

Chatchadaporn Meesri 2012: Variation of Odor Gas and Its Proportion on Sediments of Domestic Sewage and Treated Waste Water Sewage. Master of Science (Environmental Science), Major Field: Environmental Science, College of Environment. Thesis Advisor: Assistant Professor Surat Bualert, Ph.D. 123 pages.

Variation of gas (ammonia, hydrogen sulfide and methane) and its proportion on waste sewage's sediment were measured on untreated sewage from songthevada canal bangkok noi district, Bangkok. And many point source of sewage from wastewater treatment system i.e. municipal slaughterhouse sewage storage lagoon in suphanburi province, UASB water treatment plant at banpong tapioca flour industrial, sedimentation pond, oxidation pond and mangrove forest in phetchaburi municipal wastewater treatment plant. This sediment was collected from each sites and storage in gas chamber. Variations of gas were analyzed by gas chromatography and ion chromatography. The 3 types of gas was found in all study sites. The maximum range of concentration of methane (4,576-101,395 ppm), ammonia (0-84.89 ppm) and hydrogen sulfide (0.62-6.35 ppm) was found at narrowest of canal. In sediment from untreated sewage, was found maximum range of concentration of methane (729,404-9,900,837 ppm) and hydrogen sulfide (58.94-689,050 ppm) at sediment that collected from tapioca flour industrial UASB plant. And maximum range of concentration of ammonia (0-75.84 ppm) was found from slaughterhouse sediment. The trend of emission concentration compared to the time that showed average of highest concentration on day 6 and day 7 of all study site whereas the emission of methane from the sediment treatment system, which tends to increase the gas increasing from day 6. Ammonia emission was affected by pH and BOD in sediment. Hydrogen sulfide emission was affected by value of available sulfate, BOD and sulfide. Emission of methane was affected by Carbon ratio in sediment and BOD value. Furthermore, the value of redox potential was a factor that affected on sequence of gas emission because that related with selection of electron receptor in bacteria.

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