

GEOCHEMICAL PROFILE OF SOME HEAVY METAL IN TOK BALI  
LAGOON, MELAYU

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**GEOCHEMICAL PROFILE OF SOME HEAVY METAL IN TOK BALI LAGOON,  
KELANTAN**

**By**

**Mohd Zuhairan bin Nahar**

**Research project report submitted in partial fulfillments  
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PROJEK PENYELIDIKAN I DAN II**

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk :

**Geochemical Profile Of Some Heavy Metal in Tok Bali Lagoon, Kelantan** oleh **Mohd Zuhairin bin Nahar, UK 8770** telah diperiksa dan semua pembetulan yang disarankan telah dilakukan. Laporan ini dikemukakan kepada Jabatan Sains Samudera sebagai memenuhi sebahagian daripada keperluan memperolehi Ijazah Sarjana Muda Sains (Sains Samudera) Fakulti Sains dan Teknologi, Kolej Universiti Sains dan Teknologi Malaysia.

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## LIST OF FIGURES

3.0	The Location of Study Area	12
4.1a	standard curve for Al	17
4.1b	standard curve for Fe	17
4.1c	standard curve for Zn	18
4.1d	standard curve for Pb	18
4.1e	standard curve for Co	19
4.1f	standard curve for Cu	19
4.3a	Al Concentration vs. Depth ( $\mu\text{g/g}$ )	25
4.3b	Pb Concentrations vs. Depth ( $\mu\text{g/g}$ )	27
4.3c	Fe Concentrations vs. Depth ( $\mu\text{g/g}$ )	29
4.3d	Zn Concentrations vs. Depth ( $\mu\text{g/g}$ )	31
4.3e	Co Concentrations vs. Depth ( $\mu\text{g/g}$ )	33
4.3f	Cu Concentrations vs. Depth ( $\mu\text{g/g}$ )	35
4.4	Organic Carbons vs. Depth	37
5.3a	Correlation between Al Concentration versus Organic Carbon	51
5.3b	Correlation between Pb Concentration versus Organic Carbon	52
5.3c	Correlation between Fe Concentration versus Organic Carbon	53
5.3d	Correlation between Zn Concentrations versus Organic Carbon	54
5.3e	Correlation between Cu Concentration versus Organic Carbon	55
5.3f	Correlation between Co Concentration versus Organic Carbon	56

## LIST OF TABLES

4.2a	Recovery test for station 1	20
4.3.1a	Al, Pb, Co, Cu, Fe and Zn concentration ( $\mu\text{g/g}$ , dry weight) station 1	22
4.3.1b	Al, Pb, Co, Cu, Fe and Zn concentration ( $\mu\text{g/g}$ , dry weight) station 2	23
5.3 .1	Contamination categories of enrichment factor	47
5.3.2	R value between heavy metal and organic carbon	48
5.4a	Enrichment Factors at Station 1	57
5.4b	Enrichment Factor at Station 2	58



## LIST OF ABBREVIATIONS

<b>Symbol</b>	<b>Description</b>
%	Percentage
<sup>0</sup> C	Degree Celcius
Al	Aluminum
Cu	Copper
Co	Cobalt
Zn	Zinc
Fe	Iron
Pb	Lead
ppm	part per million
Std	Standard
TOC	Total organic carbon
OC	Organic carbon
mL	mililiter
TC	Total Carbon
µg/g dw	microgram per gram dry weight

## TABLE OF CONTENT

<b>ACKNOWLEDGEMENT</b>	<b>i</b>
<b>ABSTRACT</b>	<b>ii</b>
<b>ABSTRAK</b>	<b>iii</b>
<b>LIST OF FIGURE</b>	<b>iv</b>
<b>LIST OF TABLE</b>	<b>v</b>
<b>LIST OF ABBREVIATIONS</b>	<b>vi</b>
<b>CHAPTER 1</b>	
1.1 Introduction of the study	1
1.2 Objective	3
<b>CHAPTER II</b>	
<b>Literature Review</b>	
2.1 Mangrove	4
2.2 Sediment in Mangrove	5
2.3 Heavy Metal	5
2.4 Geochemistry of Heavy Metal	6
2.4.1 Aluminium	6
2.4.2 Zinc	7
2.4.3 Lead	7
2.4.4 Iron	8
2.4.5 Copper	9
2.4.6 Cobalt	10

## **CHAPTER III**

### **Methodology**

3.1	Research Location	11
3.2	Apparatus preparation	13
3.3	Sampling	13
3.4	Laboratory Analysis	
3.4.1	Total Organic Carbon	14
3.4.2	Heavy Metal	15

## **CHAPTER IV**

### **Result**

4.1	Standard curve	17
4.2	Recovery test	20
4.3	Heavy Metal	21
4.1.1	ISP-MS	21
4.4	Organic carbon	36

## **CHAPTER V**

### **Discussion**

<b>5.1</b>	<b>Distribution of Heavy metal in Sediment</b>	<b>38</b>
5.2.1	Al	38
5.2.2	Pb	39
5.2.3	Fe	41

5.2.4	Zn	42
5.2.5	Cu	43
5.2.6	Co	44
5.3	Organic carbon	45
5.4	Correlation between Heavy Metal and organic carbon	47
5.5	Enrichment Factor	57
<b>CHAPTER VI</b>		
	Conclusion	59
<b>REFERENCES</b>		
		60
<b>APPENDIXES</b>		
		65

## ABSTRACT

The understanding of variation in sedimentary process across mangrove area is most important because they influence the environment and other related process. The sediment core was obtained show some characteristic of high organic carbon, geochemical element such as aluminum, iron, zinc, cobalt, copper and lead were carried out to access the production of mangrove sediment. Two sample core were obtained from the mangrove forest at Tok Bali to measuring the concentration of heavy metal for each sample from surface until depth 40 cm at station 1 and depth 46 cm for station 2. The total mean value for concentration of geochemical element of aluminum at station 1 was 2.49% while at station 2, the average is 2.03%, lead is 38.81  $\mu\text{g/g dw}$  at station 1 and at station 2, the average of concentration of Pb is 31.21  $\mu\text{g/g dw}$ , ferum is 0.60%, and for station 2, the average of concentration is 0.66%, Zinc at station 1 is 68.71  $\mu\text{g/g dw}$ , and at station 2 is 52.32  $\mu\text{g/g dw}$ . Cobalt is 4.59  $\mu\text{g/g dw}$  at station 1 and at station 2 is 4.55  $\mu\text{g/g dw}$ , copper is 31.88  $\mu\text{g/g dw}$  at station 1 and for station 2, the average is 28.19  $\mu\text{g/g dw}$ . The average of organic carbon in the sediment is for Station 1 is 0.74% and for the station 2, average percentage of total organic carbon in the sediment is 0.45%.

## **PROFIL GEOKIMIA BAGI SESETENGAH BAHAN BERAT DI MUARA TOK BALI**

### **ABSTRAK**

Pemahaman mengenai kepelbagaian proses yang berlaku di kawasan hutan paya bakau adalah terlalu penting kerana ia mempengaruhi kawasan persekitarannya dan mempunyai hubungan diantara proses – proses yang berkaitan. Lapisan sediment diambil untuk dilihat sifat-sifat bahan organik serta elemen geokimia seperti aluminum, ferum, zinc, cobalt, kuprum dan plumbum ditentukan untuk menilai penghasilan sedimen di paya bakau. 2 sample lapisan sediment diambil daripada kawasan paya bakau yang berada di Tok Bali untuk menentukan kandungan sampel dari permukaan sehingga kedalaman 40 cm untuk stesen 1 dan 46 cm untuk stesen 2. Jumlah purata kepekatan elemen geokimia bagi aluminum di stesen 1 is 2.43% sementara di stesen 2, adalah 1.91%, bagi elemen plumbum, 74.61  $\mu\text{g/g dw}$  di stesen 1 dan di stesen 2, puratanya adalah 84.66  $\mu\text{g/g dw}$ , purata bagi ferum adalah 0.61  $\mu\text{g/g dw}$ , dan untuk stesen 2 adalah 1.01  $\mu\text{g/g dw}$ , sementara itu purata kepekatan bagi Zinc di stesen 1 adalah 78.25  $\mu\text{g/g dw}$ , dan di stesen 2 adalah 72.59  $\mu\text{g/g dw}$ . Cobalt pula, 4.59  $\mu\text{g/g dw}$  di stesen 1 dan di stesen 2 adalah 16.81  $\mu\text{g/g dw}$ , kuprum pula mempunyai purata 31.88  $\mu\text{g/g dw}$  di stesen 1 dan untuk stesen 2 adalah 64.46  $\mu\text{g/g dw}$ . nilai purata bagi bahan organik untuk stesen 1 adalah 0.74% dan untuk stesen 2 puratanya adalah 0.47%.