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Sewage pollution in Pulau Perhentian, off Terengganu, South
China Sea / Thong Chee Hin.



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KOLEJ UNIVERSITI SAINS & TEKNOLOGI MALAYSIA
21030 KUALA TERENGGANU

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KOLEJ UNIVERSITI SAINS & TEKNOLOGI MALAYSIA
(KUSTEM)

Pengarang **THONG CHEE HIN** No. Panggilan
Lp
88 49
FST 49

Judul **Sewage pollution in Pulau Perhentian off Terengganu**

Tarikh	Waktu Pemulangan	Nombor Ahli	Tanda tangan
29-7-05	5.00 pm	UK8038	Thw.
15/8/06	11.00 pm	UK10965	Thw.
8/1/07	1	UK11605	Thw.
29/8/200	1149 am	UK21176	Thw.

18/2/10

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SEWAGE POLLUTION IN PULAU PERHENTIAN,
OFF TERENGGANU, SOUTH CHINA SEA

By

THONG CHEE HIN

This project report is submitted in partial fulfillment of the requirements
for the degree of Bachelor of Science (Marine Science)

Faculty of Science and Technology
COLLEGE UNIVERSITY SCIENCE AND TECHNOLOGY
MALAYSIA
(UNIVERSITY PUTRA MALAYSIA TERENGGANU)

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Abstract

Increasing numbers of tourist visiting Pulau Perhentian in the recent years may contaminate its aquatic environment with sewage waste. Two samplings were conducted in April 2001 (17.4.2001 – 20.4.2001) and August 2001 (16.8.2001 – 20.8.2001) to determine Pulau Perhentian's water quality. 16 sampling stations were established around the island. Parameters which were studied including total coliform count, fecal coliform count, *Escherichia coli* count, BOD₃, total suspended solids and total alkalinity.

In April and August, the mean total coliform counts in Pulau Perhentian water were 26.69 MPN/100 ml and 65.69 MPN/ 100 ml respectively. Mean total coliform counts in sediment were 1.05 MPN/g in April and 0.76 MPN/g in August. In April, the mean fecal coliform counts in Pulau Perhentian water and sediment were 17.81 MPN/100 ml and 0.79 MPN/g respectively. In August, mean fecal coliform count in water was 11.19 MPN/100 ml and sediment was 0.56 MPN/g. No *Escherichia coli* count was available in April. In August, mean *Escherichia coli* counts in water and sediment were 7.75 MPN/100 ml and 0.42 MPN/g respectively. BOD₃ were low in both months, with mean BOD₃ of $0.27 \pm 0.098 \text{ mg.L}^{-1}$ in April and $0.59 \pm 0.156 \text{ mg.L}^{-1}$ in August. In April, mean total suspended solids in Pulau Perhentian water was $44.88 \pm 15.44 \text{ mg.L}^{-1}$ and August was $35.81 \pm 9.06 \text{ mg.L}^{-1}$. In April, most of total alkalinity were recorded within 93.00 - 100.00 mg CaCO₃.L⁻¹ and August, 100.00 to 110.00 mg CaCO₃.L⁻¹. Hydrological parameters (temperature, pH, specific conductivity, salinity, saturated dissolved oxygen and dissolved oxygen) were constant in this study. Generally, Pulau Perhentian is safe for recreational activities.

Abstrak

Sejak beberapa tahun kebelakangan ini, peningkatan pelancong melawat Pulau Perhentian mungkin menyebabkan persekitaran akuatikinya dicemari sisa kumbahan. Dua penyampelan dilakukan pada April 2001 (17.4.2001 – 20.4.2001) dan Ogos 2001 (16.8.2001 – 20.8.2001) untuk menentukan kualiti air Pulau Perhentian. 16 stesen penyampelan ditetapkan mengelilingi Pulau Perhentian. Parameter yang dikaji termasuk bilangan jumlah coliform, bilangan fecal coliform, bilangan *Escherichia coli*, BOD₃, jumlah pepejal terampai dan jumlah alkalinity. Dalam April dan Ogos, min bilangan jumlah coliform di perairan Pulau Perhentian ialah 26.69 MPN/100 ml dan 65.69 MPN/100 ml masing-masing. Min bilangan jumlah coliform dalam sedimen ialah 1.05 MPN/g dalam April dan 0.76 MPN/g dalam Ogos. Dalam April, min bilangan fecal coliform dalam air dan sedimen Pulau Perhentian ialah 17.81 MPN/100 ml dan 0.79 MPN/g. Dalam Ogos, min bilangan fecal coliform dalam air ialah 11.19 MPN/100 ml dan dalam sedimen ialah 0.56 MPN/g. Bilangan *Escherichia coli* tidak didapati dalam April. Dalam Ogos, min bilangan *Escherichia coli* dalam air dan sedimen ialah 7.75 MPN/100 ml dan 0.42 MPN/g masing-masing. BOD₃ adalah rendah pada kedua-dua bulan tersebut, dengan min BOD₃ sebanyak $0.27 \pm 0.098 \text{ mg.L}^{-1}$ dalam April dan $0.59 \pm 0.156 \text{ mg.L}^{-1}$ dalam August. Dalam April, min jumlah pepejal terampai dalam perairan Pulau Perhentian ialah $44.88 \pm 15.44 \text{ mg.L}^{-1}$ dan dalam Ogos, ialah $35.81 \pm 9.06 \text{ mg.L}^{-1}$. Dalam April, kebanyakan jumlah alkalinity direkodkan antara 93.00 - 100.00 mg CaCO₃.L⁻¹ dan dalam Ogos, antara 100.00 - 110.00 mg CaCO₃.L⁻¹. Parameter hidrologikal (suhu, pH, konduktiviti

spesifik, salinity, penepuan oksigen terlarut dan oksigen terlarut) adalah malar dalam kajian ini. Umumnya, air Pulau Perhentian masih sesuai untuk tujuan rekreasi.

PUSAT PEMBELAJARAN DIGITAL SULTANAH NUR ZAHIRAH