

PREDICTION ON SEDIMENT MOVEMENT FOR DREDGING PURPOSES  
AT WHARF NUMBER 1 TO 7, SOUTH PORT, PORT KLANG

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### Abstract

A prediction on the sediment movement is essential for dredging works. In order to achieve this, the sedimentation area and the dredging location have to be identified to ensure a steady flow in the harbour. Because the determination of the required depth for the safety passage of the vessels is inadequate by merely monitoring the seabed topography.

In this project, the prediction of sediment movement depends on the sounding and flow parameters data acquired from the year 1988 to early 1992 and the equations used. However, these data collections are within the scope of the hydrographer. The sedimentation area is determined from contour plans while the location that should be dredged is obtained from longitudinal and cross sections.

Sediment movement is predicted to move southward with the overall orbital velocity between 0.45 and 0.50 m<sup>2</sup>/second. While, the rate of the total sediment transport is approximately 80 000 to 100 000 m<sup>3</sup>/year. Consequently, the observed and computed values of sediment siltation are compared.

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## CHAPTER ONE : INTRODUCTION

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### 1.0 Introduction

In the last couple of years, the seabed topography has become more and more important for certain projects which deal with ocean and land. It is very useful for the mariner, engineer, geologist and geophysicist to make their job easier.

As a hydrographer, data collection of tides, water flow, current and sediment sampling are used by the person as stated above in their works. Beside that, the hydrographer is also responsible in monitoring the required depth of the navigation line, especially at the harbour area. If the depth is below the requirement, dredging activities has to be done under engineer and hydrographer supervision. The dredging is done after the sediment study ( especially sediment movement ) and siltation are taking into account.

The selected research area is wharf number 1 to 7, South Port, Port Klang ( see Figure 1.1 ). In carrying out data processing and analysis, DATACOM SOFTWARE is used.