ABSTRACT

The main purpose of this thesis is to investigate the occurrence and quality of the groundwater in the Jurong River Region. Measurements are made on the ground water table, water temperature, pH, RPH and electric conductivity of the groundwater in the field.

Open wells are used in the surveying of groundwater in this region. Among these wells surveyed, most are "unconfined wells" except station 9 which is a "confined well".

The groundwater level of this region is approximately parallel to the ground surface. The depth to the groundwater table from ground surface is within two meters.

Regarding the pH value of each surveying station of this region, it is noted that they are not influenced by river water or sea water but mostly determined by geology formation and pollutant from local sources. In the most cases, the pH values of the groundwater are smaller than 7.0 (neutral) within a range between 4.0 to 6.4.

The result of the above survey is, if the pH value is higher, the electric conductivity value is also higher than the surrounding water. This increase or decrease of the electric conductivity is not influenced by river water or sea water.

Difference in the temperature of groundwater is not great. The higher is 27.0°C and the lowest is 25.7°C.

The changing of groundwater level is greatly influenced by rainfall. Heavy rainfall will cause the groundwater level to rise rapidly. But if there is less rainfall or no rainfall, the level will fall accordingly. By assuming the datum level, we can determine the residence time of the groundwater. The obtained value of it is 100 to 200 days.

In short, the main points of this thesis are to show the relationship between groundwater level, pH, RPH, temperature, electric conductivity and the groundwater table change in the Eastern Part of Lower Jurong River Area. I sincerely hope that this thesis would assist as a guide for further investigation of groundwater in the other regions.