Chalalai Rungruang 2008: Efficiency of TSP and PM_{10} Reduction by High Pressure Water Spraying under the Bangkok Mass Transit System (BTS) Station. Master of Science (Environmental Science). Major Field: Environmental Science. College of Environment. Thesis Advisor: Associate Professor Samakkee Boonyawat. Ph.D. 103 pages.

The objectives of this research were to study efficiency of PM_{10} and TSP reduction at footpath under the Saphan-Khwai BTS station by high pressure water spraying. and to study the effect of water spraying patterns on PM_{10} and TSP reduction. PM_{10} and TSP concentration sample was collected every 3 hours of 6 sampling sites at Saphan-Khwai BTS station by using PM_{10} Hi-Volume Sampler as well as TSP Hi-Volume Sampler between January 31 to February 8. 2007.

The results showed that high pressure water spraying under the Saphan-Khwai BTS station when the wind direction come from northeast had the average reduction efficiency of PM_{10} and TSP at footpath in the southeast of station were 47% and 37%. respectively. However. the PM_{10} concentrations still exceed the National Ambient Air Quality Standard. with average PM_{10} and TSP concentrations were 173 $\mu g.m^{-3}$ and 292 $\mu g.m^{-3}$. respectively.

The pattern of spraying high pressure water all time show that the highest reduction efficiency of PM_{10} and TSP. then spraying every 10 minutes and 5 minutes. respectively. Such patterns of spraying can reduce PM_{10} concentrations. in average. 52%. 46% and 43%. respectively. while can reduce TSP concentrations. in average. 42%. 36% and 32%. respectively. The results can be concluded that the Saphan-Khwai BTS station should be spray high pressure water all time. especially during rush hours that had many people use the footpath under the Bangkok Mass Transit System (BTS) station.

Chalalai Rungruang — Student's signature

S Boonyawat — Thesis Advisor's signature

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