

# **STUDY OF POTENTIAL CONTAMINATION LEVEL OF HEAVY METAL Cu , Cr AND Fe ION COMPOUNDS ON GROUNDWATER IN THE FINAL DISPOSAL AREA AT CIPAYUNG, DEPOK CITY, WEST JAVA**

## **ABSTRACT**

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Cipayung final disposal (TPA) is part of a public facility that can be utilized by Depok people. Currently, the disposal area that owned by Depok City Government is approximately 11.2 hectares. The purpose of this study were : (1) Analyzing the potential contamination of heavy metals Cu, Cr and Fe ion on groundwater in the Cipayung disposal area, (2) Re-design the Cipayung disposal area wastewater treatment plant. The study was conducted in Cipayung District, Depok City, West Java Province in October during the dry season.

The method used in this research were surveying and mapping, laboratory testing, and Le Grand scoring method that used to determine physical parameters such as : (1) Depth of Groundwater level, (2) Slope of Groundwater level, (3) Absorption Above The Groundwater level, (4) Well Horizontal Distance With The Pollutant Resources, (5) Aquifer Permeability. Laboratory test was conducted to determine the levels of chemical parameters such as BOD, COD, Total Iron (Fe), Copper (Cu), Total Chromium (Cr) and pH. Laboratory test results will be use as a comparison standard quality based on Government Regulation No. 82 of 2001 concerning Water Quality Management and Water Pollution Control and the Regulatory of Environment Minister No. 5 of 2014 concerning Wastewater Quality Standard.

Based on the scoring results of each parameter using the Le Grand method at 19 point of wells sampling, obtained a small contamination potential class (very improbable) and moderate (possible but not likely). The further the location of the wells with pollutant resources (Final Disposal) the smaller the level of the contamination. The proper management direction that can be done to reduce the level of leachate water pollution in the Cipayung final disposal area is redesign the wastewater treatment plant (WWTP) that accordance with the characteristics of Cipayung final disposal leachate.

Keywords : Potential Contamination, Groundwater, Le Grand, Contamination level