

CONCENTRATION OF HEAVY METAL IN SURFACE
SEDIMENT AT SULU SULAWESI SEA (SABAH)

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Concentration of Heavy Metal in Surface Sediment at Sulu-Sulawesi Sea (Sabah)

By

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**Research Report submitted in partial fulfillment of
the requirements for the degree of
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**DECLARATION AND VERIFICATION REPORT
FINAL YEAR RESEARCH PROJECT**

It is hereby declared and verified that this research report entitled:

Concentration of Heavy Metal in Surface Sediment at Sulu-Sulawesi Sea (Sabah) by Siti Zuraidah Bt Hashim, Matric No. UK14860 have been examined and all errors identified have been corrected. This report is submitted to the Department of Marine Science as partial fulfillment towards obtaining the Degree **Bachelor of Science (Marine Science)**, Faculty of Maritime Studies and Marine Science, University Malaysia Terengganu.

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LIST OF ABBREVIATIONS

Al	-	Aluminium
Cu	-	Copper
Fe	-	Iron
g	-	gram
Mg	-	Magnesium
ml	-	milliliter
Pb	-	lead
ppm	-	part per million
Zn	-	zinc

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ABSTRACT

This study was conducted in the Sulu-Sulawesi Sea of Sabah. The objective of this study was to determine the concentration of heavy metals in surface sediments of Sulu-Sulawesi Sea, Sabah and to relate between organic carbon and heavy metals. Surface sediments were taken using Smith McIntyre grab. The samples were digested using Teflon bomb method and analyzed using ICP-MS. For organic carbon analysis, iron sulfate oxidation method was used. The concentration of Al, Fe, Mg, Zn, Cu, and Pb ranged between 0.003% - 6.55%, 0.10% - 5.43%, 0.17% - 2.38%, 19.9 ppm–79ppm, 2.54ppm–55.78ppm, and 2.41ppm–19.73 ppm respectively. Al showed significant correlation with organic carbon while other metals show poor correlation with organic carbon. The sediments of the Sulu and Sulawesi seas may be considered as relatively pristine as pollutant metal Pb was very low in concentration.

ABSTRAK

Kajian mengenai kandungan logam berat telah dijalankan di laut Sulu-Sulawesi, Sabah. Tujuan kajian ini adalah untuk mengkaji kandungan logam berat di dalam sediment dan juga mengkaji korelasi di antara peratusan organik karbon dan kandungan logam berat. Sampel permukaan dasar laut diambil menggunakan grab Smith McIntyre. Di makmal, sampel ini dicerna menggunakan teknik perceraan Teflon bomb dan peratusan organic carbon ditentukan menggunakan kaedah pengoksidaan Ferum Sulfat. Kandungan logam iaitu Al, Fe, Mg, Zn, Cu, dan Pb adalah diantara 0.003% - 6.55%, 0.10% - 5.43%, 0.17% - 2.38%, 19.9 ppm-79ppm, 2.54ppm-55.78ppm, dan 2.41ppm-19.73 ppm setiap satu. Al menunjukkan korelasi dengan peratusan organik karbon manakala logam yang lain menunjukkan korelasi yang lemah dengan peratusan organik karbon.