THE STUDY OF AERATION PROCESS IN WATER PRE-TREATMENT OF PT X IN BEKASI DISTRICT

UNDERGRADUATE FINAL PROJECT

Submitted as one of the requirements to obtain
Bachelor Degree in Sarjana Teknik

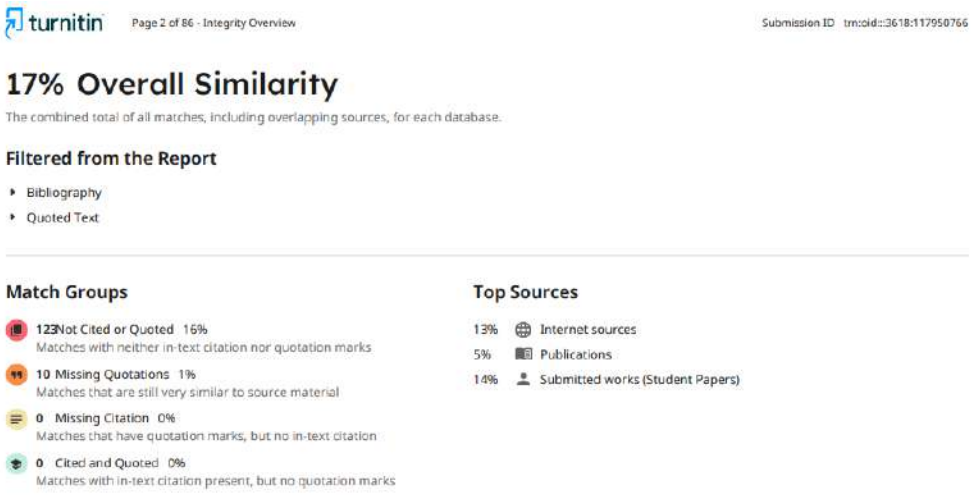
By:

Salza Afifa Aulia

018202100004

FACULTY OF ENGINEERING
ENVIRONMENTAL ENGINEERING STUDY PROGRAM
CIKARANG
FEBRUARY 2025

TURNITIN TEST RESULT


turnitin Page 2 of 86 - Integrity Overview Submission ID trn:oid:::3618:117950766

17% Overall Similarity

The combined total of all matches, including overlapping sources, for each database.

Filtered from the Report

- Bibliography
- Quoted Text

Match Groups

- 123 Not Cited or Quoted 16%
  Matches with neither in-text citation nor quotation marks
- 10 Missing Quotations 1%
  Matches that are still very similar to source material
- 0 Missing Citation 0%
  Matches that have quotation marks, but no in-text citation
- 0 Cited and Quoted 0%
  Matches with in-text citation present, but no quotation marks

Top Sources

13% Internet sources
5% Publications
14% Submitted works (Student Papers)

GPTZERO TEST RESULT

turnitin Page 2 of 81 - AI Writing Overview Submission ID trn:oid:::3618:117950766

*% detected as AI

AI detection includes the possibility of false positives. Although some text in this submission is likely AI generated, scores below the 20% threshold are not surfaced because they have a higher likelihood of false positives.

Caution: Review required.

It is essential to understand the limitations of AI detection before making decisions about a student's work. We encourage you to learn more about Turnitin's AI detection capabilities before using the tool.

Disclaimer
Our AI writing assessment is designed to help educators identify text that might be prepared by a generative AI tool. Our AI writing assessment may not always be accurate (i.e., our AI models may produce either false positive results or false negative results), so it should not be used as the sole basis for adverse actions against a student. It takes further scrutiny and human judgment in conjunction with an organization's application of its specific academic policies to determine whether any academic misconduct has occurred.

Frequently Asked Questions

How should I interpret Turnitin's AI writing percentage and false positives?
The percentage shown in the AI writing report is the amount of qualifying text within the submission that Turnitin's AI writing detection model determines was either likely AI-generated text from a large-language model or likely AI-generated text that was likely revised using an AI paraphrase tool or word spinner.

False positives (incorrectly flagging human-written text as AI-generated) are a possibility in AI models.

AI detection scores under 20%, which we do not surface in new reports, have a higher likelihood of false positives. To reduce the likelihood of misinterpretation, no score or highlights are attributed and are indicated with an asterisk in the report (*%).

The AI writing percentage should not be the sole basis to determine whether misconduct has occurred. The reviewer/instructor should use the percentage as a means to start a formative conversation with their student and/or use it to examine the submitted assignment in accordance with their school's policies.

What does 'qualifying text' mean?
Our model only processes qualifying text in the form of long-form writing. Long-form writing means individual sentences contained in paragraphs that make up a longer piece of written work, such as an essay, a dissertation, or an article, etc. Qualifying text that has been determined to be likely AI-generated will be highlighted in cyan in the submission, and likely AI-generated and then likely AI-paraphrased will be highlighted purple.

Non-qualifying text, such as bullet points, annotated bibliographies, etc., will not be processed and can create disparity between the submission highlights and the percentage shown.

ABSTRACT

PT X is a clean water company with a continuous process system in raw water treatment. This study evaluates the existing secondary data from the pre-treatment of water at PT X, focusing on characteristics such as dissolved oxygen, iron (Fe), ammonia (NH_3) using a continuous aeration system. The purpose of this study is to offer an alternative aeration approach to improve the pre-treatment process in reducing contaminants in water. This research was done on a laboratory scale, employing the batch aeration approach as an alternative to continuous aeration. The equipment employed includes a batch aeration reactor, a chlorination unit, and different measurement instruments for iron, ammonia, pH, turbidity, and dissolved oxygen. Based on data from laboratory-scale studies, the batch aeration system showed considerable improvement in pollutant removal. Specifically, the batch system was able to increase dissolved oxygen by 97% at an air flow rate of 4 l/min, remove 100% of iron, increase pH concentration by 13%. However, in this experiment, the ammonia content did not vary substantially although the turbidity concentration in the water increase by 70%. These data imply that batch aeration may be utilized as an alternate way to minimize pollutants in water in PT X's water pre-treatment process.

Keywords: *Aeration Process, Continuous Aeration, Batch Aeration, Water Pre-Treatment, Contaminant Removal.*

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES