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Monitoring of a Common Biomedical Waste Incineration Facility-A Case Study

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Abstract: Incineration is one of the options for the treatment and disposal of the biomedical wastes. The incineration process causes air as well as water pollution. Studies were conducted to assess the efficacy of a common biomedical waste incineration facility in achieving the prescribed limits for discharge of effluent and emissions in the environment. It was observed that with venturi as an air pollution control device, the concentrations of NO_x, HCl and the particulate matter in stack emissions were 17.8 mg/Nm^3, 75.8 mg/Nm^3 and 196.2 mg/Nm^3, respectively.The concentration of SO_2 was found below the detectable level. It was noticed that the emission levels of HCl and particulate matter exceed the prescribed limits. The oxides of nitrogen (NO_x) were found within the limit. The effluent discharge of venturiscrubber and other processes was treated using an activated carbon column. The analysis of treated effluentshown pH7.74, TSS of 12 mg/L, TDS of 1066 mg/L, BOD of 5 mg/L, COD of 21 mg/L and oil-grease of 2 mg/L that meet the prescribed effluent discharge limits. With pollution control measures, and proper operation and maintenance care, it is possible to contain the air and water pollution problems from the incinerator.

Key words: Biomedical waste, Incineration, Emission monitoring, Effluent treatment.

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