

TITLE: MICROBIOLOGICAL AND PHYSICOCHEMICAL QUALITY OF WATER FROM MINES USED FOR HUMAN CONSUMPTION IN LONDRINA - PR

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ABSTRACT:

Mines also known as springs are important water resources found in rural areas and may be easily contaminated due to lack of adequate protection at the site of the outcrop or its vicinity. The control of the sanitary quality of drinking water is important and necessary since its contamination becomes an influential medium for waterborne diseases. In Brazil, Ministry of Health, through ordinance 2914/2011 have established the microbiological and physicochemical parameters for water quality assessment. This study aimed to verify the drinking water quality from 50 mines located in the city of Londrina – Paraná between February and May 2017, through research in reports of Bacteriology Laboratory, in State University of Londrina, analyzing the presence of total coliforms and *E. coli*, in order to infer the indication of fecal contamination. In this context, the methodology used was of the chromogenic substrate Colilert®. For turbidity and fluoride determination, the Nephelometry and Ion Selective Electrode methods were used, respectively. The results showed that 45 (90%) were out of the microbiological standards (absence of total coliforms and *E. coli* in 100 mL of the sample), in which 35 (77.7%) presented contamination by total coliforms and *E. coli* and 10 (22.2%) by only total coliforms. In relation to the fluoride parameter (maximum permissible value = 1.5 mg / L), 100% of the samples were within recommended standards and for turbidity, 4 (8%) samples exceeded maximum allowed value (5 UT). In addition, none of the samples had been treated with chlorine. The results still show that the consumption of water from these mines poses risk to health, since they are in disagreement with the current legislation that establishes the desired quality parameters. In closing, it is necessary that the population better understand the health risks related to the consumption of these waters, besides to developing preventive actions.

Keywords: mines, water, total coliforms, *Escherichia coli*

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