

DISTRIBUTION OF CN NITROGENOUS COMPOUNDS AND
CHLOROPHYLL-A AT NERUS RIVER BASIN, TERENGGANU

MURAHIM SHAFIQ

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KOLEJ UNIVERSITI SAINS & TEKNOLOGI MALAYSIA
21030 KUALA TERENGGANU

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DISTRIBUTION OF ON NITROGENOUS COMPOUNDS AND
CHLOROPHYLL-A AT NERUS RIVER BASIN, TERENGGANU

By

Noraini Shaari

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JABATAN SAINS KIMIA
FAKULTI SAINS DAN TEKNOLOGI
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**PENGAKUAN DAN PENGESAHAN LAPORAN
PROJEK PENYELIDIKAN I DAN II**

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk:

Distribution of nitrogenous compounds and chlorophyll-a at Nerus River basin, Terengganu oleh **Noraini binti Shaari**, No. Matrik **UK6770** telah diperiksa dan semua pembetulan yang disarankan telah dilakukan. Laporan ini dikemukakan kepada Jabatan Sains Kimia sebagai memenuhi sebahagian daripada keperluan memperoleh ijazah Sarjana Muda Sains (**Kimia Analisis dan Persekitaran**), Fakulti Sains dan Teknologi, Kolej Universiti Sains dan Teknologi Malaysia.

Disahkan oleh :

Penyelia Utama

Nama : Prof. Madya Dr. Norhayati Mohd Tahir

Cop Rasmi : **NORHAYATI MOHD TAHIR (Ph. D., PROF MADYA)**

**PENSYARAH
JABATAN SAINS KIMIA
FAKULTI SAINS DAN TEKNOLOGI
KOLEJ UNIVERSITI SAINS DAN TEKNOLOGI MALAYSIA
BENGABANG TELIPOT, 21030 KUALA TERENGGANGU**

Tarikh : 13th April 2005

Ketua Jabatan Sains Kimia

Nama : Prof. Madya Dr. Ku Halim bin Ku Bulat

Cop Rasmi : **PROF. MADYA DR. KU HALIM KU BULAT**

**Ketua
Jabatan Sains Kimia
Fakulti Sains dan Teknologi
Kolej Universiti Sains dan Teknologi Malaysia
21030 Kuala Terengganu.
Tel: 09-6683257**

Tarikh : 13th April 2005

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LIST OF ABBREVIATION

H ₃ BO ₃	Acid boric
NH ₄ Cl	Ammonium Chloride
NH ₃ -N	Ammonia nitrogen
BOD	Biochemical oxygen demand
BOD ₅	Biochemical oxygen demand (for 5 days)
BOD ₇	Biochemical oxygen demand (for 7 days)
CO (NH ₂) ₂	Carbonate
°C	Celsius
cm ³	Centimeter cube
COD	Chemical oxygen demand
dm ³	Decimeter cube
DO	Dissolved oxygen
g/m ²	Gram per meter square
µm	Micrometer
µmol.cm ⁻³	Micromole per centimeter cube
mg/L	Milligram per liter
min	Minute
NEAD	N(1-naphtyl)ethylenediamine dihydrochloride
nm	Nanometer
NO ₃ ⁻	Nitrate
N	Nitrogen
ppb	part per billion
ppm	part per million
ppt	part per thousand
%	Percentage
P	Phosphorus
K ₂ S ₂ O ₈	Potassium sulphate oxide
NaOH	Sodium hydroxide
SS	Suspended solid
TDN	Total dissolved nitrogen
TSS	Total suspended solids
WQI	Water Quality Index

ABSTRACT

The study of nitrogenous nutrients and chlorophyll-a has been carried out at nine sampling stations along the Nerus River. The nitrite, nitrate, total nitrogenous particulate and total dissolved nitrogen has been determine using diazonium method whereas, pigment extraction method based on the APHA Standard Methods was use to analyze chlorophyll-a. In addition, the *in situ* measurements were also conducted during sampling for the physical parameters determination such as temperature, salinity, dissolved oxygen and pH by using YSI multi parameter data logger. The concentrations of nitrite, nitrate, total dissolved nitrogen, total nitrogenous particulate and chlorophyll-a observed were in the range 0.30 to 5.9 ppb N, 36.92 to 296.91 ppb N, 95.52 to 465.52 ppb N, 1.20 to 97.06 ppb N and 12.25 to 103.53 mg/L respectively.

KAJIAN KUALITI AIR BERDASARKAN SEBATIAN NITROGEN DAN KLOROFIL-A DI LEMBANGAN SUNGAI NERUS, TERENGGANU

ABSTRAK

Kajian mengenai penentuan kepekatan nutrien bernitrogen dan klorofil-a telah dijalankan di sembilan stesen persampelan di sepanjang lembangan Sungai Nerus. Kaedah diazonium digunakan untuk menganalisa nitrit, nitrat, total partikulat dan total nitrogen terlarut manakala klorofil-a memerlukan kaedah pengekstrakan pigmen dengan merujuk kepada Kaedah Pempawaian APHA. Sebagai tambahan, pengukuran *in situ* dijalankan semasa persampelan bagi mendapatkan parameter fizikal seperti suhu, saliniti, oksigen terlarut dan pH dengan menggunakan YSI multi parameter. Kepekatan nitrit, nitrat, total nitrogen terlarut, total partikulat dan klorofil-a di Lembangan Sungai Nerus masing-masing adalah dalam julat antara 0.30 hingga 5.98 ppb N, 36.92 hingga 296.91 ppb N, 95.52 hingga 465.52 ppb N, 1.20 hingga 97.06 ppb N dan 12.25 hingga 103.53 mg/L.