CONTINUOUS TURBIDITY MONITORING SYSTEM

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Degree of Master of Science

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DECLARATION

"I declare that is my own work and this thesis does not incorporate without acknowledgment any material previously submitted for a Degree or Diploma in any other University or institute of higher learning and to the best of my knowledge and belief it does not contain any material previously published or written by another person except where the acknowledgement is made in the text.

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Dr.D.P Chandima

ABSTRACT

It is very important to measure the turbidity of raw water because the turbidity of treated water should be less than 5 NTU. In water treatment plants, three water samples per day are taken for turbidity testing. The main objective of this research is to propose on alternative continuous turbidity monitoring system instead of manual test.

Several experiments were alone to fine out a relationshipbetween colour difference and turbidity. Colour difference was measured and calculated by MATLAB program. Turbidity was measured by “HACH” turbidity meter. Thereafter best fitted curve was development by using E - views software.

After few verification experiments the project was implemented at the laboratory of the treatment plant at Kandana. Final implementations was done at Ingiriya Water Supply Scheme and according to the results arrange error percentage is below 4.14%

Accuracy of the proposed System can be further improved by fitting a better models and by increasing the population of sample data set.

DEDICATION

I dedicate my dissertation work to both my parents. My Father late Mr.Lionel Kuruppu did not only raise and nurture me but also taxed himself dearly over the years for my education and intellectual development. Also motherly care and support of my mother Mrs.Nanda Kuruppu, have been shown in incredible ways recently.

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LIST OF ABBREVIATIONS

NTU - Nephelometric Turbidity Units.

TSS - Total Suspended Solids.

MSE - Mean Square Error

LED - Light Emitting Diode

MGD - Million Gallons per Day

SSC - Suspended – Sediment Concentration

HD - High Density

CRT - Cathode Ray Tube

LIST OF APPENDICES

Appendix A- MATLAB Code for processing image

Appendix B -Result sheet