

Student Research
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Potential impact of industrial air emissions on water quality

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This student research investigated whether contaminants of emerging concern (CECs) may impact the quality of drinking water sources, and whether this is sufficiently considered in permitting of industrial emissions.

Drinking water quality in the Netherlands is strictly regulated. However, the impacts of industrial air emissions on groundwater and surface water intended for drinking water abstraction are not very widely assessed in research, and it is not yet clear to which degree their potential impact is taken into account when setting environmental quality standards and/or emission limits.

Therefore, the product of this student research is a proposal for a research project to fill in this existing knowledge gap. To achieve this, the research proposal suggests to carry out a thorough evaluation of current EU and Dutch drinking water quality standards to assess if potential contamination sources, like industrial air emissions, are considered when selecting compounds and setting numerical target values. It is recommended that this research would also study potential exposure pathways from industrial air emissions to human exposures via different routes, through the collection and analysis of relevant data from sampling and/or reliable databases.

The knowledge gained in the proposed research project would support the protection of drinking water source quality, optimize environmental quality standard setting and could also serve as an independent surveillance to examine if current water quality standards are actually met. The results of the research may thus be of interest for drinking water companies, environmental and health protection authorities, and industries that wish to contribute to the European zero-pollution action plan. The research proposal also briefly addressed how environmental quality assessment and standard setting can be made more integral, i.e. taking into account the distribution of anthropogenic chemicals through all environmental compartments (e.g. air, water, soil). In follow-up student research this may be developed further.

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