Exposure Assessment and Real-time Evaluation of Surface Cleaner Dust Suppression Technology during Highway Construction

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The overall aim of the study is to evaluate an existing form of wet method technology and vacuum technology to decrease exposure to respirable dust and crystalline silica for operators of roadway surface cleaners. Although dust control technology is available for this application, it is not understood whether these technologies reduce exposures of the operators or surrounding workers. In order to evaluate the respirable dust controls, an exposure assessment will be performed to determine the percent silica reduction between the uncontrolled and controlled methods, as well as an important evaluation of productivity, highway construction usability, and worker preference.

The research objectives of the study will be to 1) determine the percent dust reduction of control technologies for roadway cleaning equipment, 2) compare measures of productivity such as the time it takes to clean a defined length of pavement, 3) qualitatively determine the usability of the system for roadway construction (e.g. whether or not water sources are accessible and readily available), and 4) analyze a questionnaire of worker preference in regards to the dust control method.

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