

**DETECTION OF COLIFORM BACTERIA IN SEA BATHING  
WATER IN TERENGGANU COAST**

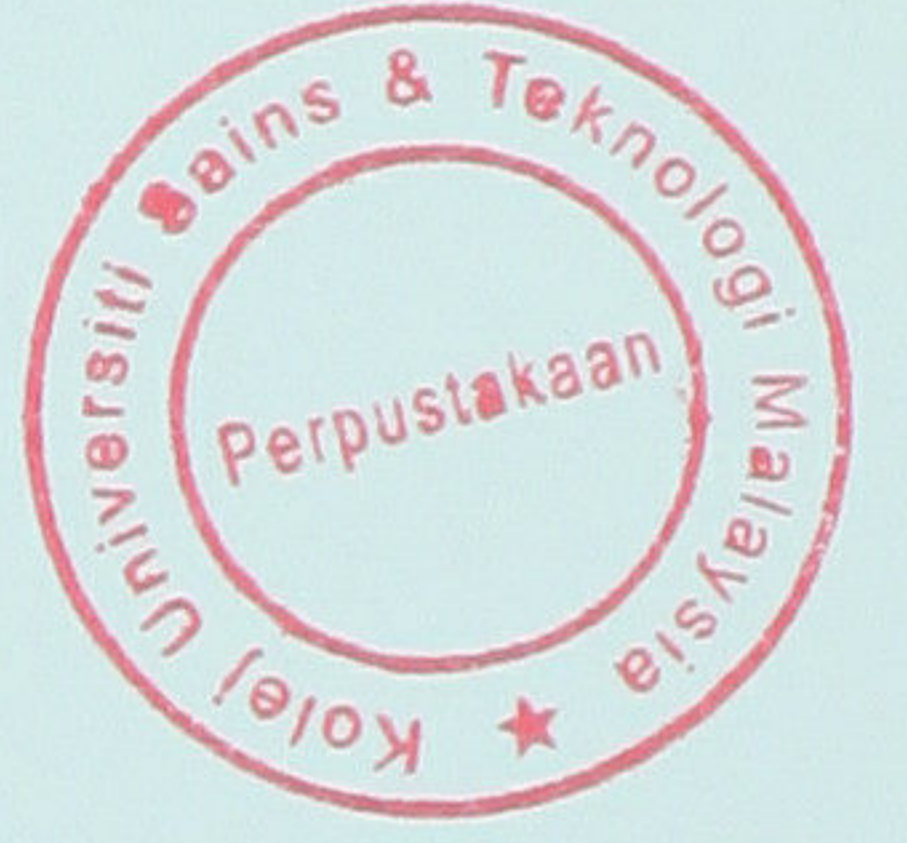
**HOW HUI YONG**

**FACULTY OF SCIENCE AND TECHNOLOGY  
KOLEJ UNIVERSITI SAINS DAN TEKNOLOGI MALAYSIA  
KUSTEM**

**2003**

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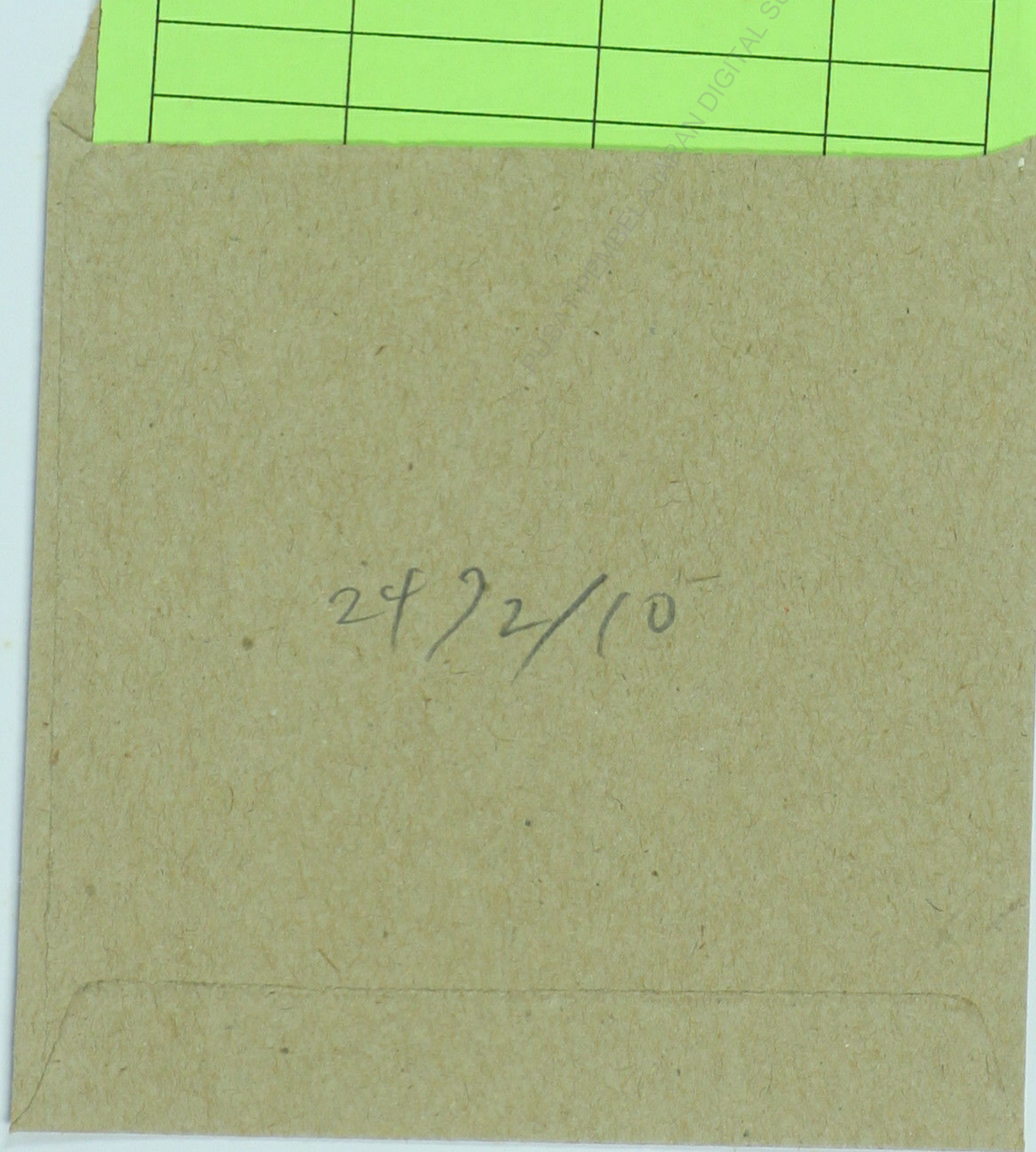
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Detection of coliform bacteria in sea bathing water in  
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PERPUSTAKAAN  
KOLEJ UNIVERSITI SAINS & TEKNOLOGI MALAYSIA  
(KUSTEM)

Penjarang: How Hui Yong No. Panggilan: CPN 1576

Judul: Detection of coliform bacteria

Tarikh	Waktu Pemulangan	Nombor Ahli	Tanda tangan
16/12/03	1.00	UK 5746	
21/7/05	11.00	UK 8038	
27/2/06	4:30 pm	9423	
11/05/06	6:00 pm	UK 9699	
25/3/07	11:00 pm	10230	



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**DETECTION OF COLIFORM BACTERIA IN SEA BATHING WATER IN  
TERENGGANU COAST**

**By:**

**HOW HUI YONG**

**This project report is submitted in partial fulfillment of the requirements for the  
Bachelor of Applied Science  
(Biodiversity Conservation and Management)**

**Department of Biological Sciences  
Faculty of Science and Technology  
Kolej Universiti Sains & Teknologi Malaysia  
(KUSTEM)  
2003**

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# UNIVERSITY COLLEGE SCIENCE AND TECHNOLOGY MALAYSIA

## APPROVAL AND CERTIFICATION FORM

I certify that the report of this final year project entitled 'Detection of Coliform Bacteria in Bathing Sea Water in Terengganu Coast' by HOW HUI YONG, metric no. UK4166 have been read and all the alteration and correction recommended by Examiners have been done. This thesis submitted to Department of Biological Sciences, have been accepted as fulfillment of the requirement for degree of Sarjana Muda Science in Management and Conservation of Biodiversity of Faculty of University College Science and Technology Malaysia (KUSTEM).

Approve by:

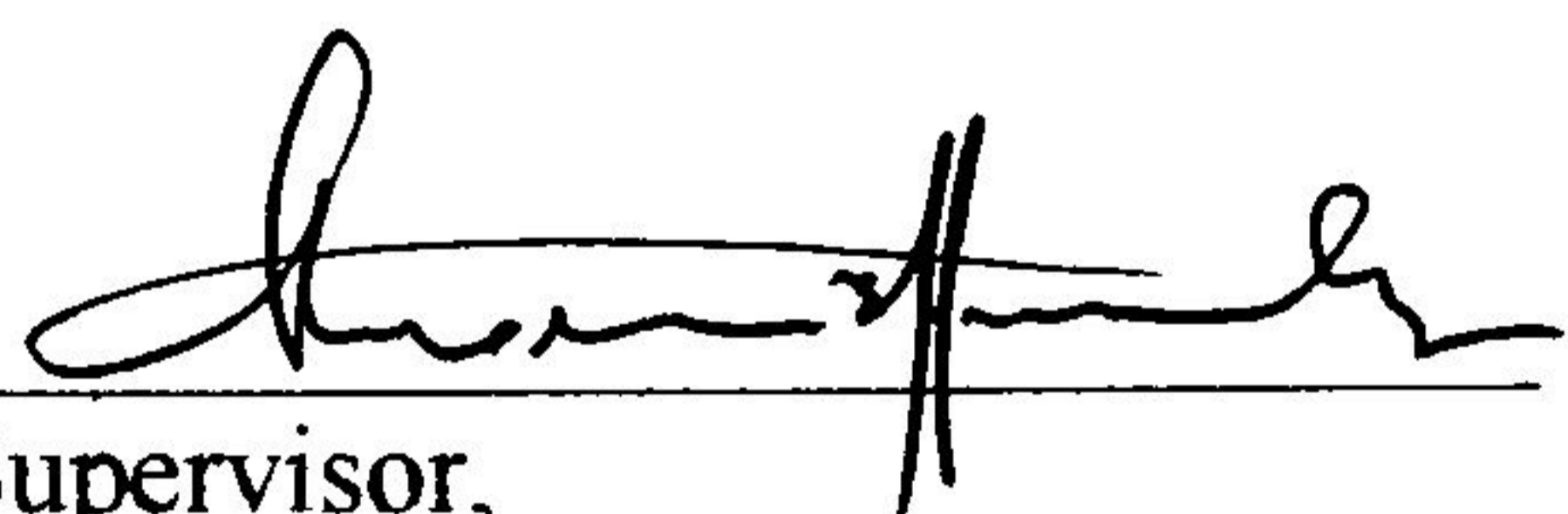
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## ABSTRAK

Satu kajian berkenaan dengan kehadiran fecal coliforms (FC) telah dijalankan pada dua pantai rekreasi di Kuala Terengganu masing-masing iaitu di Pantai Batu Buruk dan Pantai Batu Rakit. Sampel air diambil dari tiga stesen yang berbeza di setiap lokasi. Parameter lain yang turut diambil bacaannya ialah pH dan juga suhu air laut. Tujuan kajian ini ialah untuk menghitung bilangan koloni fecal coliforms. Total coliforms (TC), fecal coliforms (FC) dan juga *E. coli* (EC) turut dikesan pada setiap lokasi kajian. Dalam kajian ini, teknik penurasan membran telah digunakan dan medium yang dipilih untuk mengesan coliform bakteria ialah agar M-endo dan M-FC. Pantai Batu Buruk menunjukkan kehadiran bilangan koloni bakteria yang tinggi di setiap stesen. Manakala semua stesen di Pantai Batu Rakit menunjukkan kehadiran bilangan koloni bacteria yang rendah. Kegiatan aktiviti yang tinggi dan air kumbahan di kawasan rekreasi memberikan nilai bilangan koloni bakteria yang tinggi di situ. Di dalam kajian ini, didapati bahawa tiada korelasi di antara bilangan koloni total coliforms dengan bilangan koloni fecal coliforms.

## ABSTRACT

A study on fecal coliform was carried out on seawater from Batu Buruk and Batu Rakit, two known recreational beaches in Kuala Terengganu. The water samples were collected from three different sampling sites in each location. Parameters such as temperature and pH were determined in the field. The objective of this study was to determine the number of fecal coliform colonies present. Total coliform, fecal coliform and *E. coli* were detected in the sampling sites. Membrane filter technique was used to determine the bacteria count and the media chosen for enumeration of coliforms bacteria was M-Endo and M-FC. Batu Buruk Beach shows high concentrations of coliform bacteria in each station. Meanwhile all stations at Batu Rakit Beach have lower concentrations of coliform bacteria. High concentration of coliform colonies is the result of high recreational activities and sewage outfall. It was found that all the stations studied showed no correlation between the number of total coliform and the number of fecal coliform.