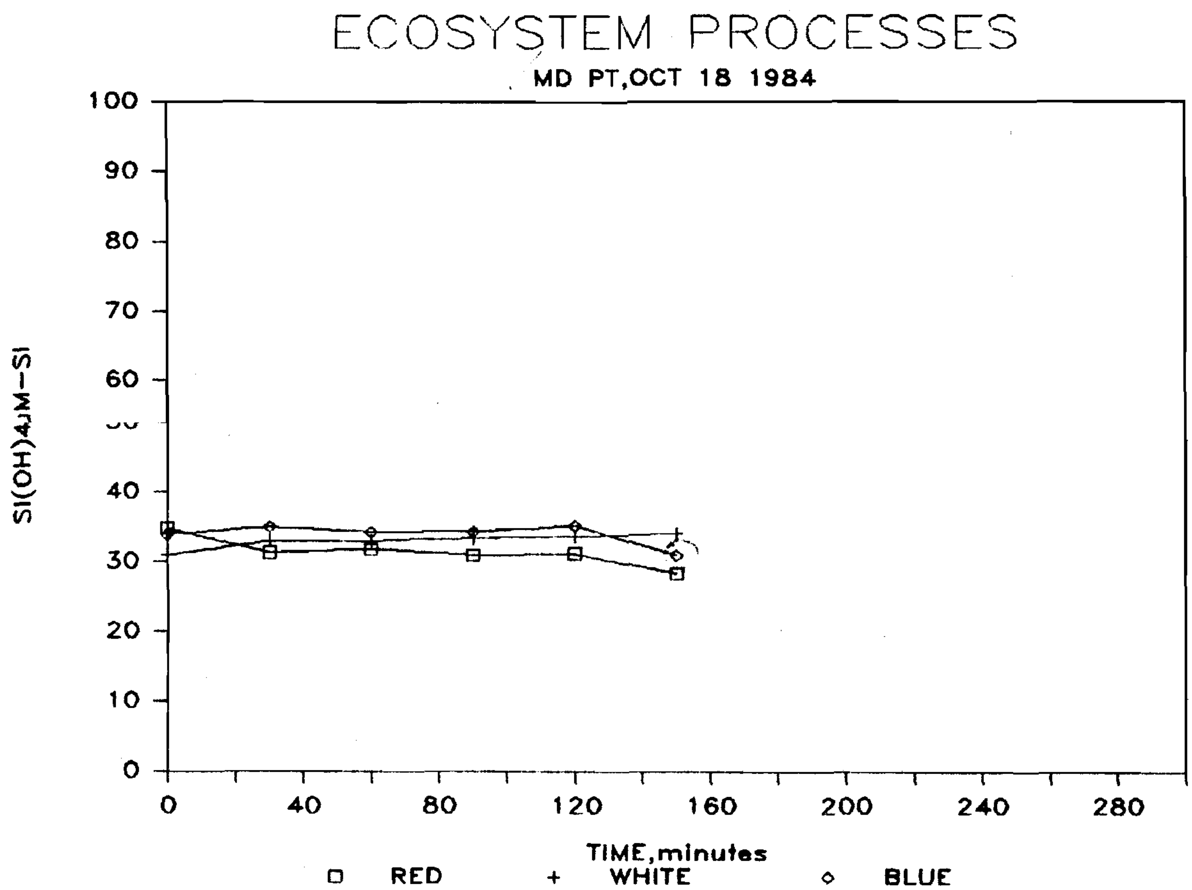
ECOSYSTEM PROCESSES
HORN PT,OCT 15 1984
SI(OH)4/uM-SI
100
90
80
70
60
50
40
30
20
10
0
0
40
80
120
160
200
240
280
TIME,minutes
RED
WHITE
BLUE

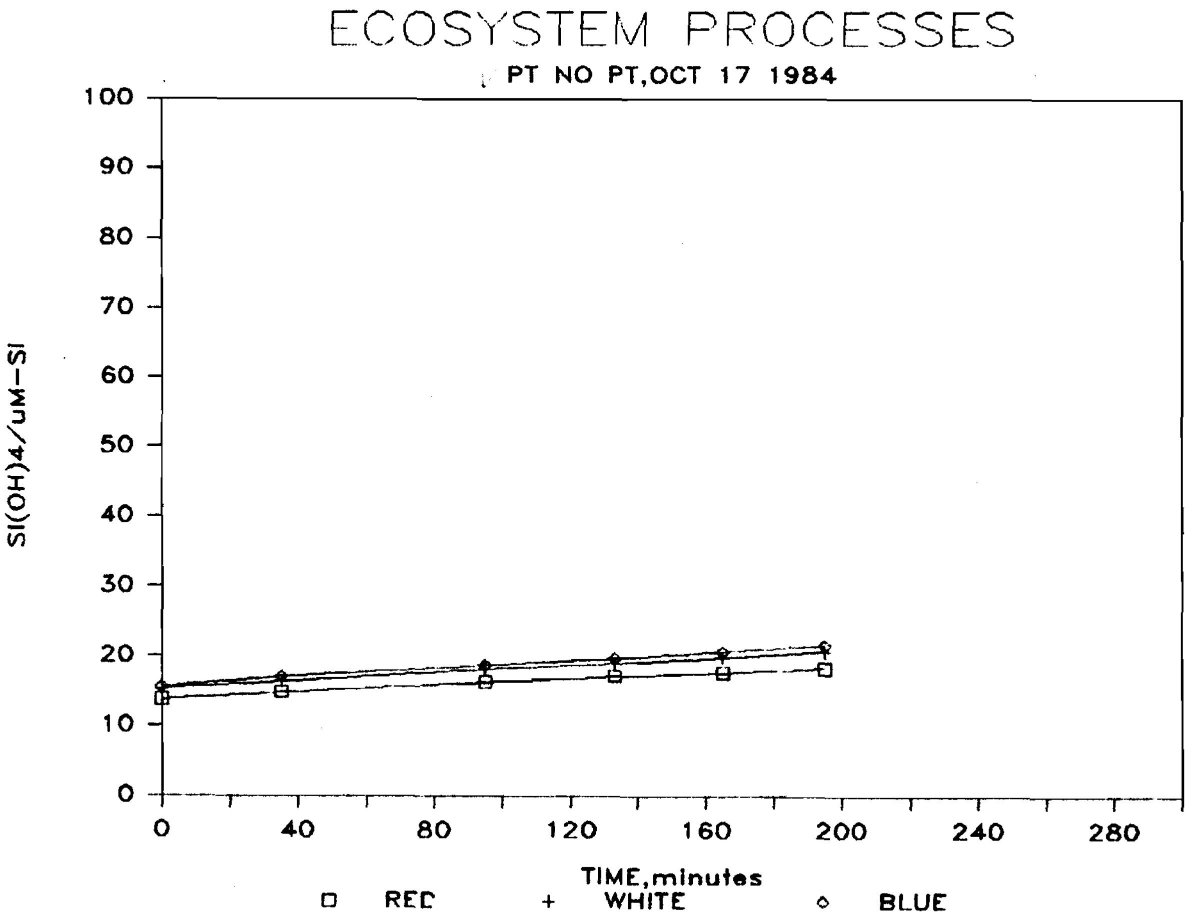
At time of scanning 1/16/2007, no page was found for No. 9-54

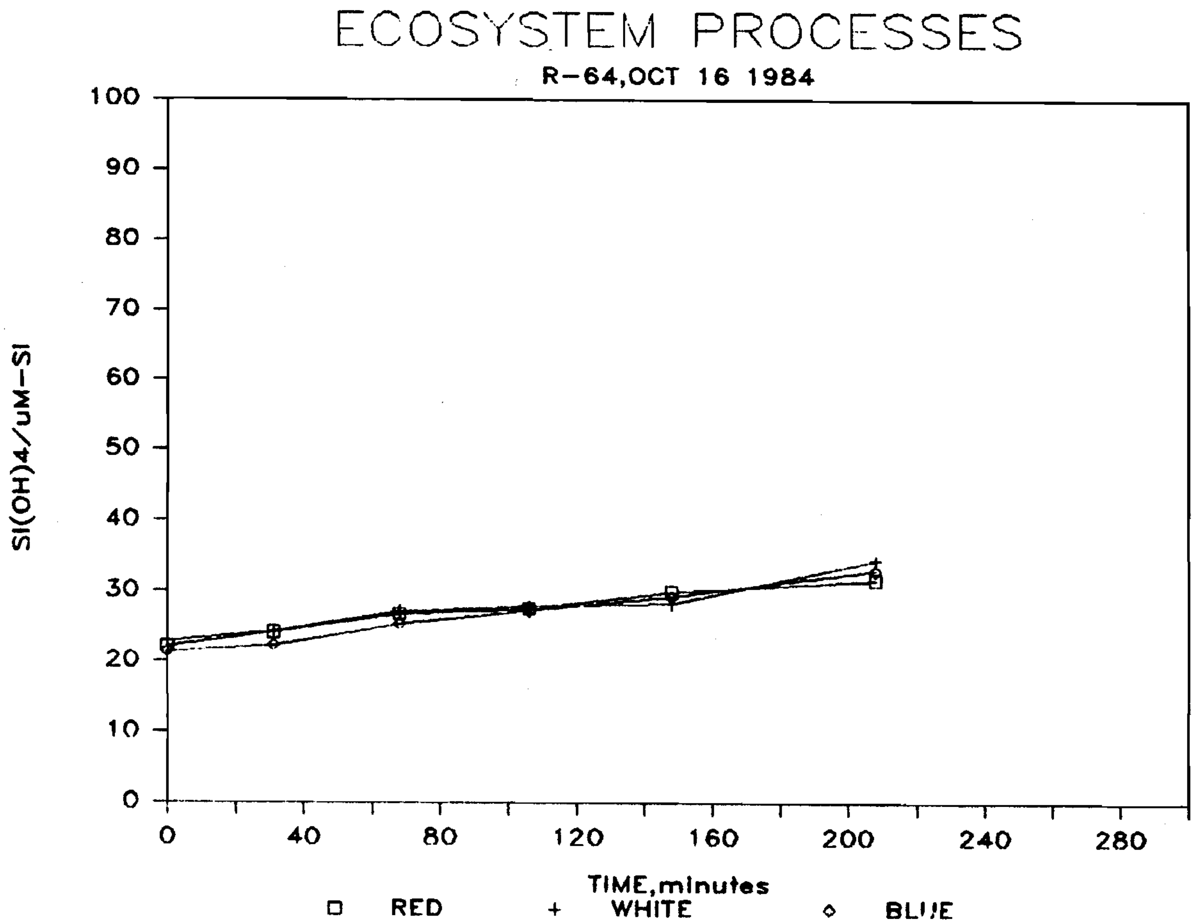
No. 9-55

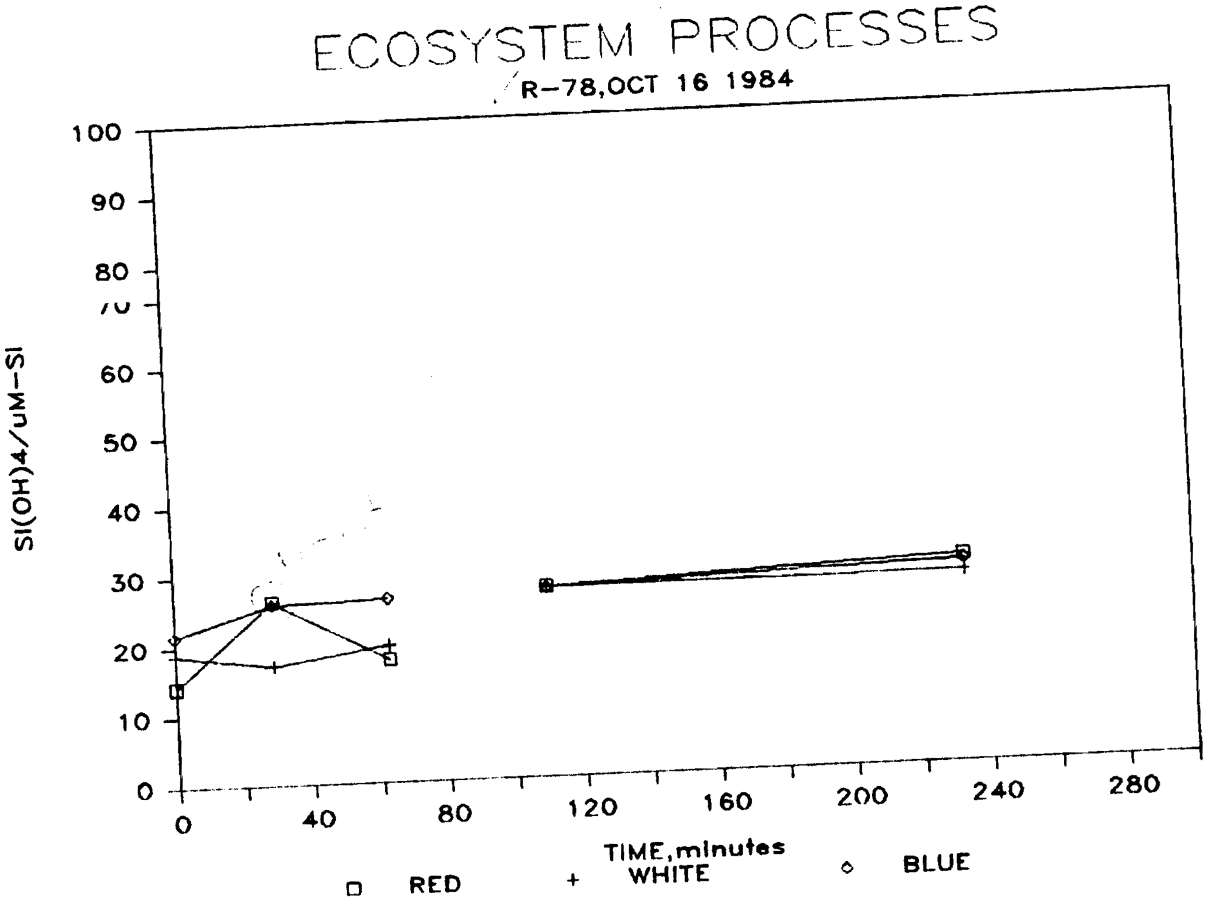


ECOSYSTEM PROCESSES
RAG PT,OCT 18 1984
SI(OH)4/uM-SI
100
90
80
70
60
50
40
30
20
10
0
0
40
80
120
160
200
240
280
TIME,minutes
RED
WHITE
BLUE

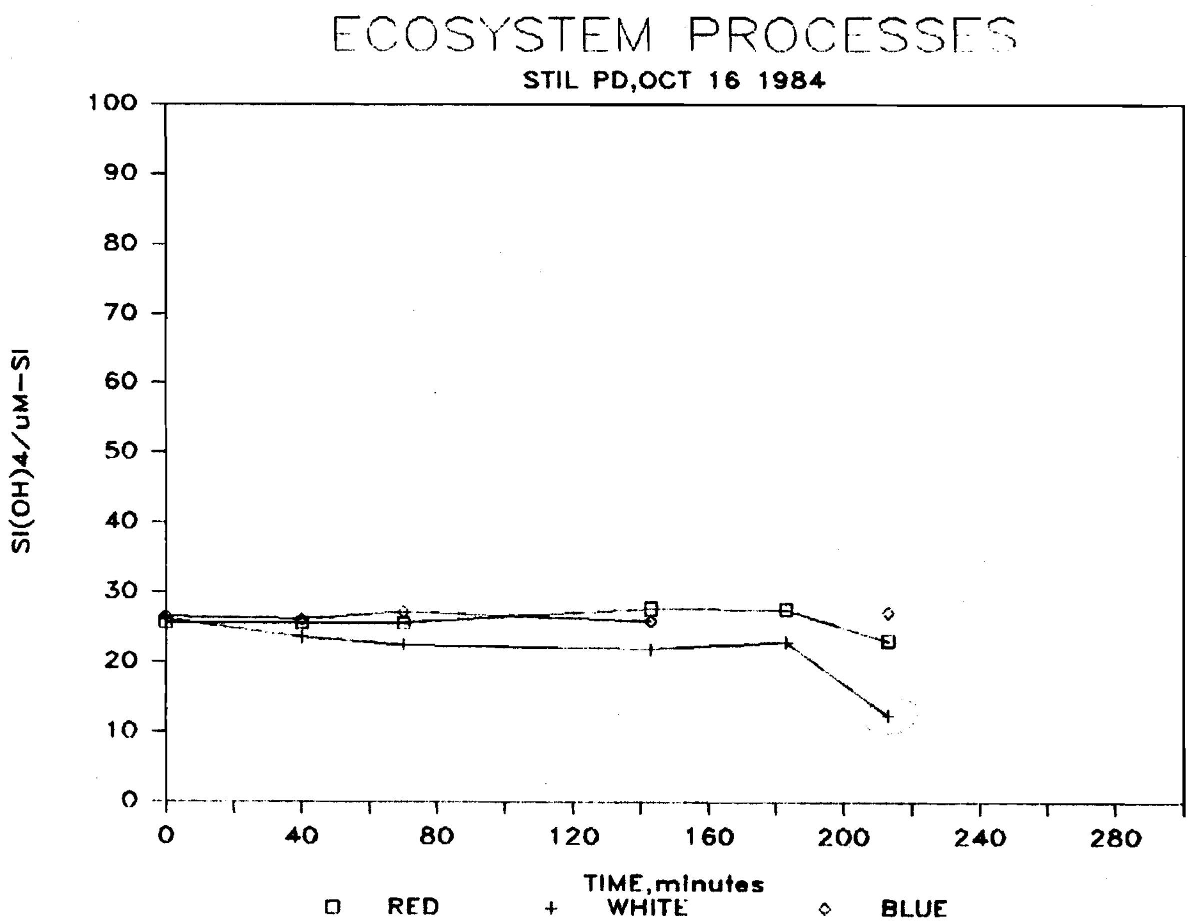

ECOSYSTEM PROCESSES
MD PT,OCT 18 1984
SI(OH)4,M-SI
100
90
80
70
60
40
30
20
10
0
0
40
80
120
160
200
240
280
TIME,minutes
RED
WHITE
BLUE


ECOSYSTEM PROCESSES
PT NO PT,OCT 17 1984
SI(OH)4/uM-SI
100
90
80
70
60
50
40
30
20
10
0
0
40
80
120
160
200
240
280
TIME,minutes
REC
WHITE
BLUE

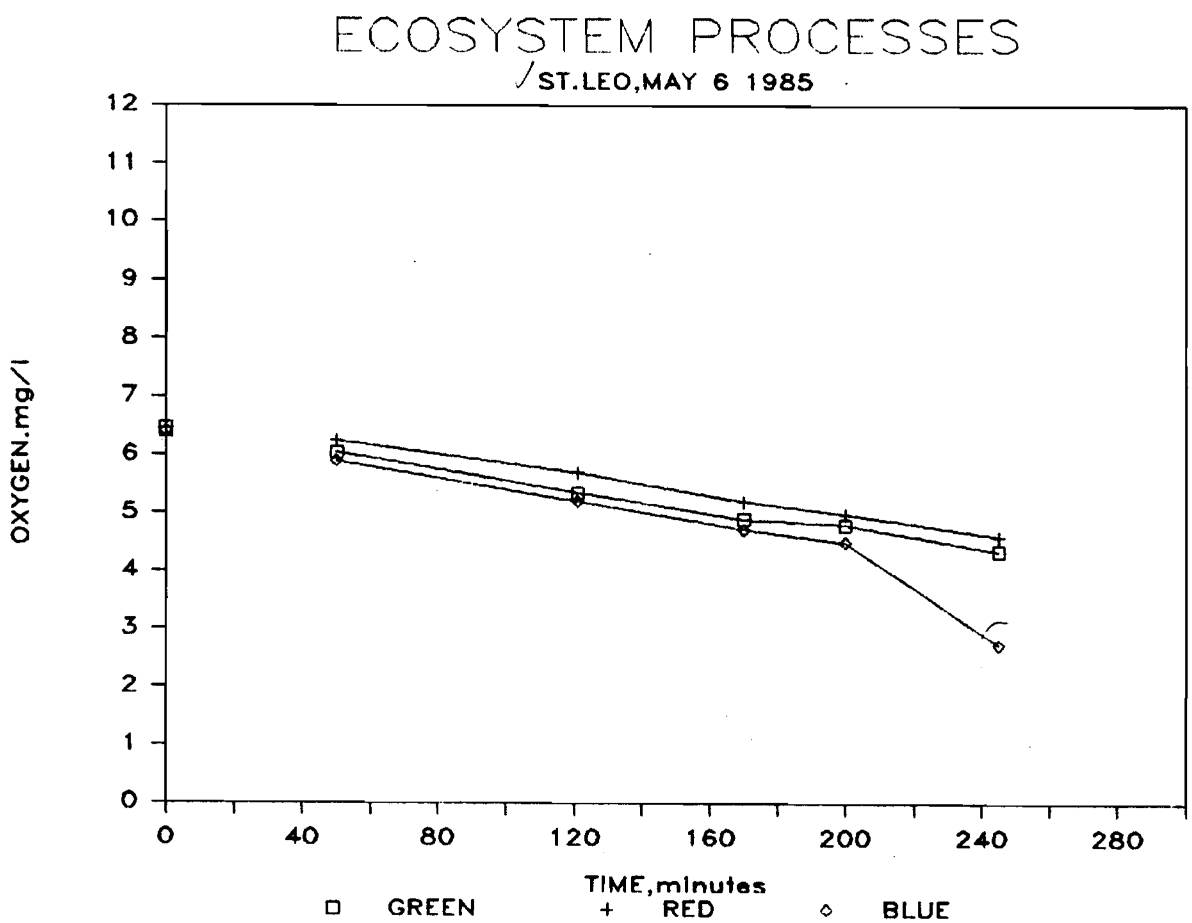

ECOSYSTEM PROCESSES
R-64,OCT 16 1984
100
90
80
70
60
50
40
30
20
10
0
SI(OH)4/uM-SI
0
40
80
120
160
200
240
280
TIME,minutes
RED
WHITE
BLUE


ECOSYSTEM PROCESSES
R-78,OCT 16 1984
SI(OH)4/uM-SI
100
90
80
70
60
50
40
30
20
10
0
0
40
80
120
160
200
240
280
TIME,minutes
RED
WHITE
BLUE

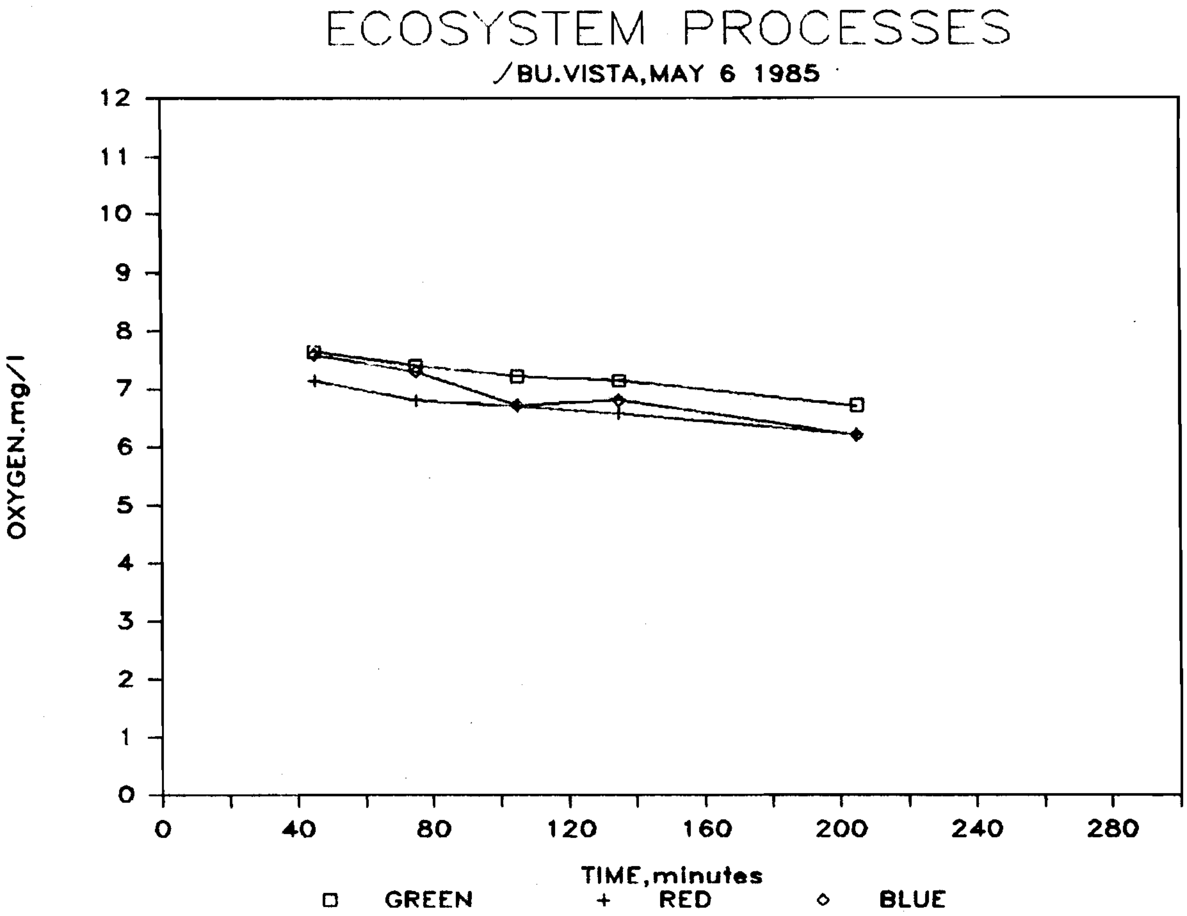
No. 9-60



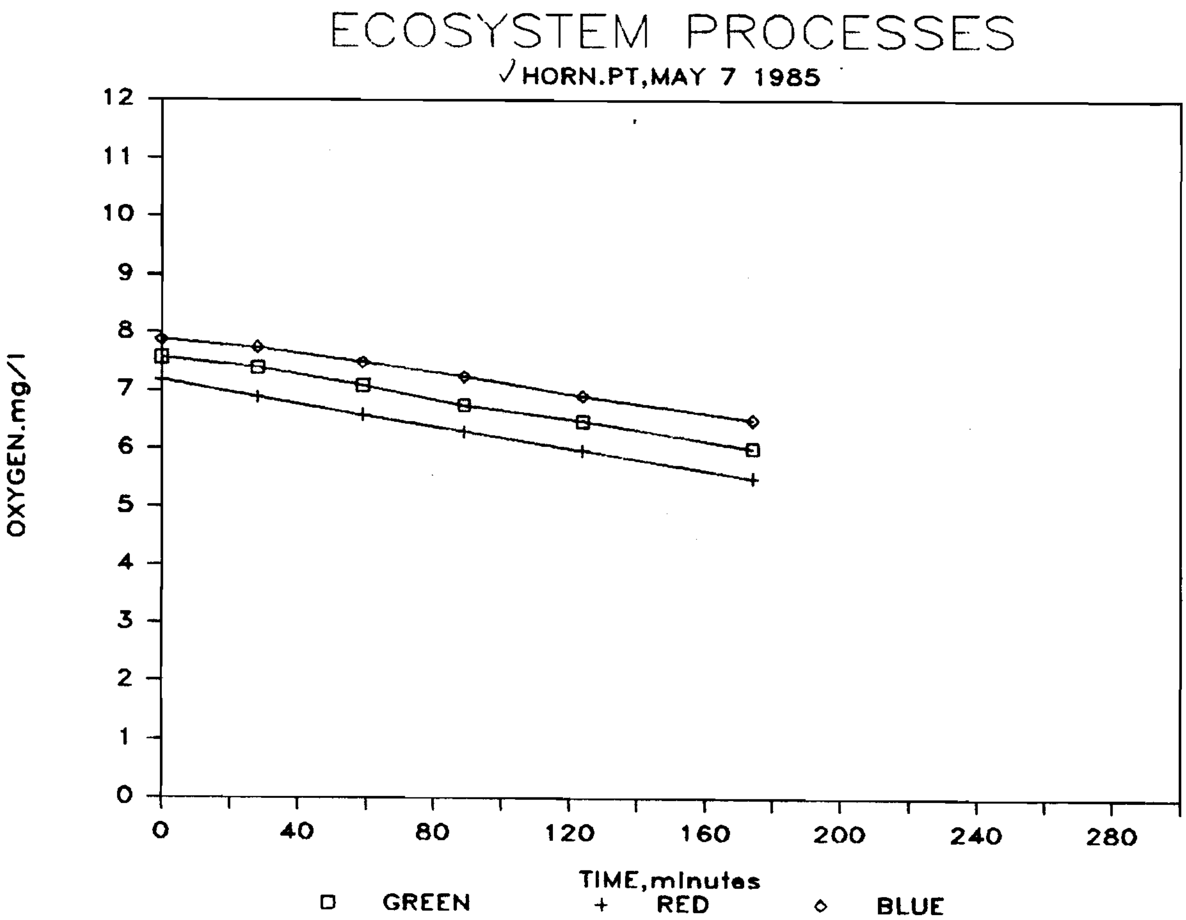
ECOSYSTEM PROCESSES
STIL PD,OCT 16 1984
SI(OH)4/uM-SI
100
90
80
70
60
50
40
30
20
10
0
0
40
80
120
160
200
240
280
TIME,minutes
RED
WHITE
BLUE



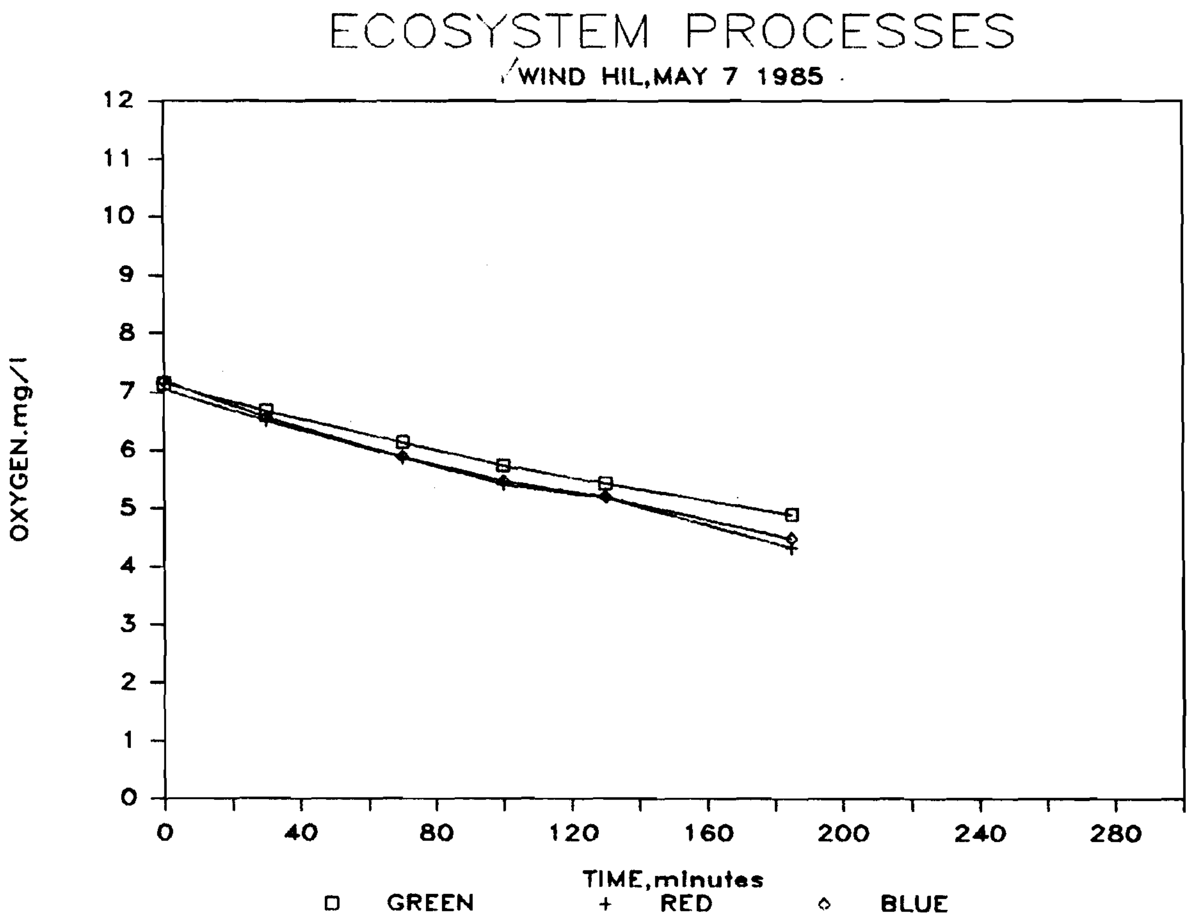
ECOSYSTEM PROCESSES
ST.LEO,MAY 6 1985
OXYGEN.mg/l
TIME,minutes
0
40
80
120
160
200
240
280
0
1
2
3
4
5
6
7
8
9
10
11
12
GREEN
RED
BLUE

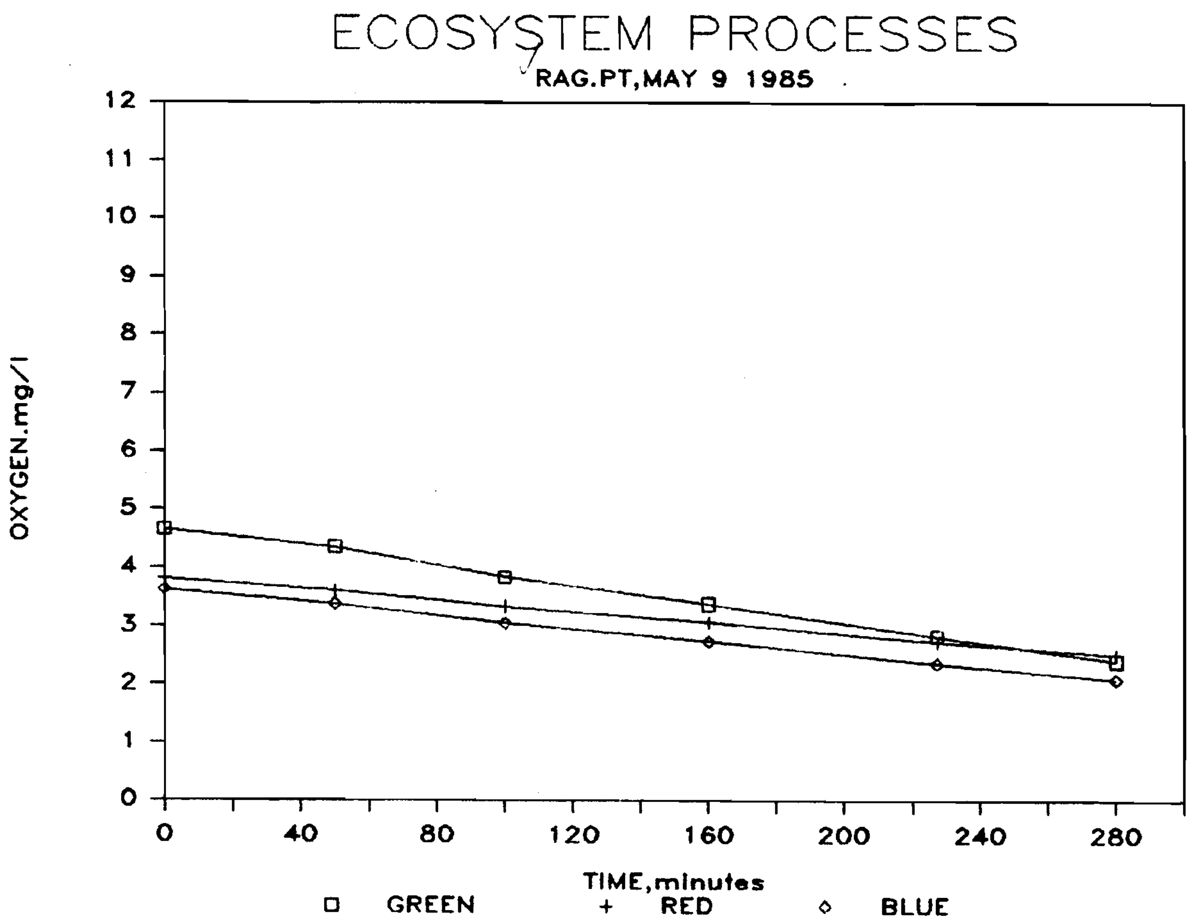

ECOSYSTEM PROCESSES
/BU.VISTA,MAY 6 1985
OXYGEN.mg/l
12
11
10
9
8
7
6
5
4
3
2
1
0
0
40
80
120
160
200
240
280
TIME,minutes
GREEN
RED
BLUE

No. 9-63

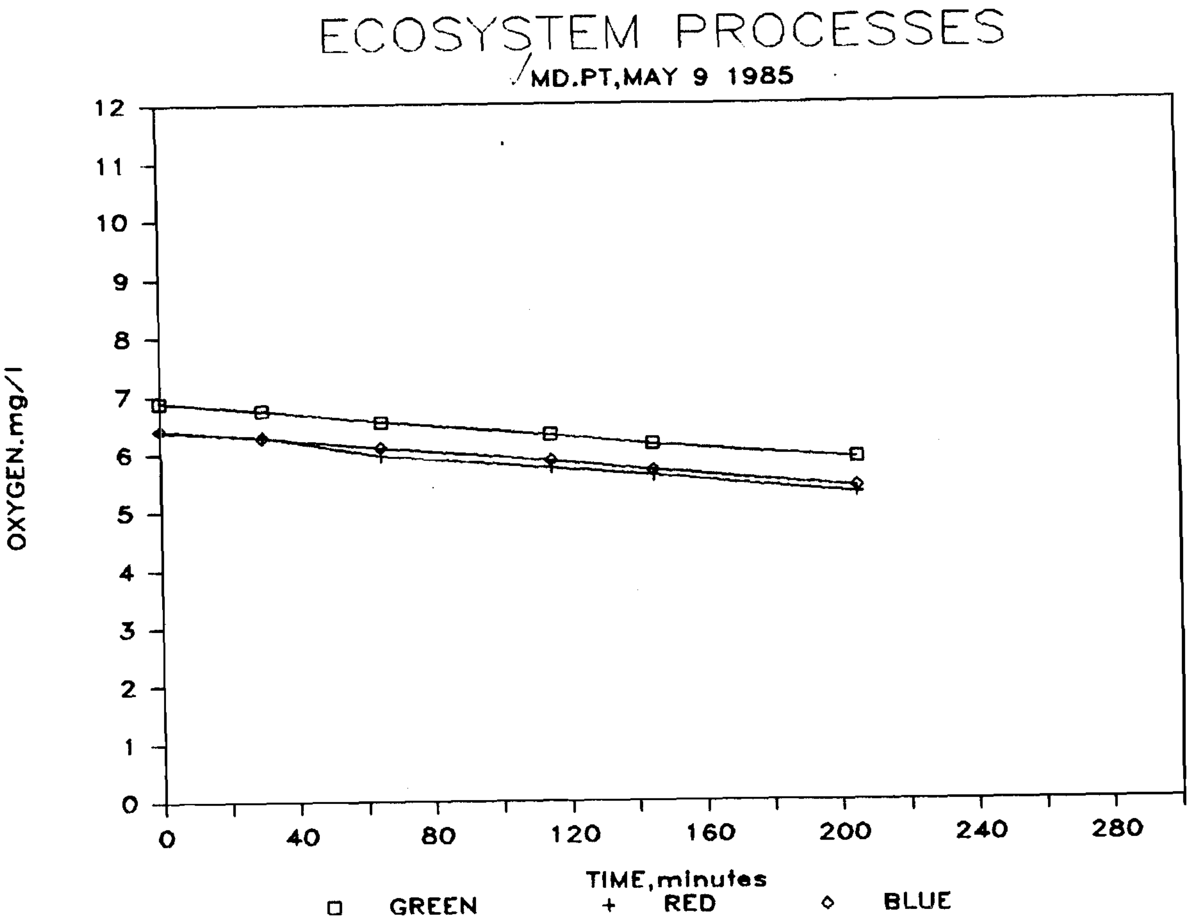


ECOSYSTEM PROCESSES
√HORN.PT,MAY 7 1985
OXYGEN.mg/l
0
1
2
3
4
5
6
7
8
9
10
11
12
0
40
80
120
160
200
240
280
TIME,minutes
GREEN
RED
BLUE

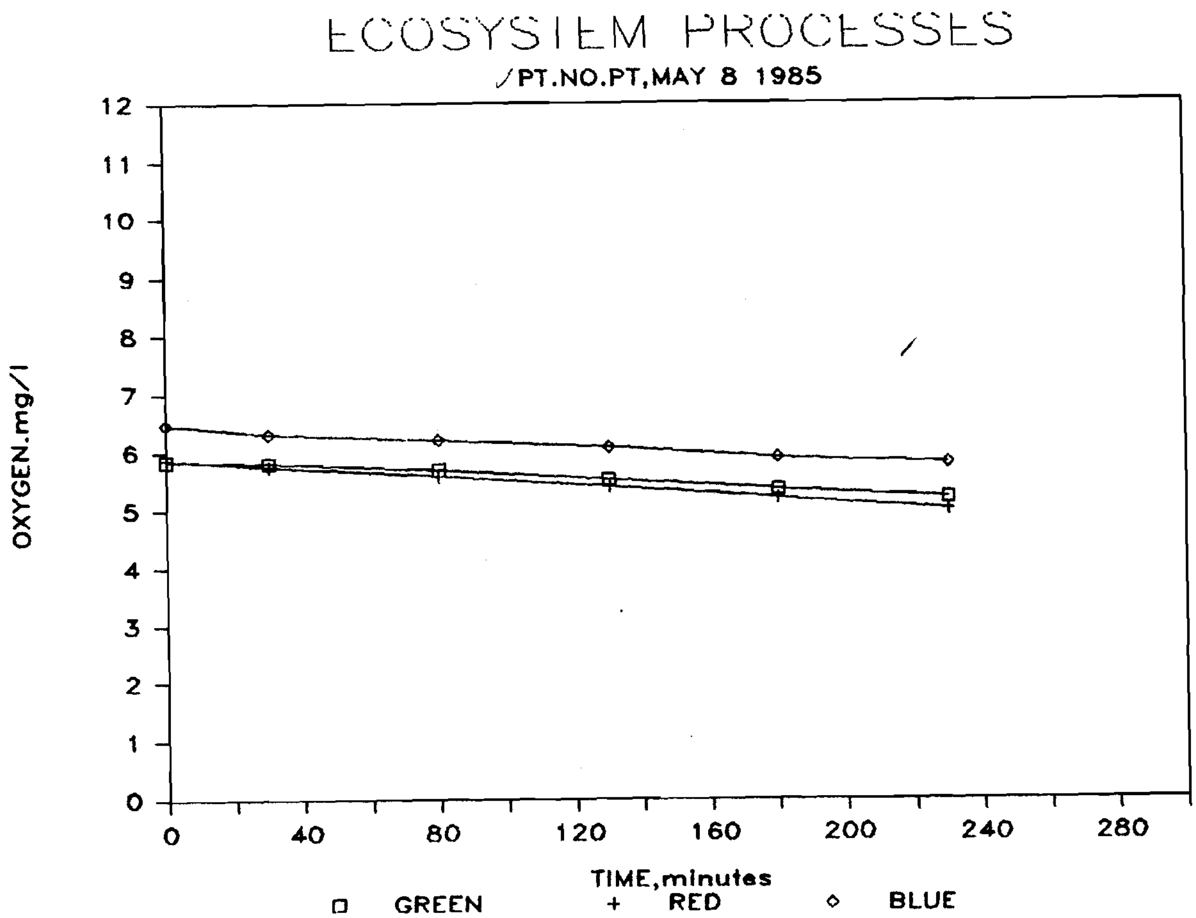

ECOSYSTEM PROCESSES
WIND HIL, MAY 7 1985
OXYGEN.mg/l
0
1
2
3
4
5
6
7
8
9
10
11
12
0
40
80
120
160
200
240
280
TIME, minutes
GREEN
RED
BLUE


ECOSYSTEM PROCESSES
RAG.PT,MAY 9 1985
OXYGEN.mg/l
12
11
10
9
8
7
6
5
4
3
2
1
0
0
40
80
120
160
200
240
280
TIME,minutes
GREEN
RED
BLUE

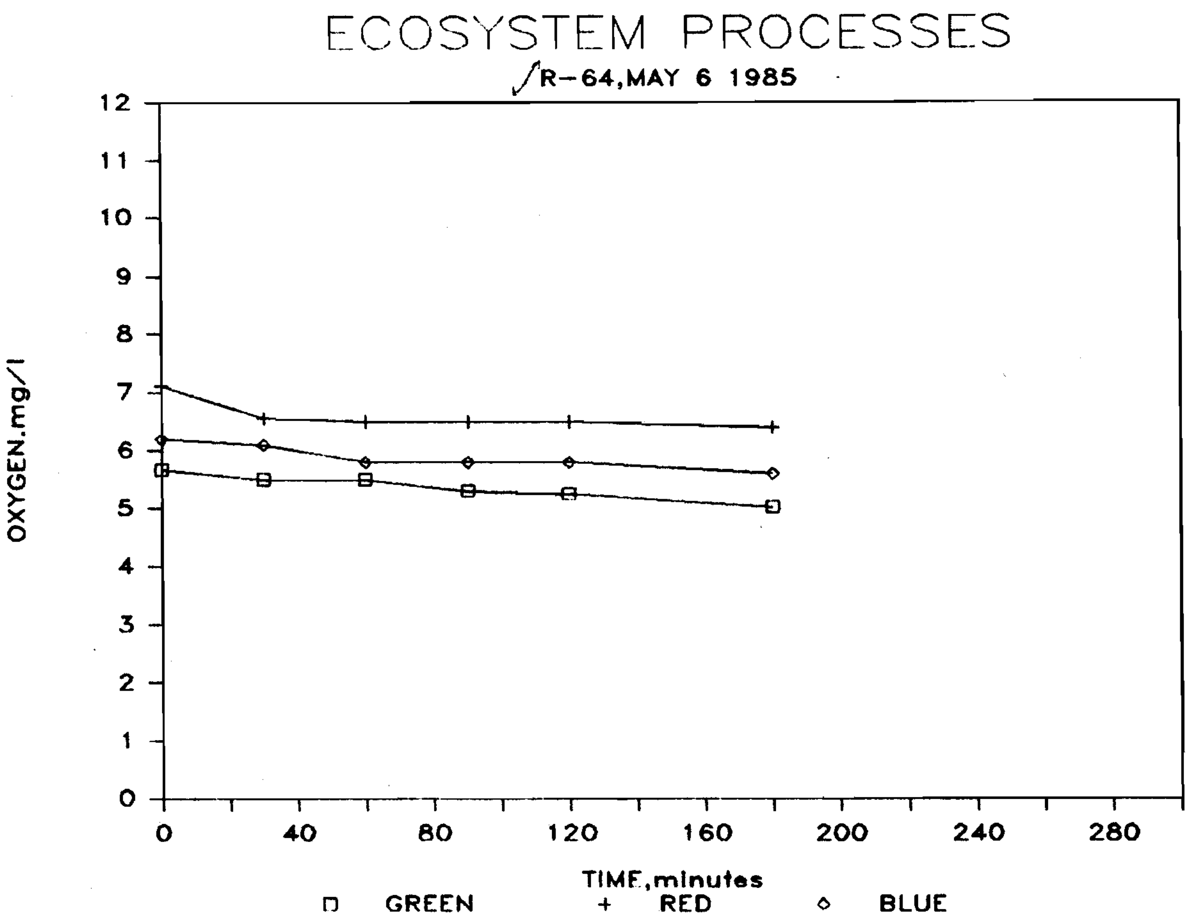
No. 9-66



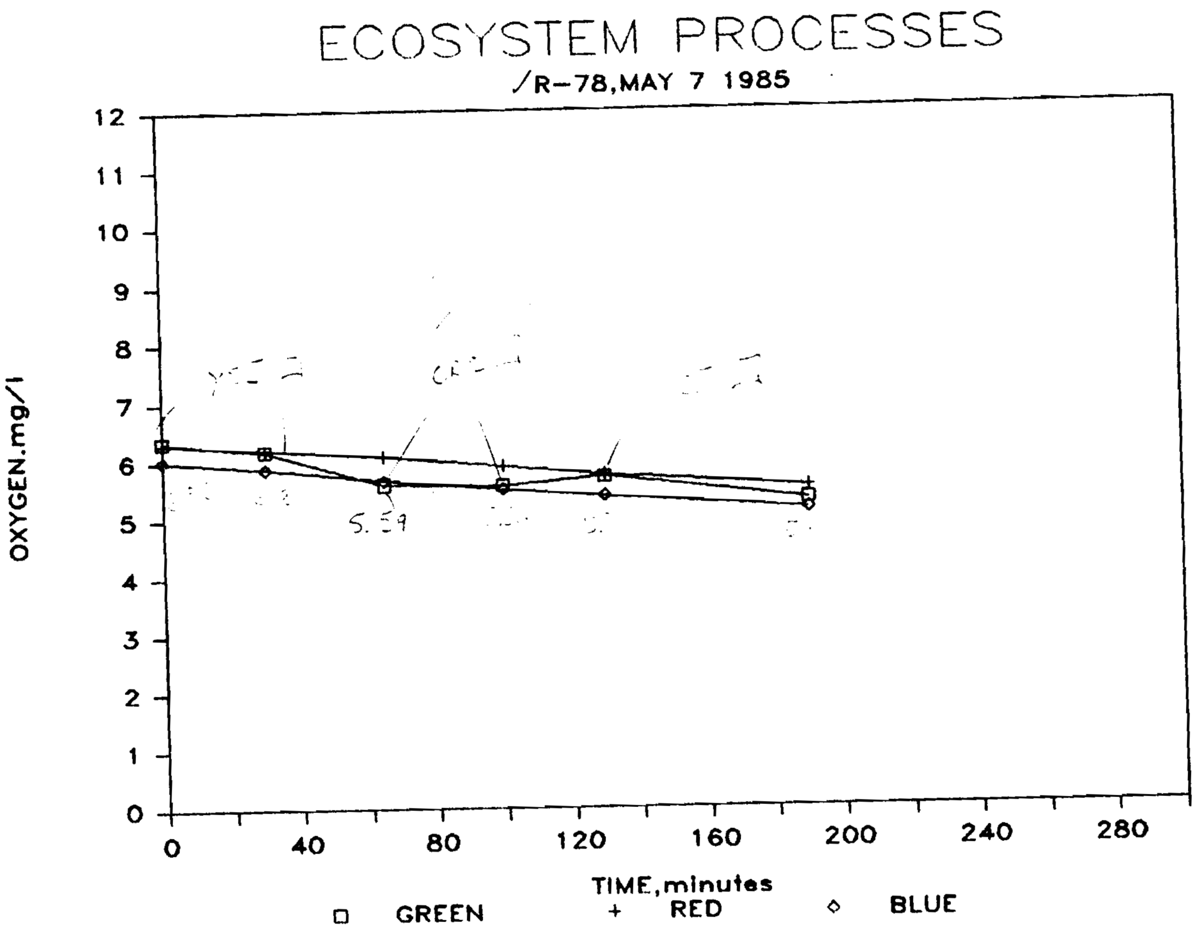
ECOSYSTEM PROCESSES
MD.PT,MAY 9 1985
12
11
10
9
8
7
6
5
4
3
2
1
0
OXYGEN.mg/l
0
40
80
120
160
200
240
280
TIME,minutes
GREEN
RED
BLUE


ECOSYSTEM PROCESSES
/PT.NO.PT, MAY 8 1985
OXYGEN.mg/l
0
1
2
3
4
5
6
7
8
9
10
11
12
0
40
80
120
160
200
240
280
TIME,minutes
GREEN
RED
BLUE

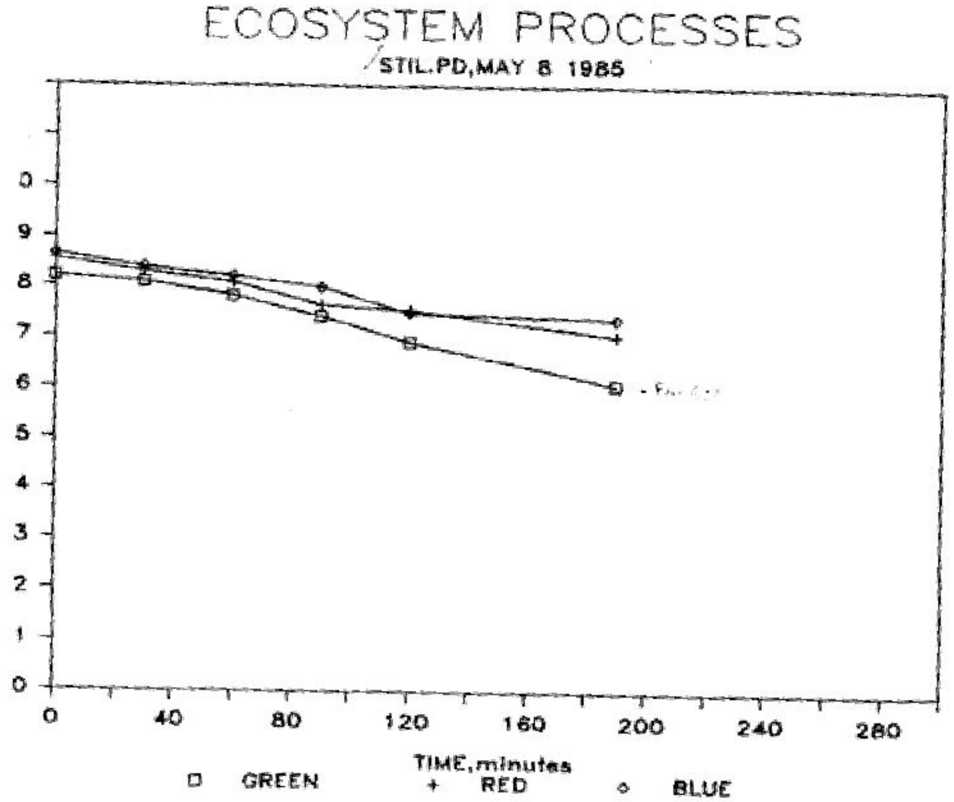
No. 9-68


ECOSYSTEM PROCESSES
R-64, MAY 6 1985
OXYGEN.mg/l
0
1
2
3
4
5
6
7
8
9
10
11
12
0
40
80
120
160
200
240
280
TIME, minutes
GREEN
RED
BLUE

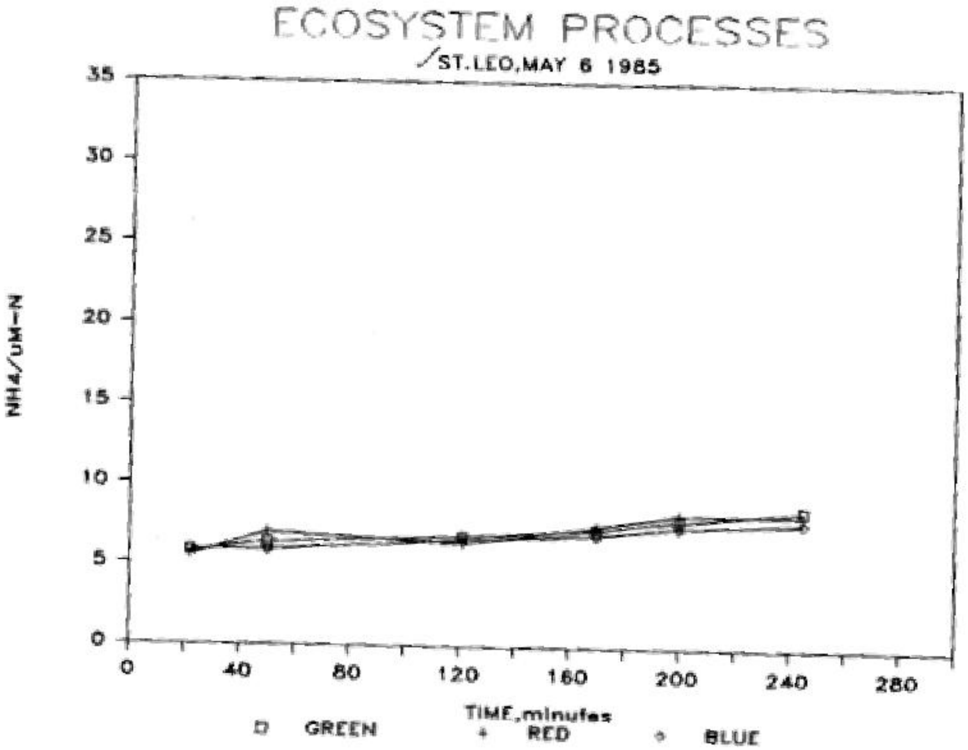
No. 9-69


ECOSYSTEM PROCESSES
/R-78, MAY 7 1985
OXYGEN, mg/l
12
11
10
9
8
7
6
5
4
3
2
1
0
5.59
0
40
80
120
160
200
240
280
TIME, minutes
GREEN
RED
BLUE

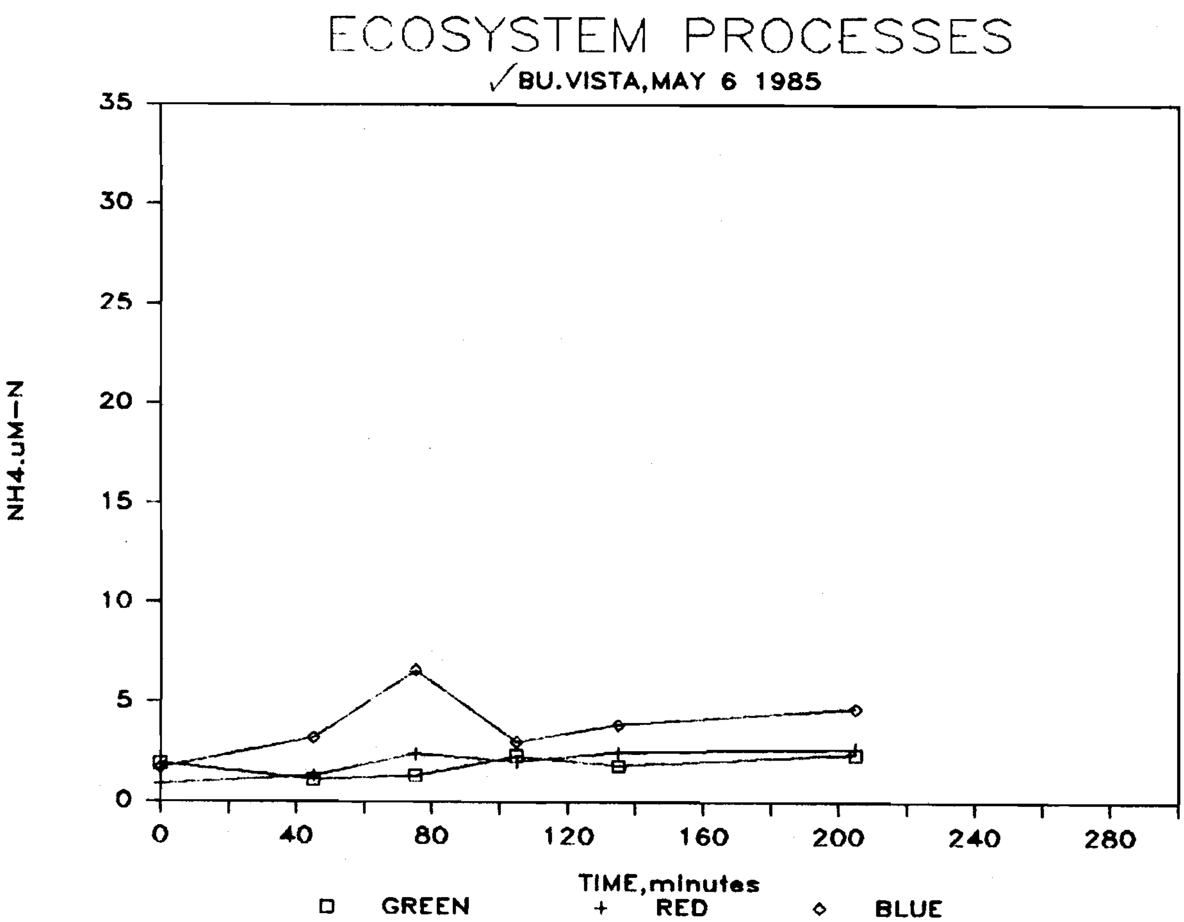
No. 9-70


ECOSYSTEM PROCESSES
STIL.PD,MAY 8 1985
0
9
8
7
6
5
4
3
2
1
0
0
40
80
120
160
200
240
280
TIME,minutes
GREEN
RED
BLUE

No. 9-71

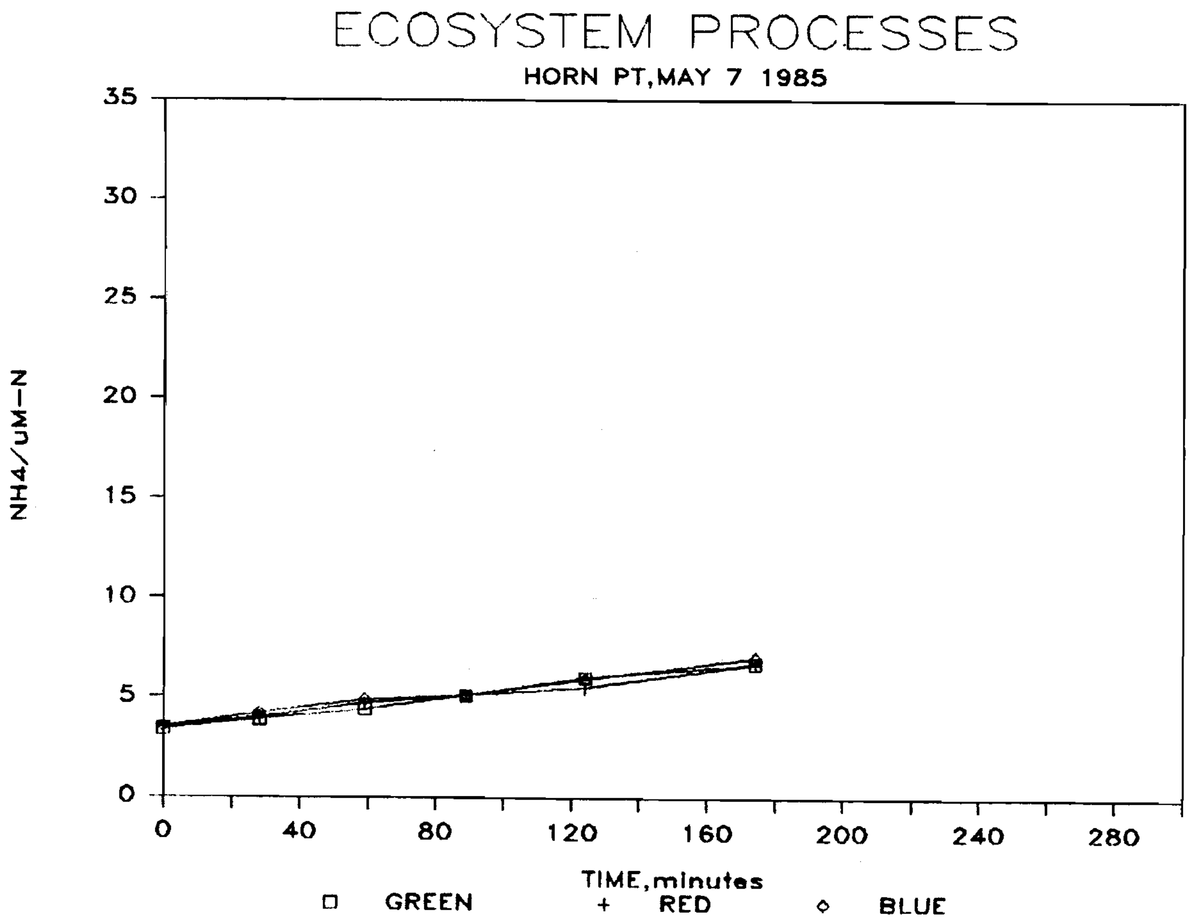


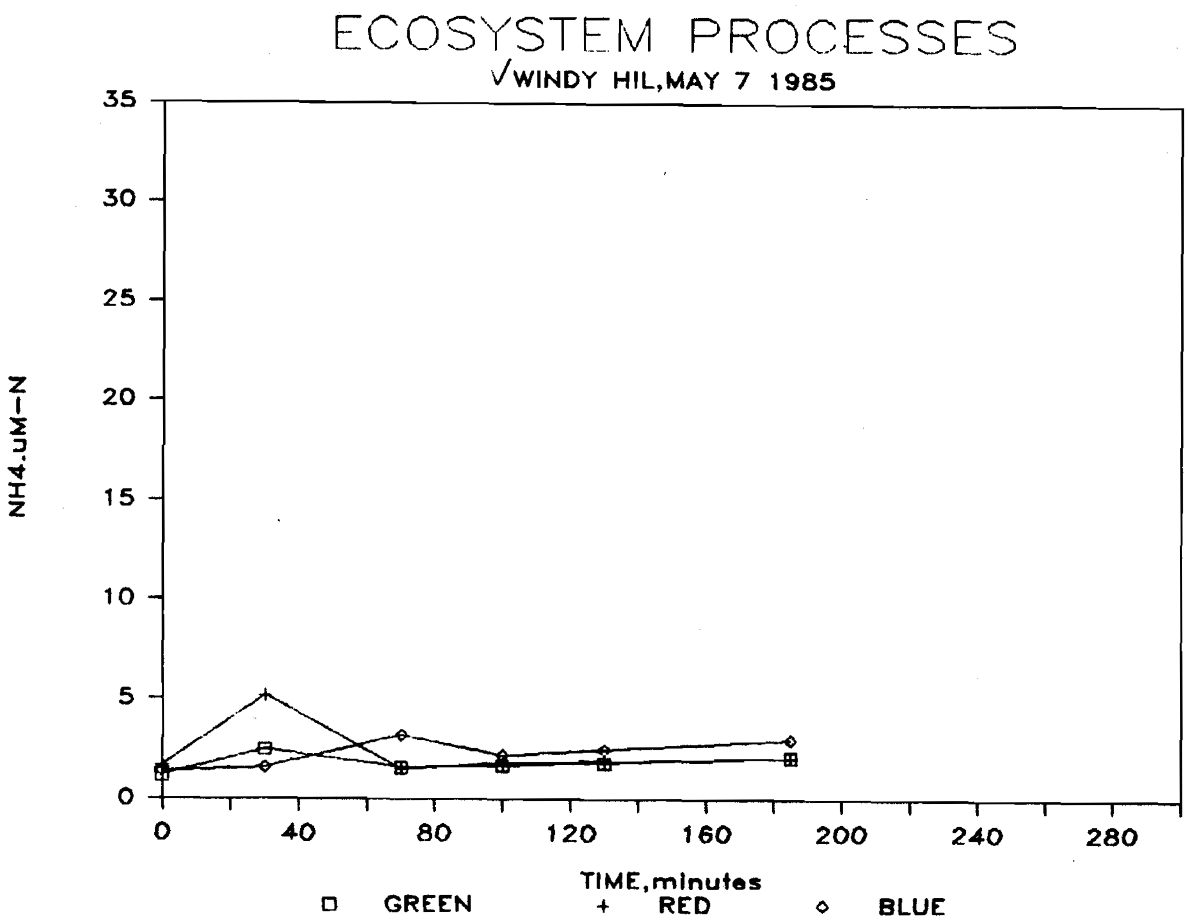
ECOSYSTEM PROCESSES
ST.LEO,MAY 6 1985
NH4/uM-N
35
30
25
20
15
10
5
0
0
40
80
120
160
200
240
280
TIME,minutes
GREEN
RED
BLUE

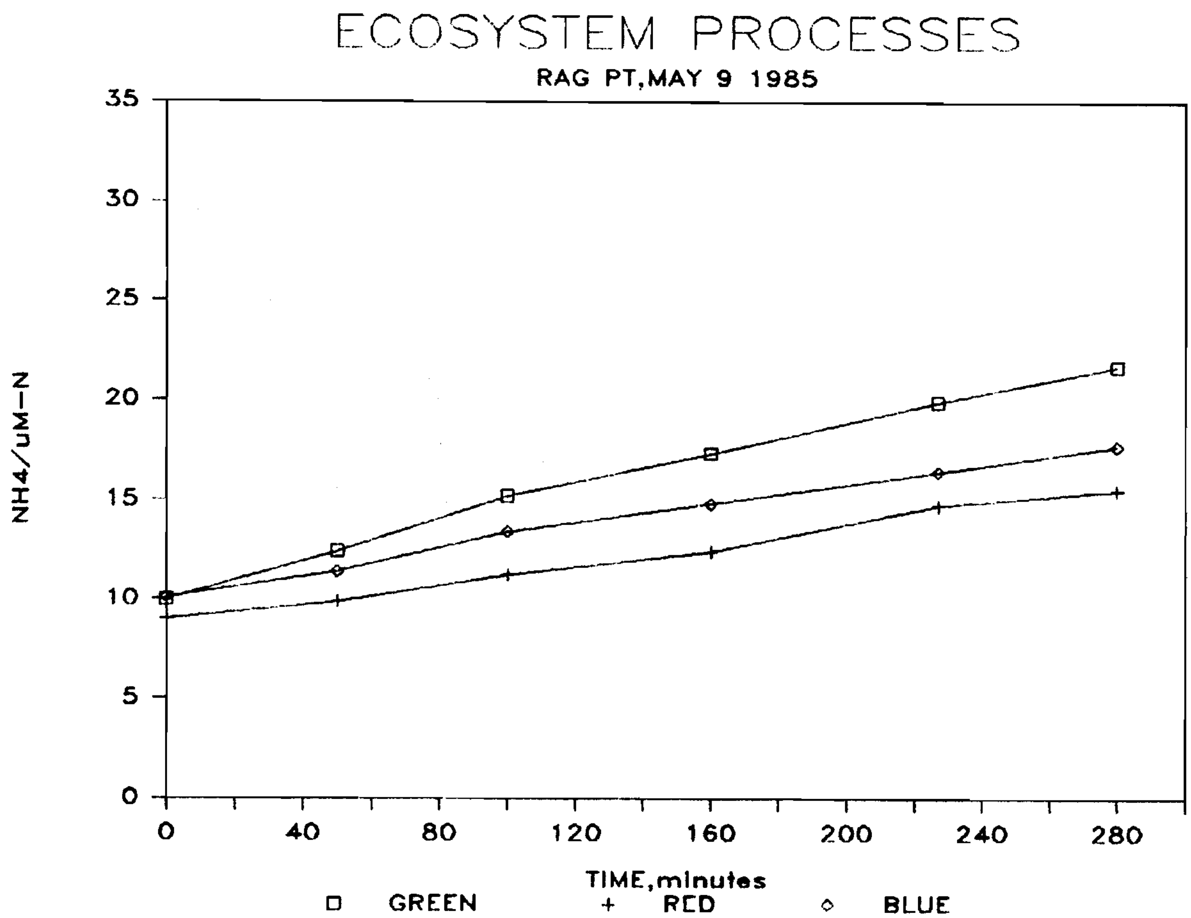


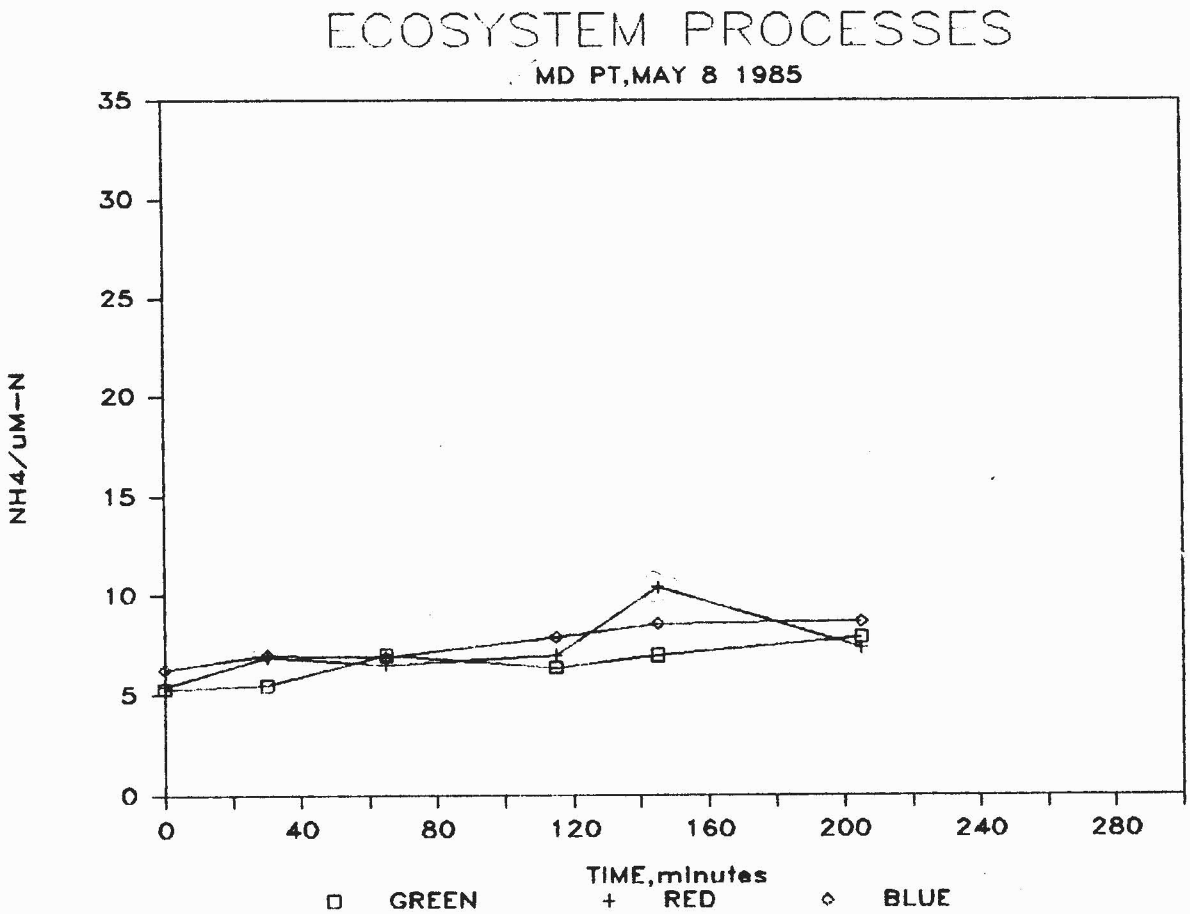
ECOSYSTEM PROCESSES
✓BU.VISTA,MAY 6 1985
NH4.uM-N
35
30
25
20
15
10
5
0
0
40
80
120
160
200
240
280
TIME,minutes
GREEN
RED
BLUE

No. 9-73

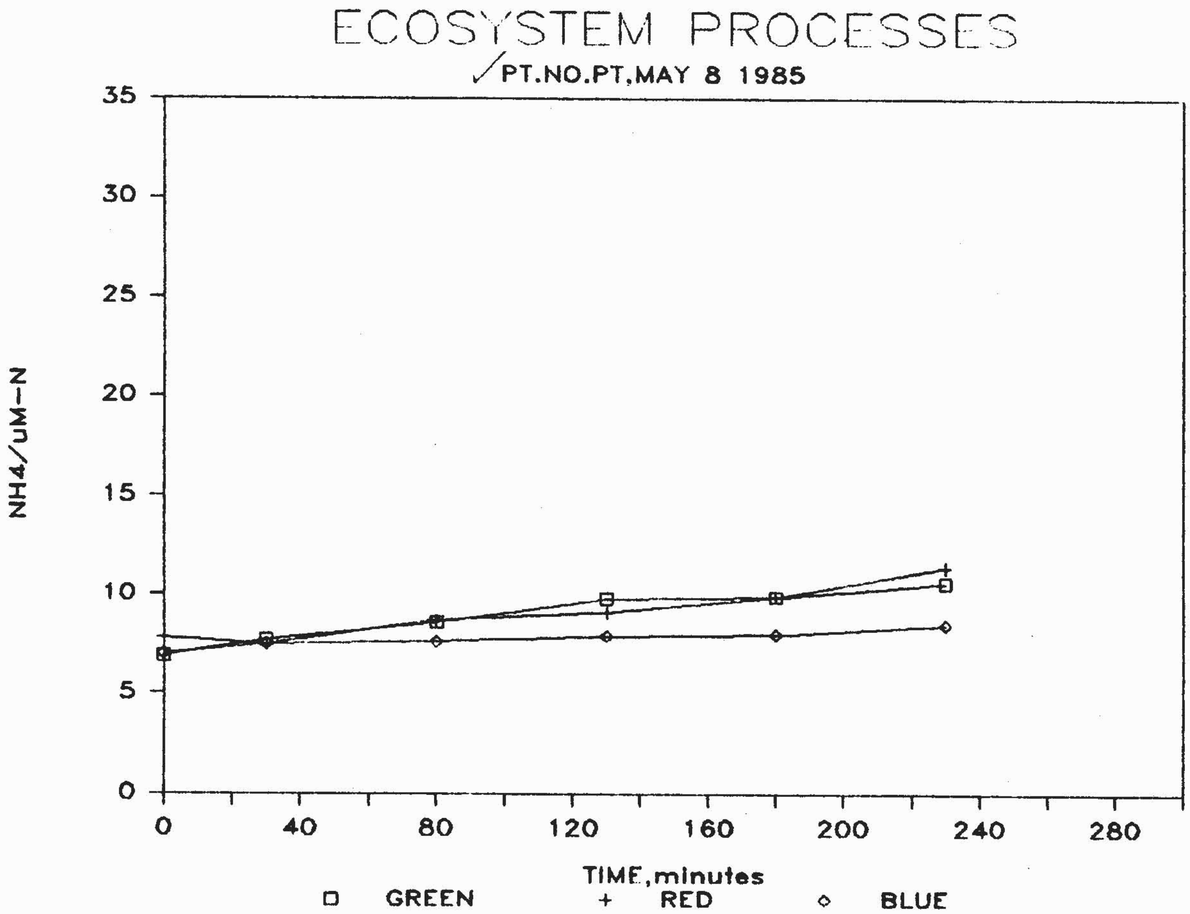

ECOSYSTEM PROCESSES
HORN PT,MAY 7 1985
NH4/uM-N
35
30
25
20
15
10
5
0
0
40
80
120
160
200
240
280
TIME,minutes
GREEN
RED
BLUE


ECOSYSTEM PROCESSES
√WINDY HIL,MAY 7 1985
35
30
25
20
15
10
5
0
NH4.uM-N
0
40
80
120
160
200
240
280
TIME,minutes
GREEN
RED
BLUE


ECOSYSTEM PROCESSES
RAG PT,MAY 9 1985
NH4/uM-N
35
30
25
20
15
10
5
0
0
40
80
120
160
200
240
280
TIME,minutes
GREEN
RED
BLUE

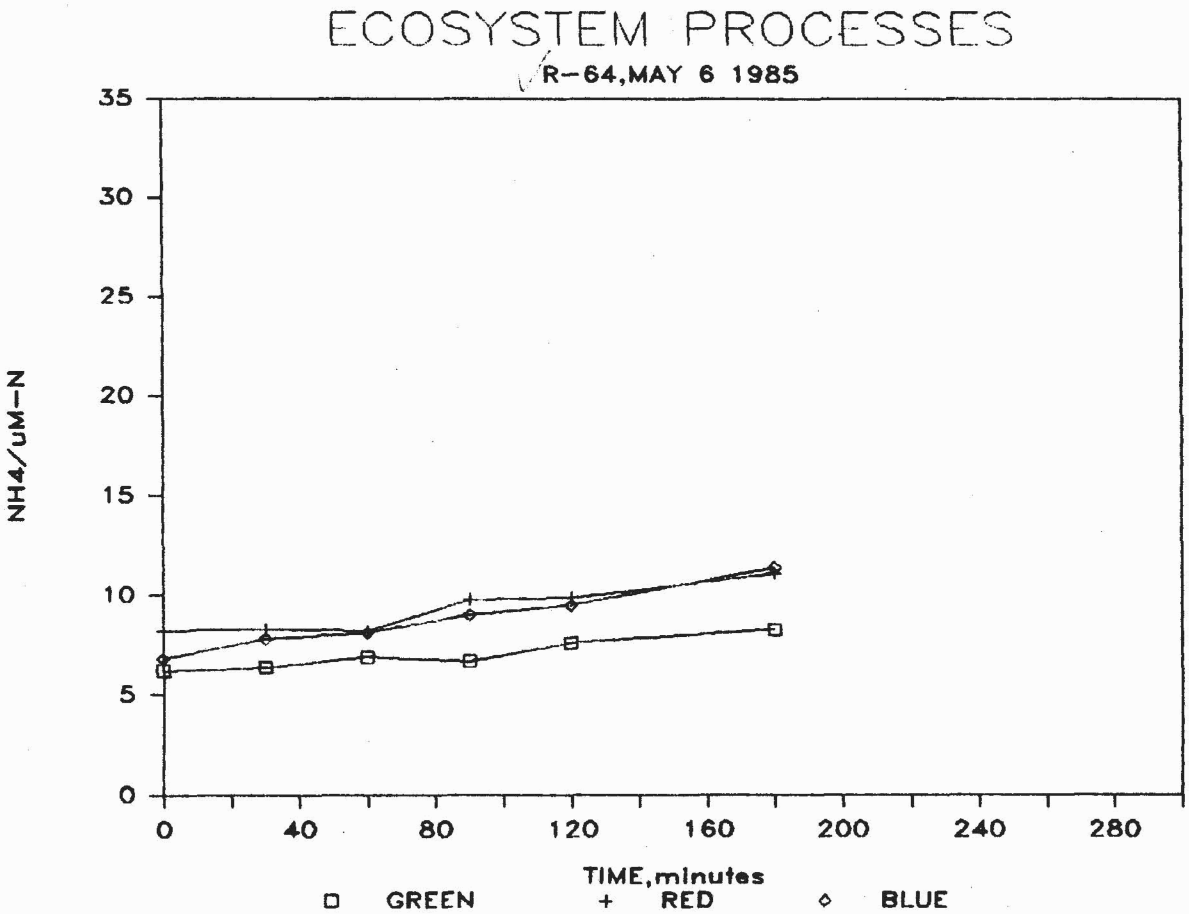

ECOSYSTEM PROCESSES
MD PT,MAY 8 1985
NH4/uM-N
35
30
25
20
15
10
5
0
0
40
80
120
160
200
240
280
TIME,minutes
GREEN
RED
BLUE

No. 9-77



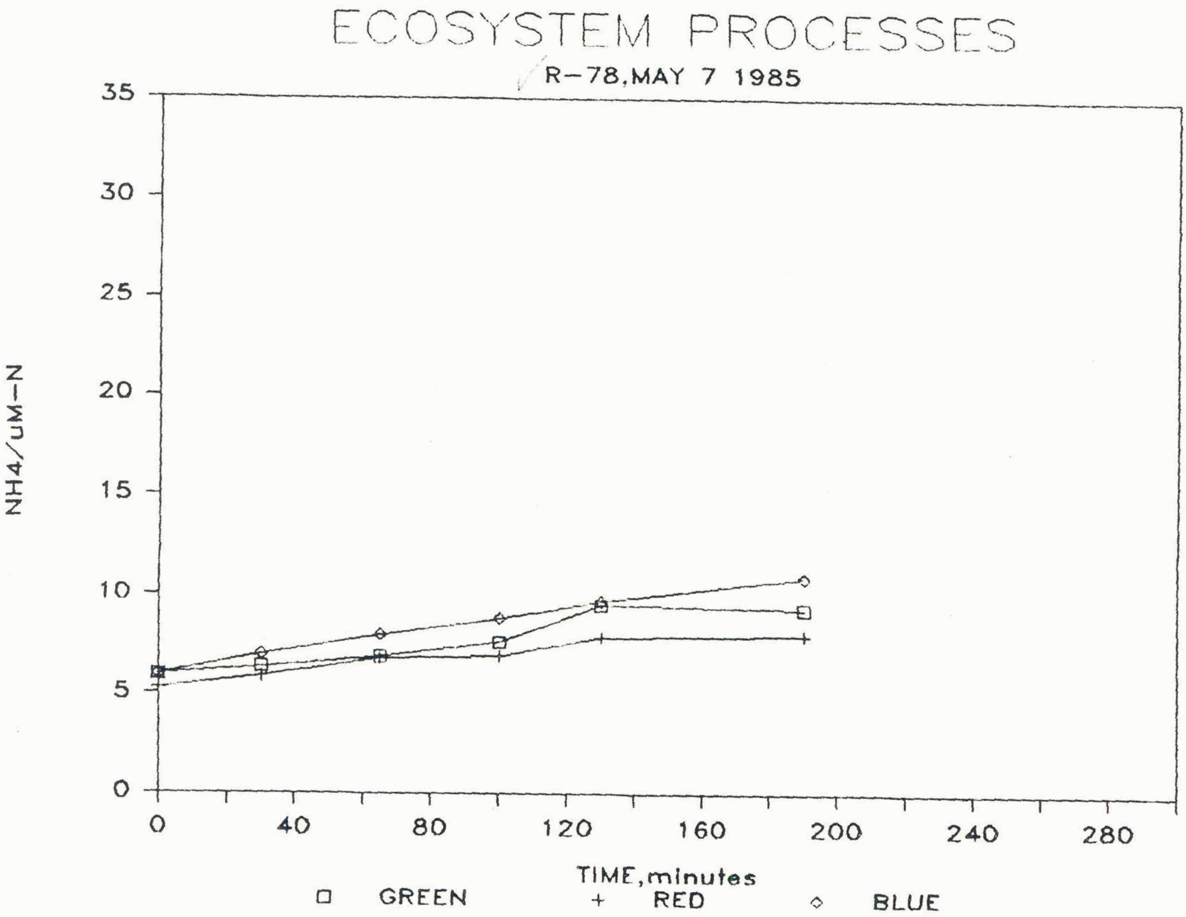
ECOSYSTEM PROCESSES
✓PT.NO.PT,MAY 8 1985
NH4/uM-N
35
30
25
20
15
10
5
0
0
40
80
120
160
200
240
280
TIME,minutes
GREEN
RED
BLUE

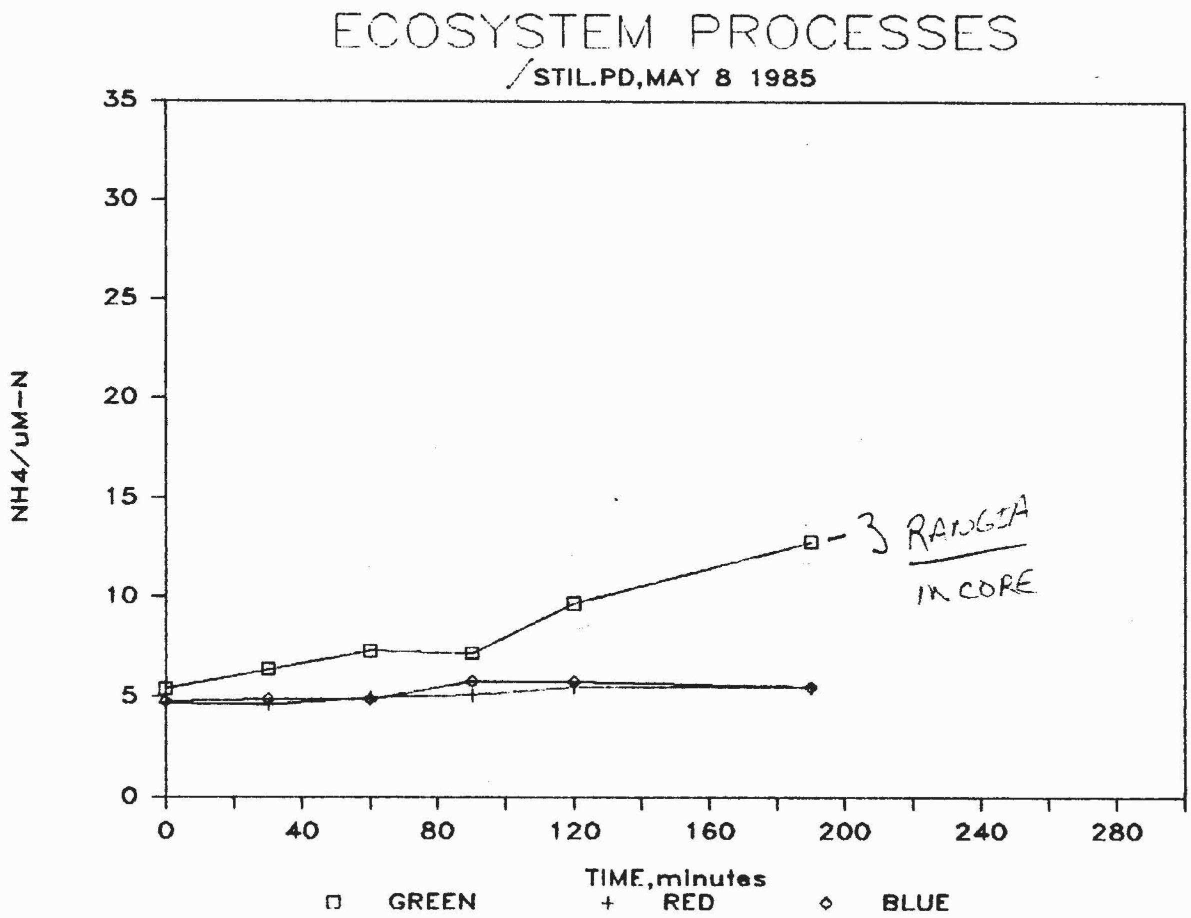
No. 9-78

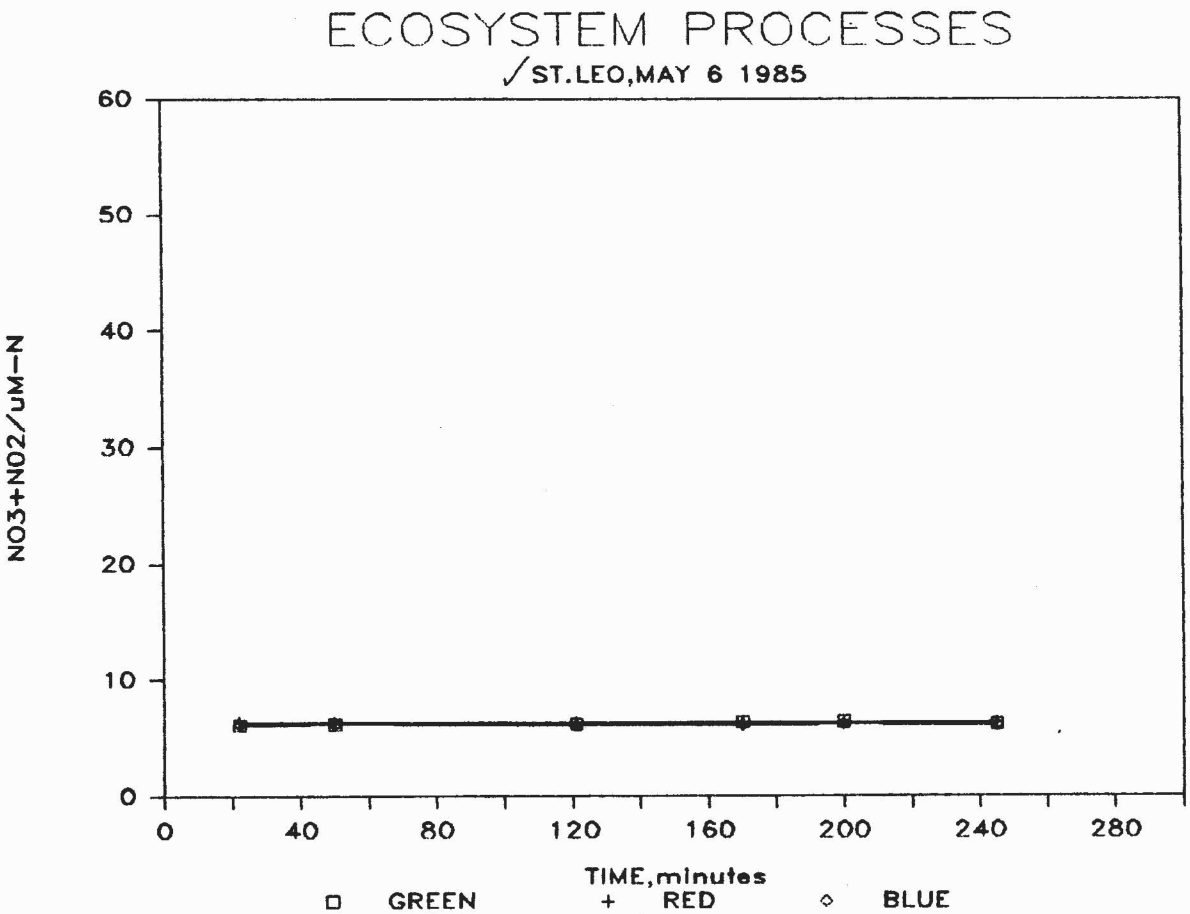


ECOSYSTEM PROCESSES
R-64,MAY 6 1985
35
30
25
20
15
10
5
0
NH4/uM-N
0
40
80
120
160
200
240
280
TIME,minutes
GREEN
RED
BLUE

No. 9-79

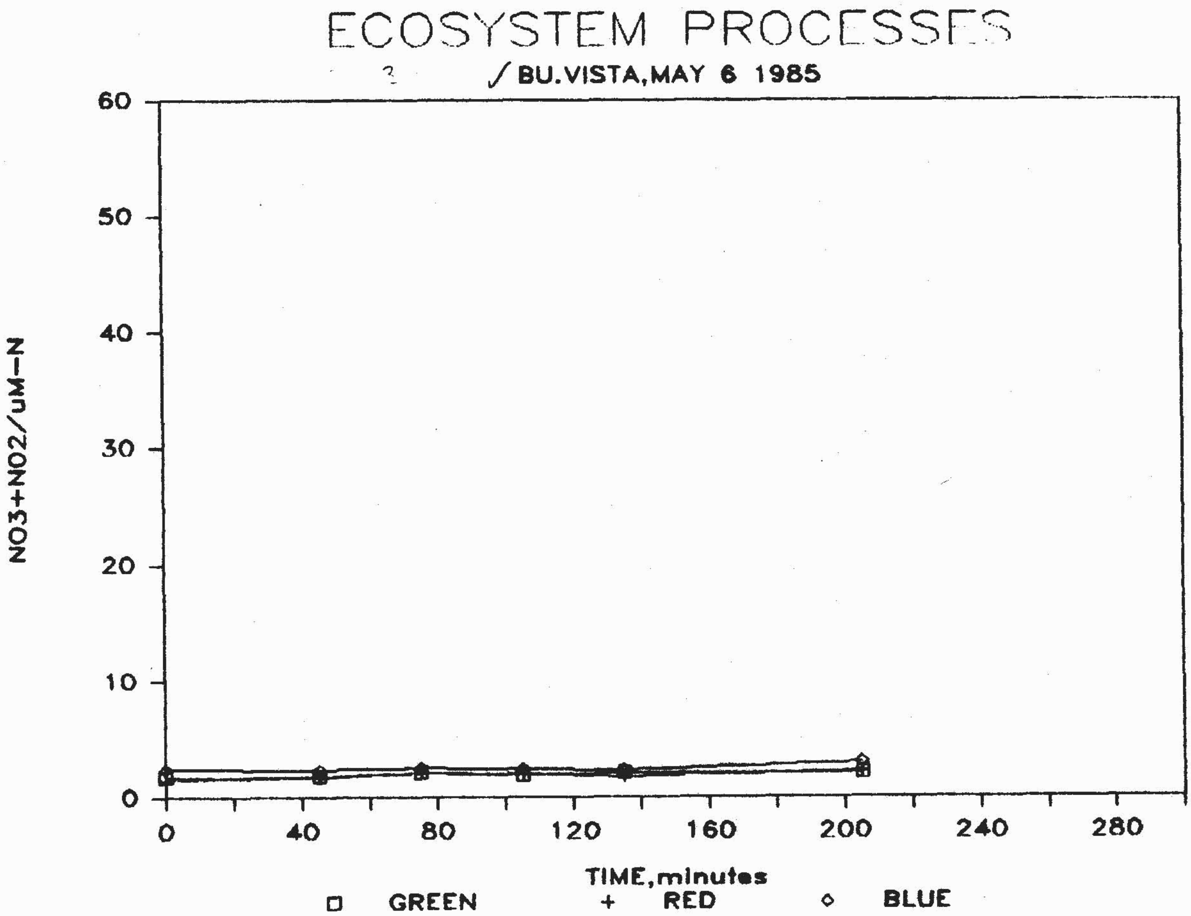

ECOSYSTEM PROCESSES
R-78, MAY 7 1985
NH4/uM-N
35
30
25
20
15
10
5
0
0
40
80
120
160
200
240
280
TIME, minutes
GREEN
RED
BLUE


ECOSYSTEM PROCESSES
STIL.PD,MAY 8 1985
NH4/uM-N
35
30
25
20
15
10
5
0
0
40
80
120
160
200
240
280
TIME,minutes
GREEN
RED
BLUE
3 RANGIA
IN CORE



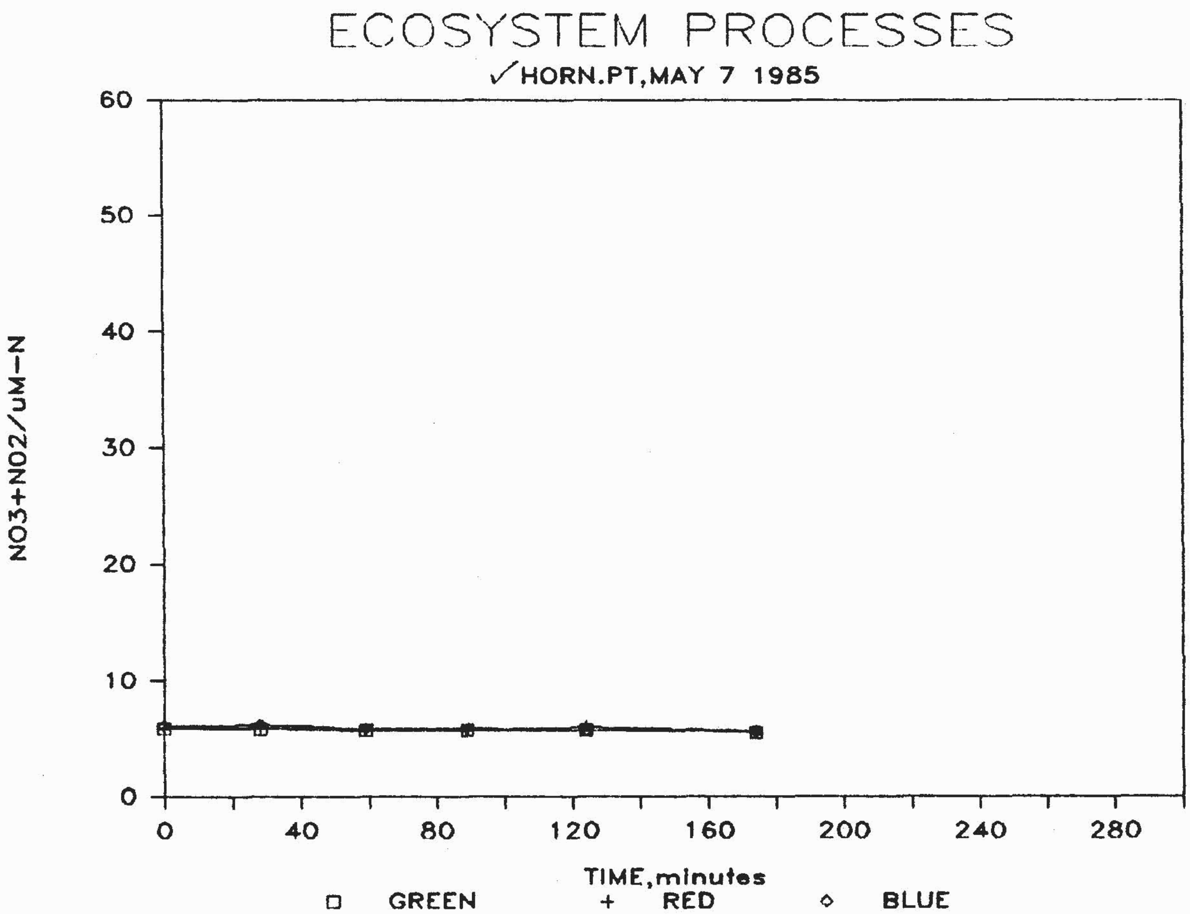
ECOSYSTEM PROCESSES
✓ST.LEO,MAY 6 1985
NO3+NO2/uM-N
60
50
40
30
20
10
0
0
40
80
120
160
200
240
280
TIME,minutes
GREEN
RED
BLUE

No. 9-82

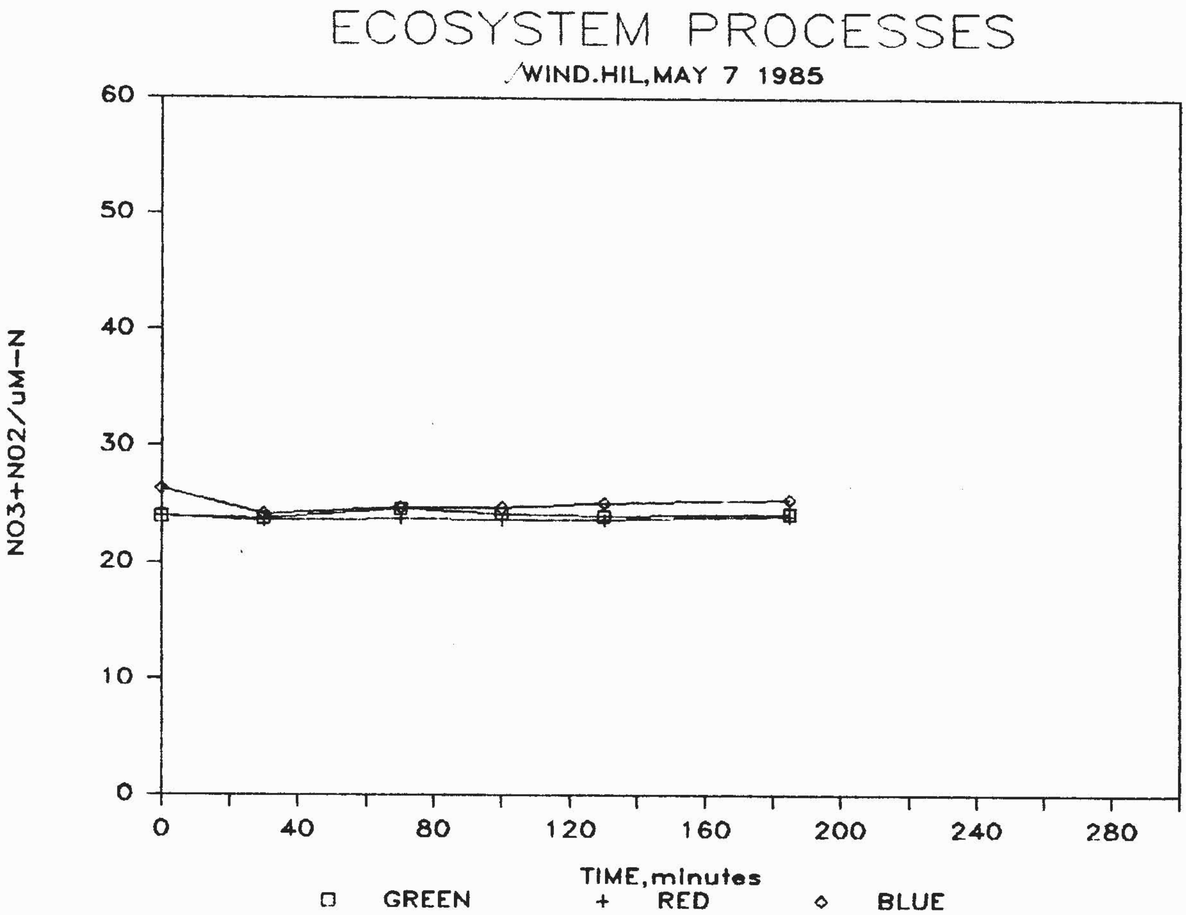


ECOSYSTEM PROCESSES
/ BU.VISTA,MAY 6 1985
NO3+NO2/uM-N
60
50
40
30
20
10
0
0
40
80
120
160
200
240
280
TIME,minutes
GREEN
RED
BLUE

No. 9-83

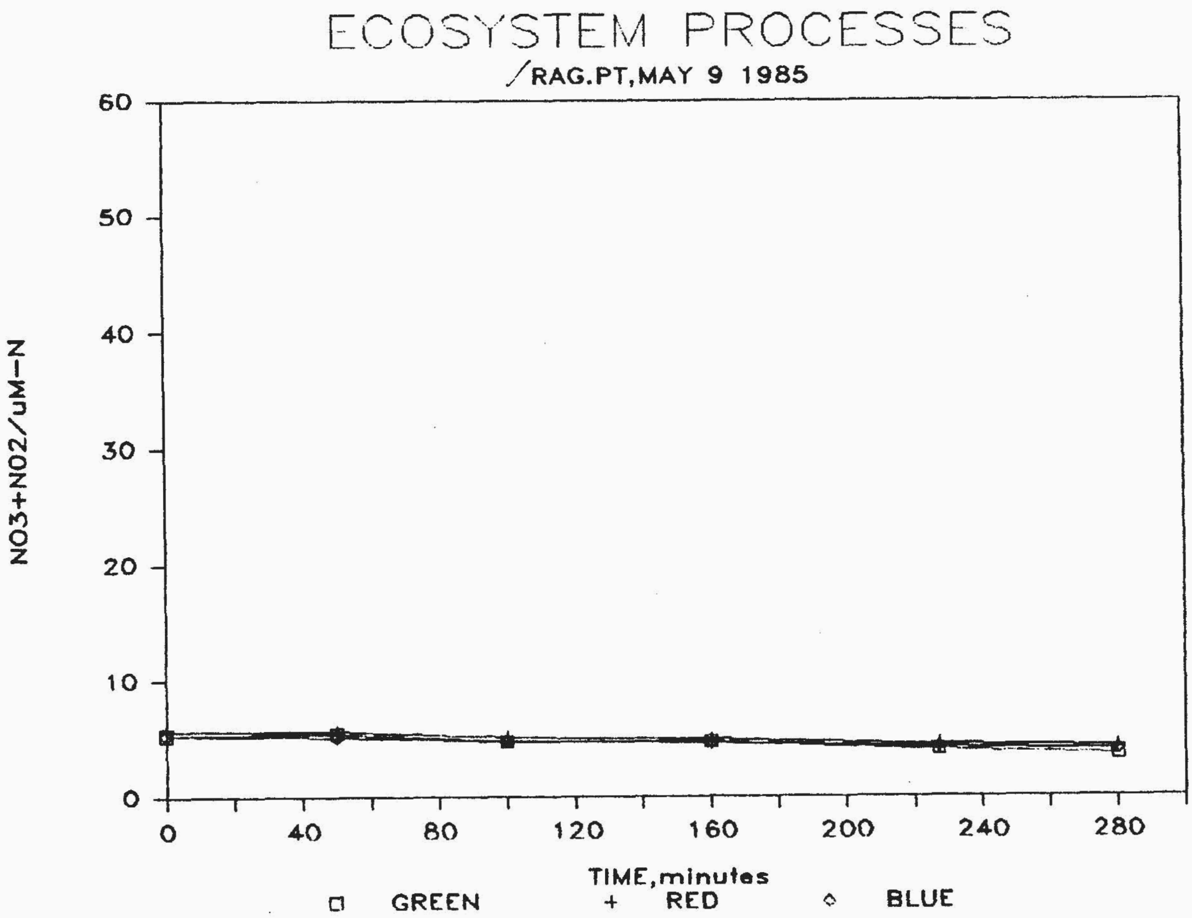


ECOSYSTEM PROCESSES
✓HORN.PT,MAY 7 1985
NO3+NO2/uM-N
60
50
40
30
20
10
0
0
40
80
120
160
200
240
280
TIME,minutes
GREEN
RED
BLUE

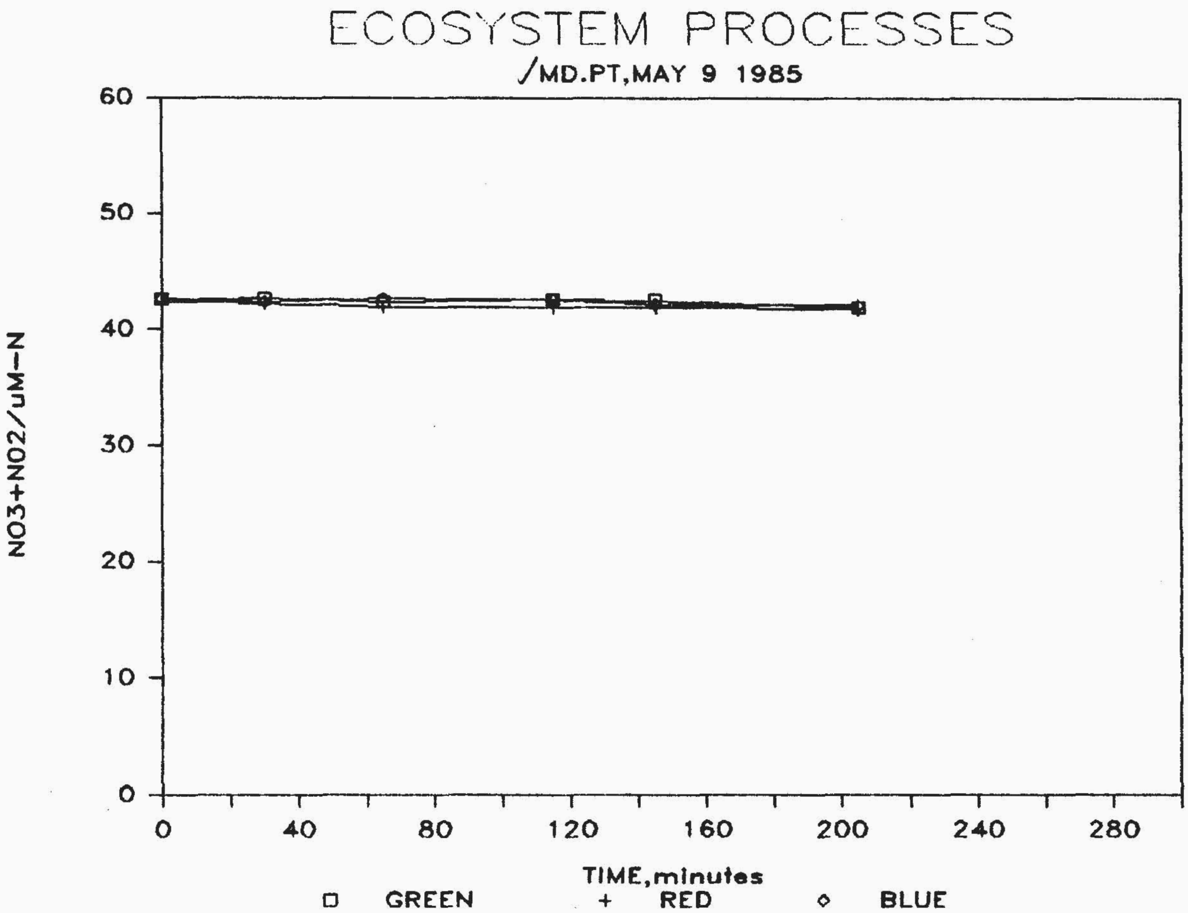


ECOSYSTEM PROCESSES
WIND.HIL,MAY 7 1985
NO3+NO2/uM-N
60
50
40
30
20
10
0
0
40
80
120
160
200
240
280
TIME,minutes
GREEN
RED
BLUE

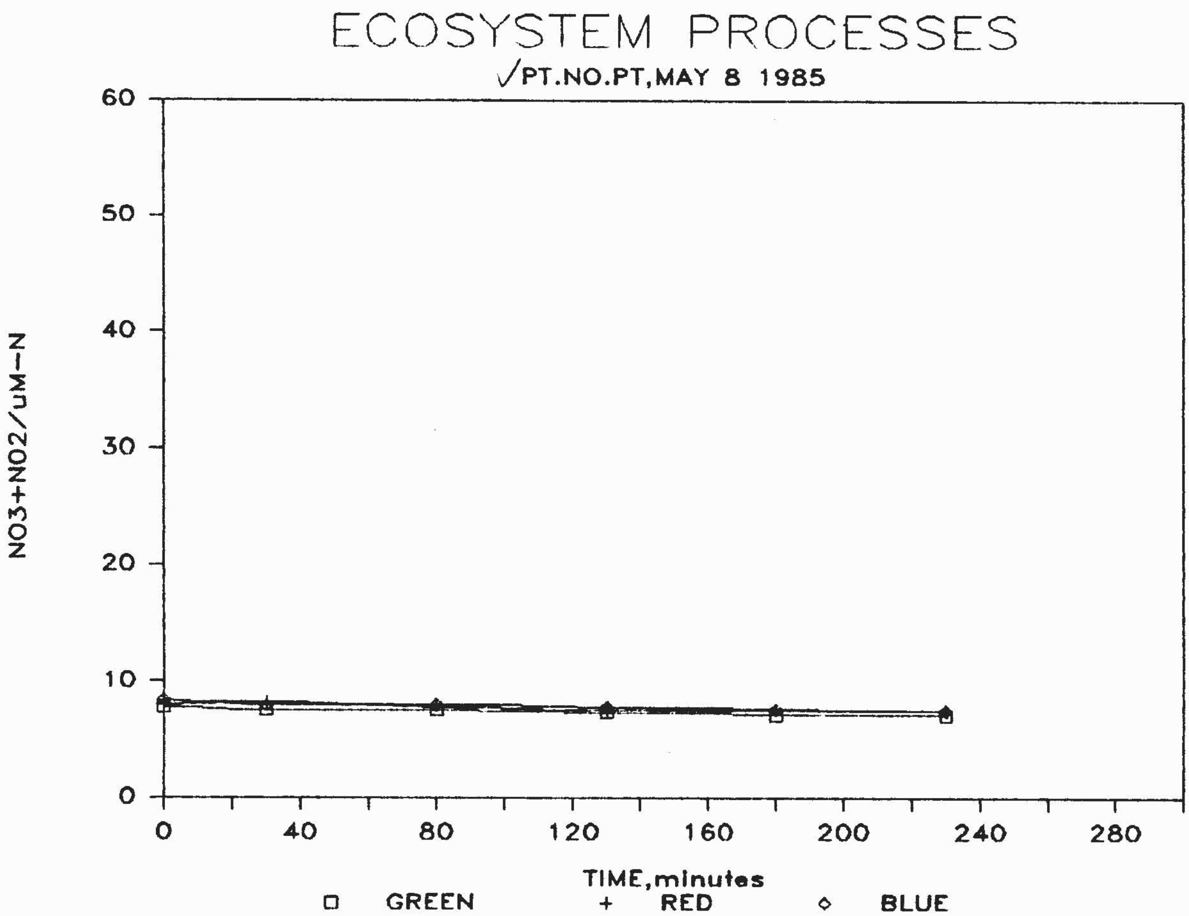
No. 9-85



ECOSYSTEM PROCESSES
/RAG.PT,MAY 9 1985
NO3+NO2/uM-N
60
50
40
30
20
10
0
0
40
80
120
160
200
240
280
TIME,minutes
GREEN
RED
BLUE

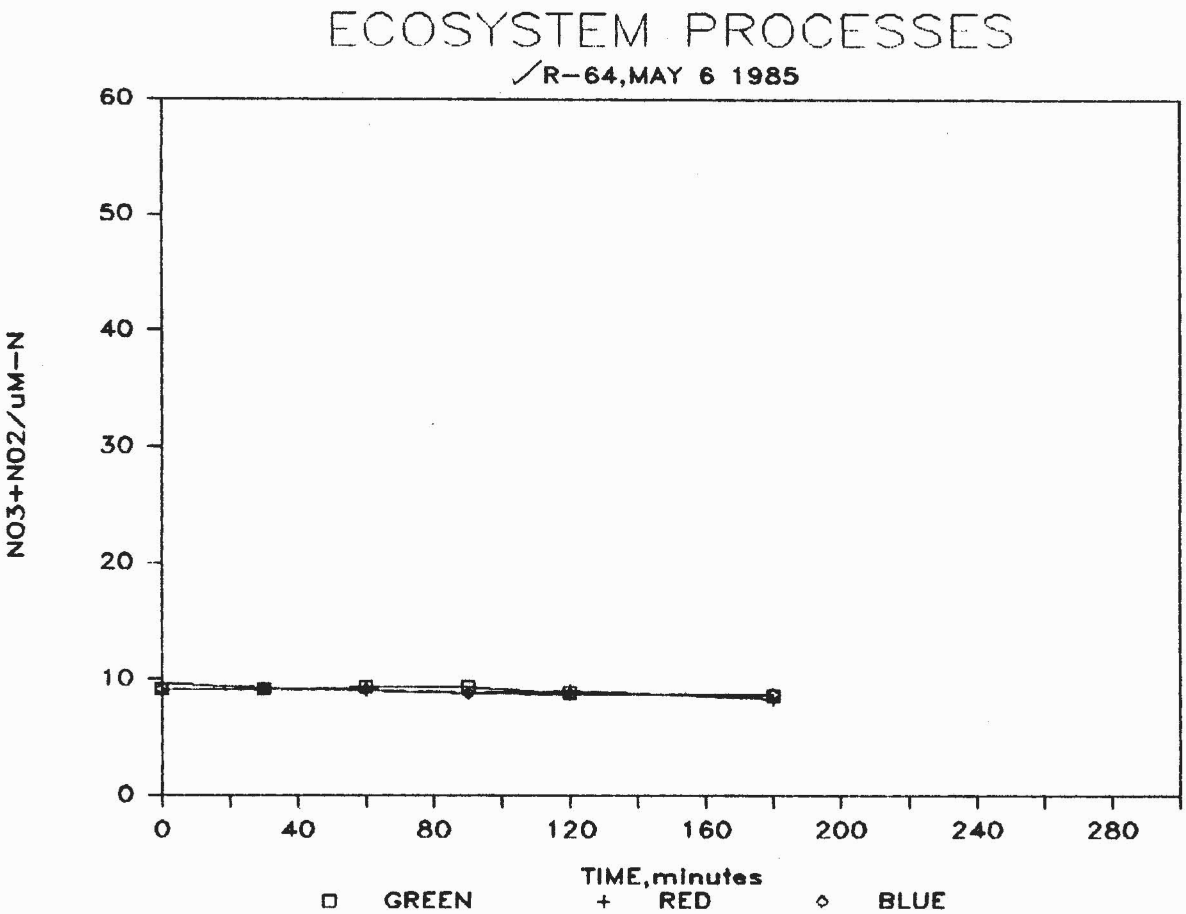

ECOSYSTEM PROCESSES
/MD.PT,MAY 9 1985
NO3+NO2/uM-N
60
50
40
30
20
10
0
0
40
80
120
160
200
240
280
TIME,minutes
GREEN
RED
BLUE

No. 9-87



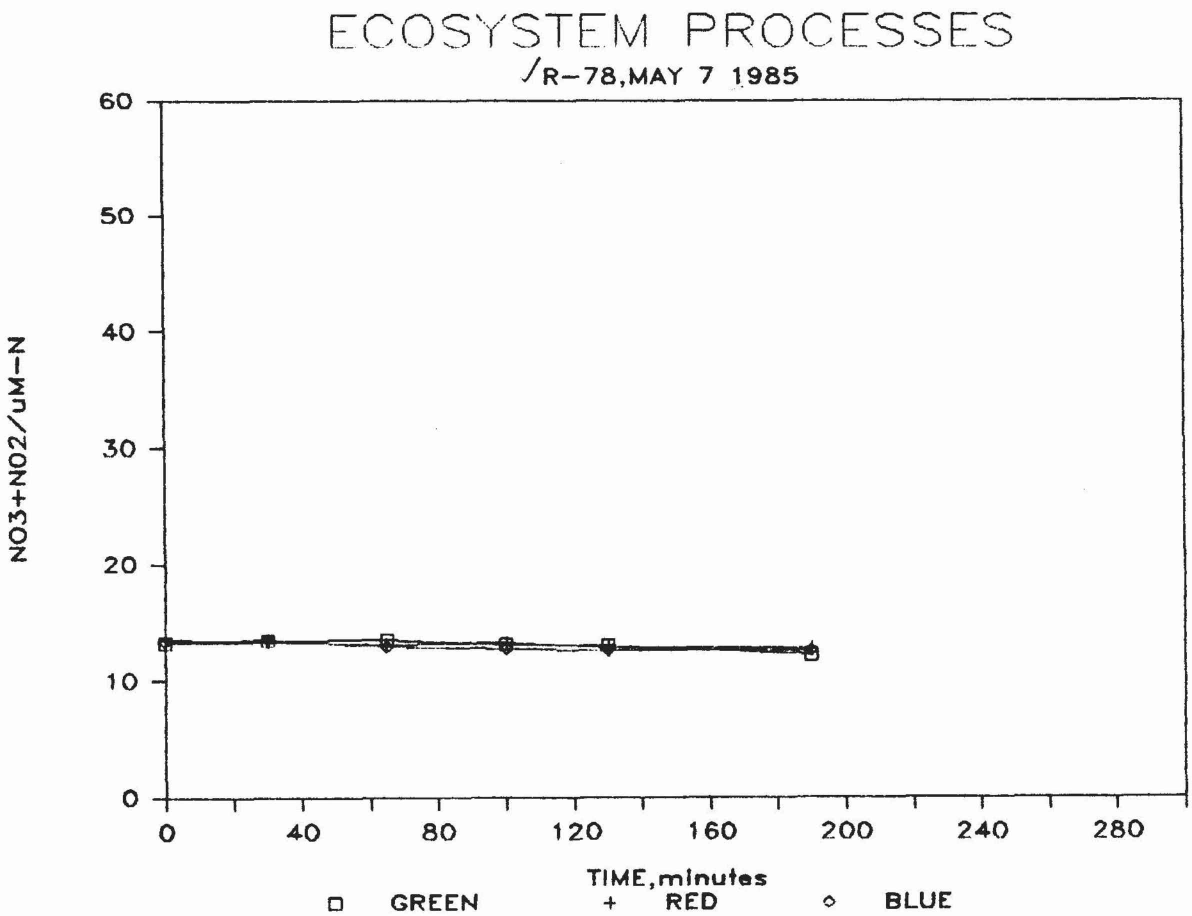
ECOSYSTEM PROCESSES
√PT.NO.PT,MAY 8 1985
NO3+NO2/uM-N
60
50
40
30
20
10
0
0
40
80
120
160
200
240
280
TIME,minutes
□ GREEN
+ RED
◇ BLUE

No. 9-88



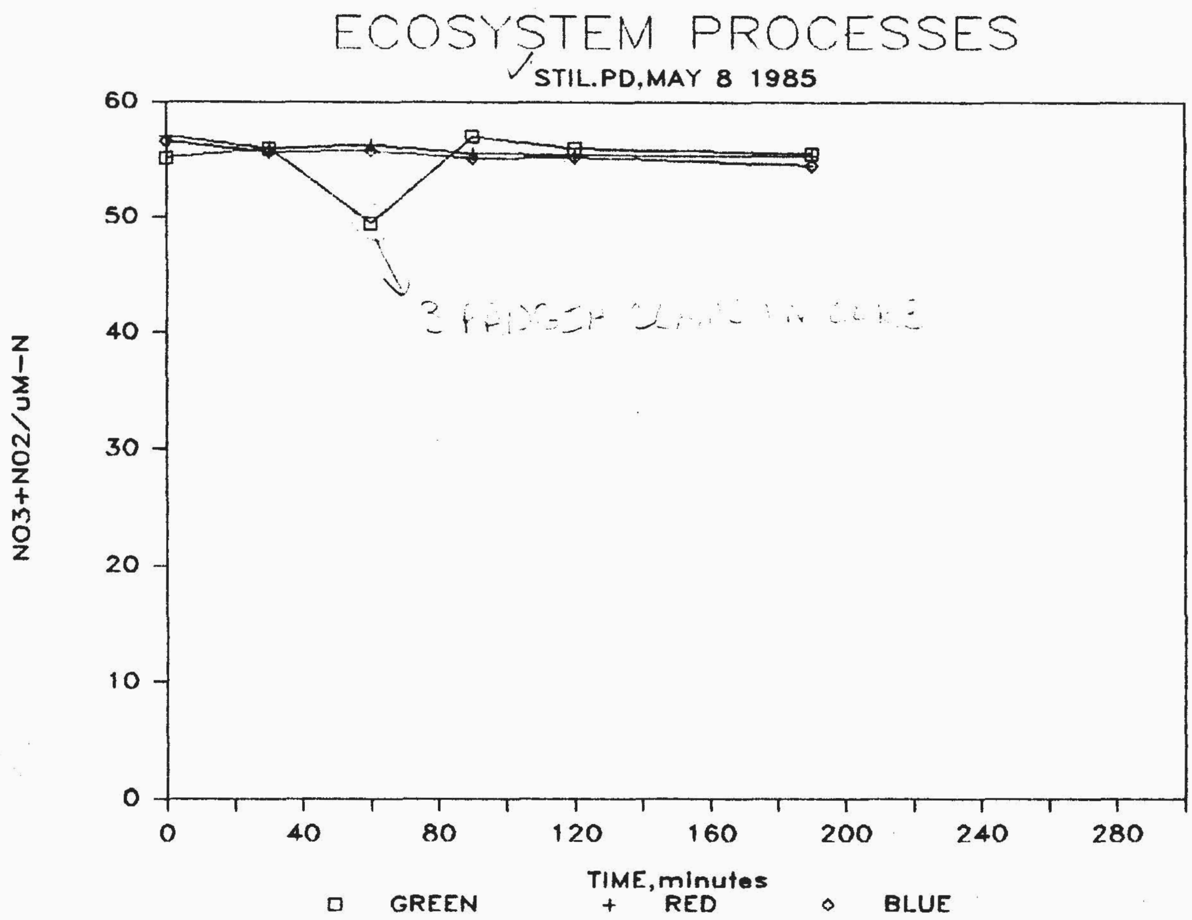
ECOSYSTEM PROCESSES
R-64, MAY 6 1985
NO3+NO2/uM-N
60
50
40
30
20
10
0
0
40
80
120
160
200
240
280
TIME, minutes
GREEN
RED
BLUE

No. 9-89

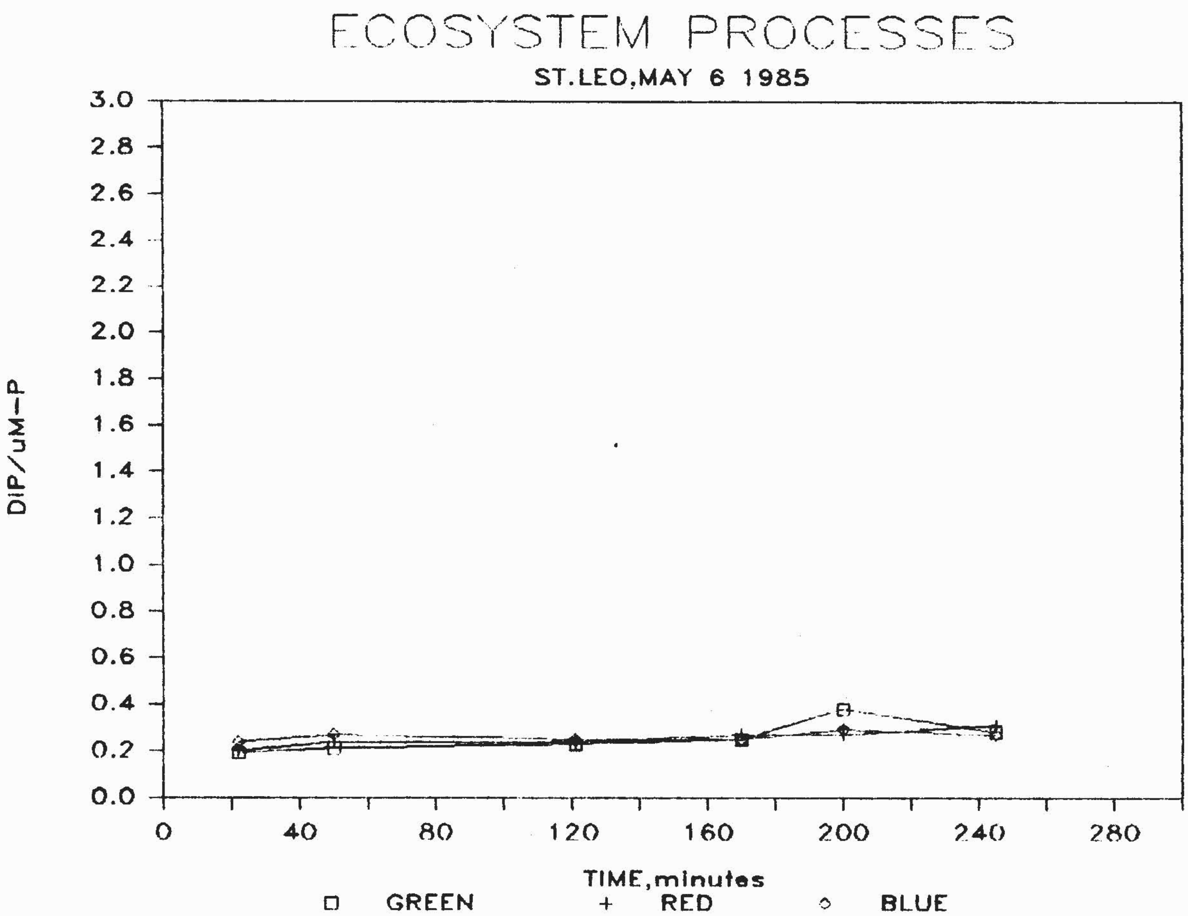


ECOSYSTEM PROCESSES
/R-78,MAY 7 1985
NO3+NO2/uM-N
60
50
40
30
20
10
0
0
40
80
120
160
200
240
280
TIME,minutes
GREEN
RED
BLUE

No. 9-90


ECOSYSTEM PROCESSES
STIL.PD,MAY 8 1985
NO3+NO2/uM-N
60
50
40
30
20
10
0
0
40
80
120
160
200
240
280
TIME,minutes
GREEN
RED
BLUE

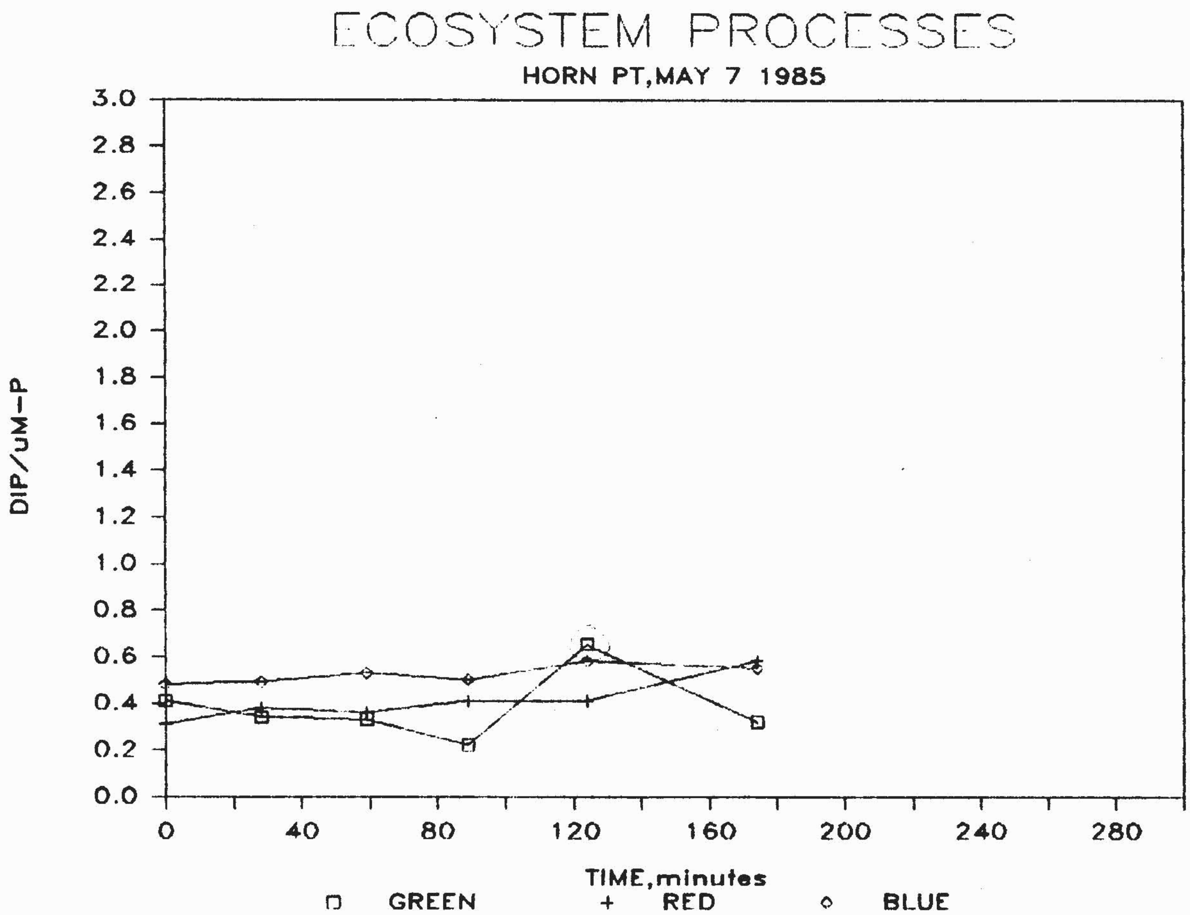
No. 9-91



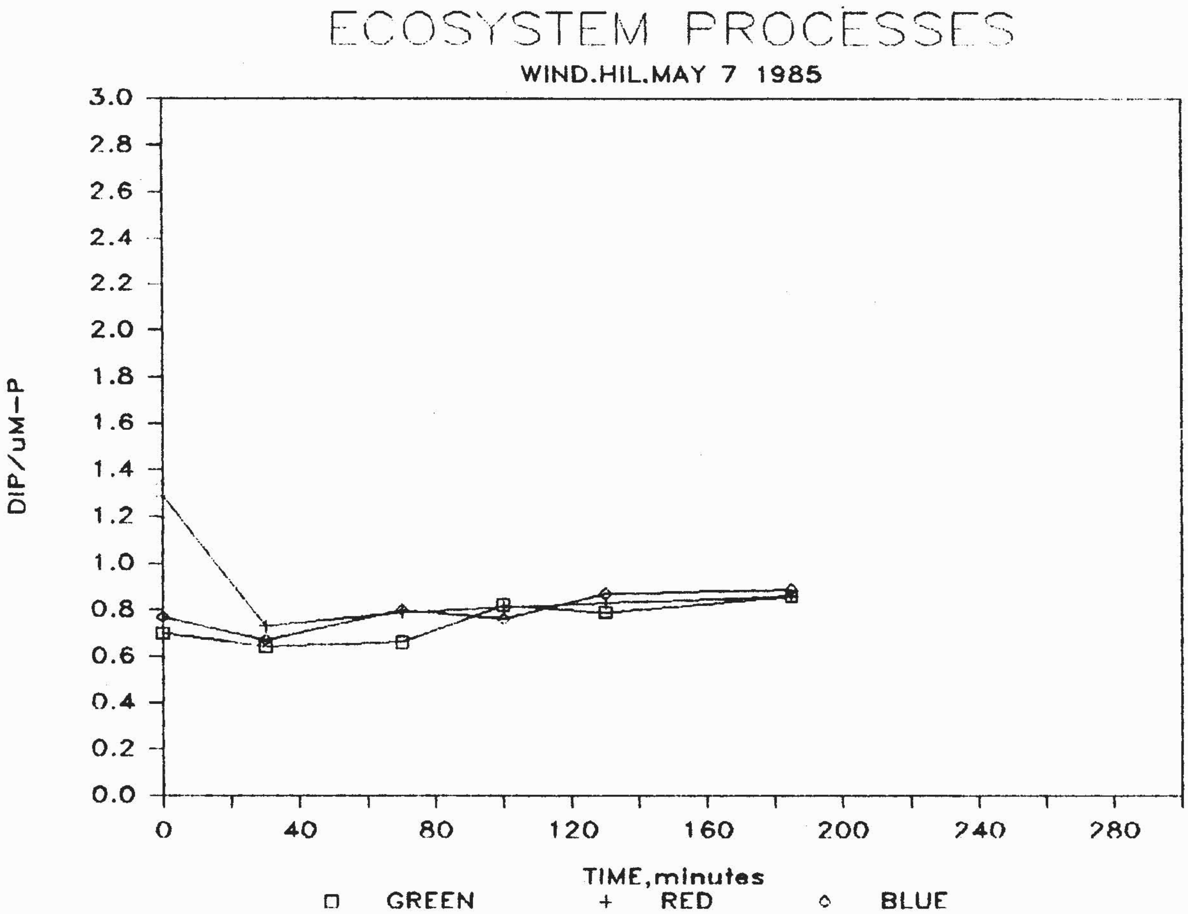
ECOSYSTEM PROCESSES
ST.LEO,MAY 6 1985
DIP/uM-P
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
40
80
120
160
200
240
280
TIME,minutes
GREEN
RED
BLUE

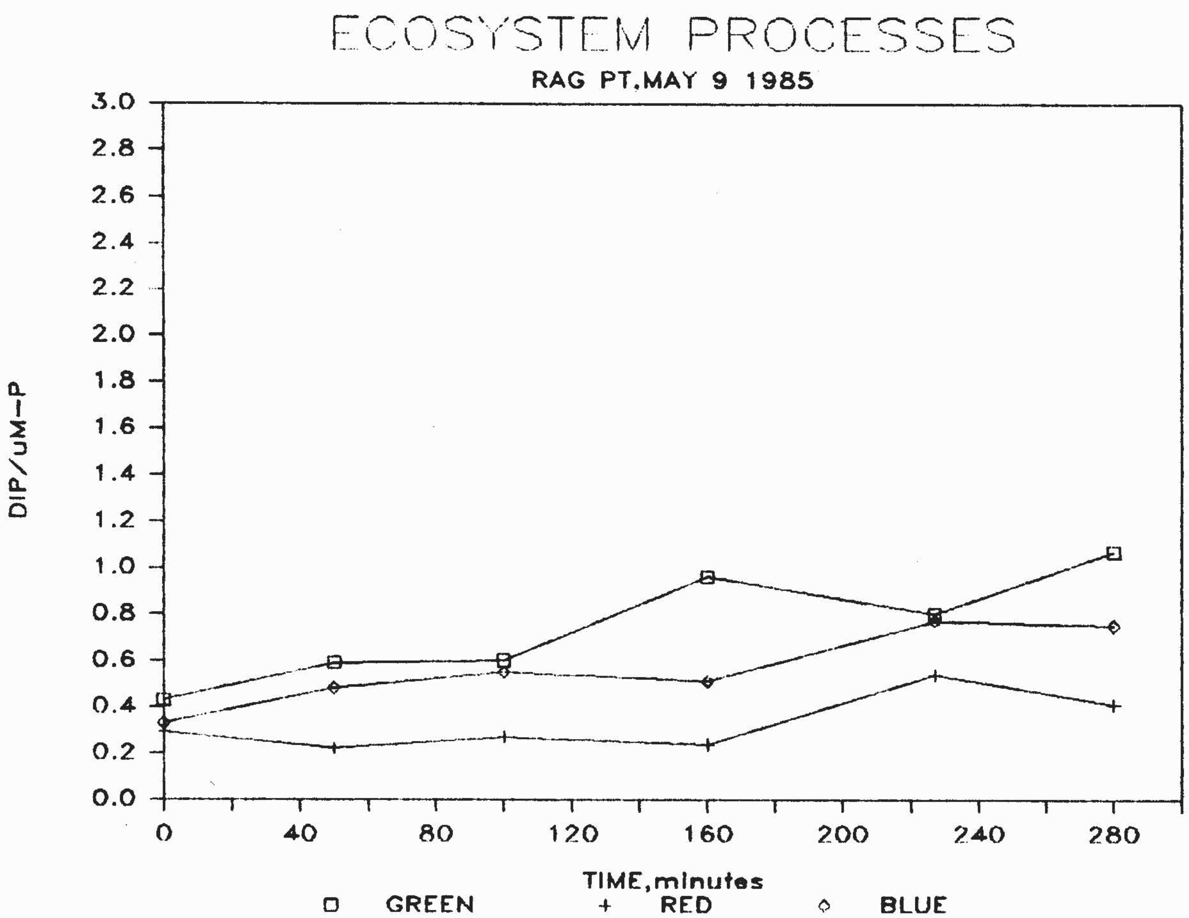
At time of scanning 1/16/2007, no page was found for No. 9-92

No. 9-93

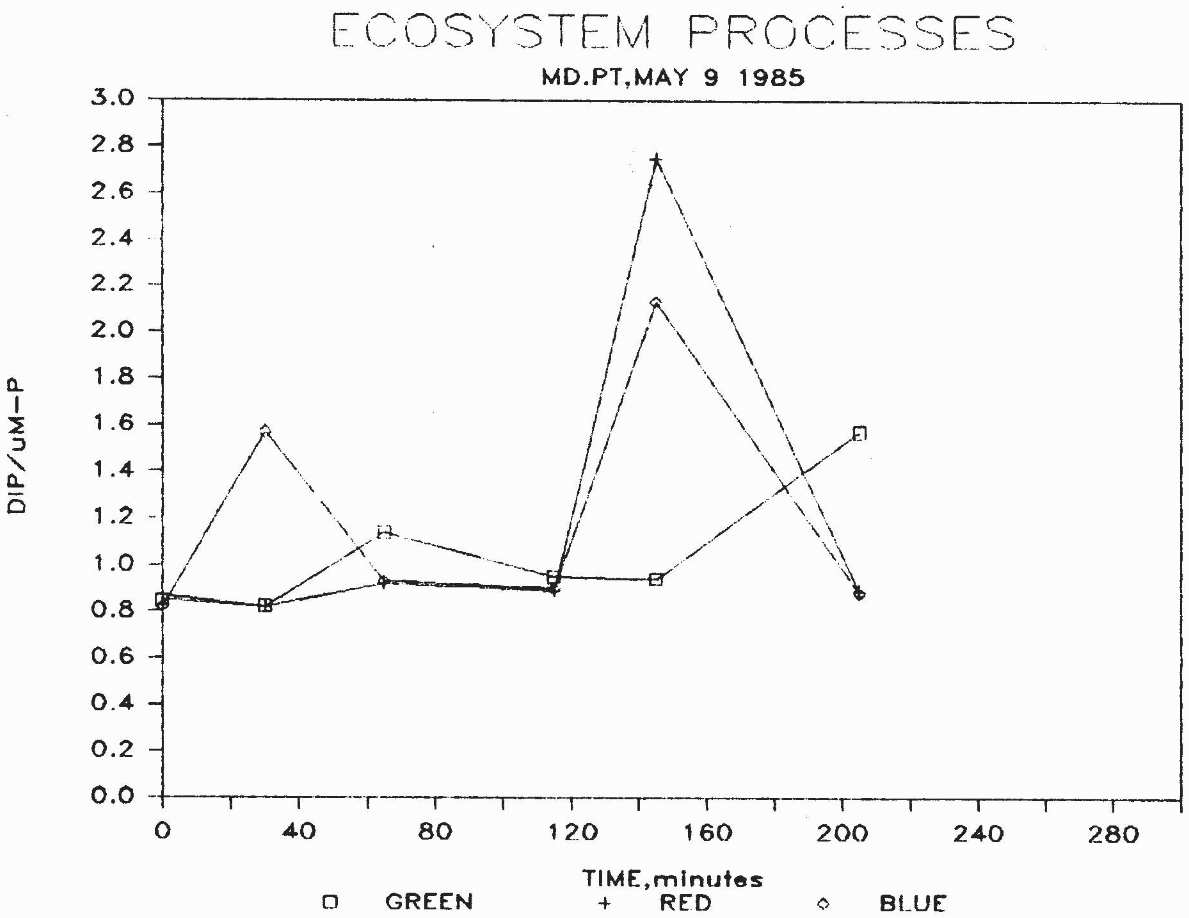


ECOSYSTEM PROCESSES
HORN PT,MAY 7 1985
DIP/uM-P
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
40
80
120
160
200
240
280
TIME,minutes
GREEN
RED
BLUE

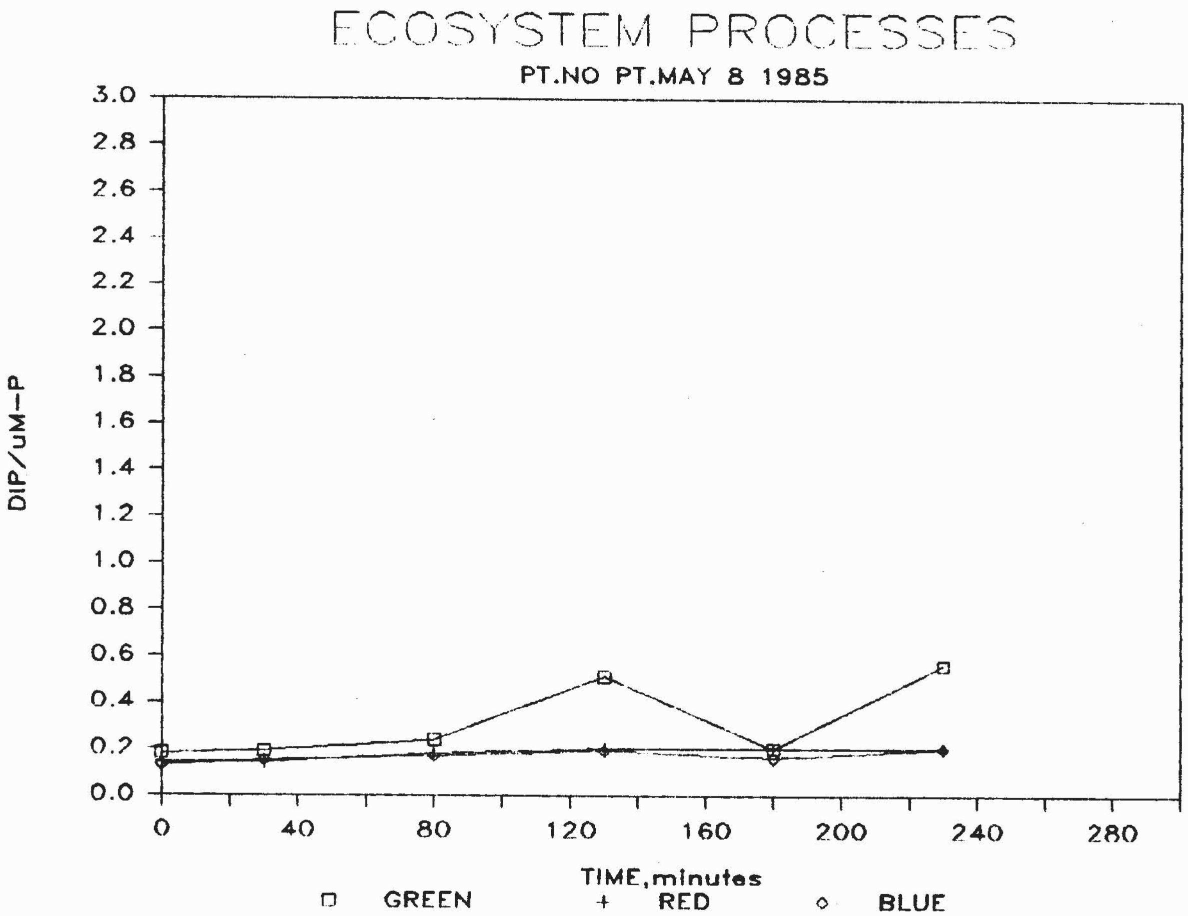

ECOSYSTEM PROCESSES
WIND.HIL.MAY 7 1985
DIP/uM-P
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
40
80
120
160
200
240
280
TIME,minutes
GREEN
RED
BLUE


ECOSYSTEM PROCESSES
RAG PT.MAY 9 1985
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
DIP/uM-P
0
40
80
120
160
200
240
280
TIME,minutes
GREEN
RED
BLUE

No. 9-96

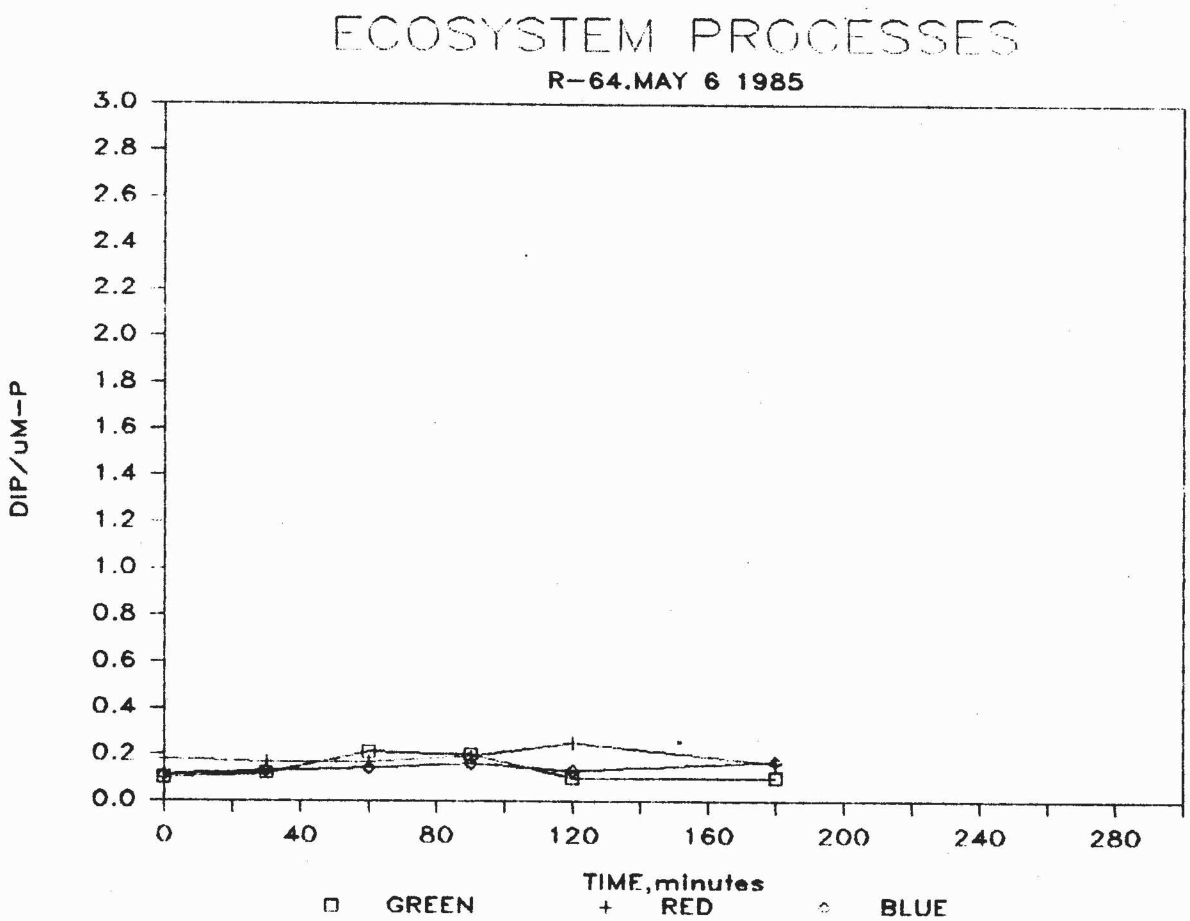

ECOSYSTEM PROCESSES
MD.PT,MAY 9 1985
DIP/uM-P
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
40
80
120
160
200
240
280
TIME,minutes
GREEN
RED
BLUE

No. 9-97



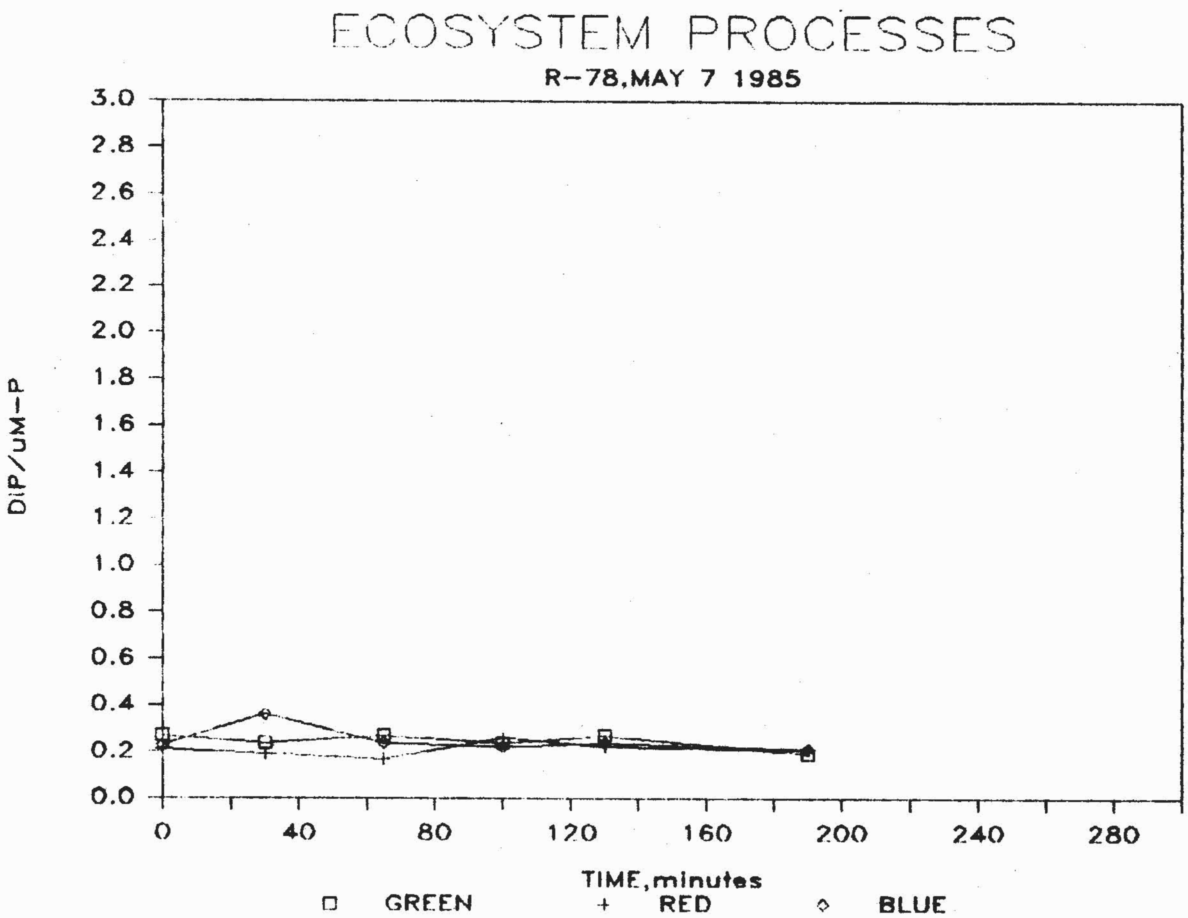
ECOSYSTEM PROCESSES
PT.NO PT.MAY 8 1985
DIP/uM-P
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
40
80
120
160
200
240
280
TIME,minutes
GREEN
RED
BLUE

No. 9-98



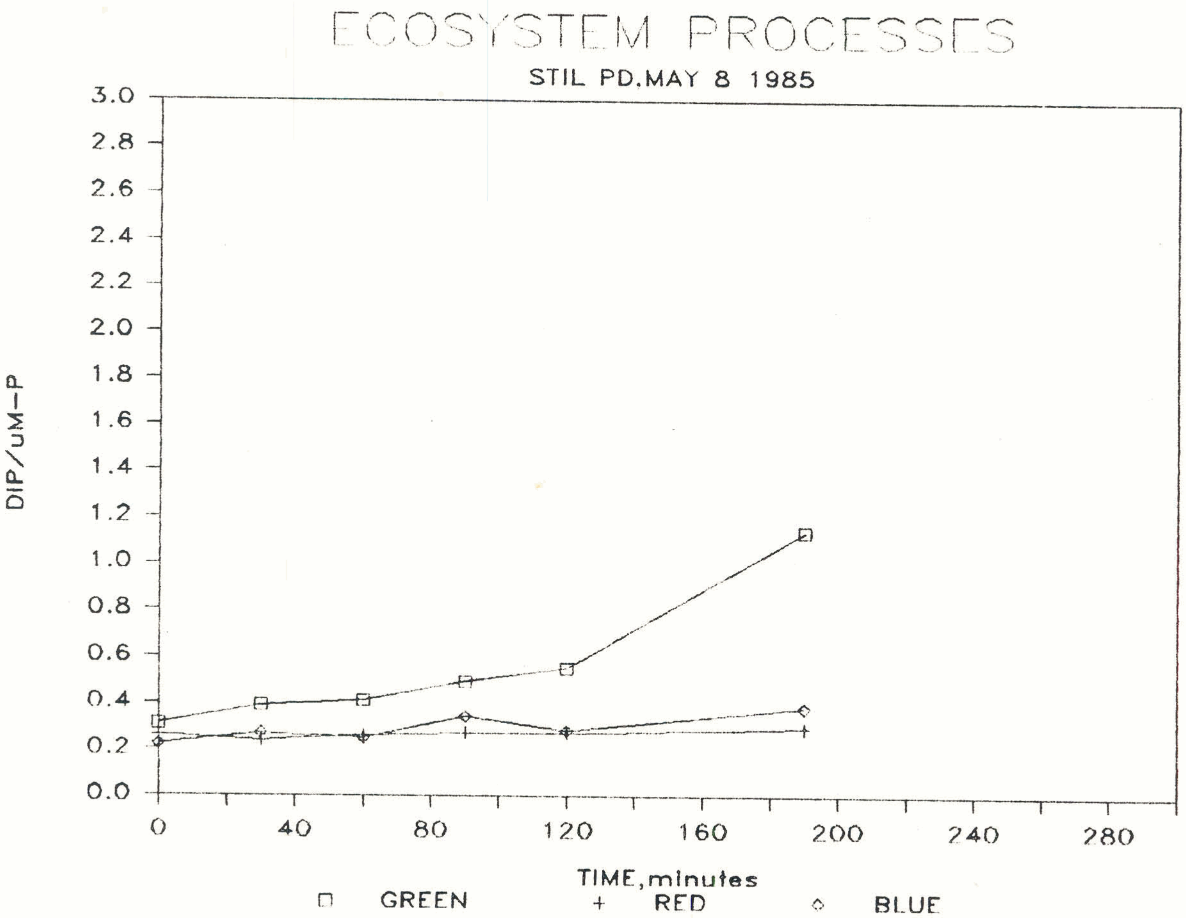
ECOSYSTEM PROCESSES
R-64.MAY 6 1985
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
DIP/uM-P
0
40
80
120
160
200
240
280
TIME,minutes
GREEN
RED
BLUE

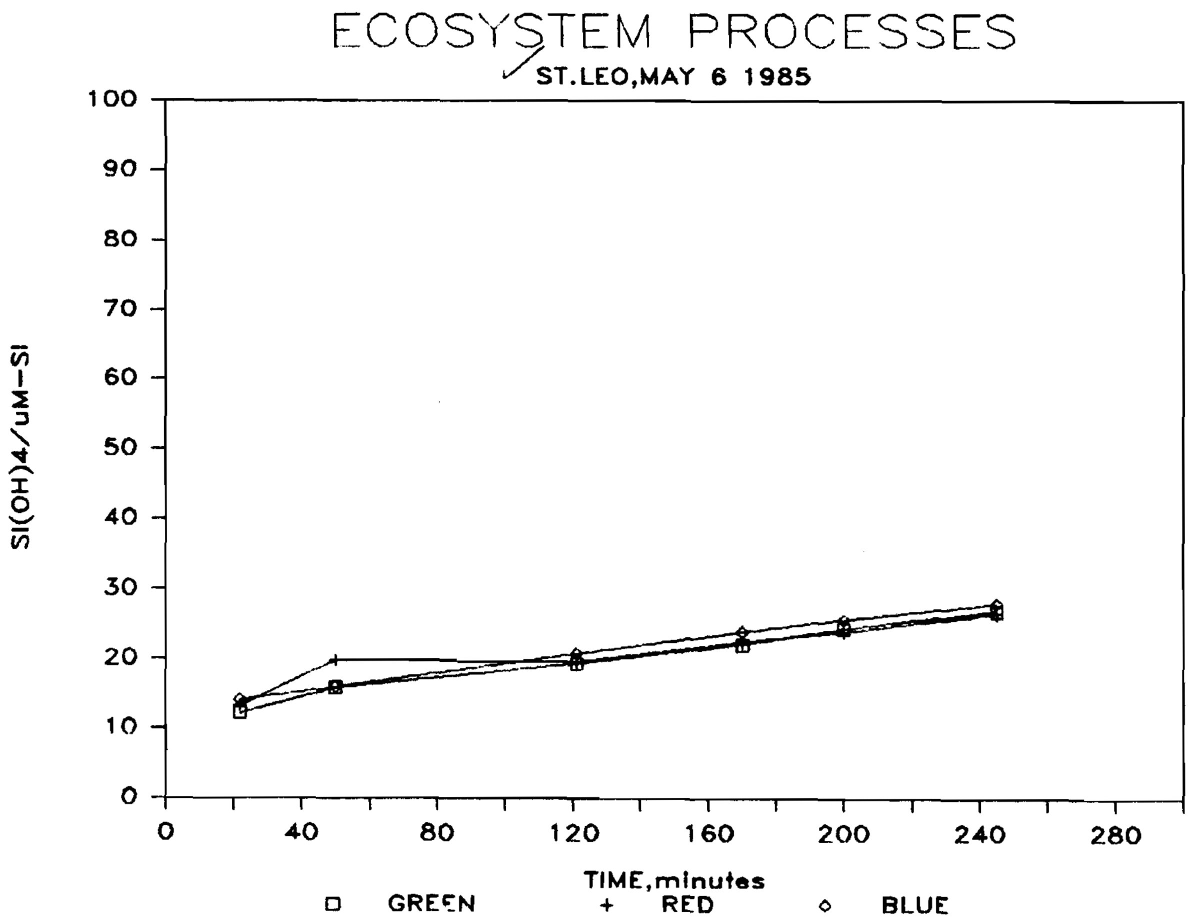
No. 9-99

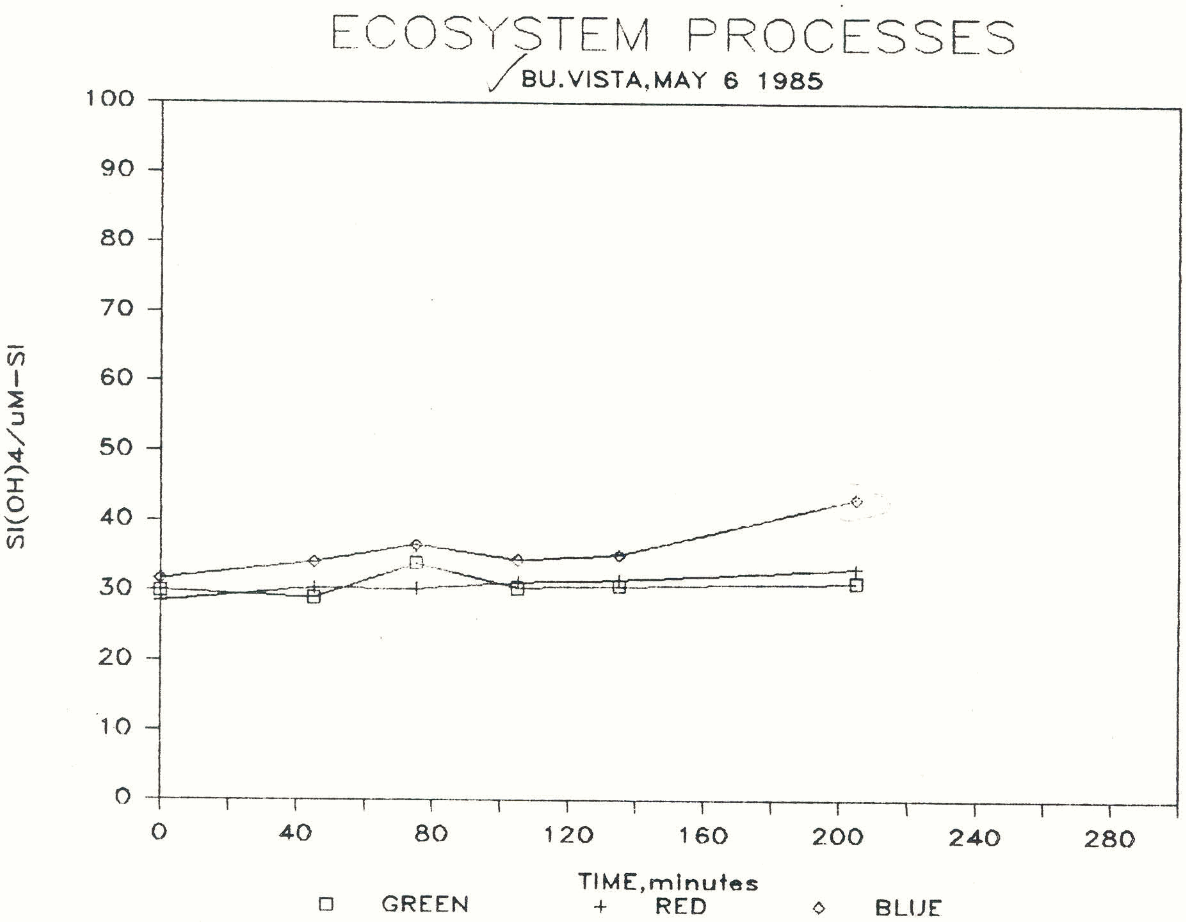


ECOSYSTEM PROCESSES
R-78, MAY 7 1985
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
DiP/uM-P
0
40
80
120
160
200
240
280
TIME, minutes
GREEN
RED
BLUE

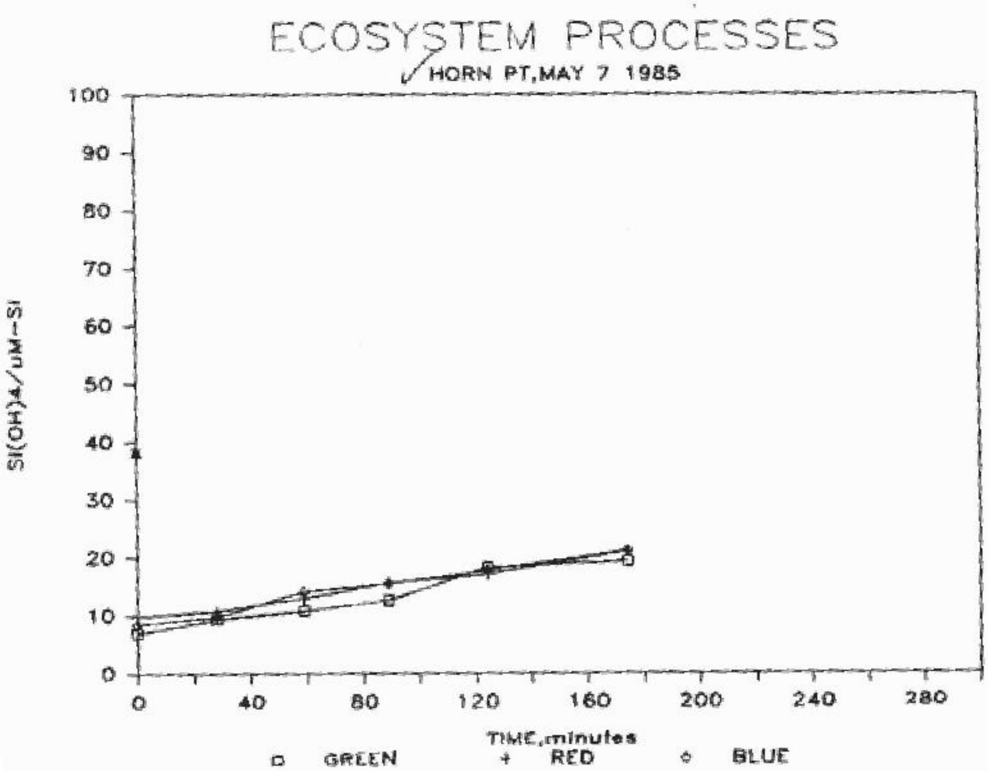
No. 9-100

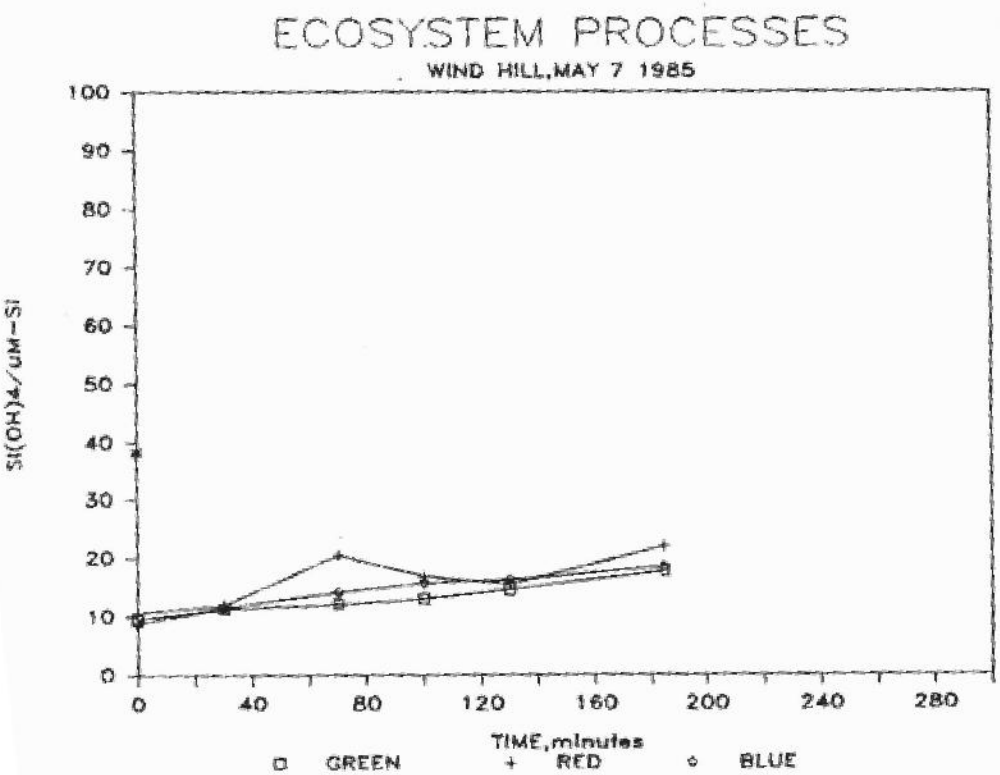

ECOSYSTEM PROCESSES
STIL PD.MAY 8 1985
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
DIP/uM-P
0
40
80
120
160
200
240
280
TIME,minutes
GREEN
RED
BLUE

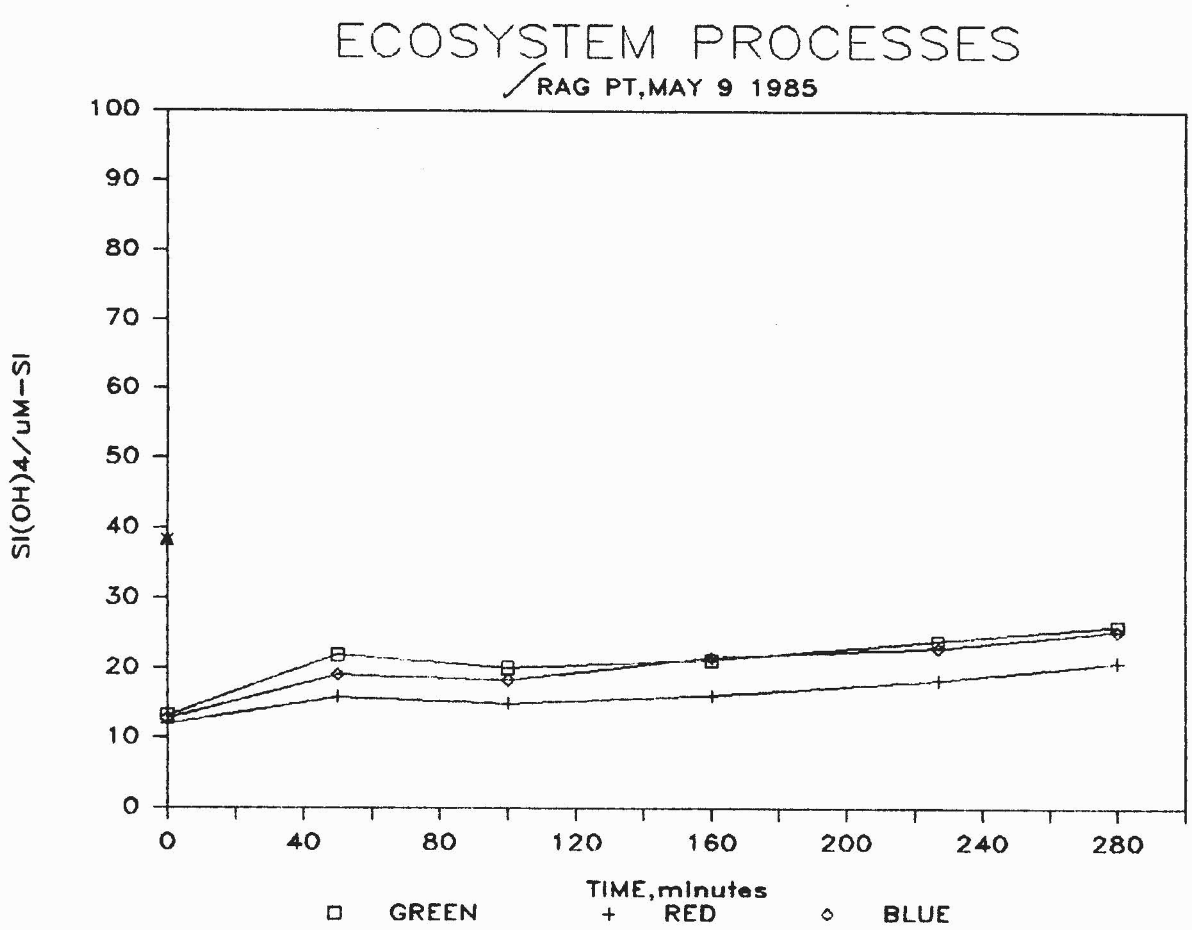

ECOSYSTEM PROCESSES
ST.LEO,MAY 6 1985
100
90
80
70
60
50
40
30
20
10
0
SI(OH)4/uM-SI
0
40
80
120
160
200
240
280
TIME,minutes
GREEN
RED
BLUE



ECOSYSTEM PROCESSES
BU.VISTA,MAY 6 1985
SI(OH)4/uM-SI
100
90
80
70
60
50
40
30
20
10
0
0
40
80
120
160
200
240
280
TIME,minutes
GREEN
RED
BLUE

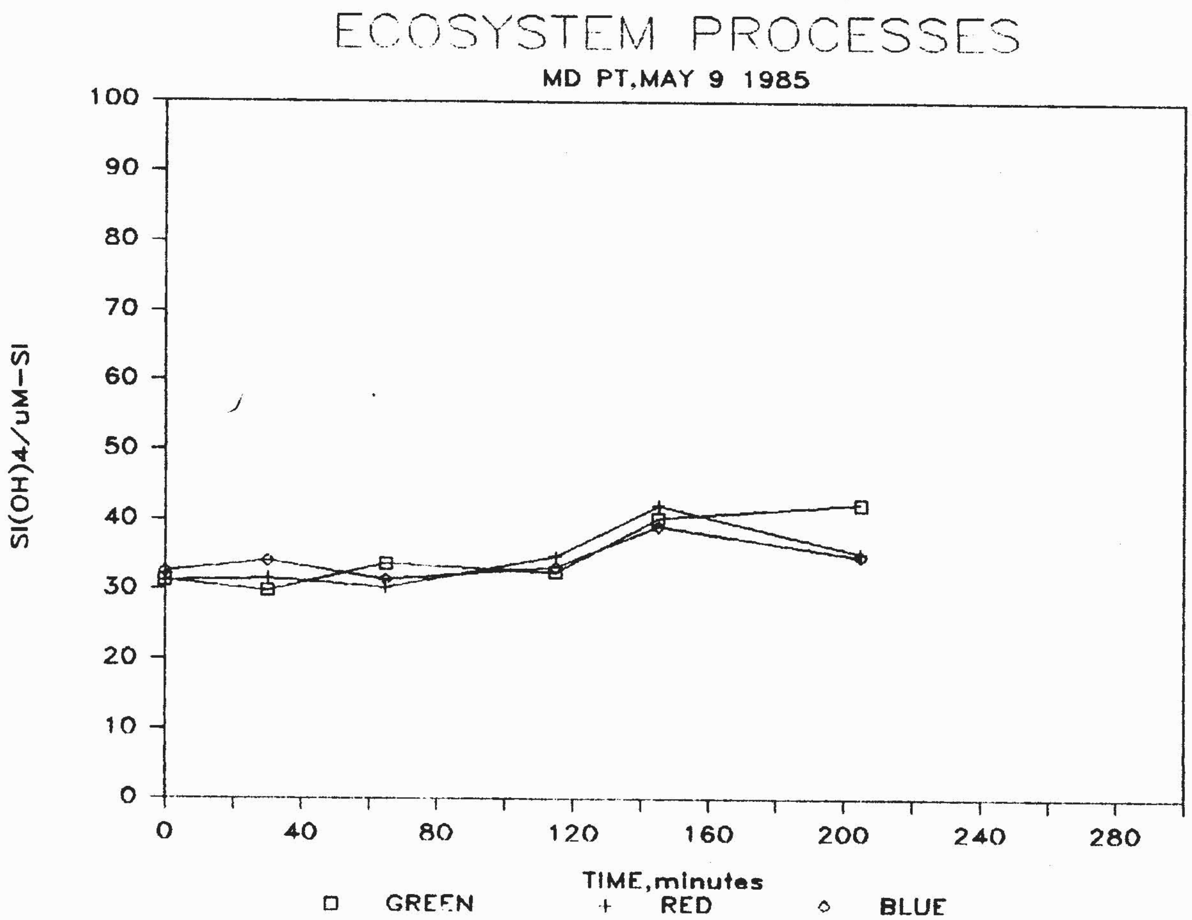

ECOSYSTEM PROCESSES
HORN PT, MAY 7 1985
SI(OH)4/uM-SI
100
90
80
70
60
50
40
30
20
10
0
0
40
80
120
160
200
240
280
TIME, minutes
GREEN
RED
BLUE


ECOSYSTEM PROCESSES
WIND HILL, MAY 7 1985
SI(OH)4/uM-SI
100
90
80
70
60
50
40
30
20
10
0
0
40
80
120
160
200
240
280
TIME, minutes
GREEN
+ RED
BLUE

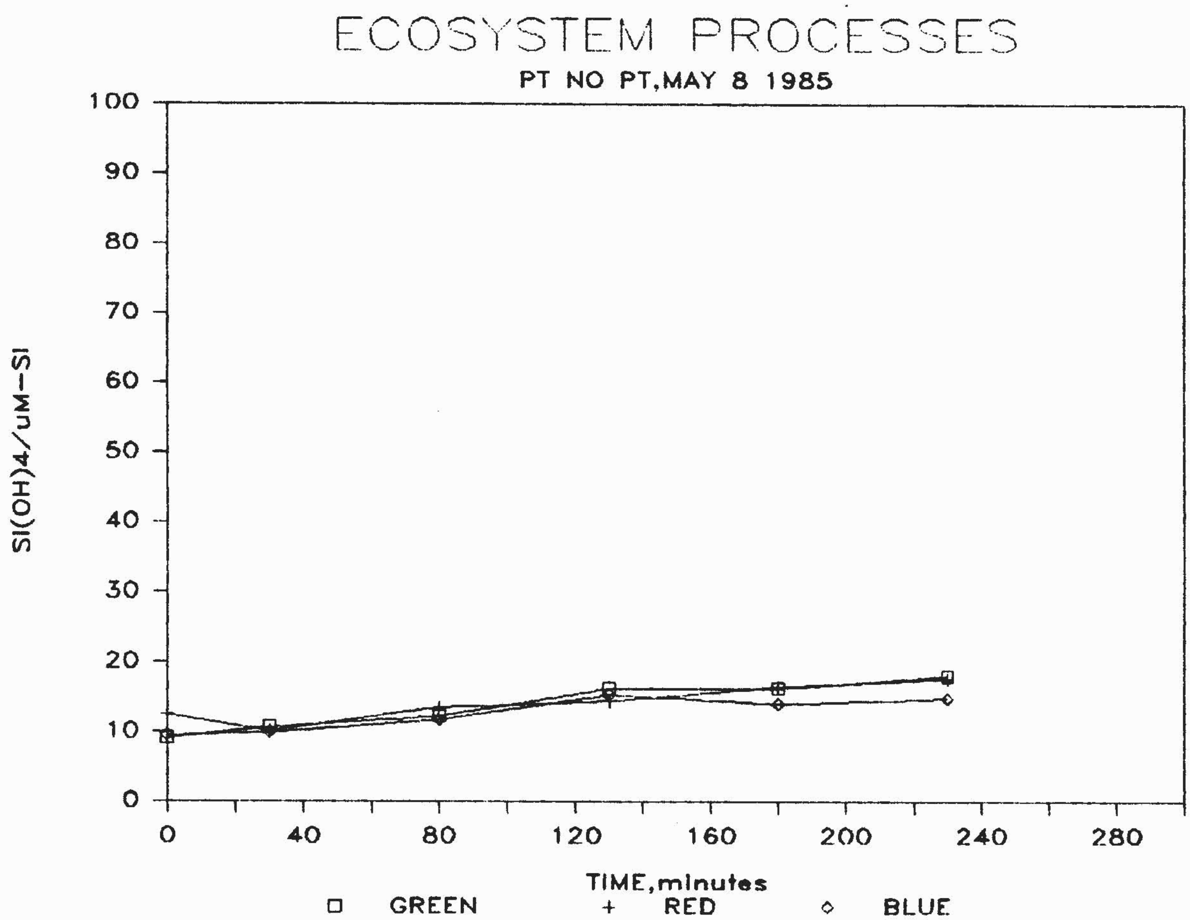


ECOSYSTEM PROCESSES
RAG PT,MAY 9 1985
100
90
80
70
60
50
40
30
20
10
0
SI(OH)4/uM-SI
0
40
80
120
160
200
240
280
TIME,minutes
GREEN
RED
BLUE

No. 9-106

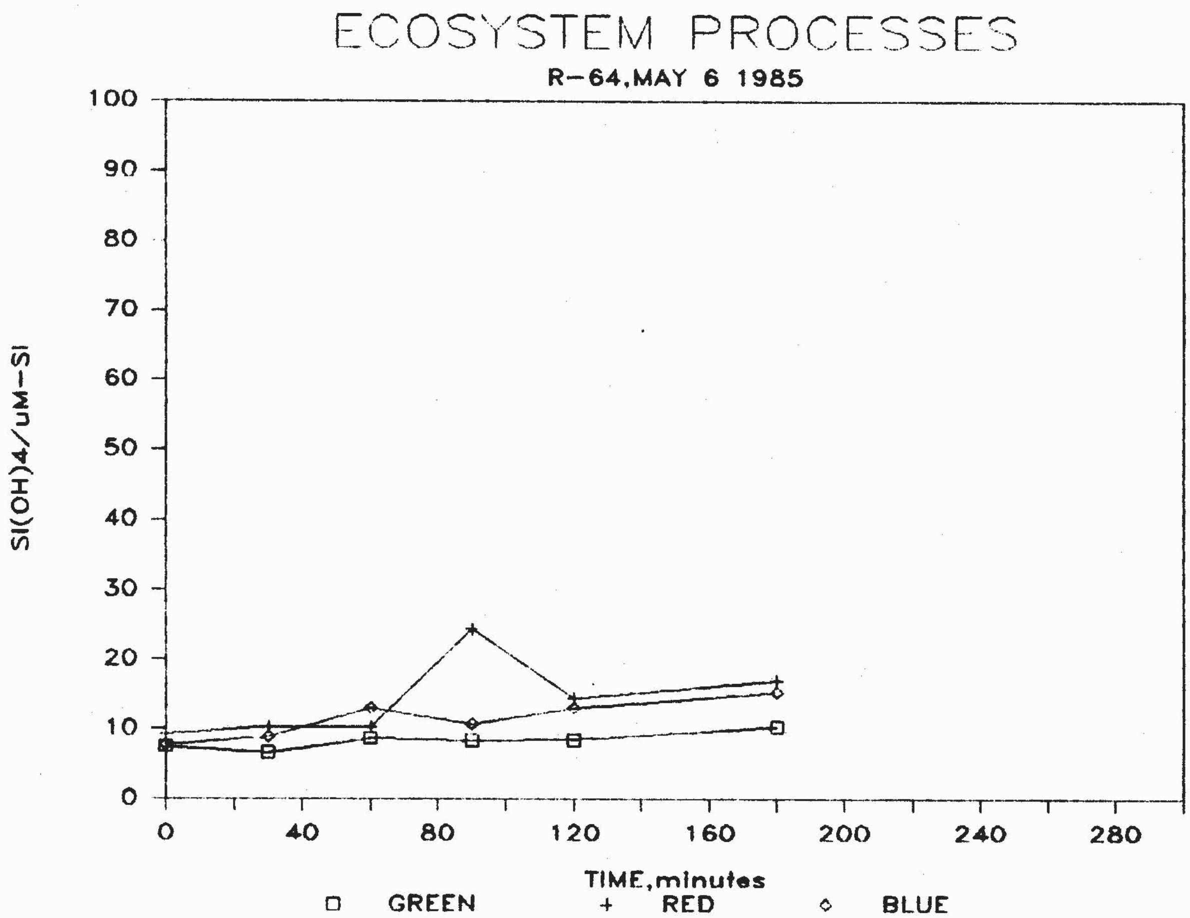


ECOSYSTEM PROCESSES
MD PT,MAY 9 1985
SI(OH)4/uM-SI
100
90
80
70
60
50
40
30
20
10
0
0
40
80
120
160
200
240
280
TIME,minutes
GREEN
RED
BLUE



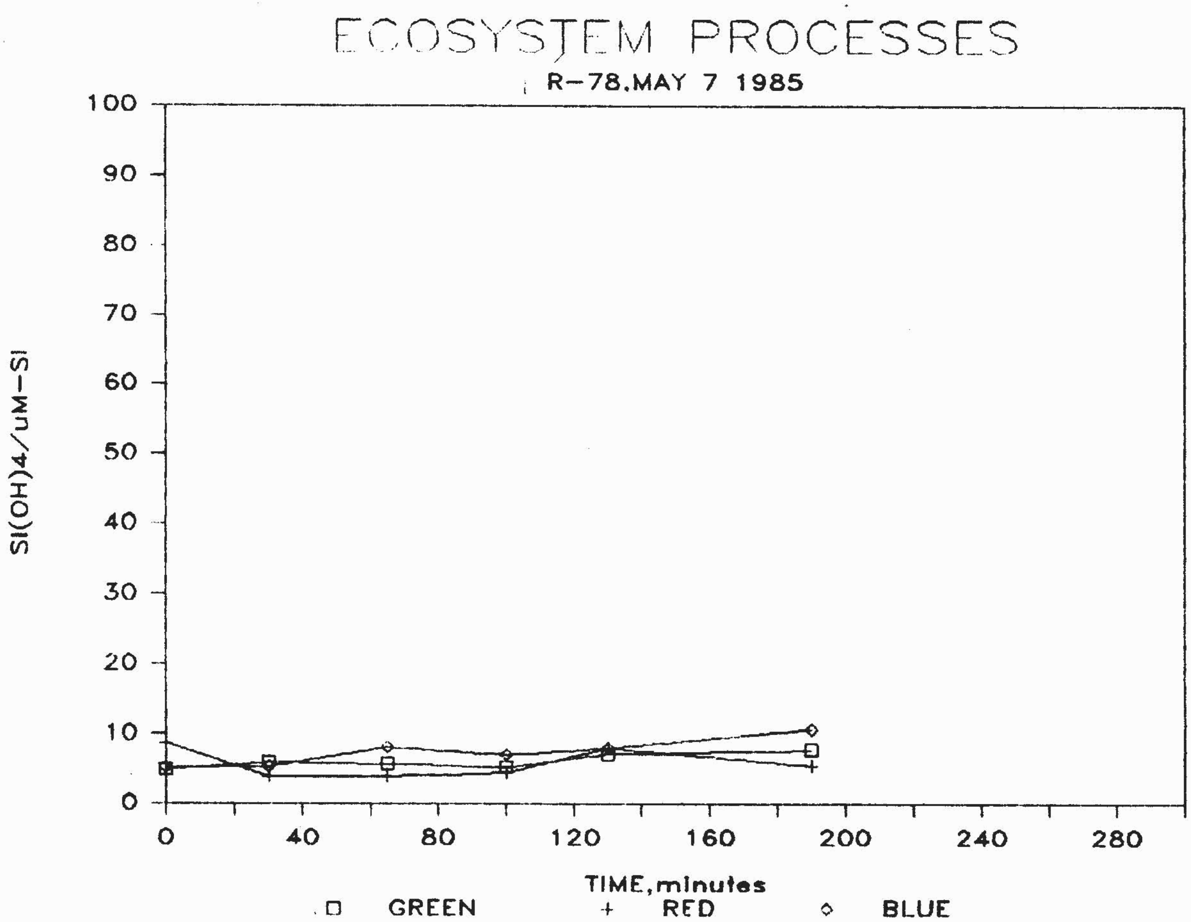
ECOSYSTEM PROCESSES
PT NO PT,MAY 8 1985
100
90
80
70
60
50
40
30
20
10
0
SI(OH)4/uM-SI
0
40
80
120
160
200
240
280
TIME,minutes
GREEN
RED
BLUE

No. 9-108



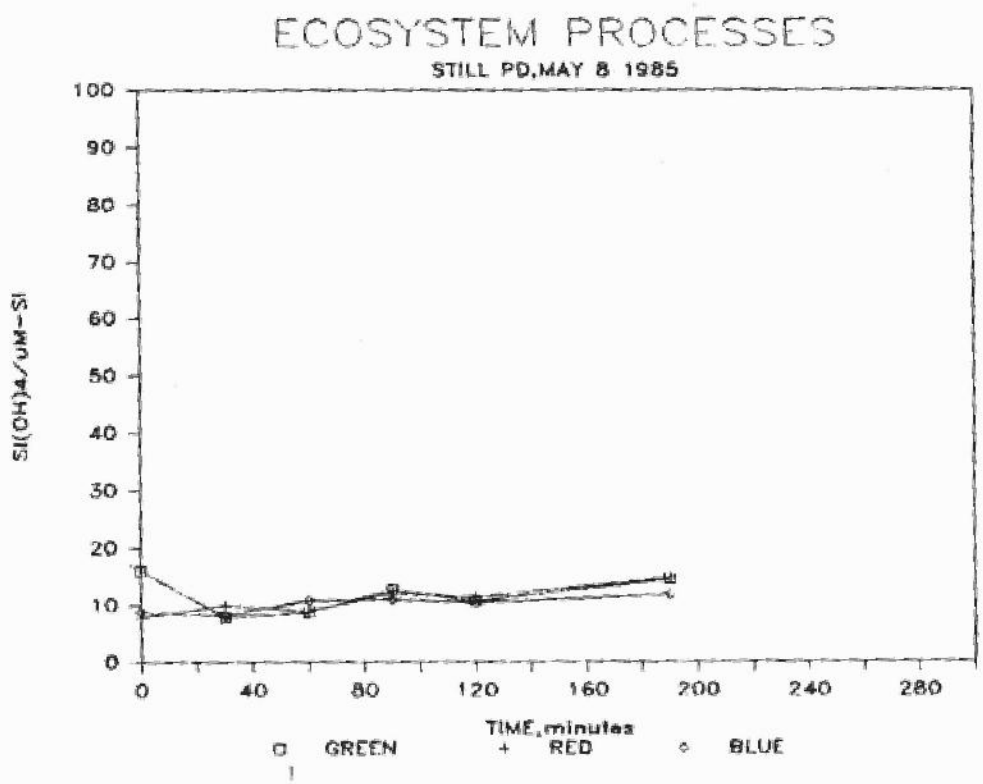
ECOSYSTEM PROCESSES
R-64, MAY 6 1985
100
90
80
70
60
50
40
30
20
10
0
SI(OH)4/uM-SI
0
40
80
120
160
200
240
280
TIME, minutes
GREEN
RED
BLUE

No. 9-109



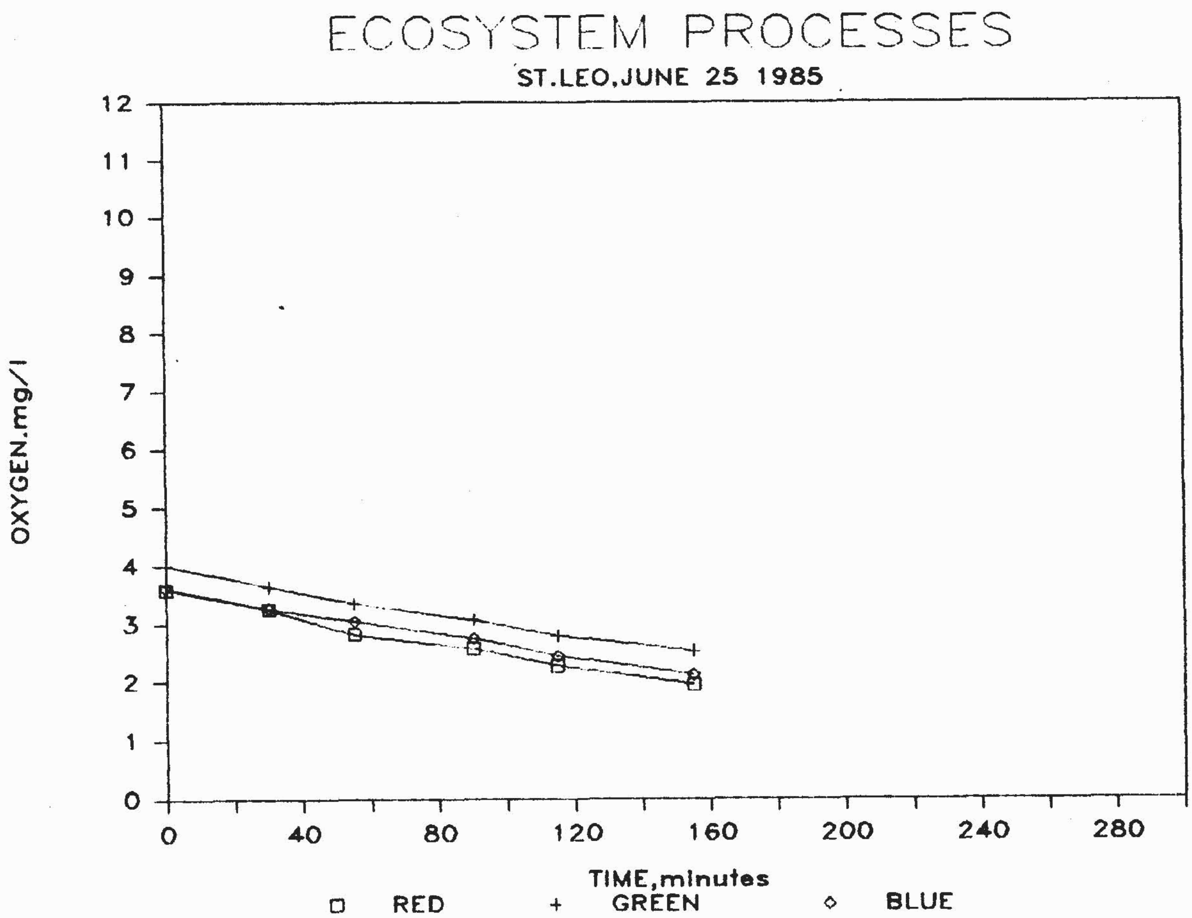
ECOSYSTEM PROCESSES
R-78.MAY 7 1985
SI(OH)4/uM-SI
100
90
80
70
60
50
40
30
20
10
0
0
40
80
120
160
200
240
280
TIME,minutes
GREEN
RED
BLUE

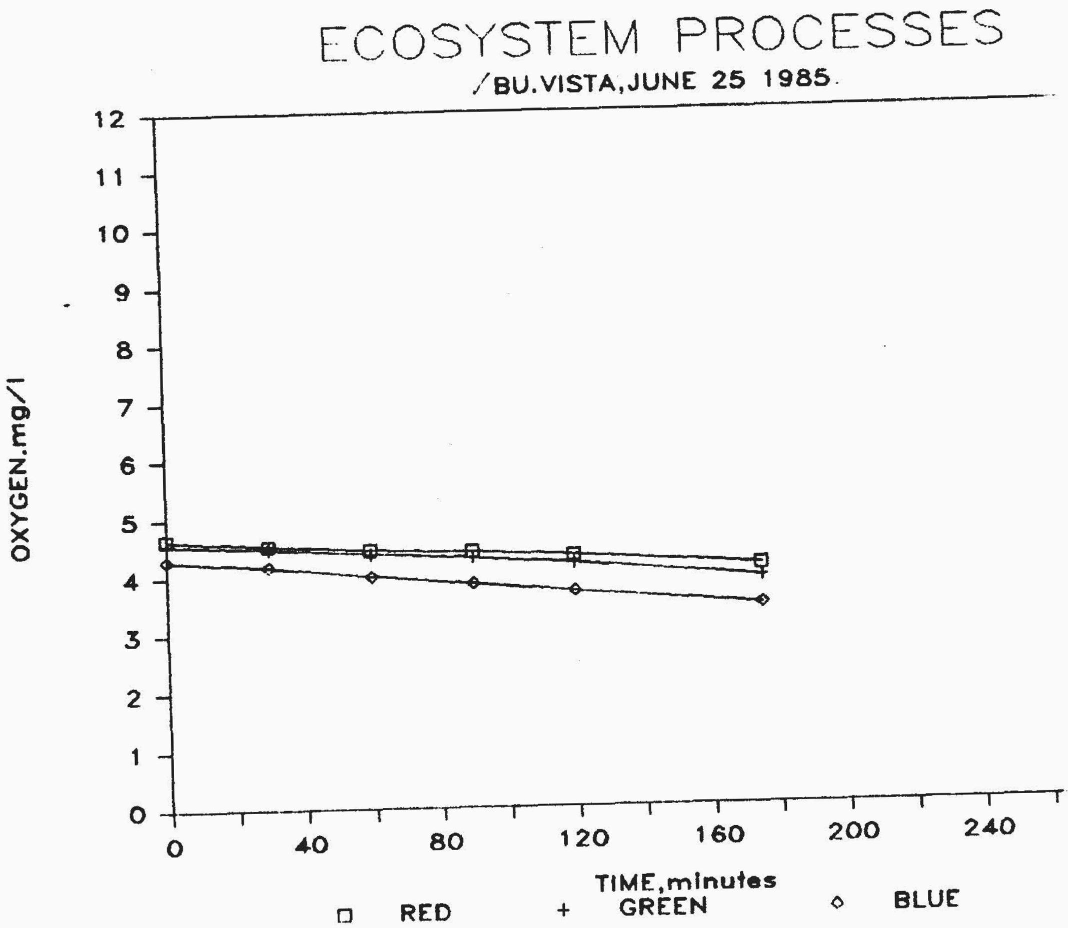
No. 9-110



ECOSYSTEM PROCESSES
STILL PD,MAY 8 1985
SI(OH)4/uM-SI
100
90
80
70
60
50
40
30
20
10
0
0
40
80
120
160
200
240
280
TIME,minutes
GREEN
RED
BLUE

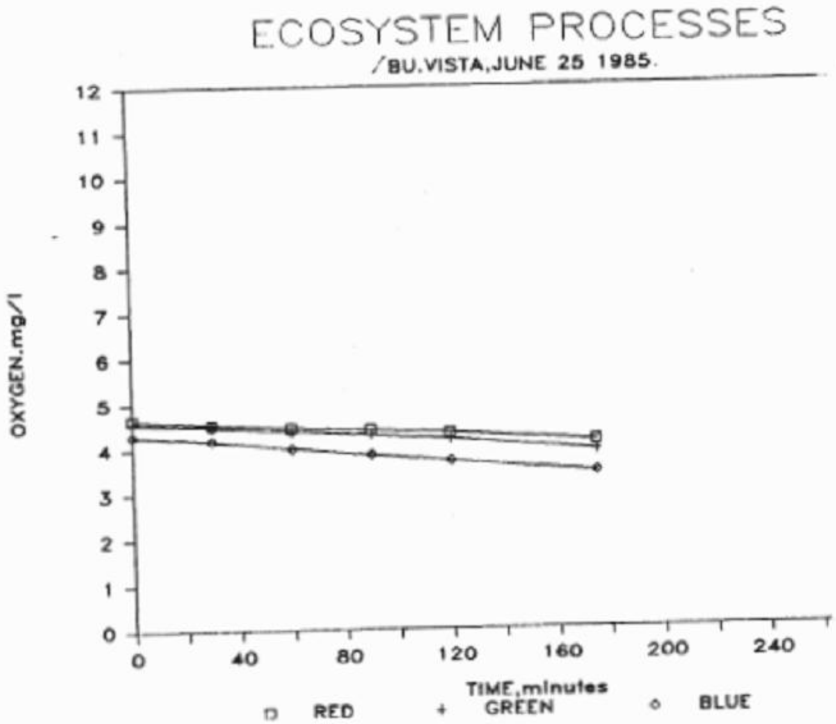
No. 9-111


ECOSYSTEM PROCESSES
ST.LEO,JUNE 25 1985
OXYGEN,mg/l
0
1
2
3
4
5
6
7
8
9
10
11
12
0
40
80
120
160
200
240
280
TIME,minutes
RED
GREEN
BLUE

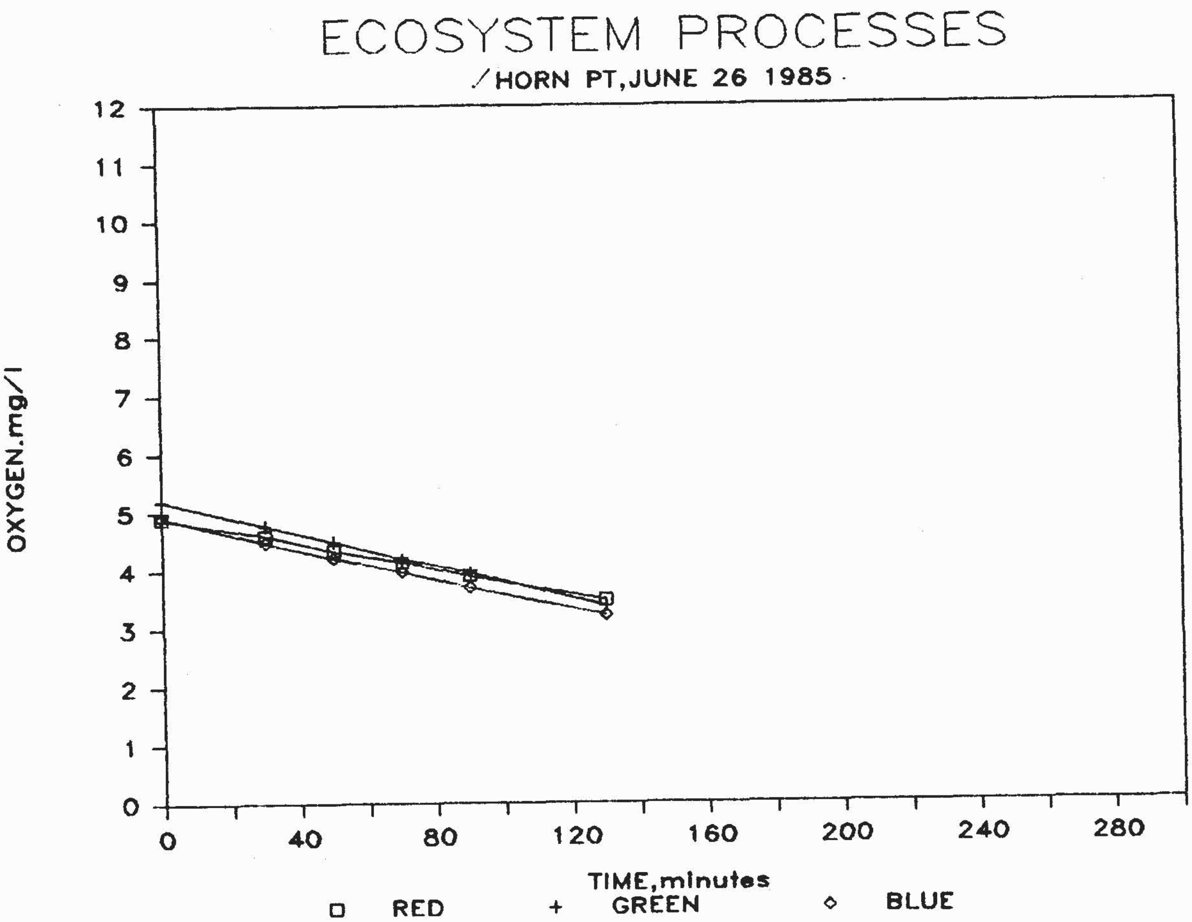


ECOSYSTEM PROCESSES
/BU.VISTA,JUNE 25 1985.
OXYGEN.mg/l
12
11
10
9
8
7
6
5
4
3
2
1
0
0
40
80
120
160
200
240
TIME,minutes
RED
GREEN
BLUE

No. 9-112

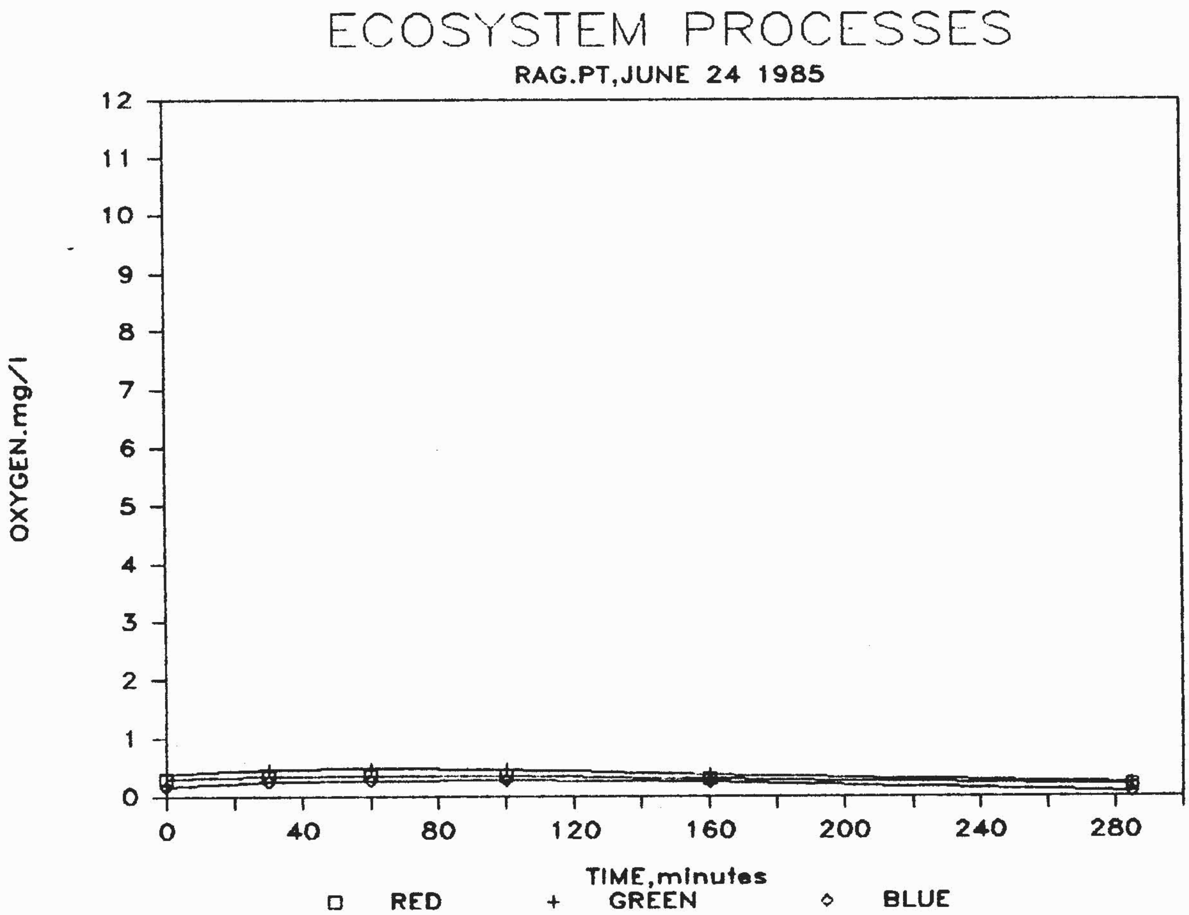

ECOSYSTEM PROCESSES
/BU.VISTA,JUNE 25 1985.
OXYGEN,mg/l
12
11
10
9
8
7
6
5
4
3
2
1
0
0
40
80
120
160
200
240
TIME,minutes
RED
GREEN
BLUE

No. 9-113



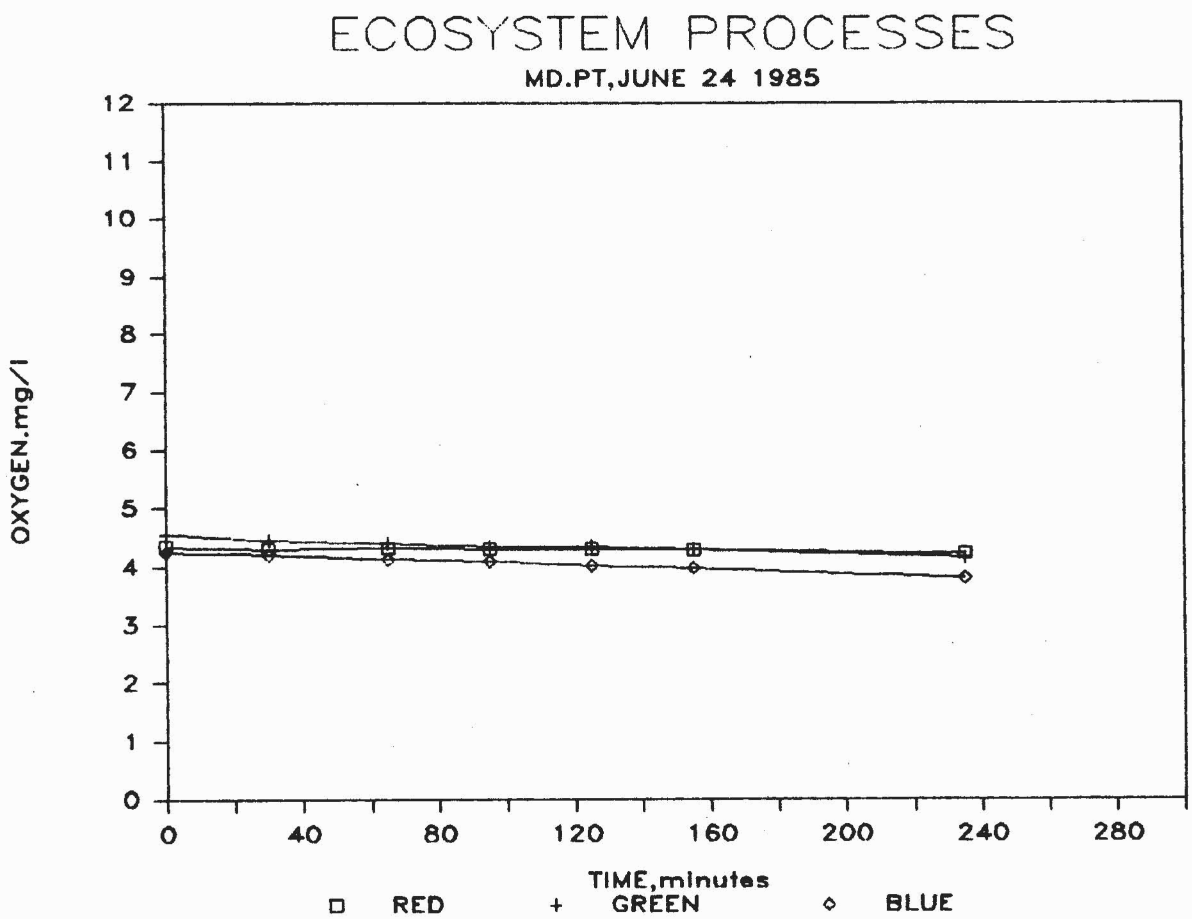
ECOSYSTEM PROCESSES
/HORN PT, JUNE 26 1985
OXYGEN.mg/l
12
11
10
9
8
7
6
5
4
3
2
1
0
0
40
80
120
160
200
240
280
TIME, minutes
RED
GREEN
BLUE

No. 9-114



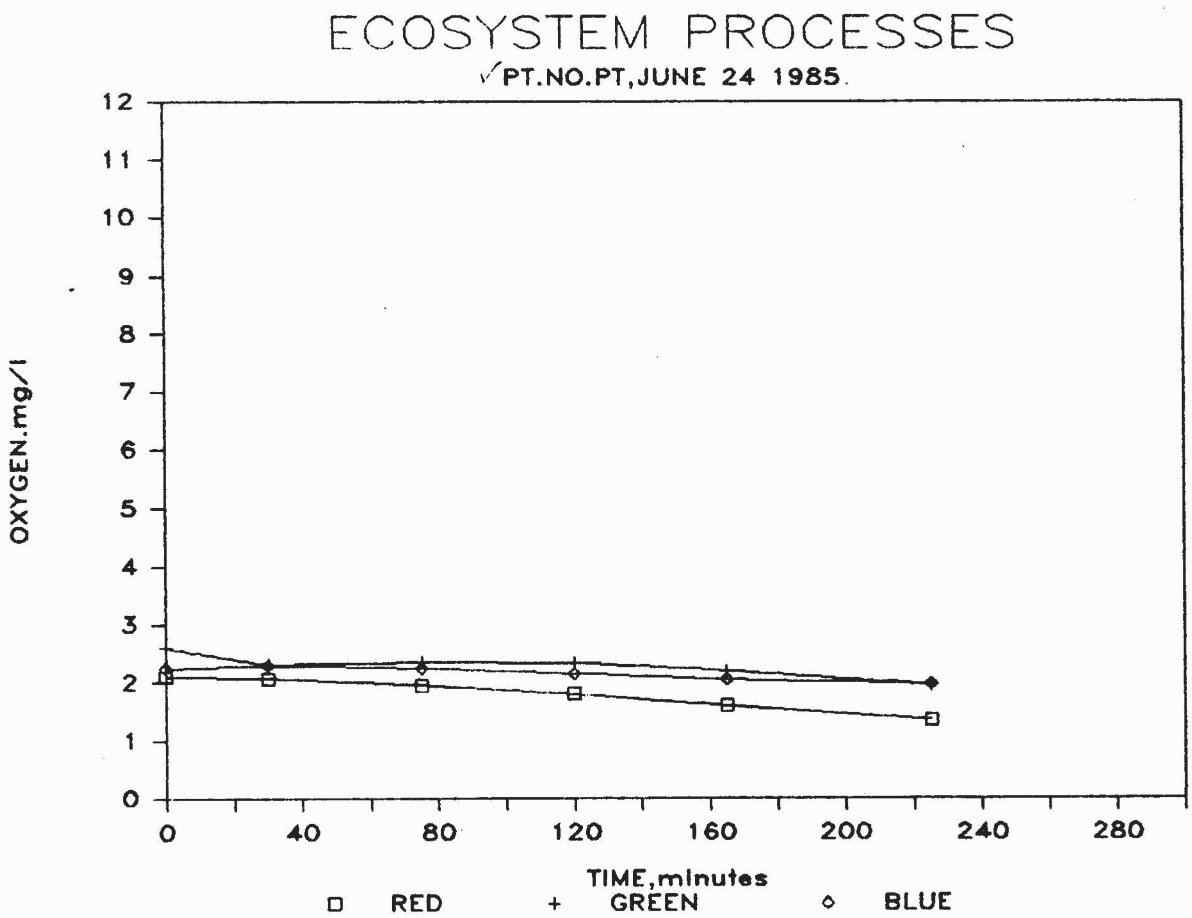
ECOSYSTEM PROCESSES
RAG.PT,JUNE 24 1985
OXYGEN.mg/l
12
11
10
9
8
7
6
5
4
3
2
1
0
0
40
80
120
160
200
240
280
TIME,minutes
RED
GREEN
BLUE

No. 9-115

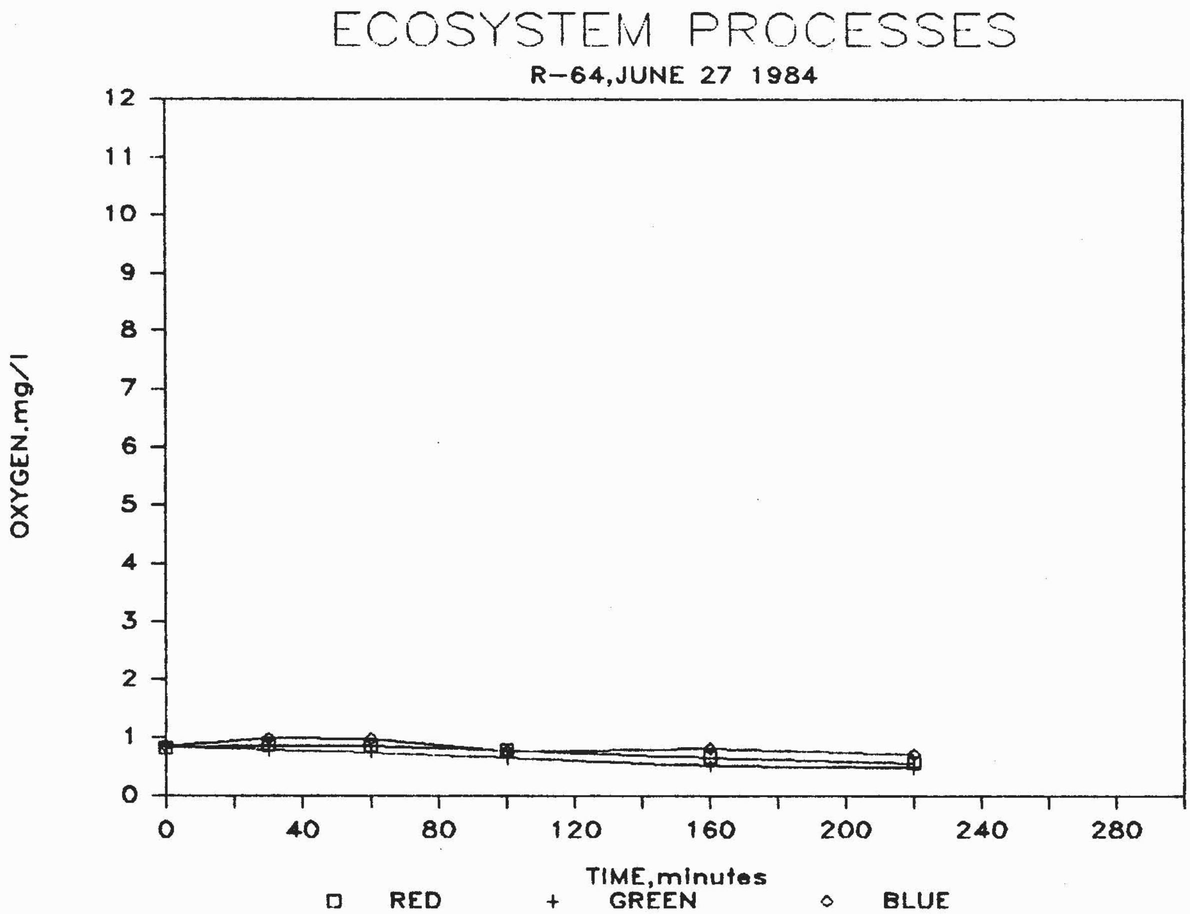


ECOSYSTEM PROCESSES
MD.PT,JUNE 24 1985
OXYGEN,mg/l
0
1
2
3
4
5
6
7
8
9
10
11
12
0
40
80
120
160
200
240
280
TIME,minutes
□ RED
+ GREEN
◇ BLUE

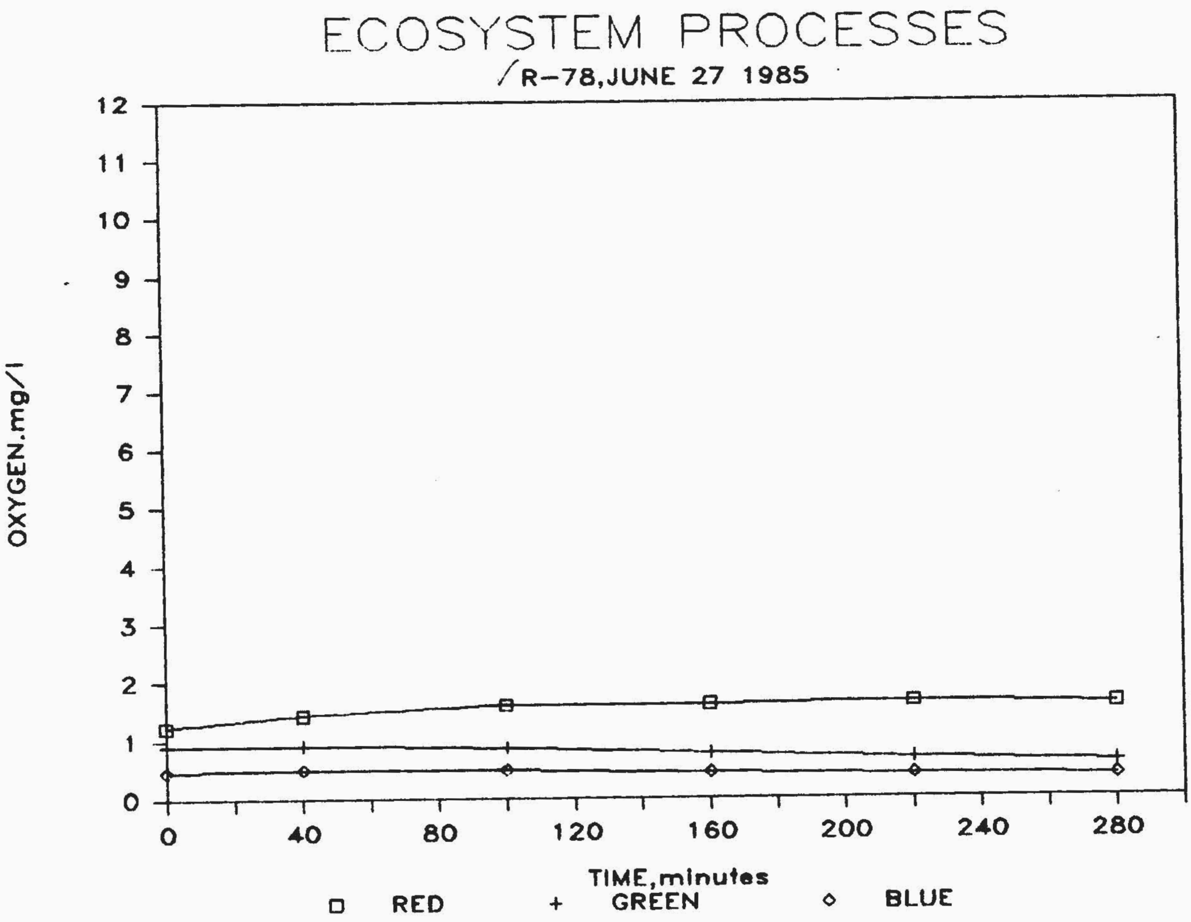
No. 9-116



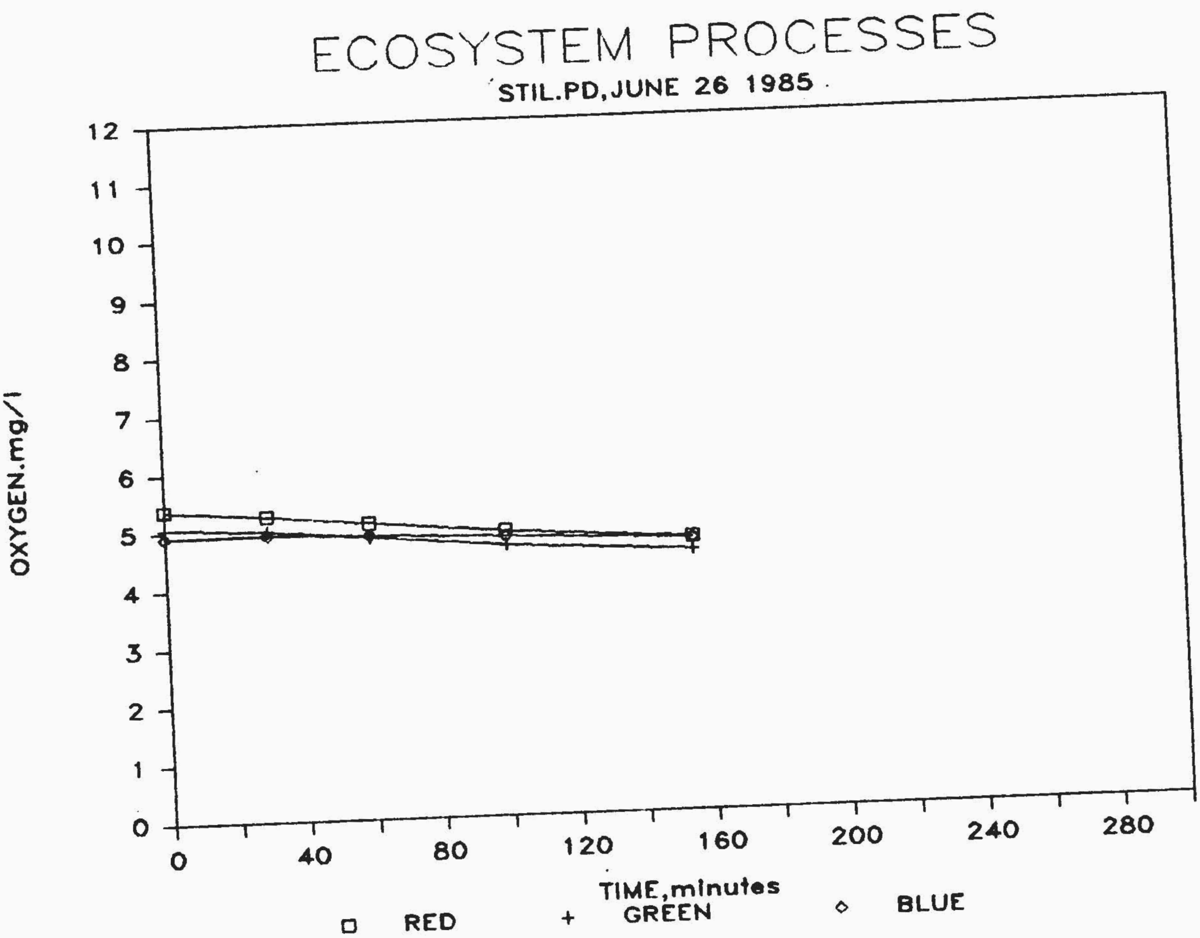
ECOSYSTEM PROCESSES
PT.NO.PT, JUNE 24 1985
OXYGEN.mg/l
12
11
10
9
8
7
6
5
4
3
2
1
0
0
40
80
120
160
200
240
280
TIME, minutes
RED
GREEN
BLUE


ECOSYSTEM PROCESSES
R-64,JUNE 27 1984
OXYGEN.mg/l
12
11
10
9
8
7
6
5
4
3
2
1
0
0
40
80
120
160
200
240
280
TIME,minutes
RED
GREEN
BLUE

No. 9-118

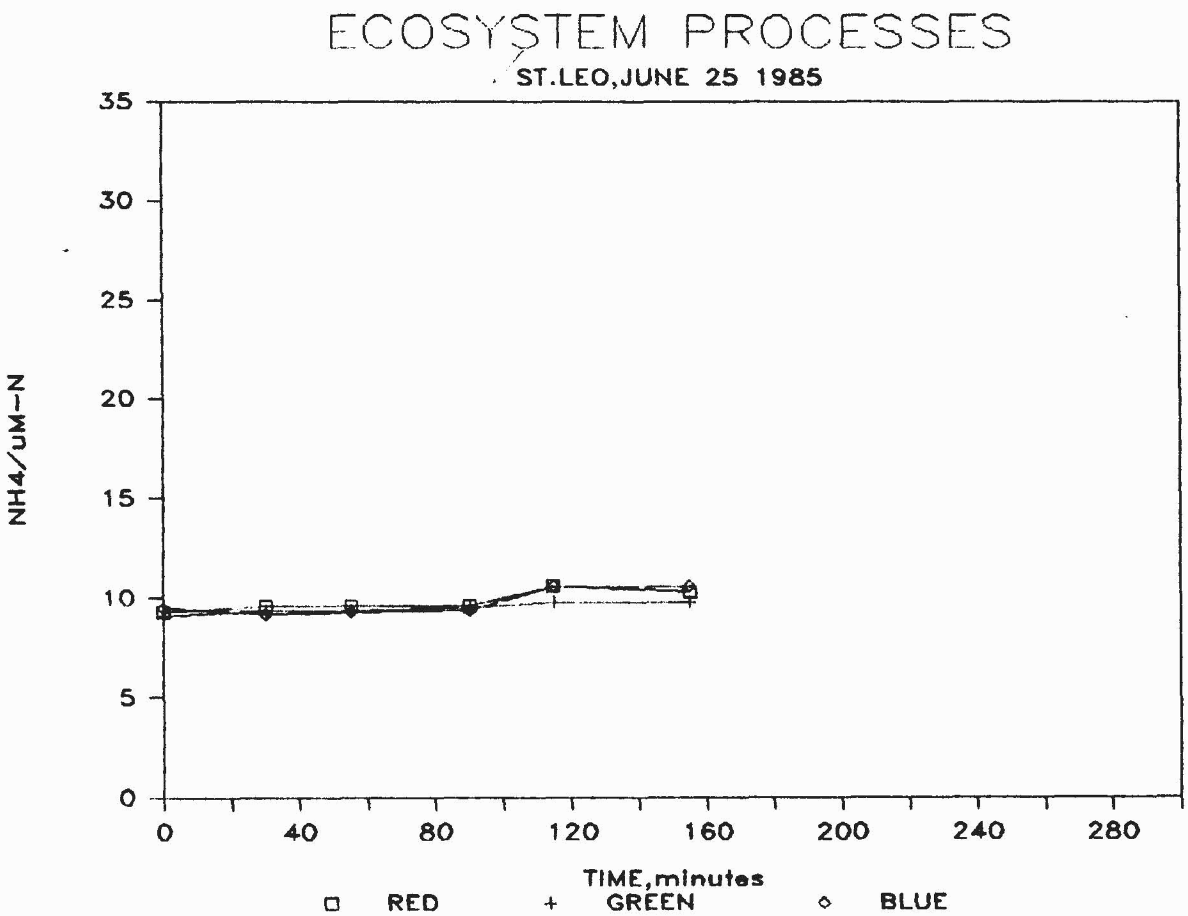

ECOSYSTEM PROCESSES
R-78, JUNE 27 1985
OXYGEN.mg/l
12
11
10
9
8
7
6
5
4
3
2
1
0
0
40
80
120
160
200
240
280
TIME, minutes
RED
GREEN
BLUE

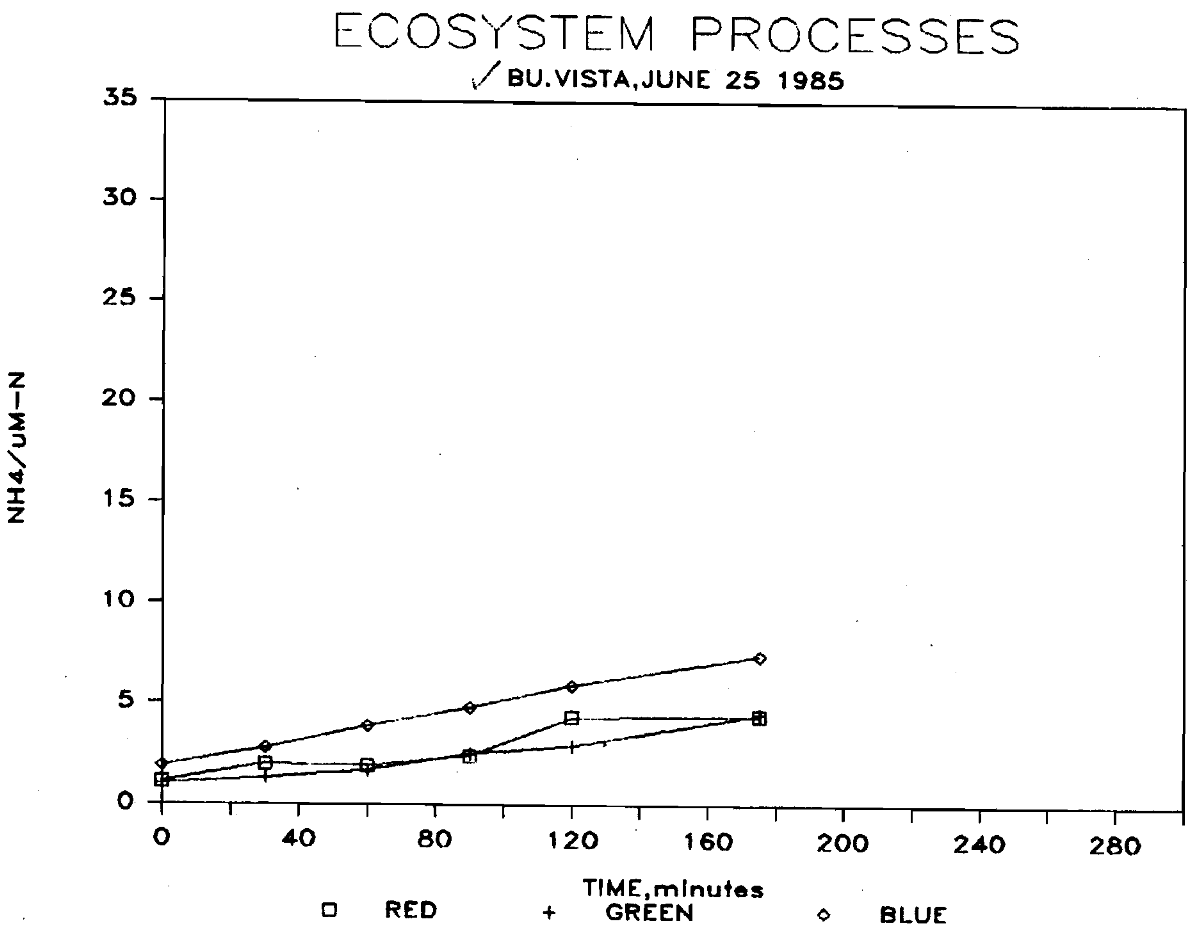
No. 9-119



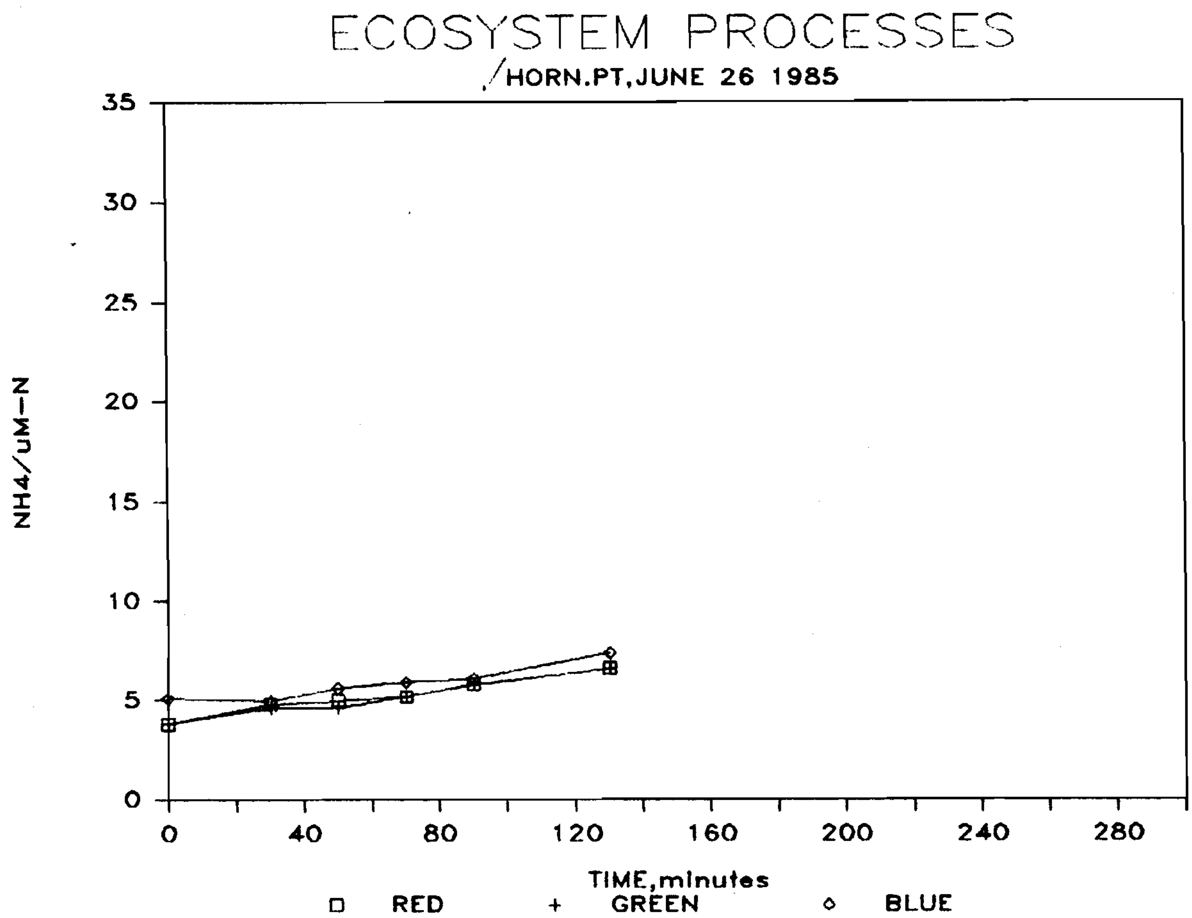
ECOSYSTEM PROCESSES
STIL.PD, JUNE 26 1985
OXYGEN, mg/l
12
11
10
9
8
7
6
5
4
3
2
1
0
0
40
80
120
160
200
240
280
TIME, minutes
RED
GREEN
BLUE

No. 9-120

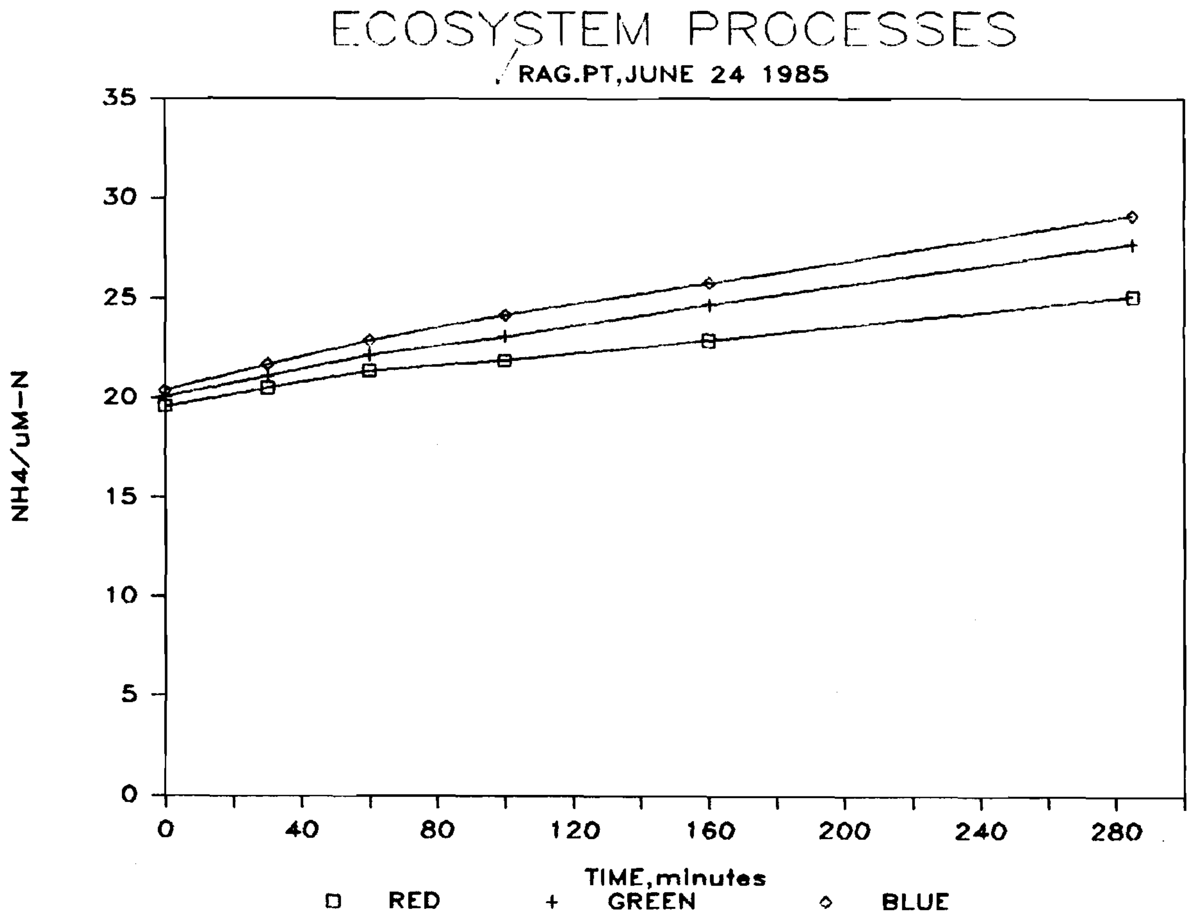

ECOSYSTEM PROCESSES
ST.LEO,JUNE 25 1985
NH4/uM-N
35
30
25
20
15
10
5
0
0
40
80
120
160
200
240
280
TIME,minutes
RED
GREEN
BLUE

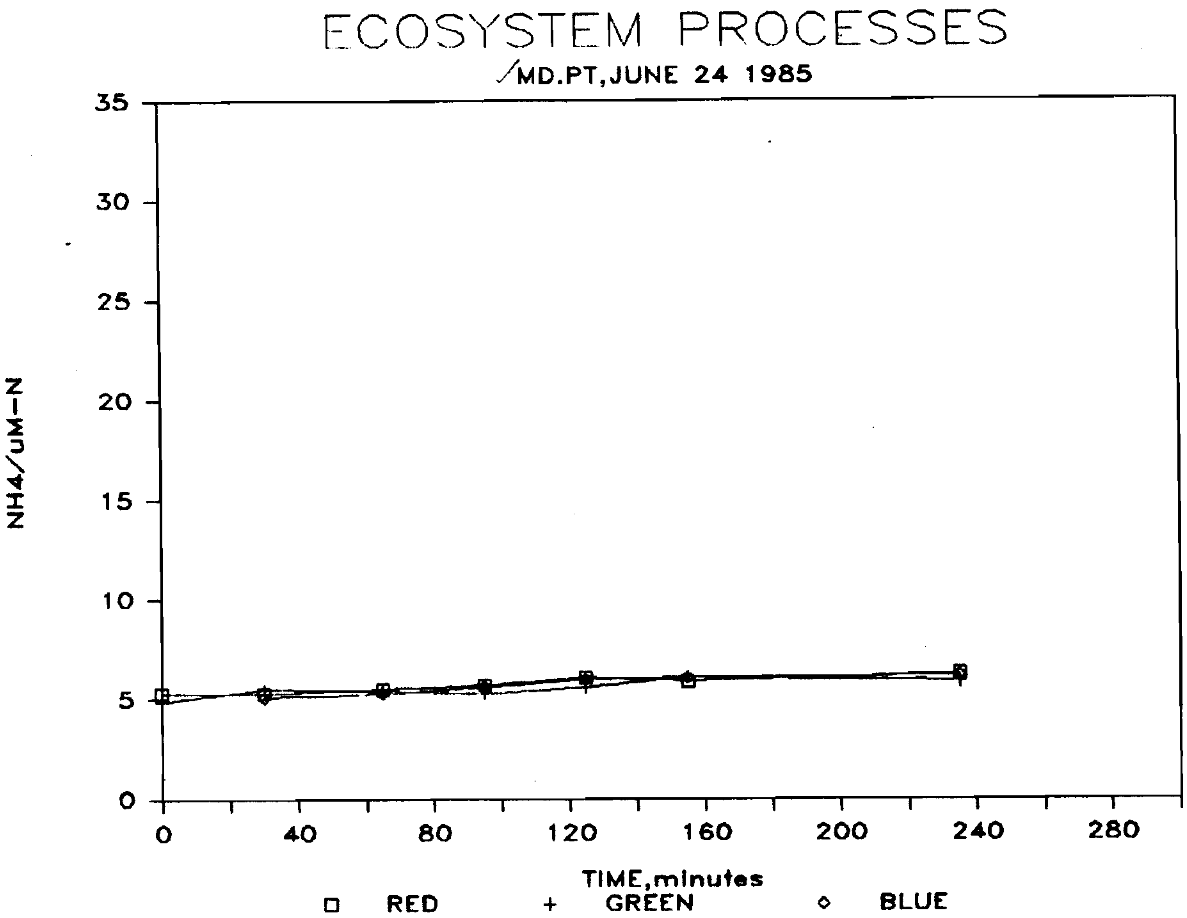


ECOSYSTEM PROCESSES
BU.VISTA,JUNE 25 1985
NH4/uM-N
35
30
25
20
15
10
5
0
0
40
80
120
160
200
240
280
TIME,minutes
RED
GREEN
BLUE

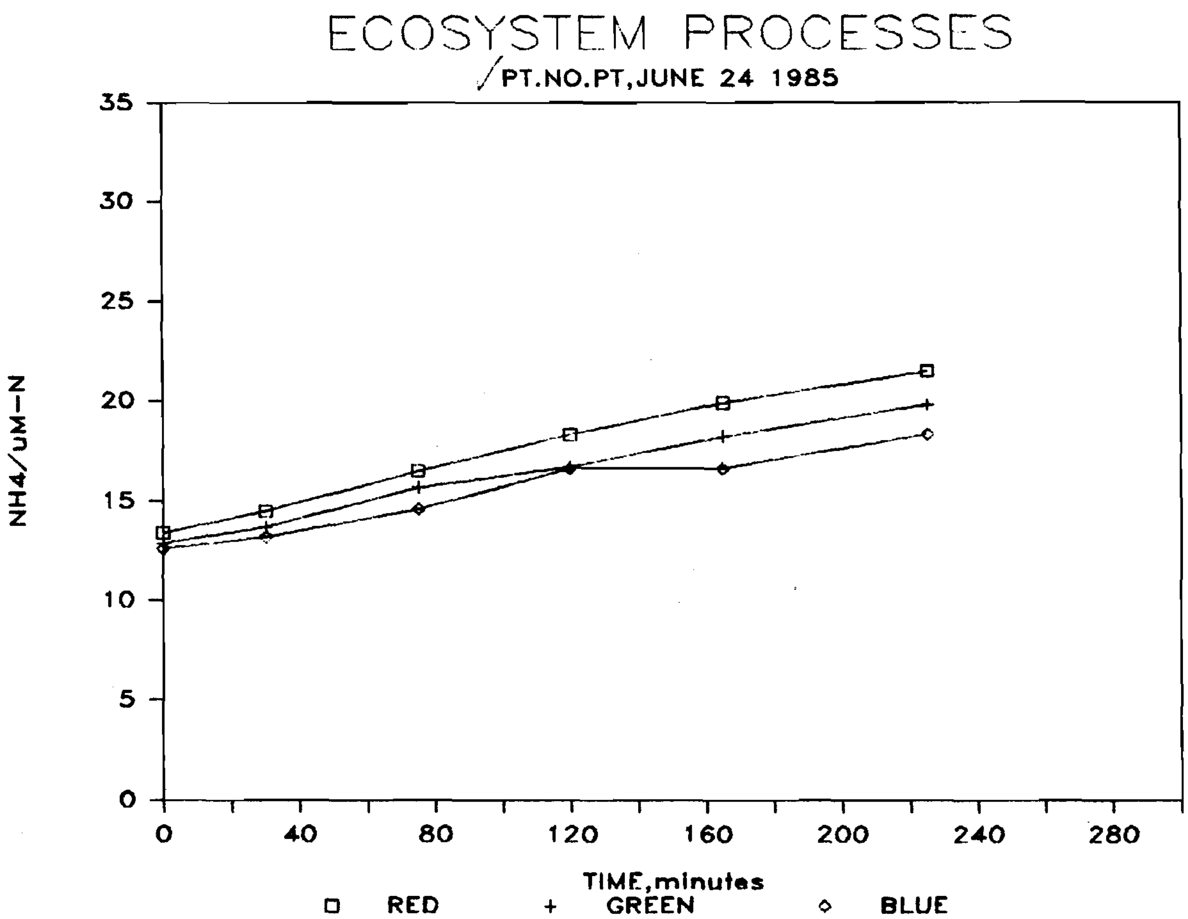


ECOSYSTEM PROCESSES
HORN.PT,JUNE 26 1985
NH4/uM-N
35
30
25
20
15
10
5
0
0
40
80
120
160
200
240
280
TIME,minutes
RED
GREEN
BLUE

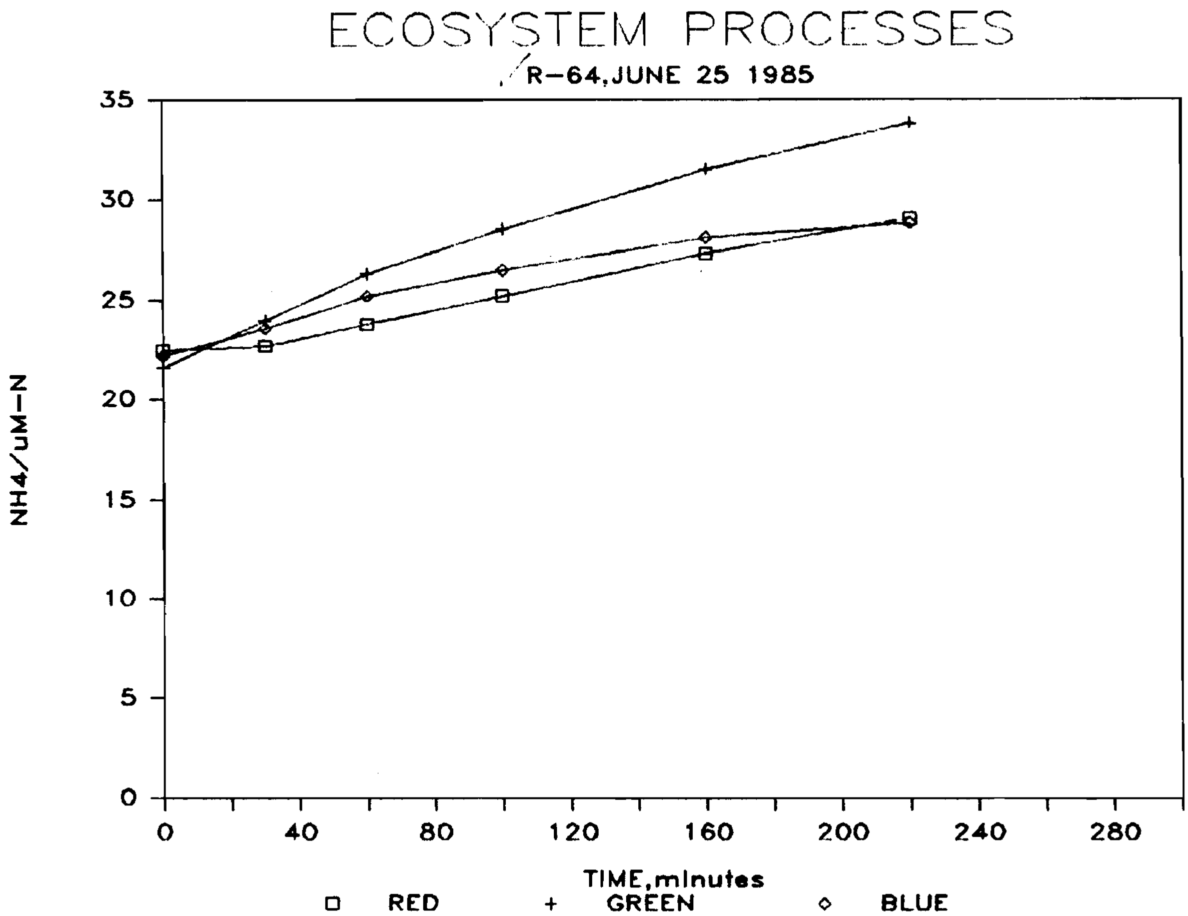

ECOSYSTEM PROCESSES
RAG.PT,JUNE 24 1985
NH4/uM-N
35
30
25
20
15
10
5
0
0
40
80
120
160
200
240
280
TIME,minutes
RED
GREEN
BLUE


ECOSYSTEM PROCESSES
MD.PT,JUNE 24 1985
NH4/uM-N
35
30
25
20
15
10
5
0
0
40
80
120
160
200
240
280
TIME,minutes
RED
GREEN
BLUE

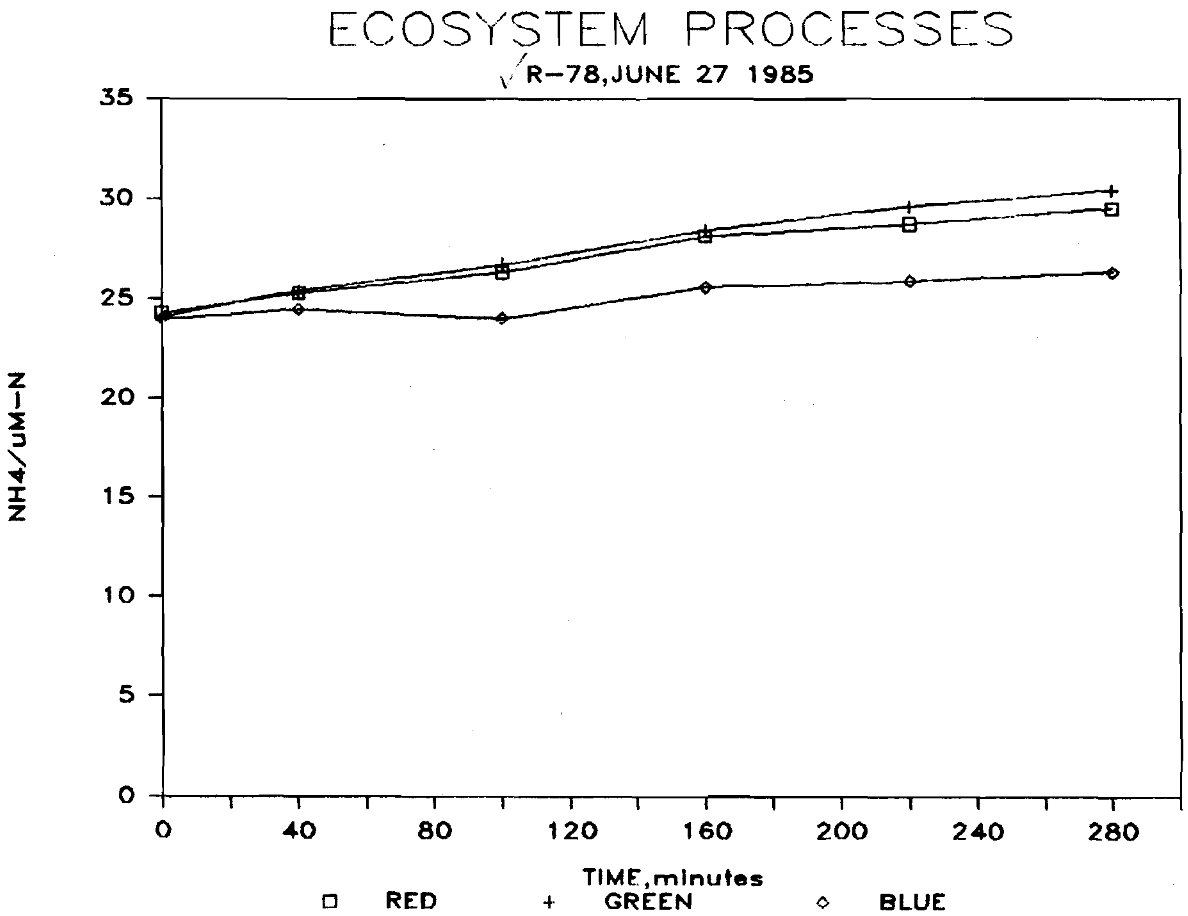
No. 9-125



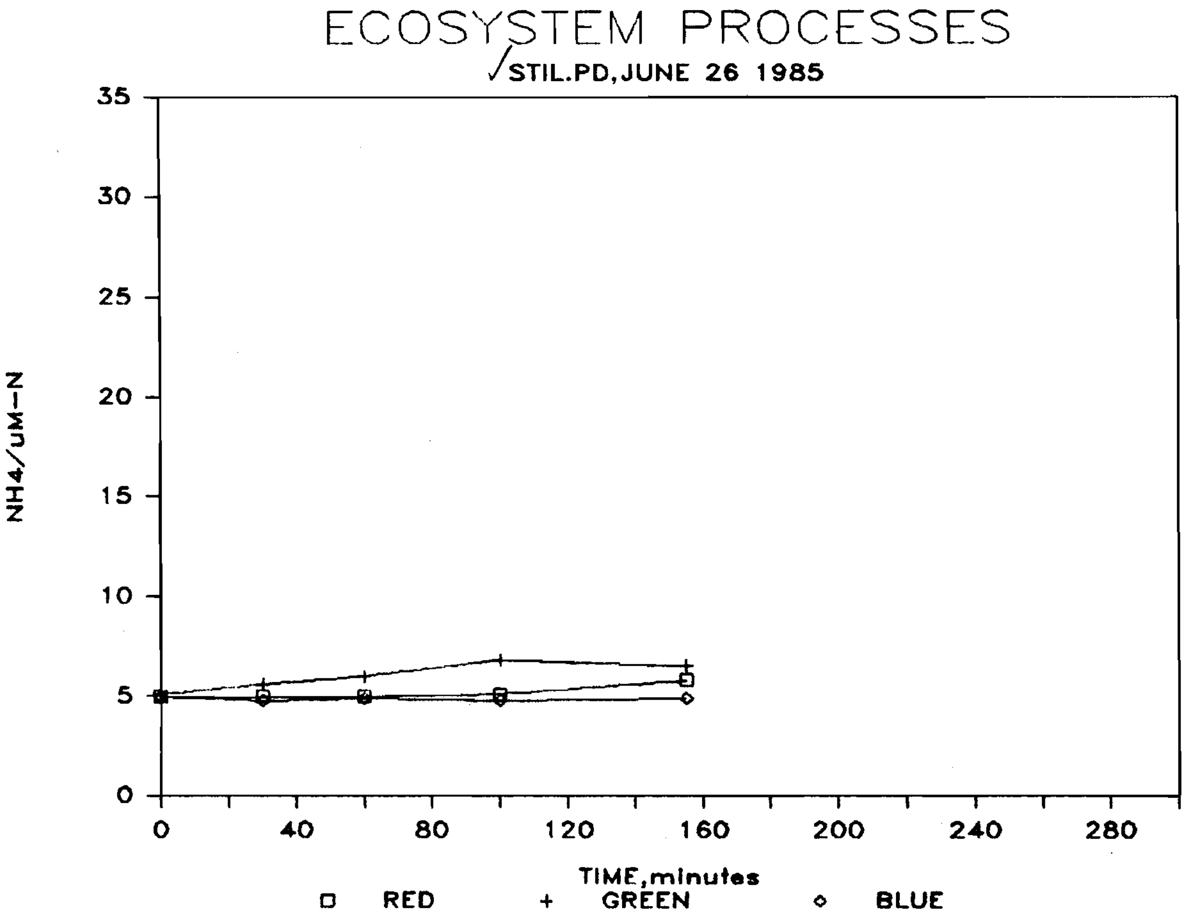
ECOSYSTEM PROCESSES
PT.NO.PT, JUNE 24 1985
NH4/uM-N
35
30
25
20
15
10
5
0
0
40
80
120
160
200
240
280
TIME, minutes
RED
GREEN
BLUE



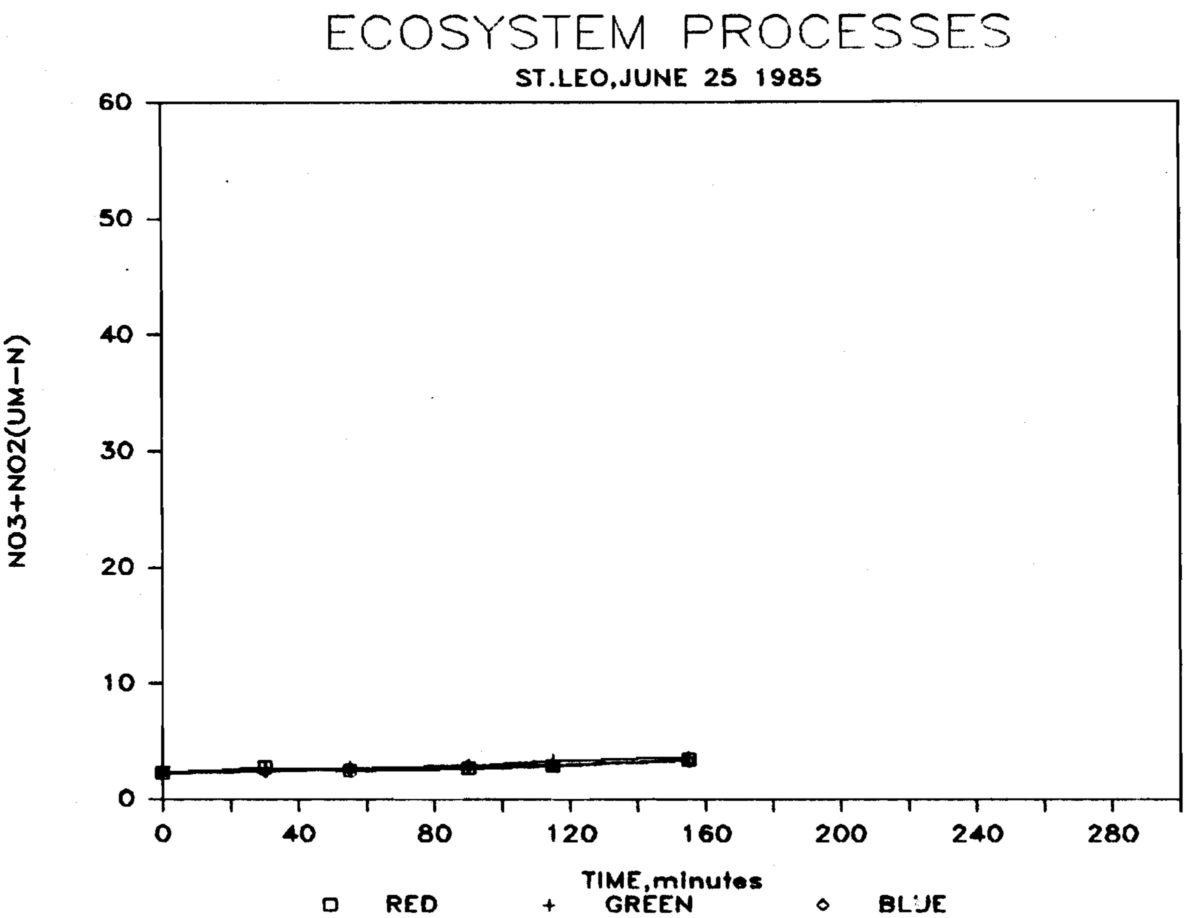
ECOSYSTEM PROCESSES
R-64,JUNE 25 1985
35
30
25
20
15
10
5
0
NH4/uM-N
0
40
80
120
160
200
240
280
TIME,minutes
RED
GREEN
BLUE

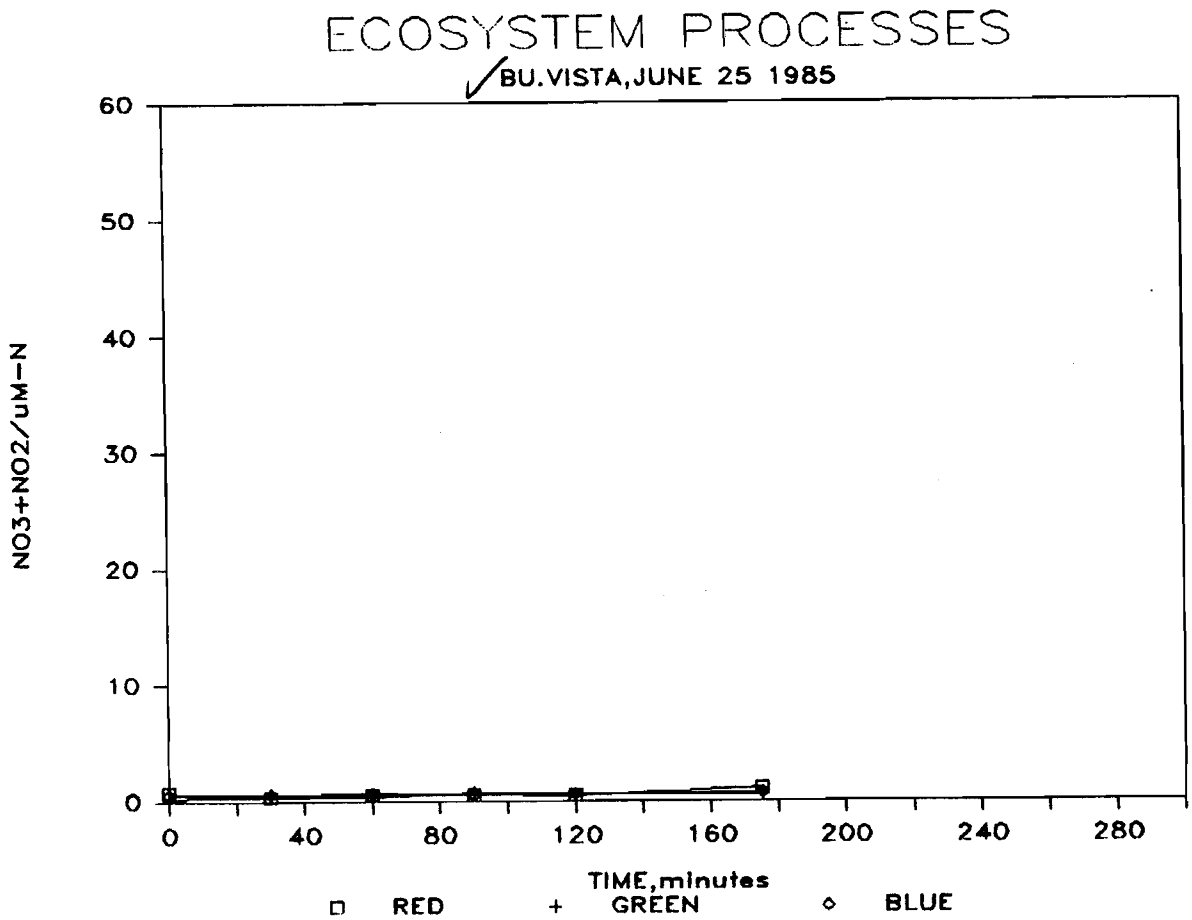

ECOSYSTEM PROCESSES
R-78, JUNE 27 1985
NH4/uM-N
35
30
25
20
15
10
5
0
0
40
80
120
160
200
240
280
TIME, minutes
RED
GREEN
BLUE

No. 9-128

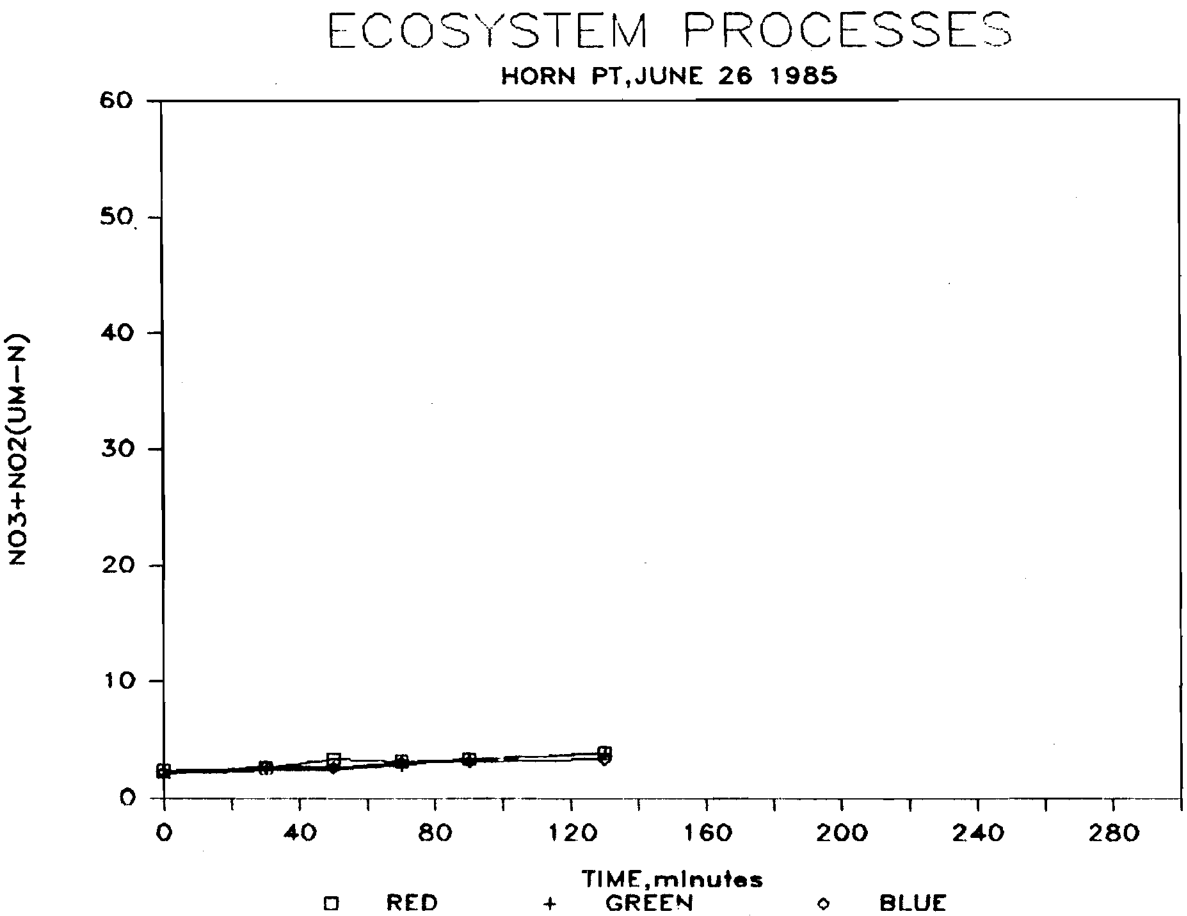


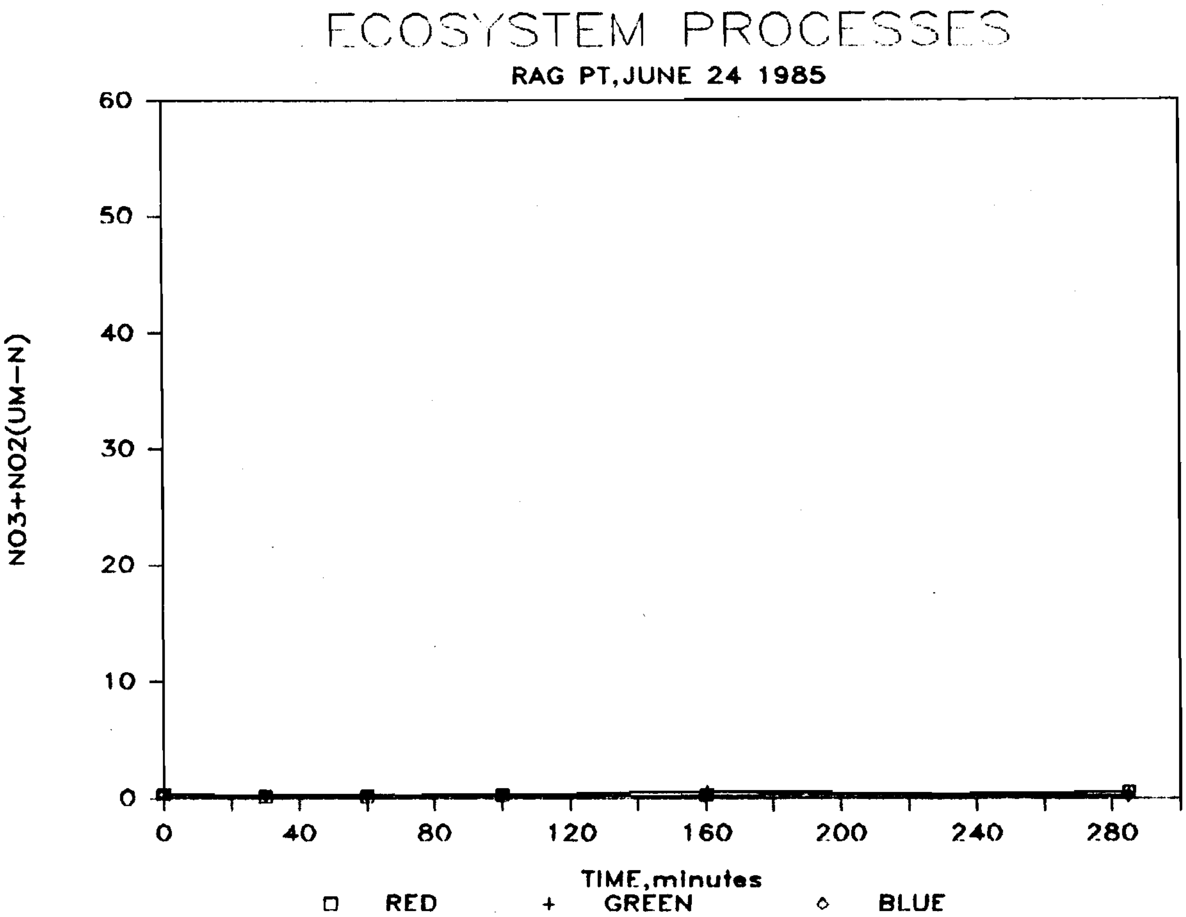
ECOSYSTEM PROCESSES
√STIL.PD,JUNE 26 1985
NH4/uM-N
35
30
25
20
15
10
5
0
0
40
80
120
160
200
240
280
TIME,minutes
RED
GREEN
BLUE

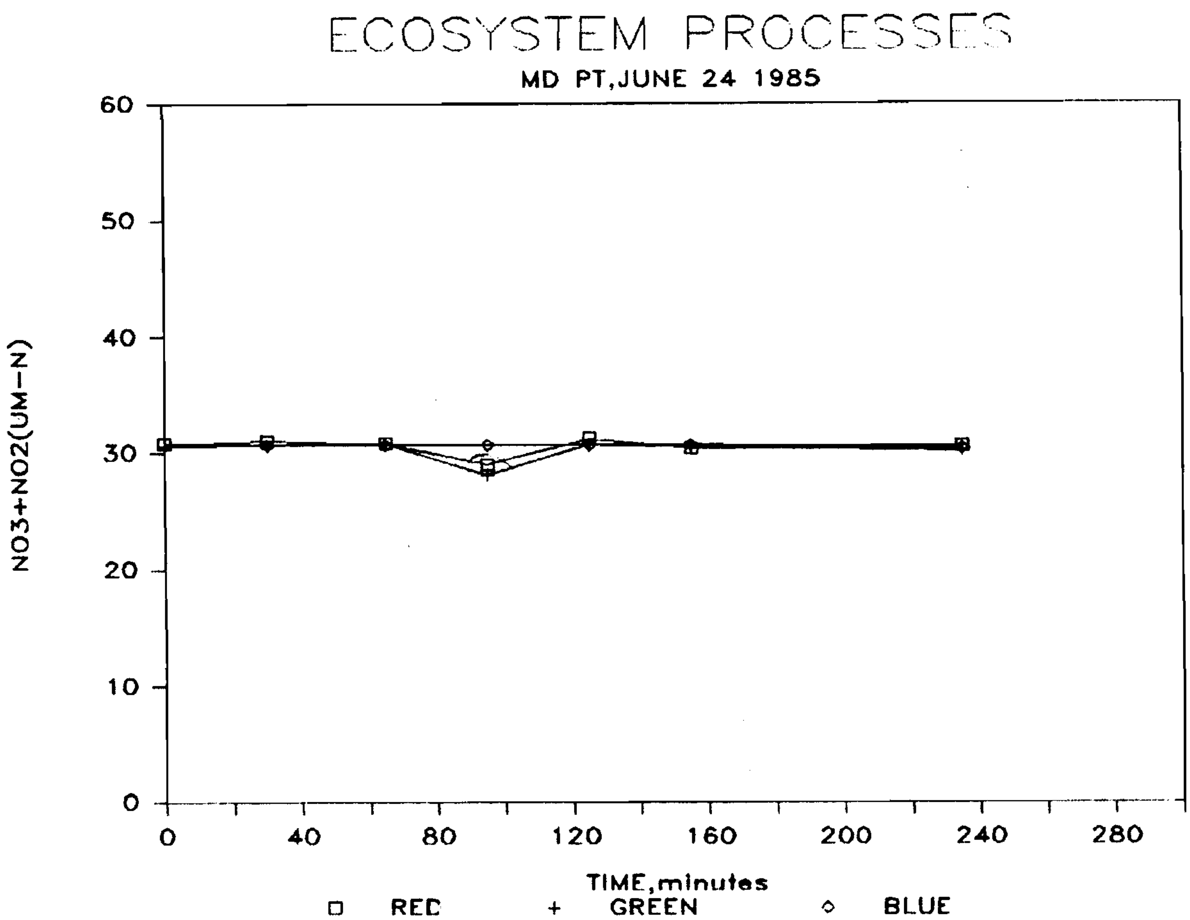

ECOSYSTEM PROCESSES
ST.LEO,JUNE 25 1985
NO3+NO2(UM-N)
60
50
40
30
20
10
0
0
40
80
120
160
200
240
280
TIME,minutes
RED
GREEN
BLUE



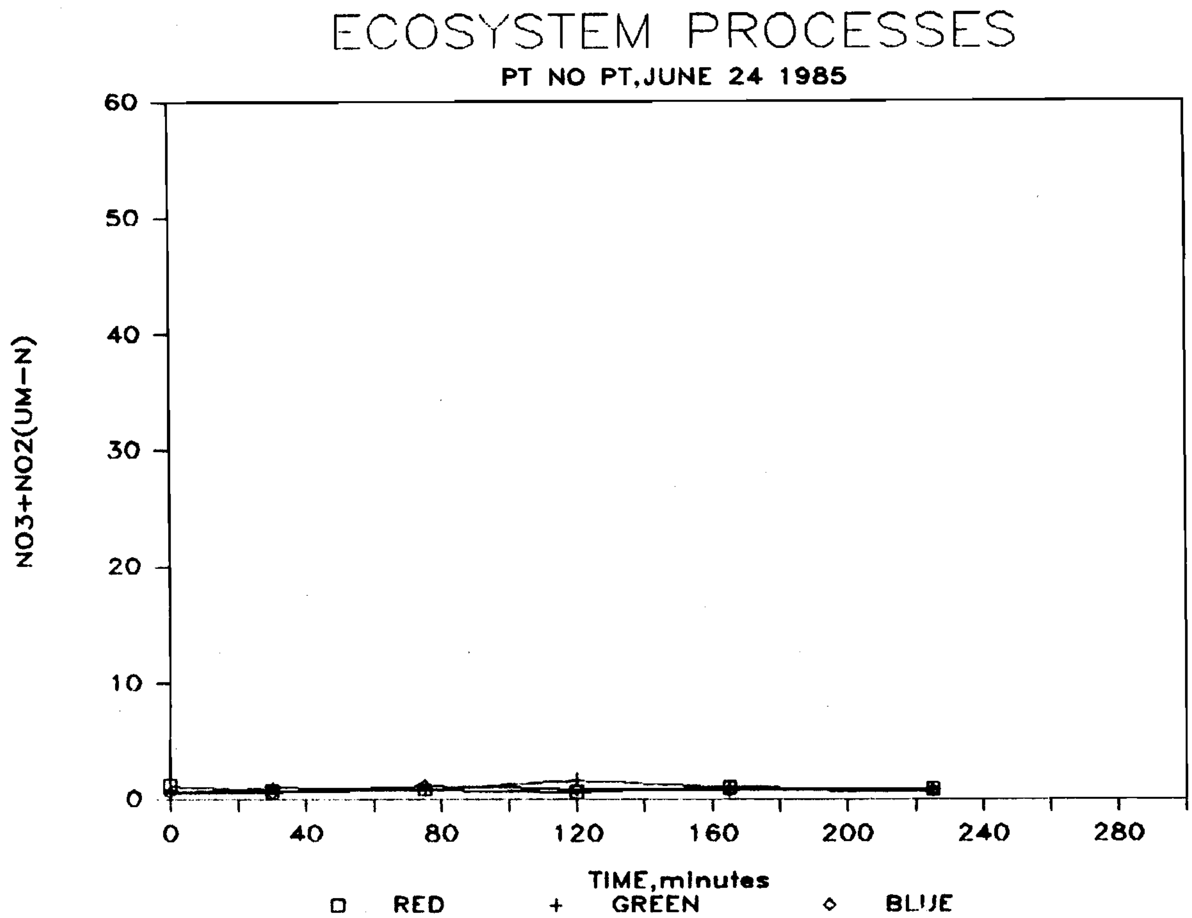
ECOSYSTEM PROCESSES
BU.VISTA, JUNE 25 1985
60
50
40
30
20
10
0
NO3+NO2/uM-N
0
40
80
120
160
200
240
280
TIME, minutes
RED
GREEN
BLUE


ECOSYSTEM PROCESSES
HORN PT, JUNE 26 1985
NO3+NO2(UM-N)
60
50
40
30
20
10
0
0
40
80
120
160
200
240
280
TIME, minutes
RED
GREEN
BLUE

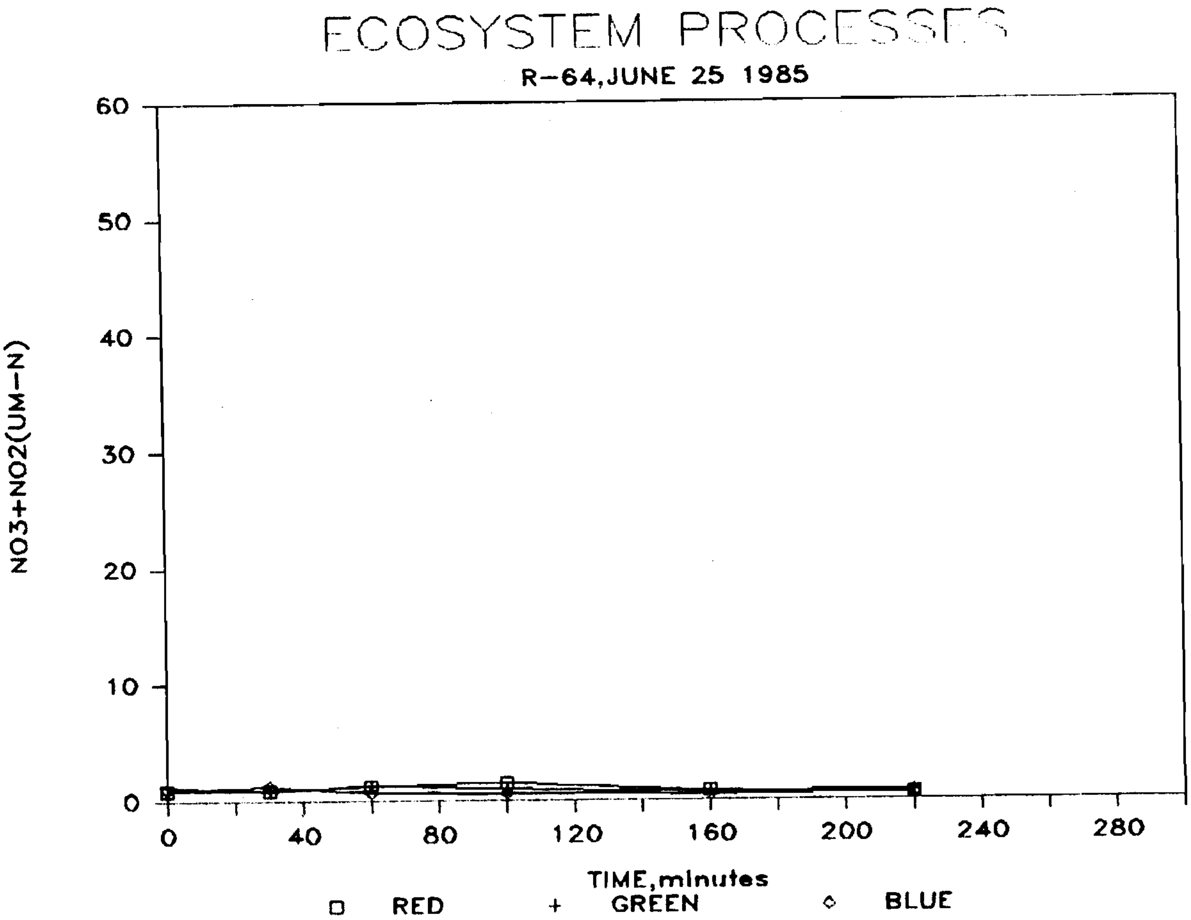

ECOSYSTEM PROCESSES
RAG PT, JUNE 24 1985
NO3+NO2(UM-N)
60
50
40
30
20
10
0
0
40
80
120
160
200
240
280
TIME, minutes
RED
GREEN
BLUE



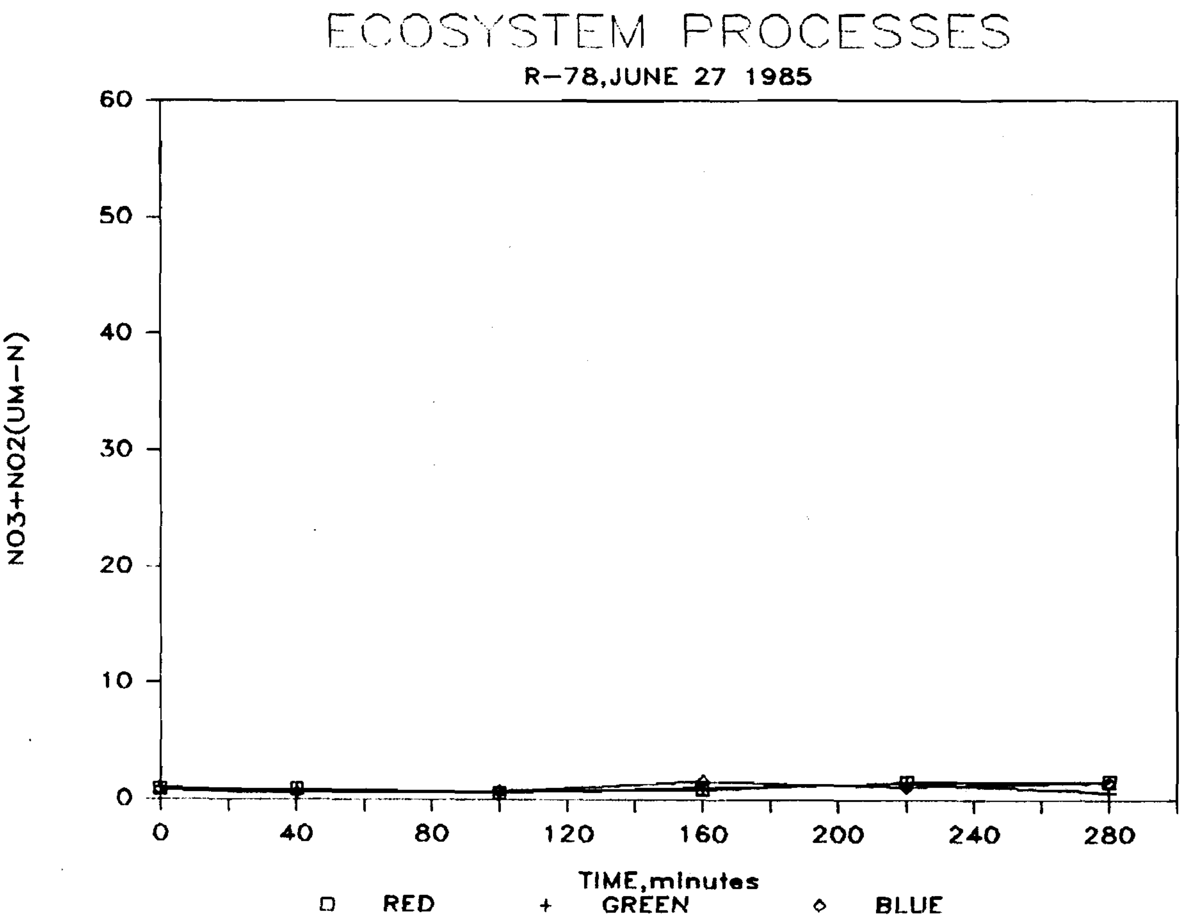
ECOSYSTEM PROCESSES
MD PT,JUNE 24 1985
NO3+NO2(UM-N)
60
50
40
30
20
10
0
0
40
80
120
160
200
240
280
TIME,minutes
REC
GREEN
BLUE


ECOSYSTEM PROCESSES
PT NO PT,JUNE 24 1985
NO3+NO2(UM-N)
60
50
40
30
20
10
0
0
40
80
120
160
200
240
280
TIME,minutes
RED
GREEN
BLUE

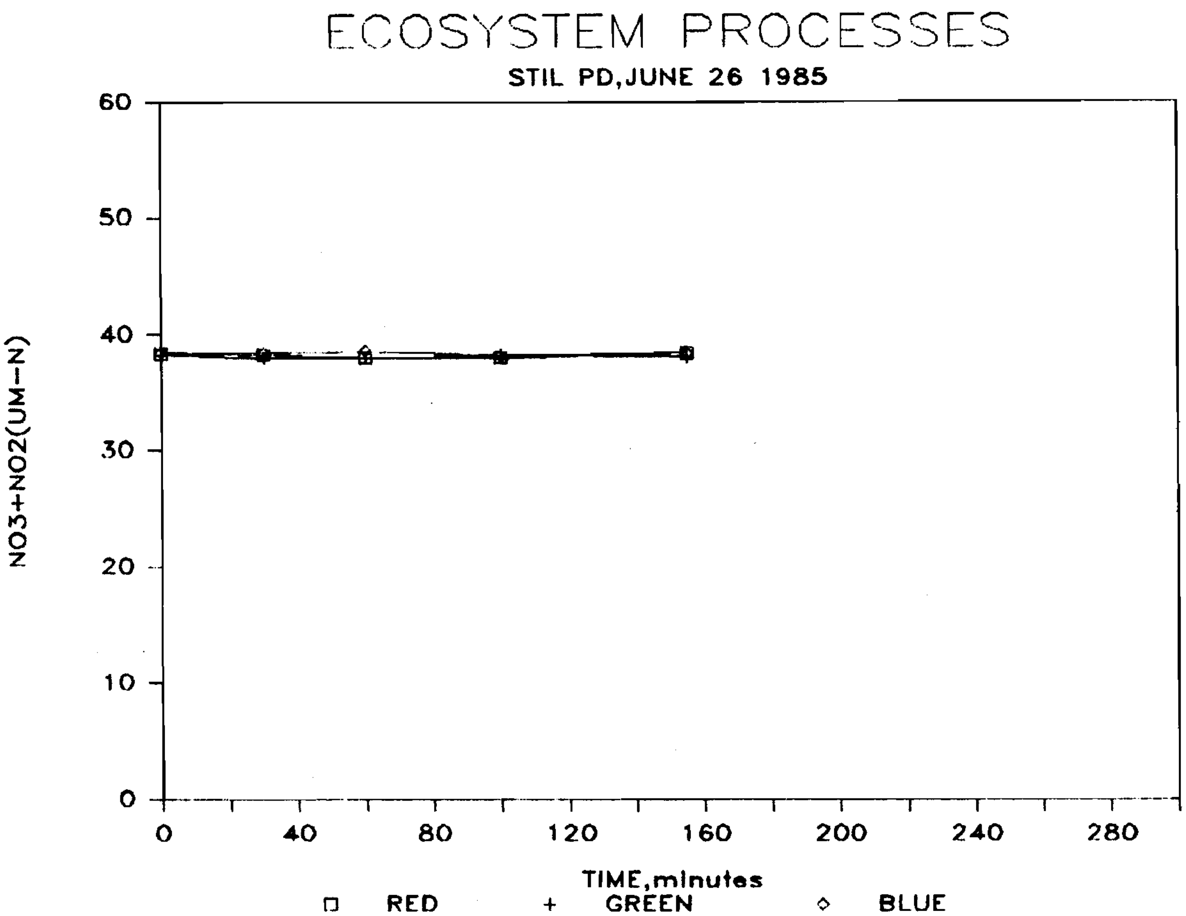
No. 9-135



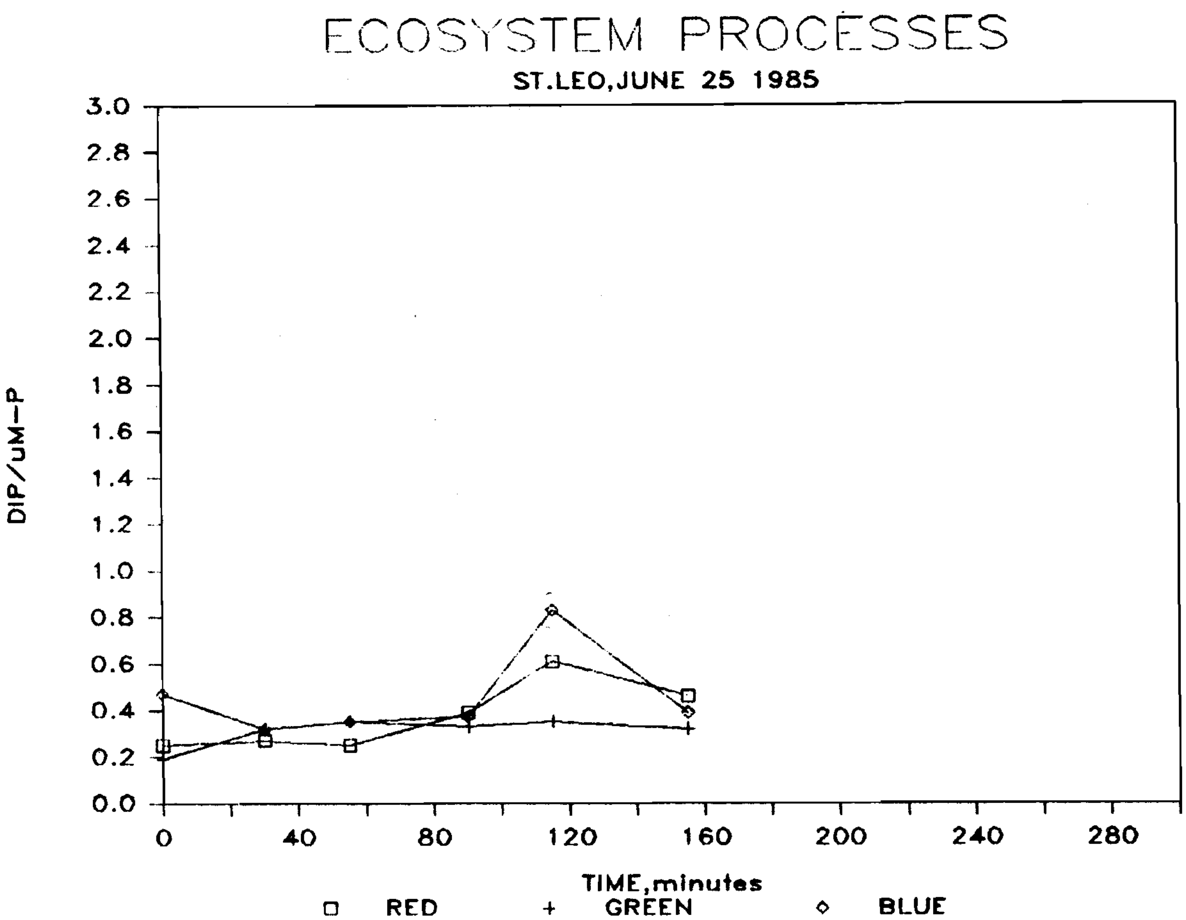
ECOSYSTEM PROCESSES
R-64,JUNE 25 1985
NO3+NO2(UM-N)
60
50
40
30
20
10
0
0
40
80
120
160
200
240
280
TIME,minutes
RED
GREEN
BLUE

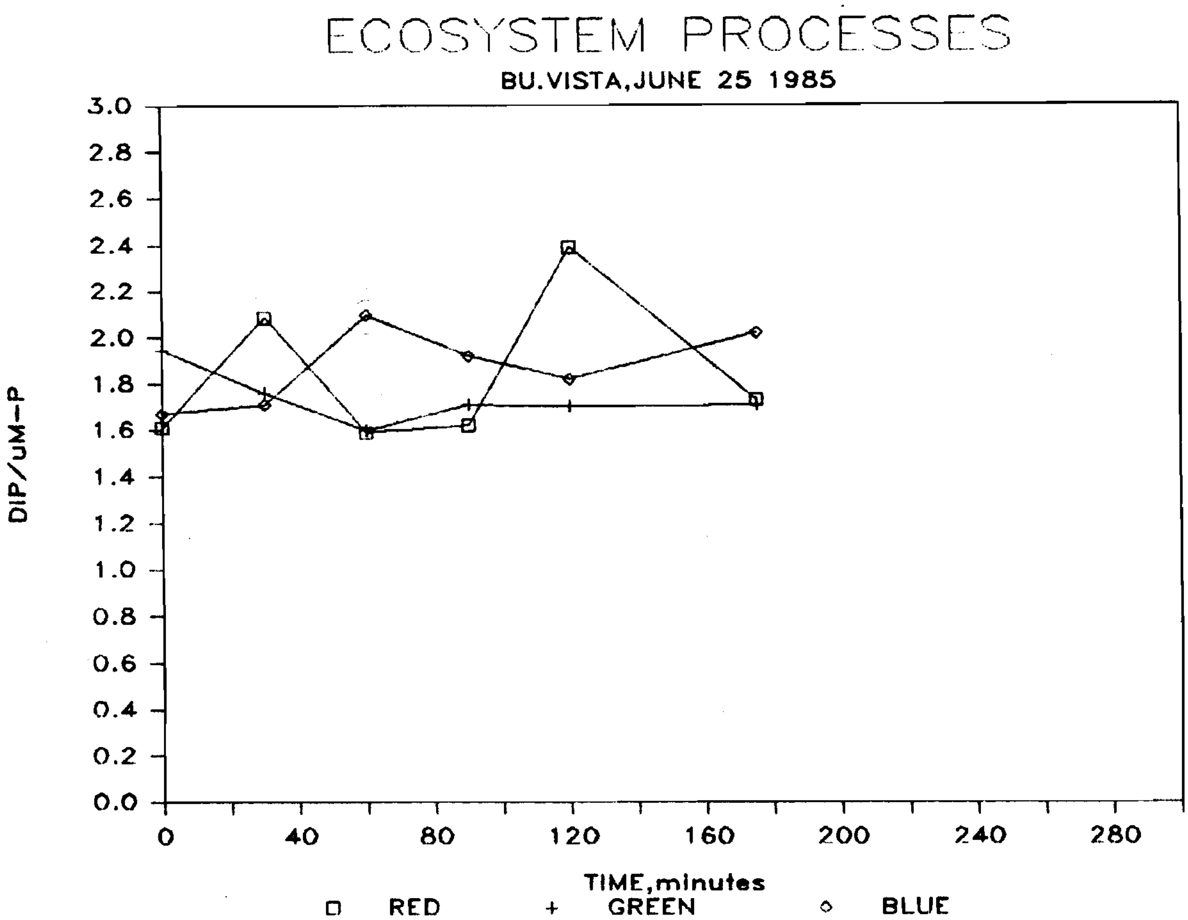

ECOSYSTEM PROCESSES
R-78,JUNE 27 1985
NO3+NO2(UM-N)
60
50
40
30
20
10
0
0
40
80
120
160
200
240
280
TIME,minutes
RED
GREEN
BLUE

No. 9-137

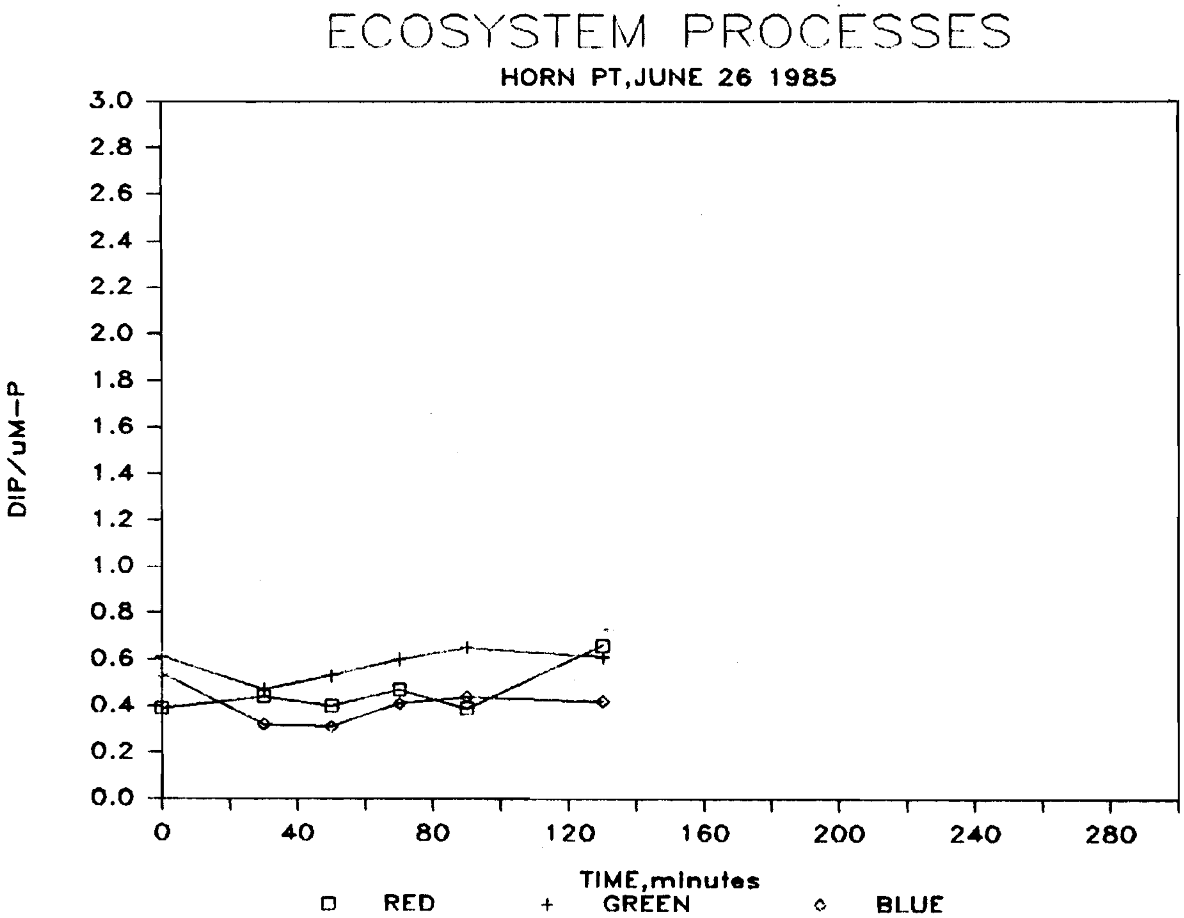


ECOSYSTEM PROCESSES
STIL PD,JUNE 26 1985
NO3+NO2(UM-N)
60
50
40
30
20
10
0
0
40
80
120
160
200
240
280
TIME,minutes
RED
GREEN
BLUE

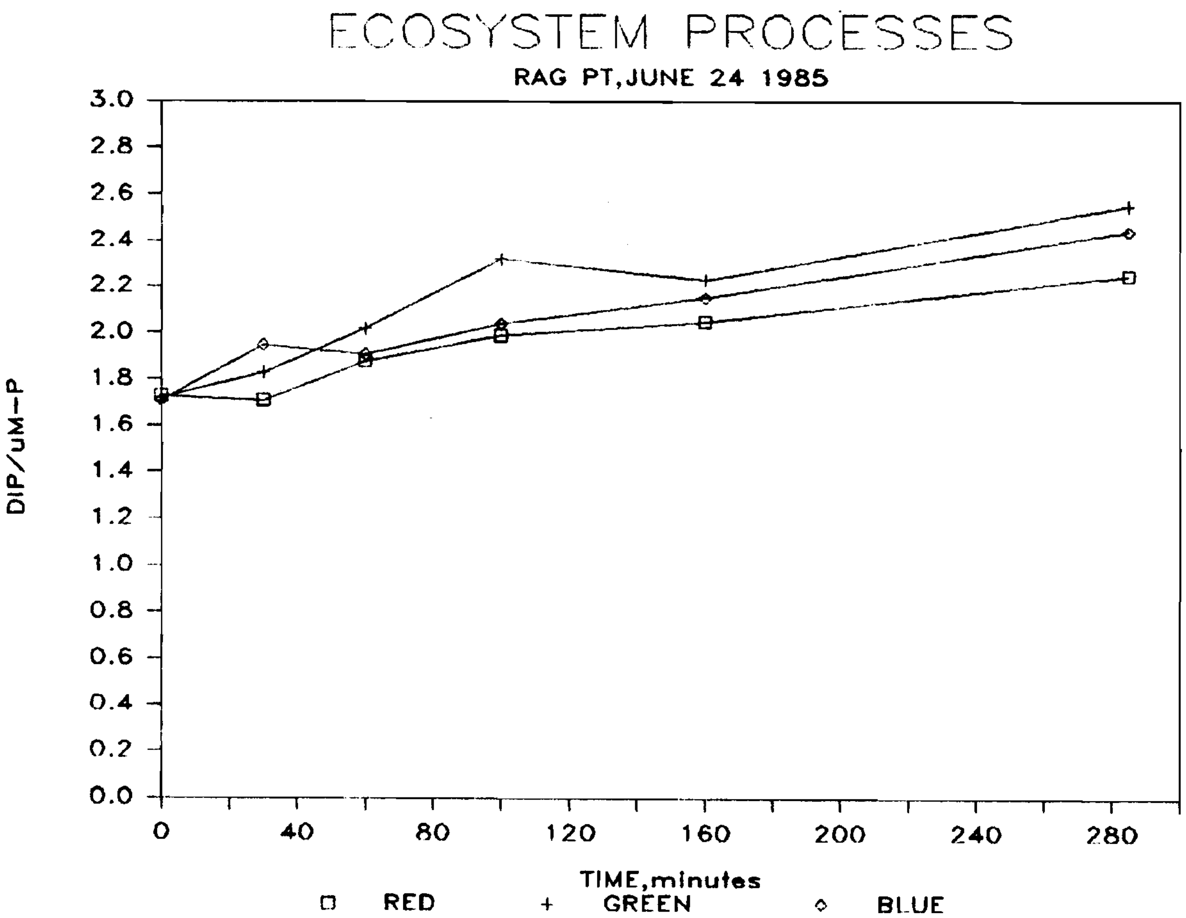

ECOSYSTEM PROCESSES
ST.LEO,JUNE 25 1985
DIP/uM-P
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
40
80
120
160
200
240
280
TIME,minutes
RED
GREEN
BLUE

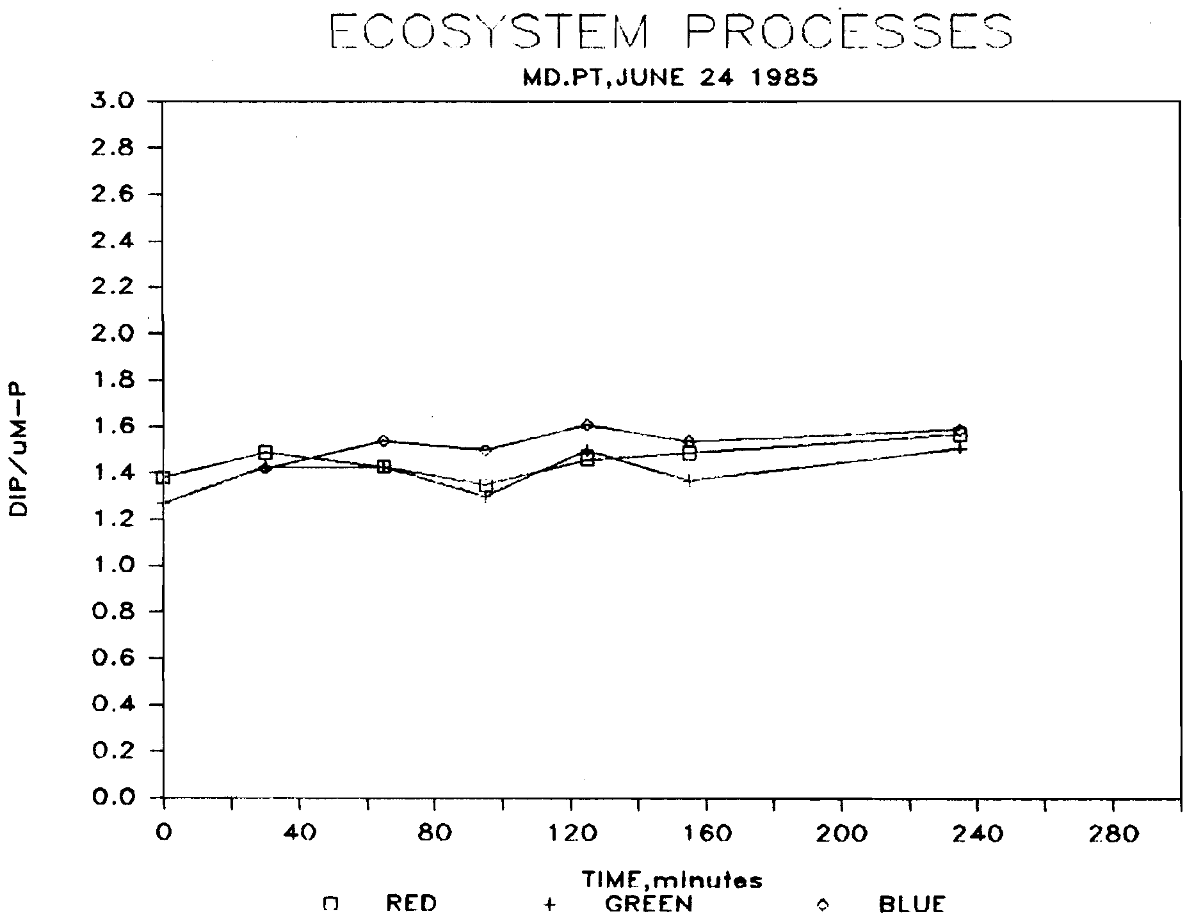


ECOSYSTEM PROCESSES
BU.VISTA,JUNE 25 1985
DIP/uM-P
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
40
80
120
160
200
240
280
TIME,minutes
RED
GREEN
BLUE

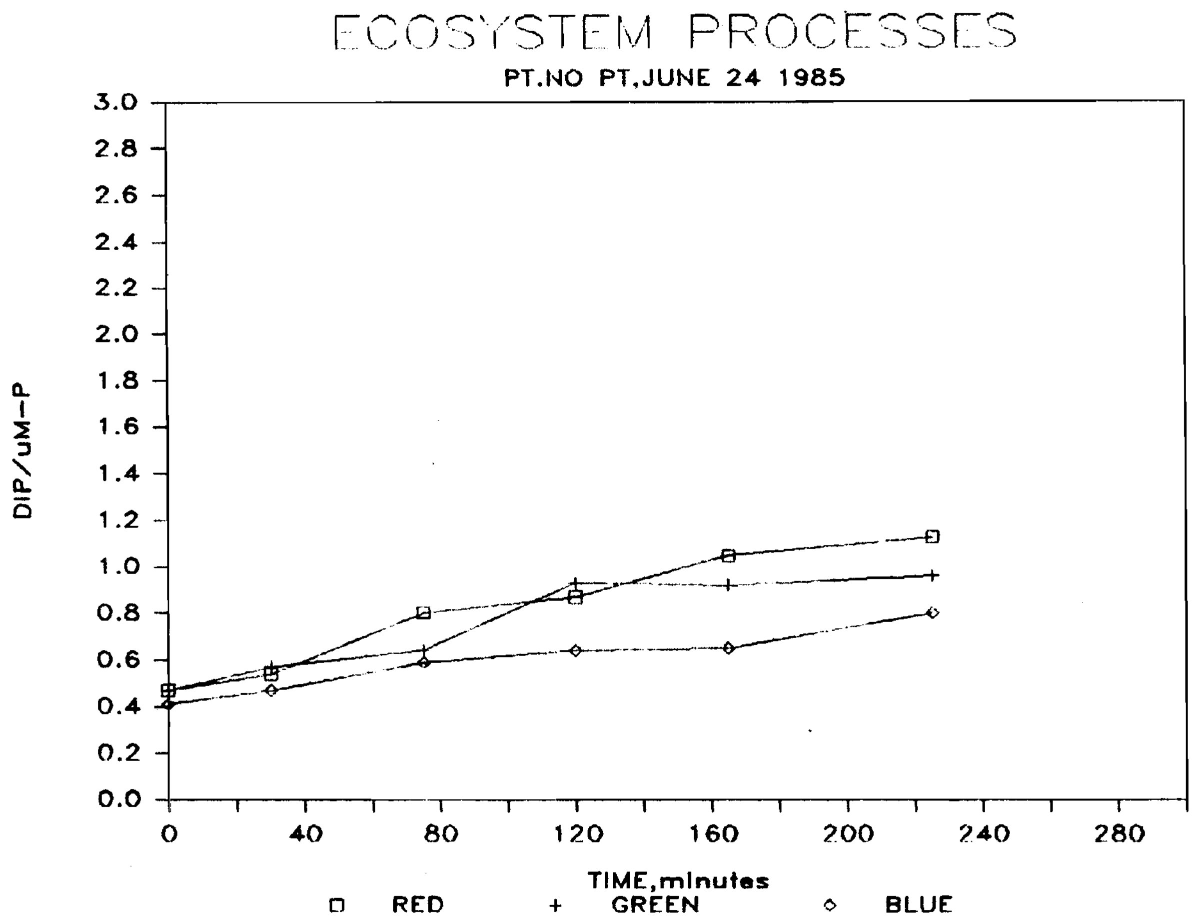

ECOSYSTEM PROCESSES
HORN PT,JUNE 26 1985
DIP/uM-P
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
40
80
120
160
200
240
280
TIME,minutes
RED
GREEN
BLUE

No. 9141

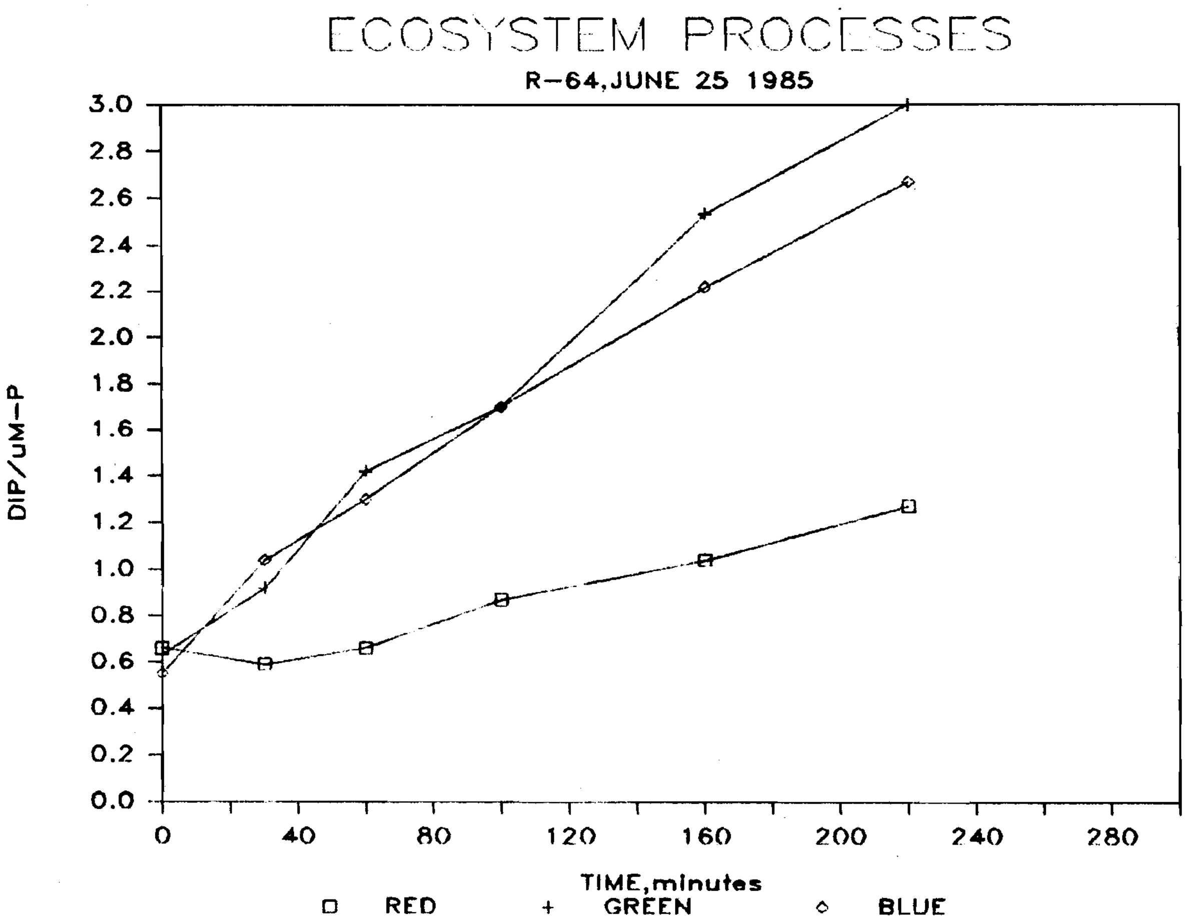

ECOSYSTEM PROCESSES
RAG PT, JUNE 24 1985
DIP/uM-P
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
40
80
120
160
200
240
280
TIME, minutes
RED
GREEN
BLUE

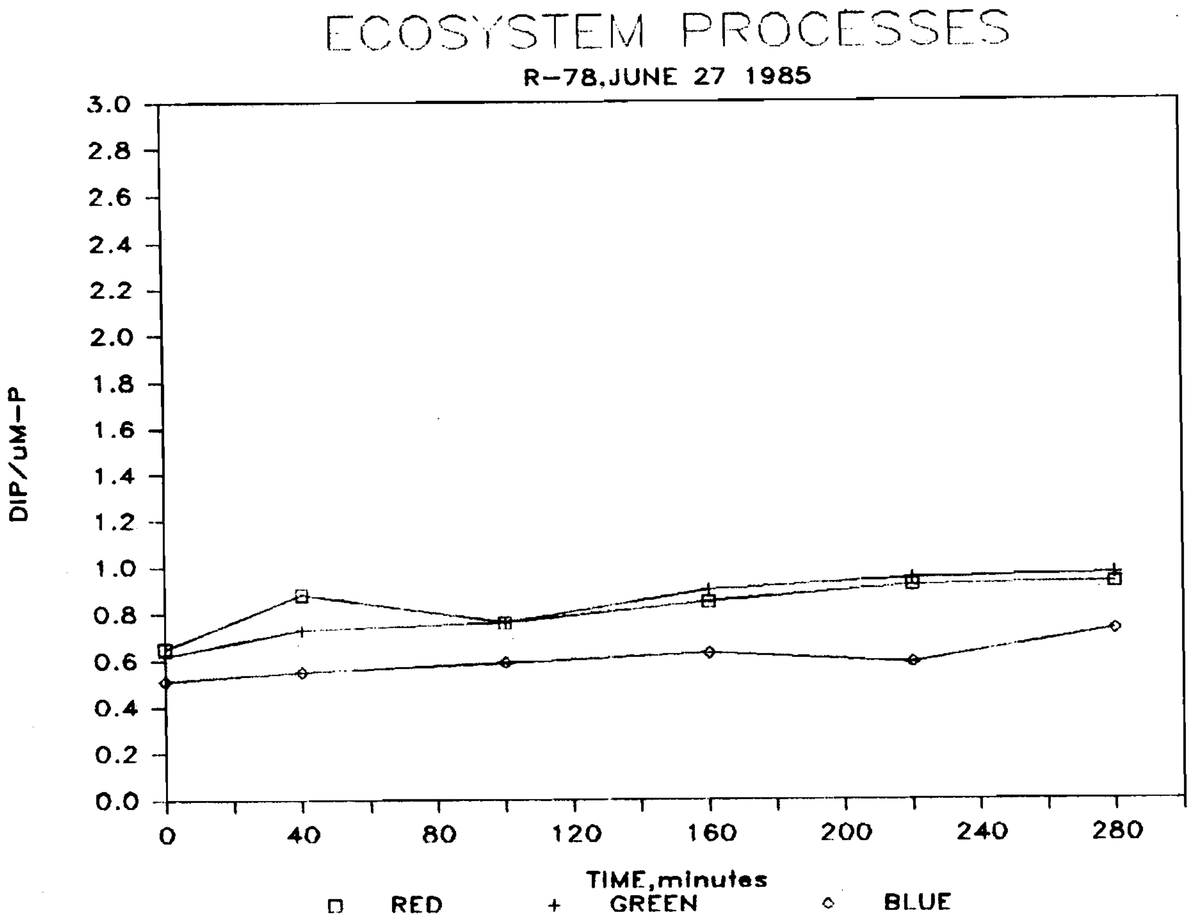

ECOSYSTEM PROCESSES
MD.PT,JUNE 24 1985
DIP/uM-P
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
40
80
120
160
200
240
280
TIME,minutes
RED
GREEN
BLUE

No. 9-143

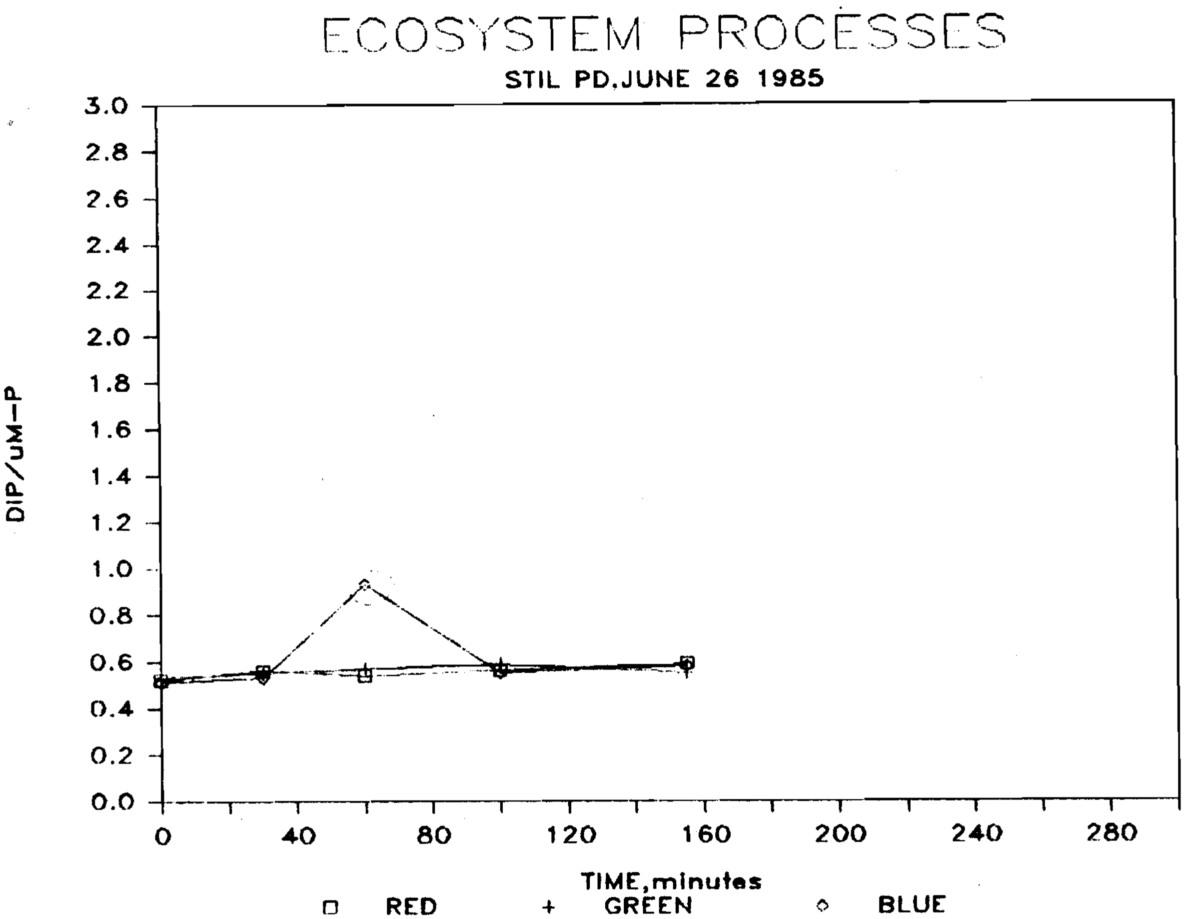


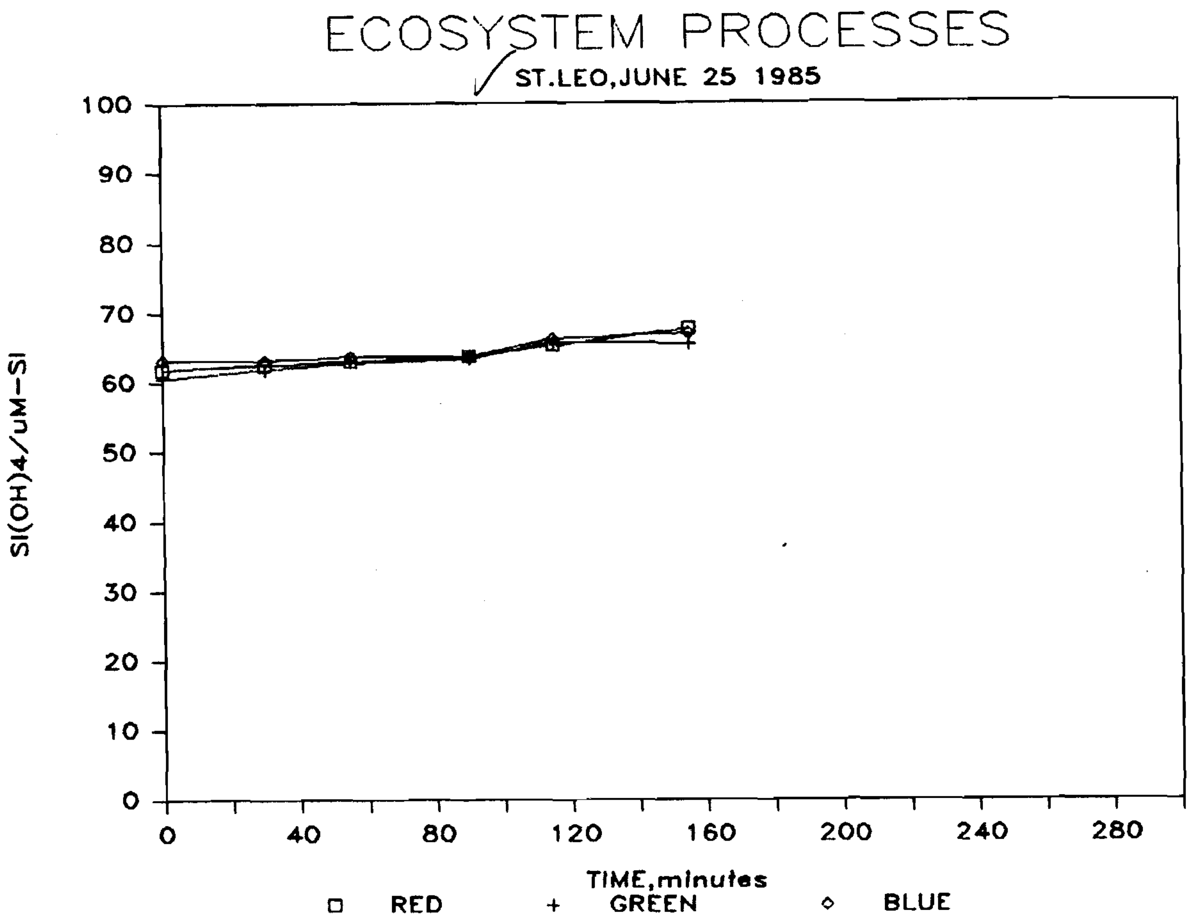
ECOSYSTEM PROCESSES
PT.NO PT,JUNE 24 1985
DIP/uM-P
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
40
80
120
160
200
240
280
TIME,minutes
RED
GREEN
BLUE

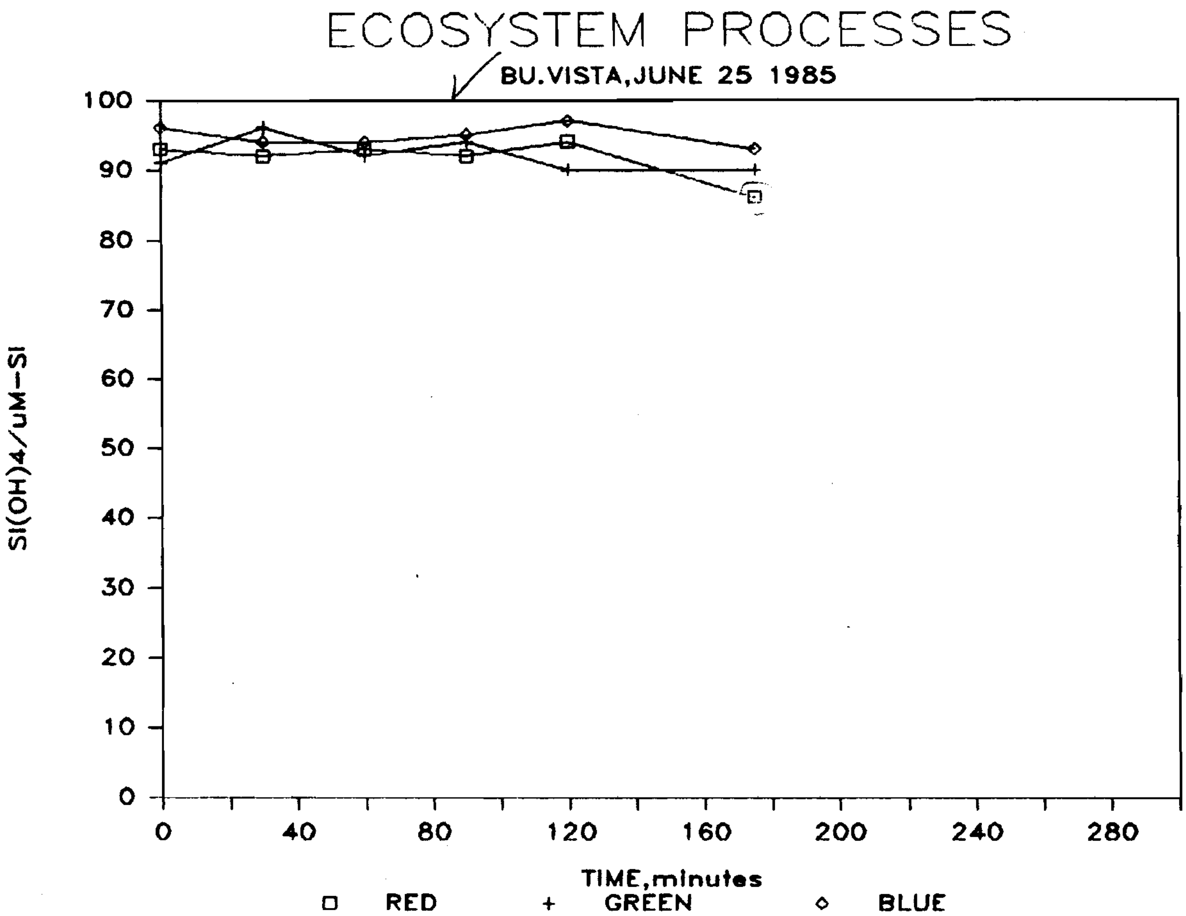

ECOSYSTEM PROCESSES
R-64,JUNE 25 1985
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
DIP/uM-P
0
40
80
120
160
200
240
280
TIME,minutes
RED
GREEN
BLUE


ECOSYSTEM PROCESSES
R-78, JUNE 27 1985
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
DIP/uM-P
0
40
80
120
160
200
240
280
TIME, minutes
RED
GREEN
BLUE

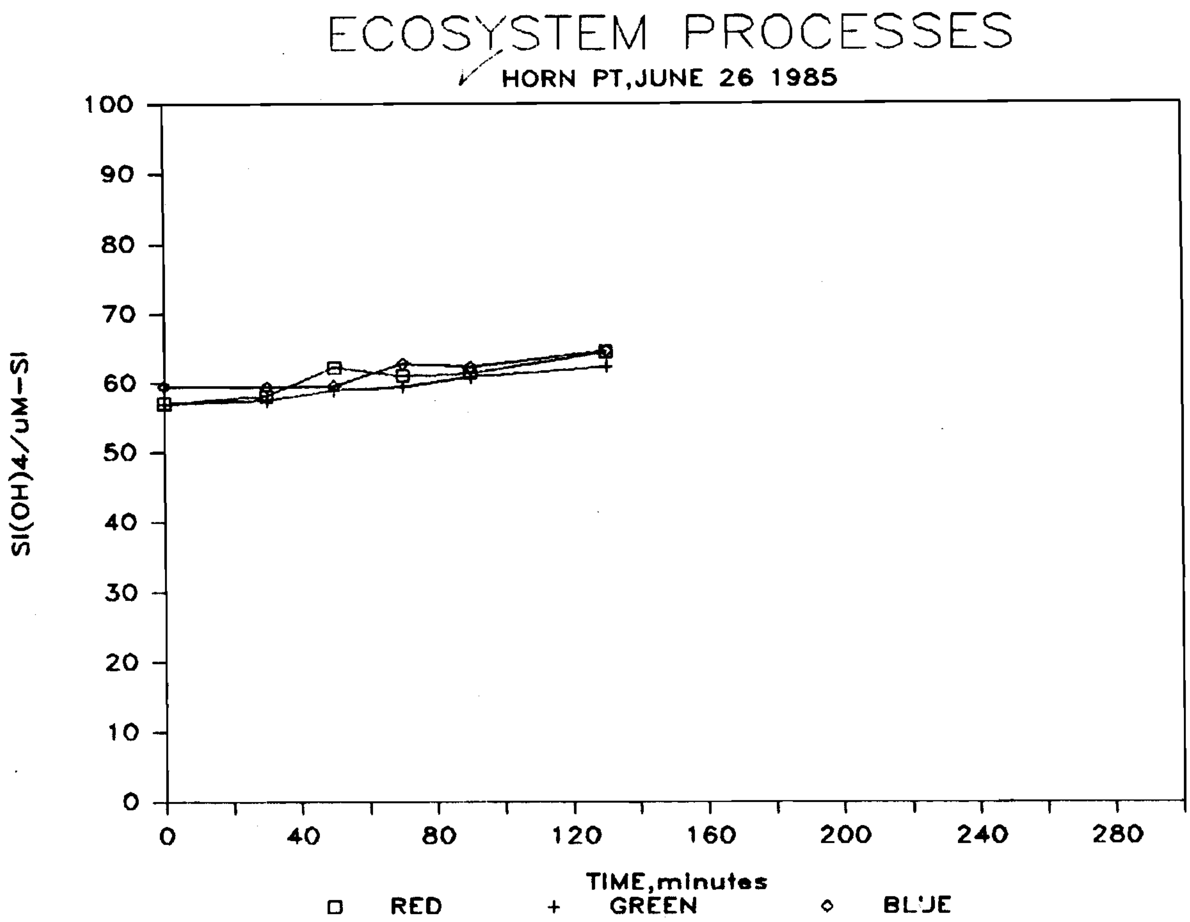
No. 9-146

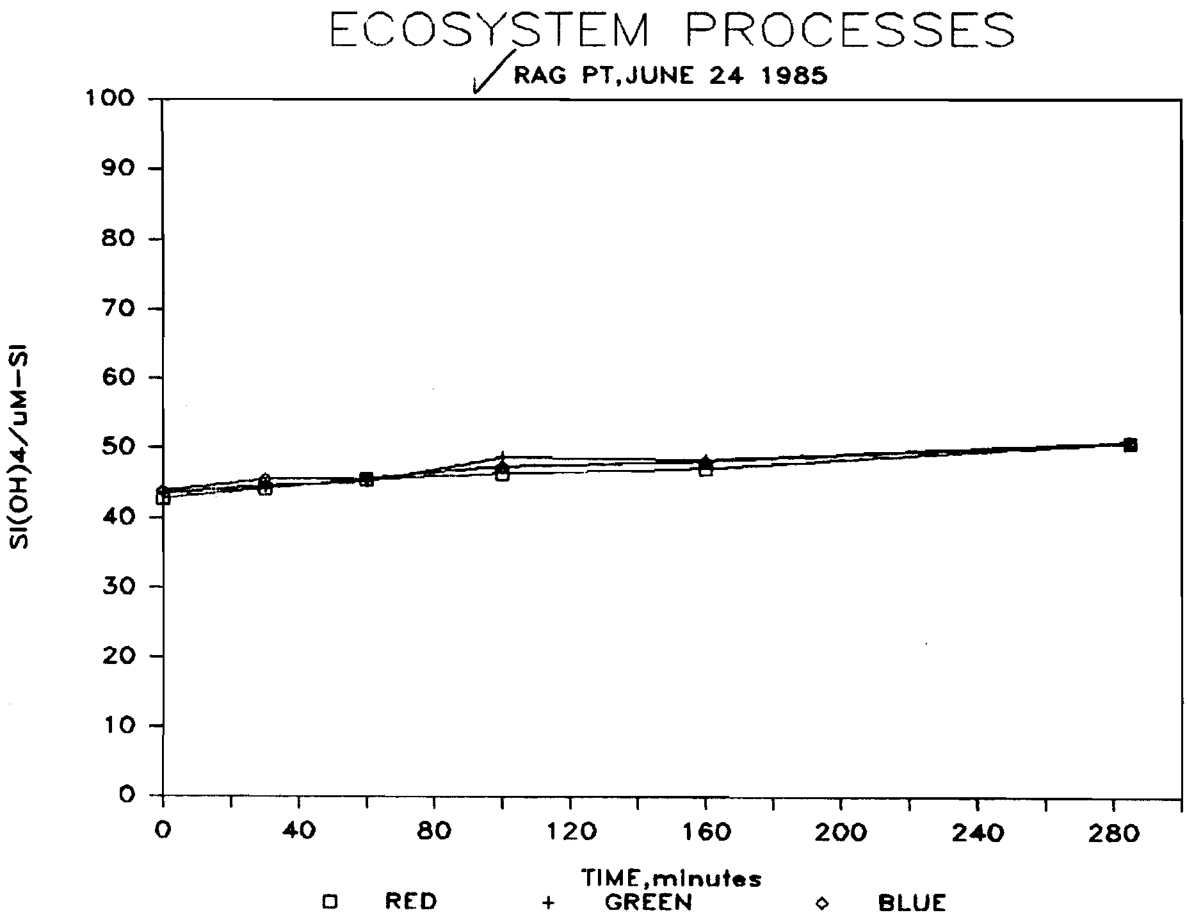

ECOSYSTEM PROCESSES
STIL PD.JUNE 26 1985
DIP/uM-P
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
40
80
120
160
200
240
280
TIME,minutes
RED
GREEN
BLUE


ECOSYSTEM PROCESSES
ST.LEO,JUNE 25 1985
SI(OH)4/uM-SI
100
90
80
70
60
50
40
30
20
10
0
0
40
80
120
160
200
240
280
TIME,minutes
RED
GREEN
BLUE

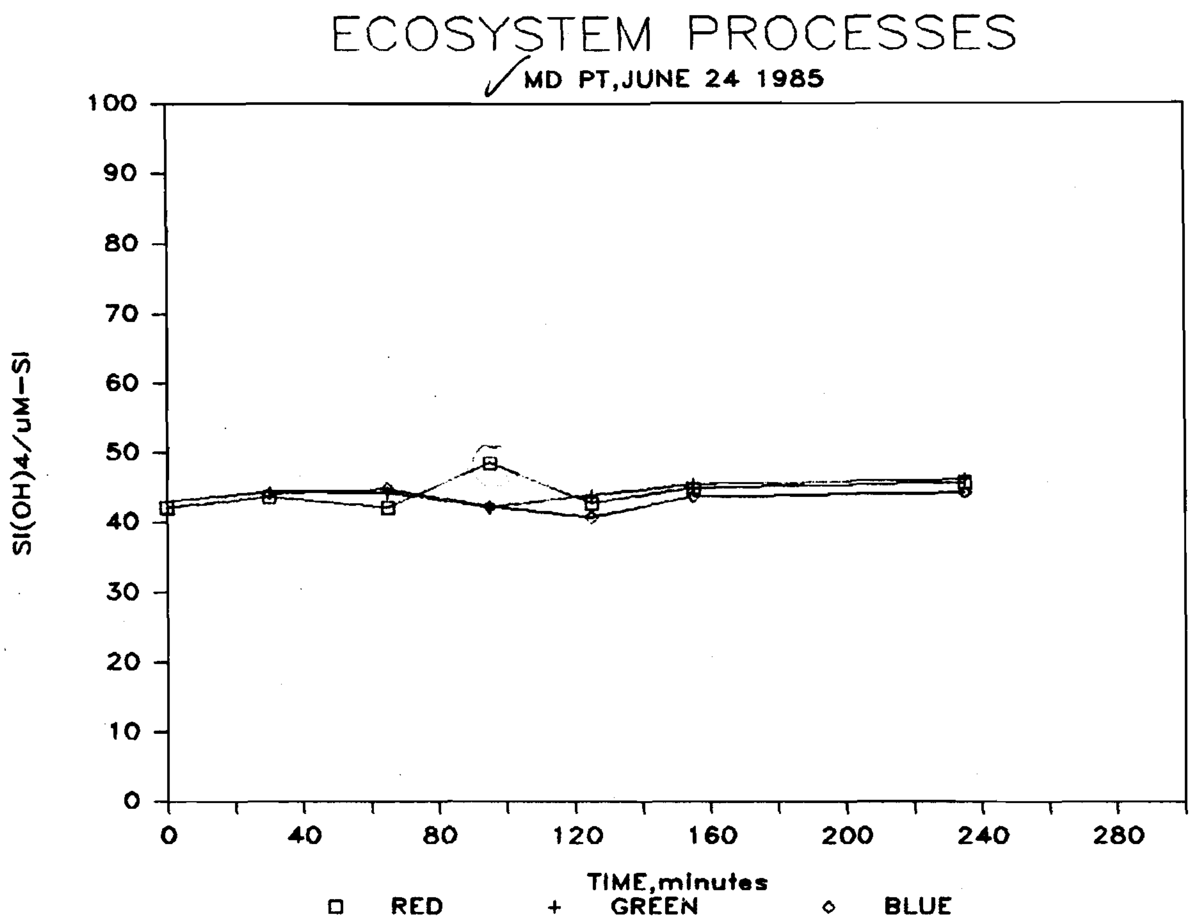

ECOSYSTEM PROCESSES
BU.VISTA,JUNE 25 1985
100
90
80
70
60
50
40
30
20
10
0
SI(OH)4/uM-SI
0
40
80
120
160
200
240
280
TIME,minutes
RED
GREEN
BLUE

No. 9-149


ECOSYSTEM PROCESSES
HORN PT,JUNE 26 1985
SI(OH)4/uM-SI
100
90
80
70
60
50
40
30
20
10
0
0
40
80
120
160
200
240
280
TIME,minutes
RED
GREEN
BLUE

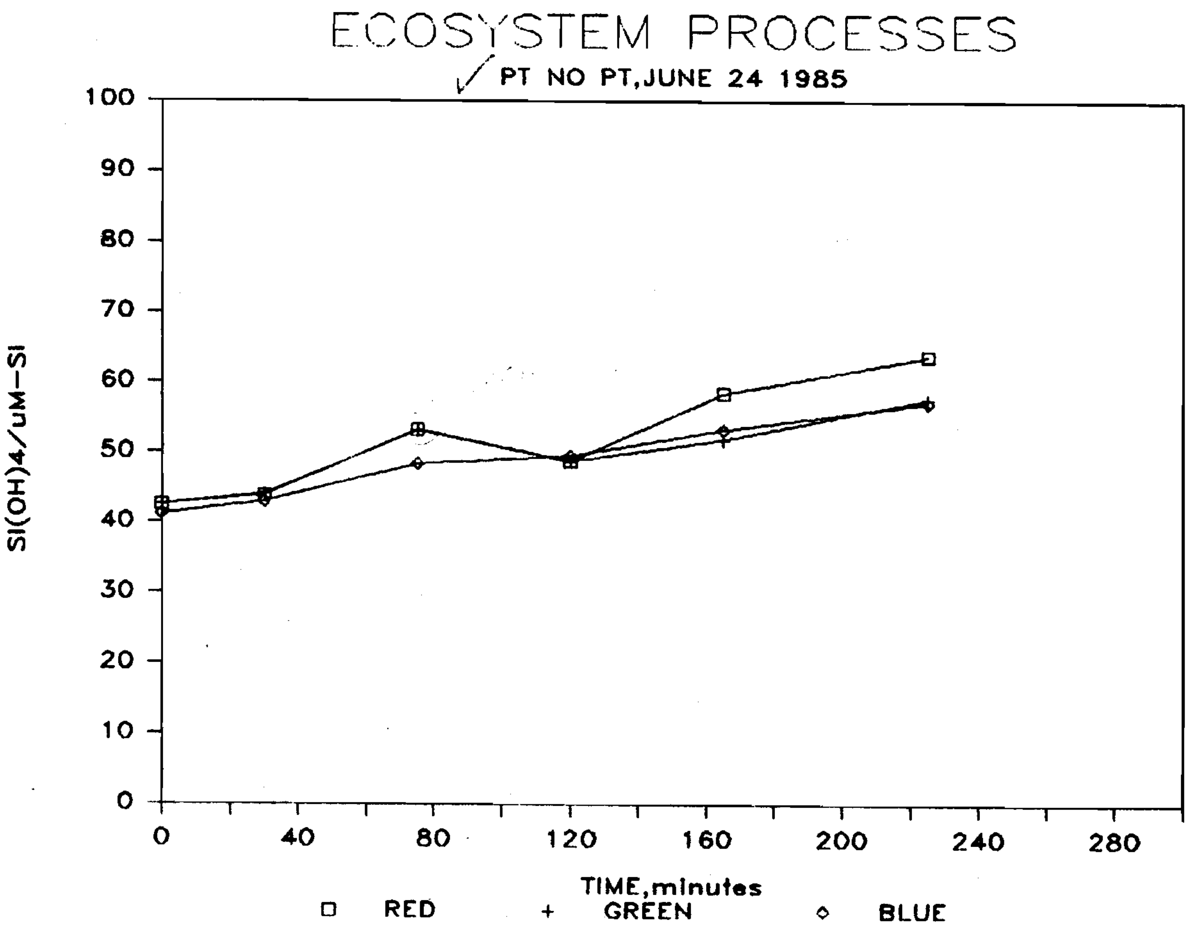

ECOSYSTEM PROCESSES
RAG PT, JUNE 24 1985
100
90
80
70
60
50
40
30
20
10
0
SI(OH)4/uM-SI
0
40
80
120
160
200
240
280
TIME, minutes
RED
GREEN
BLUE

No. 9-151



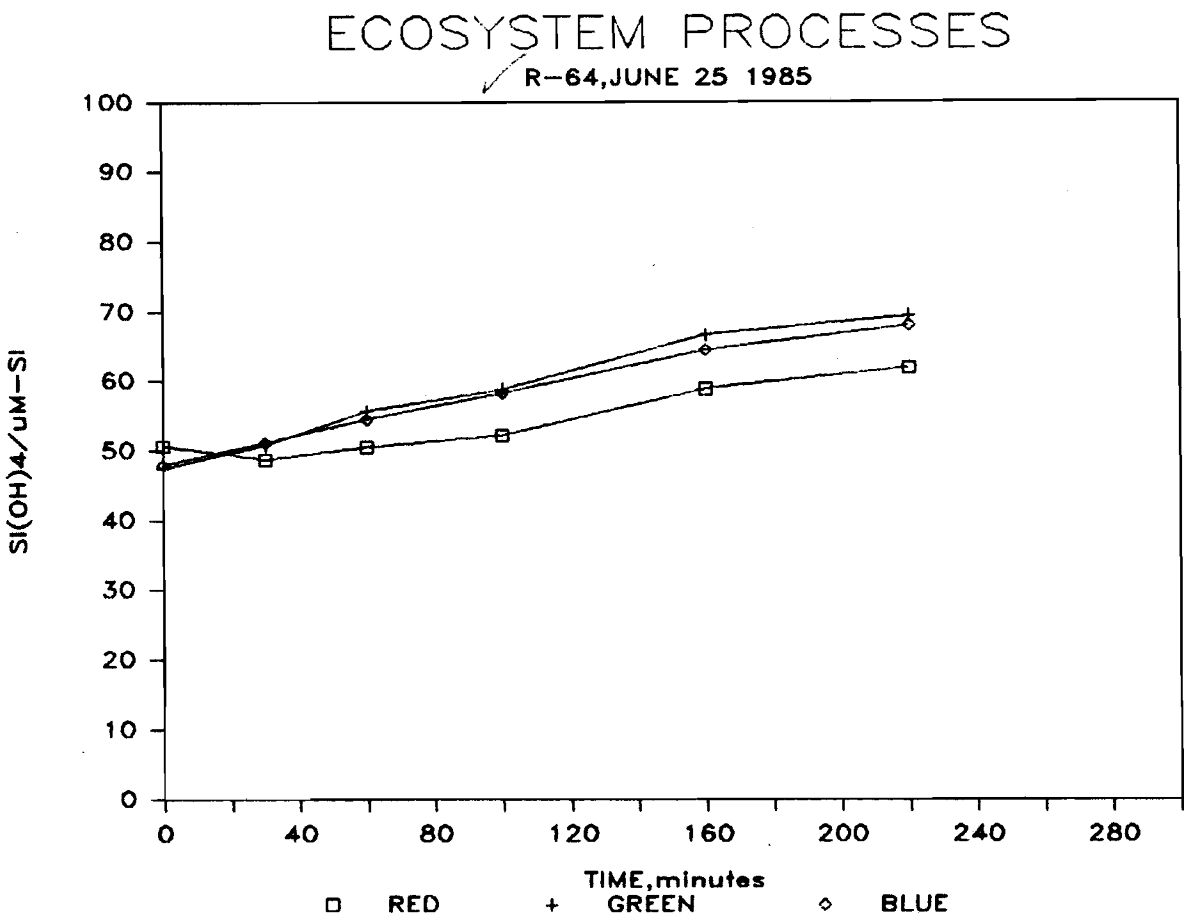
ECOSYSTEM PROCESSES
MD PT,JUNE 24 1985
SI(OH)4/uM-SI
100
90
80
70
60
50
40
30
20
10
0
0
40
80
120
160
200
240
280
TIME,minutes
RED
GREEN
BLUE

No. 9-152



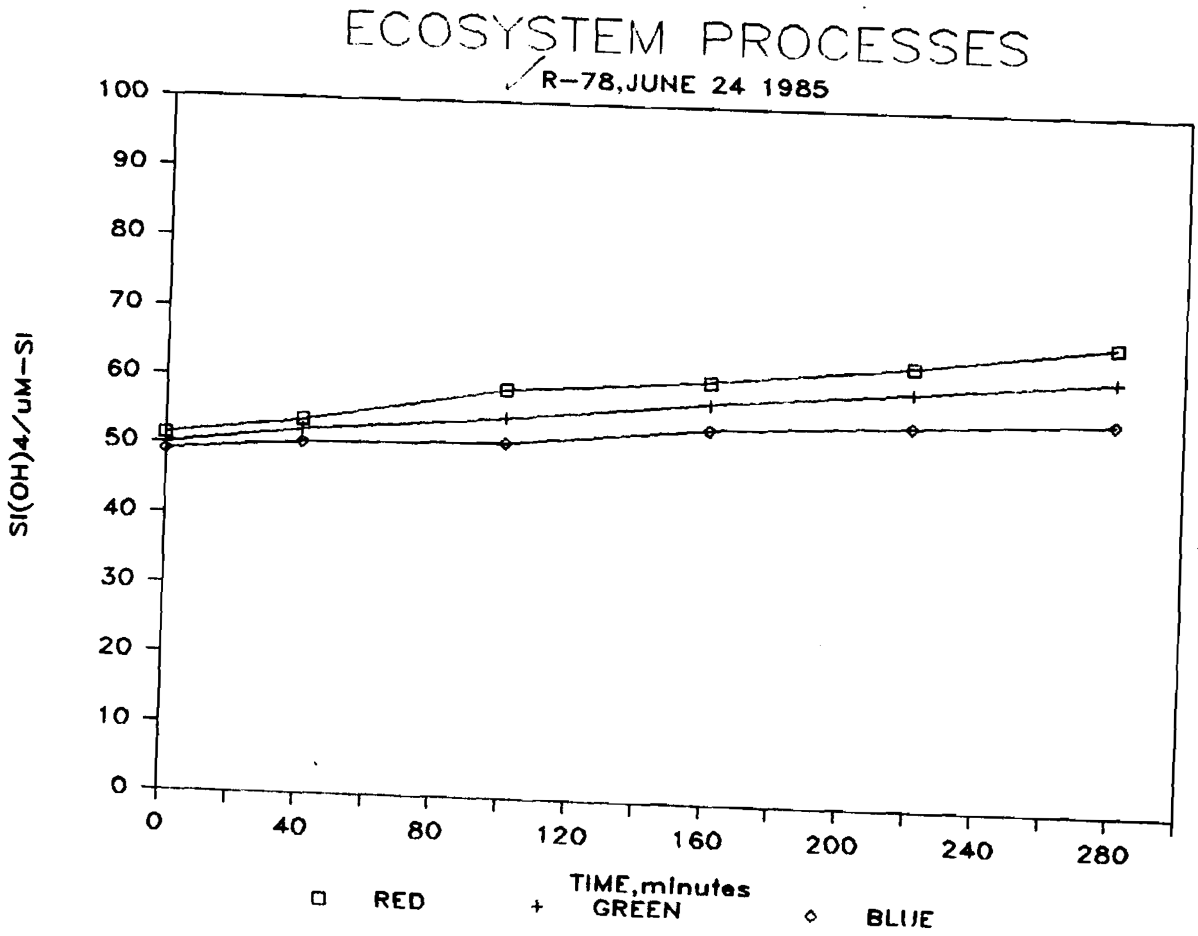
ECOSYSTEM PROCESSES
PT NO PT, JUNE 24 1985
SI(OH)4/uM-SI
100
90
80
70
60
50
40
30
20
10
0
0
40
80
120
160
200
240
280
TIME, minutes
RED
GREEN
BLUE

No. 9-153



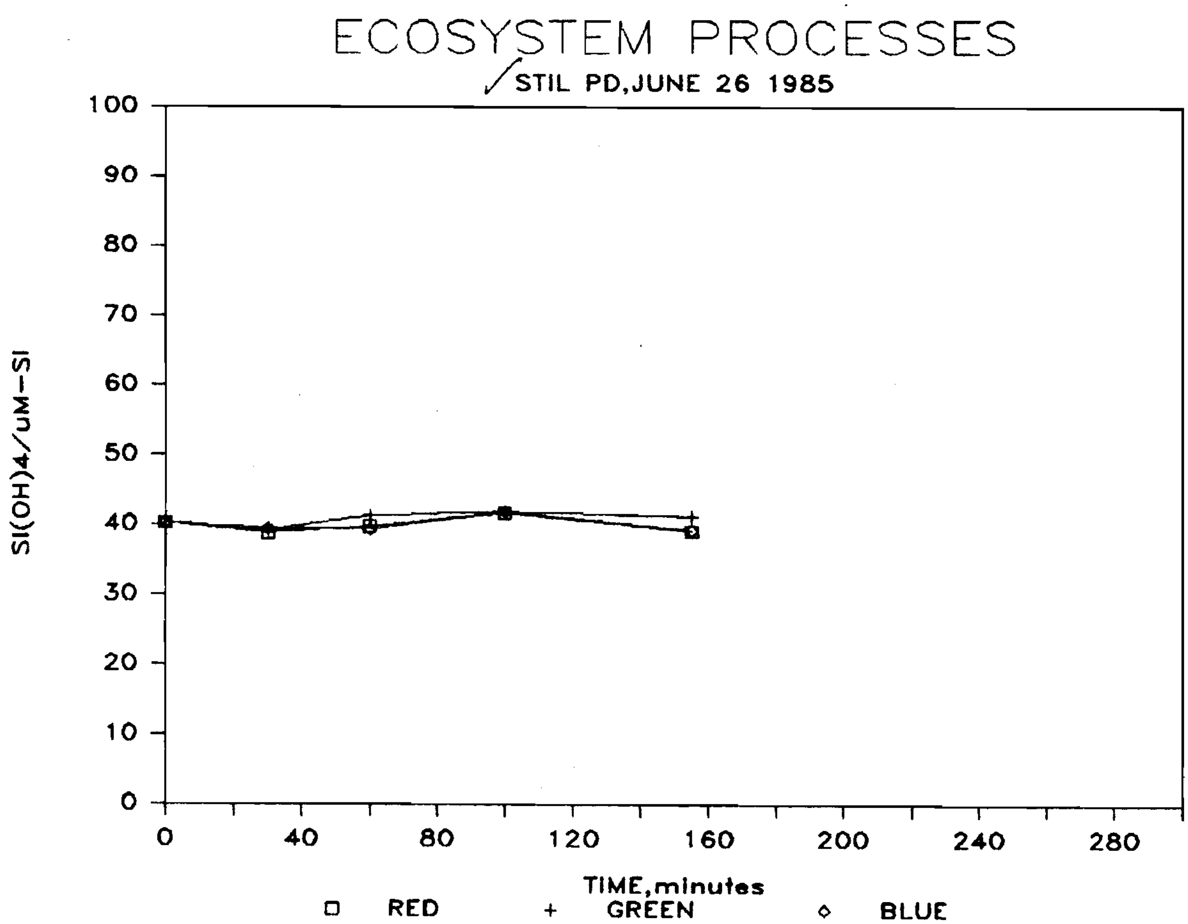
ECOSYSTEM PROCESSES
R-64, JUNE 25 1985
SI(OH)4/uM-SI
100
90
80
70
60
50
40
30
20
10
0
0
40
80
120
160
200
240
280
TIME, minutes
RED
GREEN
BLUE

No. 9-154



ECOSYSTEM PROCESSES
R-78, JUNE 24 1985
100
90
80
70
60
50
40
30
20
10
0
SI(OH)4/uM-SI
0
40
80
120
160
200
240
280
TIME, minutes
RED
GREEN
BLUE

No. 9-155



ECOSYSTEM PROCESSES
STIL PD,JUNE 26 1985
SI(OH)4/uM-SI
100
90
80
70
60
50
40
30
20
10
0
0
40
80
120
160
200
240
280
TIME,minutes
RED
GREEN
BLUE

DATA TABLE NO. 10-1

COMPOSITION RATIOS OF PARTICULATE MATERIAL IN SEDIMENT TRAP CUPS

STATION	DATE RETRIEVE	CUP DEPTH (m)	C:N (atomic)	N:P (atomic)	C:P (atomic)	C:SES (wgt)	C:CHL (wgt)
TCM.PT	30-7-84	4.20	7.79	11.18	74.69	50.98	120.34
		4.20	8.46	11.84	85.91	50.96	121.67
		4.20	8.08	11.19	77.54	42.71	143.18
		4.20	8.13	14.49	101.03	52.21	126.38
		9.20	8.41	9.79	70.61	46.02	102.42
		9.20	8.73	10.23	76.50	44.88	106.25
		9.20	8.62	10.38	76.66	46.39	122.10
		9.20	9.33	9.19	73.48	40.48	136.77
		14.30	8.71	16.62	124.11	50.20	213.80
		14.30	8.69	15.63	116.47	49.26	211.22
		14.30	8.52	16.02	117.05	49.55	196.10
TCM.PT	7-8-84	4.70	12.32	16.43	173.44	103.14	324.21
		4.70	8.07	11.65	80.55	57.06	147.34
		9.70	8.24	12.03	84.94	55.17	322.22
		9.70	8.72	10.09	75.41	43.07	103.65
		14.80	8.73	15.03	112.47	45.41	244.53
		14.80	8.71	15.27	114.03	49.55	229.13
TCM.PT	14-8-84	4.90	7.56	14.22	92.14	79.40	319.27
		4.90	8.03	12.51	86.07	68.27	272.33
		9.90	8.25	13.13	92.87	54.76	233.29
		9.90	8.90	11.76	89.74	55.74	230.55
		15.00	8.65	16.49	122.22	49.55	389.58
		15.00	8.67	16.19	120.31	51.38	413.23
TCM.PT	22-8-84	4.90	7.66	11.95	78.40	65.29	239.05
		4.90	8.31	11.90	84.76	65.87	287.49
		9.90	8.15	7.32	51.17	38.89	218.42
		9.90	8.30	12.73	90.59	42.18	231.91
		15.00	8.36	16.40	117.50	50.57	405.40
		15.00	8.34	17.65	126.15	46.96	411.88
TCM.PT	30-8-84	2.48	6.81	16.51	96.32	88.79	265.02
		2.48	6.90	13.91	82.30	38.20	329.68
		7.77	7.76	14.02	93.20	51.03	378.52
		7.70	[illegible]	14.94	[illegible]	42.78	[illegible]
		13.52	[illegible]	15.63	[illegible]	51.31	[illegible]
		13.52	8.92	15.92	121.73	46.79	564.58

DATA TABLE NO. 10-2

STATION	DATE RETRIEVE	CUP DEPTH (m)	C:N (atomic)	N:P (atomic)	C:P (atomic)	C:SES (wgt)	C:CHL (wgt)
R-78	24SEPT84	3.72	7.08	9.88	70.01	77.93	107.23
		3.72	7.24	10.15	73.52	71.52	101.03
		8.47	8.28	8.41	69.63	65.47	120.86
		8.47	7.89	9.91	78.15	67.05	143.98
		13.35	8.48	8.09	68.60	46.44	453.86
		13.35	7.76	7.23	56.15	40.15	366.85
R-78	4OCT84	3.72	8.90	7.80	69.40	37.08	266.10
		3.72	8.77	7.72	67.74	43.54	673.82
		8.47	8.83	7.52	66.37	43.90	297.00
		8.47	8.64	7.73	66.81	38.85	283.95
		13.35	8.74	8.21	71.78	40.32	574.92
		13.35	7.97	7.46	59.42	34.18	540.16
R-78	16OCT84	4.35	7.53	9.24	69.59	42.08	182.42
		4.35	8.43	8.29	69.86	51.83	220.69
		9.10	7.15	9.18	65.66	39.93	236.67
		9.10	7.62	9.70	73.95	45.52	236.35
		13.98	9.64	7.82	75.42	41.95	578.75
		13.98	89.99	8.44	759.66	391.52	5419.64
R-78	17DEC84	4.77	7.90	17.15	135.55	58.75	290.30
		4.77	8.05	8.66	69.76	54.18	274.37
		9.52	9.00	7.55	67.93	43.09	412.21
		9.52	8.50	7.57	67.37	43.22	379.26
		14.40	5.01	26.05	130.46	67.71	1759.70
		14.40	9.25	8.06	74.54	39.32	564.86
R-78	5MAR85	5.92	8.04	22.14	178.00	159.13	97.57
		5.92	6.33	23.04	145.93	131.81	90.75
		10.67	7.95	14.81	117.67	55.03	124.16
		10.67	7.94	15.09	119.71	60.74	134.02
		15.55	8.89	11.52	102.46	52.48	267.21
		15.55	8.96	10.95	98.14	50.40	256.71
R-78	LOST, NOT RESET AT THIS LOCATION: NEW LOCATION IS R-78						
R-78	5JUNE85	4.22	8.73	1.34	11.68	71.97	122.15
		4.22	10.38	1.17	12.17	60.73	160.32
		8.97	10.11	9.71	98.19	51.98	131.02
		8.97	10.91	10.62	117.99	49.82	151.45
		13.85	9.05	8.33	75.41	44.77	168.29
		13.85	9.46	11.33	107.16	60.99	355.66
R-78	18JUNE85	4.27	8.76	13.27	116.30	95.96	155.17
		4.27	9.51	13.95	132.59	87.72	135.78
		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		[illegible]	9.99	[illegible]	111.57	[illegible]	[illegible]
		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

DATA TABLE NO. 10-3

STATION	DATE RETRIEVE	CUP DEPTH (m)	C:N (atomic)	N:P (atomic)	C:P (atomic)	C:SES (wgt)	C:CHL (wgt)
R-64	30-7-84	3.80	6.99	20.34	121.95	154.50	64.50
		3.80	6.76	21.41	124.04	125.18	73.98
		3.80	7.10	16.38	99.73	123.90	81.34
		3.80	6.59	15.85	89.52	118.81	83.17
		7.80	7.38	19.12	120.92	98.09	103.01
		7.80	7.12	19.66	119.96	101.80	95.58
		7.80	7.70	14.12	93.18	95.97	119.51
		7.80	6.79	16.51	96.09	112.95	133.24
		13.70	7.99	22.23	152.27	50.80	205.90
		13.70	8.14	22.22	155.10	54.69	207.78
		13.70	8.24	49.21	347.37	52.88	221.15
		13.70	8.22	21.43	150.99	55.53	220.07
R-64	7-8-84	3.90	6.92	11.72	69.48	123.88	155.24
		3.90	6.72	18.89	108.76	146.62	175.34
		7.90	7.05	16.17	97.80	133.54	119.44
		7.90	7.30	16.43	102.89	101.75	125.21
		13.80	7.76	20.06	133.41	55.47	189.67
		13.80	7.72	19.40	128.34	53.45	190.18
R-64	14-8-84	4.30	7.20	16.54	102.10	198.17	270.58
		4.30	7.18	18.33	112.78	187.10	270.97
		8.30	7.27	19.10	119.06	128.70	208.59
		8.30	7.38	19.87	125.61	134.73	207.28
		14.20	7.82	19.93	133.57	73.20	274.87
		14.70	7.89	19.69	133.20	60.75	280.66
R-64	22-8-84	4.60	6.69	16.96	97.21	107.31	272.07
		4.60	6.69	16.86	96.66	108.16	274.15
		8.60	7.36	17.21	108.47	67.58	228.84
		8.60	7.41	19.02	120.82	68.10	266.00
		14.50	7.81	21.10	141.30	53.23	335.56
		14.50	7.39	21.49	136.10	46.02	329.29
R-64	30-8-84	4.60	6.03	16.93	87.49	115.10	288.22
		4.60	6.56	18.76	105.50	135.30	333.21
		8.60	6.53	19.21	107.62	82.87	372.32
		8.60	6.75	17.59	103.54	93.31	318.24
		14.50	7.79	20.35	[illegible]	[illegible]	[illegible]
		14.50	7.87	20.32	[illegible]	[illegible]	446.27

DATA TABLE NO. 10-4

STATION	DATE RETRIEVE	CUP DEPTH (m)	C:N (atomic)	N:P (atomic)	C:P (atomic)	C:SES (wgt)	C:CHL (wgt)
R-78	27JUNE85	4.32	6.71	17.54	117.65	73.83	118.16
		4.32	6.71	18.05	121.04	92.95	125.27
		9.07	7.44	16.36	121.63	76.06	153.00
		9.07	7.71	14.27	110.01	66.83	127.17
		13.95	8.83	86.82	766.49	46.75	335.27
		13.95	9.31	91.84	855.01	51.42	333.18
R-78 NOT RESET: NO FURTHER SAMPLING AT R-78							
R-64	24SEPT84	4.26	7.09	17.27	122.46	111.19	105.26
		4.26	7.25	18.58	134.68	107.83	99.13
		8.52	7.16	18.83	134.77	74.74	109.62
		8.52	7.82	17.14	133.96	88.01	110.97
		15.44	7.96	15.26	121.50	51.03	288.17
		15.44	7.64	16.25	124.11	51.86	217.83
R-64	4OCT84	4.16	7.36	10.72	78.95	47.23	142.16
		4.16	7.47	10.40	77.67	31.23	131.97
		8.42	7.60	17.38	132.14	43.68	256.33
		8.42	6.87	13.78	94.60	26.72	163.70
		15.34	8.40	14.68	123.27	36.86	421.39
		15.34	8.40	14.03	117.83	37.56	396.39
R-64	16OCT84	4.62	7.16	13.81	98.94	78.80	79.44
		4.62	7.36	11.96	88.09	84.83	72.05
		9.67	7.81	13.29	103.79	64.76	125.05
		9.67	7.98	12.86	102.65	57.42	111.69
		15.05	8.25	10.99	90.63	36.74	298.47
		15.05	8.46	11.57	97.85	35.57	322.72
R-64	17DEC84	TRAP LOST					
R-64	5MAR85	5.62	6.58	33.32	219.19	197.54	101.28
		5.62	8.18	21.34	174.64	191.61	115.70
		10.67	8.05	18.09	145.63	136.29	131.63
		10.67	7.06	29.09	205.39	129.20	127.92
		16.05	8.98	15.56	139.77	53.12	145.12
		16.05	8.58	15.31	131.39	53.56	173.65
R-64	15APRIL85	4.72	9.19	22.35	205.42	156.38	51.82
		4.72	8.91	27.11	[illegible]	141.91	[illegible]
		9.77	6.21	22.03	[illegible]	[illegible]	87.40
		9.77	7.66	24.99	191.35	91.41	57.49
		15.15	6.47	19.99	129.24	50.57	132.40
		15.15	6.73	18.46	124.28	42.96	157.59
R-64	30APRIL85	TRAP LOST					
R-64	6MAY85	4.62	9.45	68.46	646.62	195.07	95.01
		4.62	9.03	23.74	214.47	154.09	94.85
		9.67	7.94	[illegible]	140.77	68.78	[illegible]
		9.67	7.94	[illegible]	133.45	[illegible]	[illegible]
		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

DATA TABLE NO. 10-5

STATION	DATE RETRIEVE	CUP DEPTH (m)	C:N (atomic)	N:P (atomic)	C:P (atomic)	C:SES (wgt)	C:CHL (wgt)
R-64	5JUNE85	4.07	7.09	2.02	14.32	133.35	104.09
		4.07	6.36	2.43	15.47	231.16	100.20
		9.12	7.80	1.78	13.86	101.82	112.81
		9.12	8.19	1.84	15.07	111.01	112.09
		14.50	8.71	11.93	103.90	47.83	218.48
		14.50	8.39	13.30	111.64	49.77	185.14
R-64	18JUNE85	4.02	8.53	20.80	177.39	110.19	119.65
		4.02	7.38	25.90	191.27	124.70	184.62
		9.07	8.87	20.88	185.11	87.68	97.86
		9.07	7.89	22.27	175.76	103.49	102.34
		14.45	9.72	12.88	125.26	38.86	171.57
		14.45	9.53	13.86	132.11	40.32	176.06
R-64	25JUNE85	4.27	7.34	21.02	154.33	77.88	119.81
		4.27	6.63	25.43	168.47	147.93	115.97
		9.32	7.19	22.92	164.78	102.06	122.37
		9.32	7.57	25.41	192.24	122.57	130.23
		14.70	8.02	12.87	103.28	51.64	180.97
		14.70	8.27			63.26	242.72
R-64	11JULY85	4.52	7.21	17.43	125.61	133.08	199.09
		4.52	7.68	18.30	140.49	115.56	143.11
		9.57	7.85	20.28	159.27	45.77	143.46
		9.57	8.29	11.10	92.02	53.92	160.33
		14.95	0.23	14.27	3.24	0.86	6.22
R-64	24JULY85	4.52	7.00	↑	↑	67.27	115.13
		4.52	6.32			33.59	108.98
		9.57	7.03			38.57	148.29
		9.57	6.66			45.11	176.04
		14.95	8.63	PP data		35.86	353.05
		14.95	8.52	not yet		31.65	299.07
R-64	30JULY85	4.17	6.32	available		116.92	97.35
		4.17	6.36			74.37	82.51
		9.22	6.44			68.71	113.60
		9.22	6.76			68.51	102.36
		14.60	7.74			36.58	170.70
		14.60	7.79	↓	↓	37.79	151.27