

## Risk Communication in Emerging Contaminants: NGWA PFAS Guidance

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**Background/Objectives.** Effective risk communication engages stakeholders in the process of risk assessment and management, communicates actual risk and options for risk reduction, and facilitates participation during the risk management decision making process. Challenges to effective risk communication arise when emerging contaminants, such as perfluoroalkyl substances (PFAS) and 1,4-dioxane are present in water. Potential challenges include: (1) uncertainty/variability in regulatory cleanup criteria and policies; (2) misperceptions of proposed risk management strategies; (3) ineffective risk communication to vulnerable sub-populations; and (4) difficulties managing stakeholder expectations. Academic and remediation industries have responded to these challenges by preparing public outreach material, development of community involvement plans, and utilization of stakeholder engagement methodology from social science disciplines.

**Approach/Activities.** To help develop a National Groundwater Association (NGWA) guidance document Groundwater and PFAS: State of Knowledge and Practice, a technical team performed a literature review of public health agency documentation and peer reviewed scientific articles and prepared a chapter on risk communication. Following a July 2017 public comment period the document is scheduled for public release by the Winter of 2018.

**Results/Lessons Learned.** From the literature review we compiled a table summarizing public outreach material published to date by state and national Public Health Agencies. Topics included: basic chemistry, sources of exposure, blood testing and health effect information, risk reduction measures and water use. Based on a review of supporting materials and experience three frequently asked questions were identified and answered concerning: laboratory methods, presence of other pollutants, and comparisons of PFAS blood level results. The literature review also identified a communication plan developed to assist with engagement, information dissemination, and stakeholder empowerment, based on the successful Community-First communication program implemented at the Little Hocking PFAS contaminated site in Ohio. This program overcame distrust between community members and decision-makers including regulatory authorities and responsible parties. The plan was comprised of five action items, summarized in the Guidance, (1) Notifications to Participants and Authorities; (2) Initial Press Release and Briefing; (3) Closed Rehearsal of Community Presentations; (4) Community Meeting; and (5) Publication of Results and Information. Lastly, the Guidance identifies literature highlighting stakeholder engagement methodologies which facilitate meaningful risk communication in contentious settings including: utilization of secondary risk management performance to communicate and evaluate success of a proposed strategy; evaluation of risk perception variables through surveys, interviews, and focus groups; assessments of vulnerable populations; and decision analysis to prioritize, and communicate multiple conflicting stakeholder needs. Secondary performance metrics include source/plume containment, establishing that the contaminant is not bioavailable and/or mobile, and that there are no complete exposure pathways associated with the site.