

MINERALOGY IN SEDIMENTS AT KERTEH LAGOON, TERENGGANU

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MINERALOGY IN SEDIMENTS AT KERTEH LAGOON, TERENGGANU

By

Ranjini A/P Munisamy

**Research Report submitted in partial fulfillment of
the requirement for the degree of
Bachelor of Science (Marine Science)**

**Department of Marine Science
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UNIVERSITI MALAYSIA TERENGGANU
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DEPARTMENT OF MARINE SCIENCE
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UNIVERSITI MALAYSIA TERENGGANU

DECLARATION AND VERIFICATION REPORT

FINAL YEAR RESEARCH PROJECT

It is hereby declared and verified that this research report entitled: Mineralogy in Sediments at Kerteh Lagoon, Terengganu by Ranjini A/P Munisamy, Matric No. UK20935 have been examined and all error identified have been corrected. This report is submitted to the Department of Marine Science as partial fulfillment towards obtaining the Degree of Science (Marine Science), Faculty of Maritime Studies and Marine Science, Universiti Malaysia Terengganu.

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LIST OF ABBREVIATIONS

| | |
|---------------|------------------|
| ϕ | phi |
| % | percentage |
| mL | milliliter |
| L | liter |
| mm | millimeter |
| μm | micron |
| g | gram |
| kg | kilogram |
| M | Molarity |
| kV | kilovolt |
| ° | degree |
| °C | degree Celsius |
| θ | theta |
| < | less than |
| S.G | specific gravity |
| Al | aluminium |

| | |
|--------------------------------|----------------------------|
| C | carbon |
| Ca | calcium |
| Cu | copper |
| Fe | iron |
| K | potassium |
| Mg | magnesium |
| Na | sodium |
| O | oxygen |
| Si | silicon |
| Al ₂ O ₃ | aluminium oxide / corundum |
| CaO | calcium oxide |
| CO ₂ | carbon dioxide |
| FeO | iron oxide |
| SiO ₂ | silicon oxide |
| H ⁺ | hydrogen ion |
| OH ⁻ | hydroxide ion |

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ABSTRACT

Twelve sediment samples were collected at Kerteh lagoon on June 2011. These samples were analyzed to acquire information on sedimentological characteristics, geochemistry and mineral constituents. Dry sieve and hydrometer method were used to determine the sedimentological characteristic and sediment texture of the sediments. On the other hand, scanning electron microscope – energy dispersive spectroscopy (SEM-EDS) was used to study the geochemistry of the sediment while both X-ray diffractometer (XRD) and quantitative mineral estimation (QME) method were applied for mineralogy. Results showed that the study area consist dominantly by moderate sand size and dominant distribution of sand texture. With regards to its geochemistry, silicon oxide (SiO_2) have the highest percentage abundance at the stations which was a gist to the findings of dominant mineral in the study area. On the other hand, both XRD and heavy mineral analysis showed the dominance of quartz mineral in the study area which was due to the influence of granite weathering, as granite is the dominant rock along the east coast of Peninsular Malaysia. In addition, the high resistance towards weathering and durability was seen as the potential factors contributed to its dominant occurrence. On top of it, common occurrence of quartz in sand texture was further enhanced by the dominance of sand texture at study area.