CHAPTER I

INTRODUCTION

Wadi Hodein and its tributaries is the largest basin in the southeastern portion of Eastern Desert, draining toward Red Sea. It attains about 12,000 Km^2, representing about 50 % of Halayeib-El-Shalateen District.

More attention is directed towards the area for rising the standard of living through development of new settlements, mining activities, land reclamation, fishery, and animal husbandry .The first thing to be attend is water supply, especially, the area is characterized by aridity and suffers from scare rainfalls and desertification.

Two sources of water supply are available in the area, the first is groundwater, which forms continuous and important source for water supply. The second is the rain water as a temporary source as rain less period may continue for five or even eight years, which leads to great starvations.

The area under investigation comprises three aquifer systems, fractured basement aquifer (covering a great part of the area), Nubian Sandstone aquifer (occupying the northwestern portion of the study area), and the alluvial aquifer in the deltas and main channels of subsidiaries Wadis.

Detailed hydrogeochemical investigations were carried out to evaluate groundwater resources quality. Hydrogeochemical techniques were used as important tools in groundwater assessment. They provide information origin, mineralization as well as quality of groundwater in the investigated area.