

Programmatic Approach to Management of PFAS; One State's Strategy to Protect Human Health and the Environment

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Background/Objectives. In 2002, the Minnesota Department of Health (MDH) partnered with the Minnesota Pollution Control Agency (MPCA) to investigate PFAS in Minnesota. This work began with groundwater and drinking water investigations at and near the 3M Cottage Grove plant and related legacy waste disposal sites in Washington County (east of St. Paul). Since 2002, MDH has: established and updated health-based criteria for four different PFAS; developed analytical methods for environmental media, blood serum, and garden produce; conducted many community engagement activities; completed investigations at some fire training areas and chrome-plating facilities; and completed fish monitoring of 93 lakes and rivers. As the MDH and the MPCA moves forward in evaluating PFAS across the State, they are taking a programmatic approach evaluating potential sources and managing and mitigating impacts to human health and the environment, where appropriate and necessary. The objective of this presentation is to outline the approach taken for that evaluation, share the results and lessons learned from the process, and discuss the next steps in the program. This programmatic approach is not only invaluable for a State to determine potential sources of PFAS and efficiently manage and mitigate impacts, but it also can be modified and applied to an industrial portfolio to identify/mitigate unacceptable exposures and establish remediation reserves across a given set of assets.

Approach/Activities. The approach includes a multi-phased plan to identify and evaluate potential locations across the State that may have been contaminated with PFAS. The first phase, potential source locations and candidate evaluation, established a basic framework and protocol to identify and evaluate potential PFAS locations. A pilot test of four counties was initially conducted to develop and test the protocol prior to roll-out across the remaining 83 counties statewide. Businesses in each county were compared to North American Industry Classification System (NAICS) codes anticipated to be potential PFAS users, then addresses were geocoded using Geographical Information Systems (GIS), stored in a geodatabase and mapped. Potential pathway analysis was then performed using publicly available well information, surface water features, and aquifer sensitivity data. Next, a receptor evaluation was performed to determine relevant sensitive sub-populations.

The second phase, location prioritization and selection, included a risk ranking evaluation of potential risk categories including sub-categories of sources, pathways, and receptors. Each risk category was given a risk score that was added together for each location yielding a final location risk rank. Locations were then prioritized and location profiles were developed for the top-ranked sites.

The last phase, absence/presence determination is planned and will include biased sampling and analysis at top-ranked sites to determine the absence or presence of PFAS at each location. Preliminary conceptual site models have been developed by location type and a risk communication plan has been drafted to support the roll-out of the program.

Results/Lessons Learned. Several lessons have been learned through the protocol process. The pros and cons of the protocol process will be discussed as well as potential applicability to other types of industries.