

STUDY OF THE EFFECTS OF ALCOHOL CONCENTRATION
ON THE RATE OF REACTION OF
SODIUM HYDROXIDE WITH ETHYL ACETATE

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Distribution of phosphate and silicon compounds in Nerus river
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**DISTRIBUTION OF PHOSPHATE AND SILICON COMPOUNDS IN
NERUS RIVER BASIN, TERENGGANU**

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2004**

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**DISTRIBUTION OF PHOSPHATE AND SILICON COMPOUNDS IN
NERUS RIVER BASIN, TERENGGANU**

By

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**Research Project submitted in partial fulfillment
of the requirements for the degree of
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**PENGAKUAN DAN PENGESAHAN LAPORAN
PROJEK PENYELIDIKAN I DAN II**

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk:

Distribution of phosphorus and silica compounds at Nerus River basin, Terengganu oleh **Jeswin Kaur**, No. Matrik **UK6739** 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.

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LIST OF ABBREVIATIONS

DO	Dissolved Oxygen
DP	Dissolved Phosphate
DS	Dissolved Silicon
et al.	and others
g/mol	gram per mol
H ₂ SO ₄	Sulphuric Acid
INWQS	Interim National Water Quality Stanard
Kg	Village
mg/L	milligram per liter
ml	mili liter
μ	micro
nm	nano meter
Na ₂ SiF ₆	Disodium hexafluoro silicate
ppb	part per billion
ppm	part per million
Si	Silicon
SiO ₂	silica
TDP	Total dissolved phosphate
TDS	Total dissolved silicon
TPP	Total Particulate Phosphate
TPS	Total Particulate Silicon

UV	Ultraviolet
UV-vis	Ultraviolet Fluorescence
WHO	World Health Organization

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ABSTRACT

This study will be conducted at Nerus River basin, Terengganu during the period of May until October 2004 to determine the water quality of the river. This study is conducted in order to gain latest information on the nutrients distribution in Nerus River, which is exposed to the development of industry sectors and agricultural activities along the river. Parameters measured are phosphorus compounds (dissolved orthophosphate, total dissolved phosphate and total phosphate particulate) and silicon compound (dissolved inorganic silicon, total dissolved silicon, total silicon particulate). Method that will be used to determine the phosphorus and silicon compound are based on colourimetric method. The concentration of dissolved phosphate, total dissolved phosphate, total particulate phosphate, dissolved silicon, total dissolved silicon and total particulate silicon are in the range of 1.12-6.75 ppb P, 4.85-9.29 ppb P, 1.01-4.25 ppb P, 98.75-486.59 ppb Si, 580.86-205.68 ppb Si, and 103.45-157.63 ppb Si respectively. Station S6 is observed to have the highest concentration of DP, TDP and TPP. The highest concentration of DS and TDS is found in station S7

TABURAN SEBATIAN FOSFORUS DAN SILIKA DI LEMBANGAN SUNGAI NERUS, TERENGGANU

ABSTRAK

Kajian ini dijalankan di Sungai Nerus, Terengganu sepanjang bulan Mei sehingga Oktober 2004 untuk menentukan kualiti air di kawasan tersebut. Kajian ini dijalankan untuk mendapatkan maklumat terkini mengenai taburan nutrien di Sungai Nerus yang kian tercemar akibat pembangunan industri dan pertanian sepanjang sungai. Parameter-parameter yang diukur ialah sebatian fosfat (fosfat inorganic terlarut, jumlah fosfat terlarut dan jumlah partikulat fosfat) dan sebatian silika (silika inorganic terlarut, jumlah silickaterlarut dan jumlah partikulat silika). Kaedah analisa yang digunakan untuk menentukan kandungan fosfat dan silika adalah kaedah kolorimetrik. Kepekatan ortofosfat terlarut, TDP, TPP, silicon terlarut, TDS dan TPS adalah masing-masing dalam julat 1.12-6.75 ppb P, 4.85-9.29 ppb P, 1.01-4.25 ppb P, 98.75-486.59 ppb Si, 580.86-205.68 ppb Si, and 103.45-157.63 ppb Si. Stesen S6 mempunyai kepekatan tertinggi bagi DP, TDP dan TPP. Manakala, stesen S7 mempunyai kepekatan tertinggi bagi DS dan TDS.