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FACULTY OF APPLIED SCIENCES

DEPARTMENT OF APPLIED CHEMISTRY

TITLE:

DETERMINING THE EFFECTS OF COAL QUALITY ON BOILER EFFICIENCY

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FIELD OF STUDY: MPILO HOSPITAL COCHRANE BOILER

*A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR: -*

BACHELOR OF SCIENCE HONOURS DEGREE IN APPLIED CHEMISTRY

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MAY 2006



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ABSTRACT

This project was undertaken to determine the effects quality of coal on boiler efficiency with particular reference to Mpilo Hospital Cochrane Boiler. Efficiency testing helps evaluate how far the boiler efficiency drifts away from its designed value. Hence it is necessary to find out the current level of efficiency for performance evaluation, which is a prerequisite for energy conservation action in industry. The research also embodies an indepth literature review of the direct method of boiler efficiency evaluation. In carrying out the research experiments, data was collected on coal analysis for moisture, ash content, volatile matter and finally fixed carbon content. Steam production from the boilers was also recorded and with the aid of the data from steam tables and boiler house auxillaries, the boiler efficiency was evaluated. The results of the study revealed that boiler efficiency was affected mostly by the fixed carbon content of coal as well as the ash content of coal. Recommendations were forwarded as to improve efficiencies of the Mpilo Hospital Cochrane boiler.

