

The Impact of Gas Station Towards the Workers and Residents Surrounding in Semarang

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Abstract - At recent days, the growth of vehicle is increasing rapidly due to the increase of human activities itself. People from any social classes are able to choose what kind to transportation they prefer especially in a big industrial city, and Semarang city is no exception. Located in the central java province this (305 km²) city is one of the big city in Indonesia with the population of approximately (1.5 million) people and every single one of those people spending the day on the street consuming the gasoline for their vehicles in the balance of the high volume of vehicle such as cars & motor cycle & truck & bus & taxi an such has increased frequently in Semarang city. The current research will be done in the city of Semarang where the number of gas station is overflowing due to the vehicles in the area. In order to determine the phenomenon of which hydrocarbon fumes from vehicle fuelling can contaminate the soil and groundwater and run off into the sewers as well as it's impact to the biological surrounding including human. Gas station workers who work near volatile organic compounds (VOCs) sources, such as gasoline vapor emissions, and motor vehicle exhausts, may be exposed to highly elevated VOCs levels. This study investigates air samples from gas service stations in Semarang to evaluate the health risks following inhalation exposure. The samples will be obtained at some of the gas station in Semarang area. The concentrations of benzene, toluene, ethylbenzene, xylenes, and hexane in the air from the workplaces were significantly higher than in a control group of office workers. The lifetime cancer and noncancer risks for the workers exposed to VOCs were also assessed. Benzene may the most important cause of both cancer and noncancer risk followed by 1,3 butadiene. An exploratory analysis using multivariate techniques will also be done to begin to understand how this phenomenon occurs and will be used to accurately assess just how much and how gas station affects it is environmental surrounding. These results will be part to the empirical evidence needed to evaluate the current status of ecological impact models. With improvements in impact models and better understanding of the ecological processes recommendation can be made for more precise prediction assessment and management of pollution as well as improved recovery of processes to facilitate easier restoration and recovery.