

TOTAL AND FECAL COLIFORM CONTAMINATION OF
GROUNDWATER IN LABAC RIVER WATERSHED,
CAYITE, PHILIPPINES

THESIS

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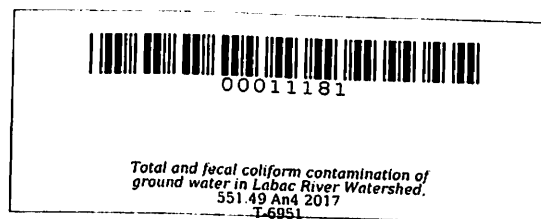
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**TOTAL AND FECAL COLIFORM CONTAMINATION OF GROUNDWATER
IN LABAC RIVER WATERSHED, CAVITE, PHILIPPINES**

Undergraduate Thesis
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ABSTRACT

ANGCAYA, MERYLL C. Total and Fecal Coliform Contamination of Groundwater in Labac River Watershed, Cavite, Philippines. Undergraduate Thesis. Bachelor of Science in Environmental Science. Cavite State University, Indang, Cavite. May 2017. Adviser: Ms. Amyel Dale L. Cero.

The study was conducted in Labac River Watershed, which covers the municipality of Tagaytay City, Mendez, Indang, and Naic, Cavite, from April 2016 to January 2017 to determine the total and fecal coliform contamination of its groundwater. Specifically, the study aimed to: (1) determine the presence of total and fecal coliform contamination of the groundwater in Labac River Watershed; (2) determine the level of total and fecal coliform contamination; (3) assess the physico-chemical characteristics of the groundwater in terms of temperature, pH, dissolved oxygen (DO), total dissolved solids (TDS), salinity and conductivity; (4) identify the factors that contribute to the total and fecal coliform contamination of groundwater; and (5) determine the possible impacts of the total and fecal coliform contamination to the immediate community and the watershed as a whole.

The study revealed that there is total and fecal coliform contamination among the selected deep wells in the upstream, midstream, and downstream areas of the watershed in both wet and dry season. The level of total and fecal coliform contamination in the sampling site at Barangay Halang, Naic, Cavite is the same for both wet and dry season. There possible factors that contributed to the total and fecal coliform contamination were identified as follows: (1) the age of the septic tanks in the households near the sampling sites, (2) lack of regular desludging of their septic tanks.

The physico-chemical characteristics of the groundwater in terms of temperature, pH, dissolved oxygen (DO), total dissolved solids (TDS), salinity and conductivity were assessed through *in situ* water quality tests and results showed low variation among wet season and dry season values.

The possible impact of total and fecal coliform contamination to the immediate community and the watershed as a whole would mainly be the occurrence of waterborne diseases. However, based on the household survey, there were no occurrence of these diseases among the respondents because most of them buy their drinking waters from the water vendors and water refilling stations.

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INTRODUCTION

The major composition of the Earth's atmosphere is 97 percent salt water and 3 percent of freshwater. These freshwater resources include different sources of water, 97 percent of which is stored in the underground where the groundwater is located, while the other 3 percent comes from the surface, which include the rivers, lakes, and ponds. There are several uses of groundwater and one of the most important is its purpose as drinking water for living organisms. Aside from its domestic uses, groundwater is also utilized by industries and agriculture. For the surface water systems, the groundwater provides the base flow for rivers that are used for water supply and recreation. During summer season, almost 90 percent of the flow in some rivers may come from the groundwater whose quality may directly affect the different types of aquatic and terrestrial animals present in the area (Water Information System for Europe, 2015).