

Issue Paper: ESTABLISHMENT OF A VAPOR CONTAMINATION, MITIGATION, and STEWARDSHIP CLEANUP-FUND

RR EAG Funding Sustainability Subgroup
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TYPE OF RECOMMENDATION

This issue paper includes recommendations for revising DNR administrative rules, pursuing legislative changes to statutes affecting the RR program, creating or revising RR program guidance, and instituting changes to internal DNR processes.

BACKGROUND

The vapor intrusion pathway has become widely recognized as a potentially significant cause of exposure to toxic substances in indoor spaces. Numerous studies have indicated that the air in buildings overlying soil or groundwater contaminated with toxic vapor-forming substances may contain potentially harmful concentrations of these contaminants due to vapor intrusion.¹

Vapor Intrusion Health Risks

Vapor Intrusion refers to subsurface contamination that can volatilize and the vapors enter the breathing space of buildings. Vapor intrusion may also occur when contaminated groundwater infiltrates buildings, and contaminants directly volatilize into the indoor air. Vapors can migrate through air space in permeable soils, fractures in bedrock or clay till, utilities, sumps, or cracks in the building foundation.

Chlorinated solvents like tetrachloroethene (PCE) and trichloroethene (TCE) do not degrade in the vadose zone when volatilized and can migrate long distances from the source of contamination via groundwater in a dissolved phase. Additionally, PCE and TCE are known to be toxic at low concentrations that cannot be detected by their odor.

There is a significant risk to human health associated with volatile organic vapors, specifically from chlorinated solvents PCE and TCE migrating from contaminated soil and groundwater into buildings. Vulnerable groups for PCE and TCE exposure include children, the elderly and especially persons who can be or are pregnant and unborn children. With exposure to PCE or TCE the following pregnancy and fetal development health effects have been found: chonal atresia^{1,2}, eye defects^{1,2}, low birth weight^{3,4}, fetal death^{1,3,5}, major malformations^{6,7}, miscarriage^{8,9}, neural tube defects^{1,2,3}, oral cleft defects^{1,2,3}, and small for gestational age¹. Additionally, breast¹⁰, cervical¹¹, and ovarian¹¹ cancer were found in women exposed to PCE or TCE. Lastly, esophageal cancer^{12,13,14}, lung cancer¹⁵, Hodgkins disease¹¹, prostate¹¹, rectal¹⁴, impaired immune systems function¹⁶, neurological effects⁹, neurobehavioral performance deficits^{16,17}, and serve generalized hypersensitivity disorder¹⁸ were all found from elevated PCE or TCE exposure.

The nature and extent of the health risks associated with acute and long-term exposure to volatile organic vapors (especially PCE and TCE) have also been presented to the DNR in a series of interdepartmental letters

¹ EPA's Vapor Intrusion Database: Evaluation and Characterization of Attenuation Factors for Chlorinated Volatile Organic Compounds and Residential Buildings. EPA Publication EPA 530-R-10-002 (March 2012).

Remediation and Redevelopment External Advisory Group



Paper/Agenda #

from the Wisconsin Department of Health Services (DHS). These letters are attached as reference confirming the risks associated with acute and chronic exposure to chlorinated solvent vapors, particularly TCE.

Current State (Information Provided by the DNR)

Responsible parties (RPs) are required by s. 292.11 and NR 700 to address vapor intrusion both on the source property, in rights-of-way (ROWs) and any affected off-site properties. As a result, many sites are investigated, remediated and mitigated for VI effectively by the RP. Also, some brownfield properties that are cleaned up and redeveloped by local governments and the private sector include VI concerns that are addressed as part of the site cleanup and redevelopment. However, many sites with significant health concerns are not of interest for redevelopment and there are a large number of sites that do not have a financially viable RP to address VI.

The DNR has federal funds from its EPA Brownfields Assessment Grant to conduct a limited amount of vapor investigation work at sites without a viable RP. This funding is only available for a limited time and not sufficient to address all sites with health concerns. These brownfields grant funds are only able to address historical dry cleaner sites in Milwaukee, with the initial effort looking at only three of a couple hundred historical dry cleaner locations in the city.

The DNR also has a limited amount of environmental repair fund dollars that are used statewide for vapor assessment and mitigation at open sites with significant health concerns and no viable RPs. The environmental repair funds are used only in ROWs to sample soil gas and sanitary sewers in an effort to understand the extent of the vapor issues and at residential properties potentially impacted by VI. In FY 2023, four sites were investigated and in FY 2024, five sites are being investigated. DNR is aware of more than 100 open sites with known or potential VI impacting residential properties that are not being adequately addressed.

Long Term Stewardship

One concern regarding VI sites is making sure that there is someone who can maintain and monitor a vapor mitigation system long term if one is needed. This is an issue for sites with viable RPs and those without. Currently, there are no funding mechanisms available for long term operation, monitoring and maintenance of vapor mitigation systems. The need to ensure protection of public health after an interim action to install the vapor mitigation system or beyond closure is very important. The current system of assigning continuing obligations that the property owner must follow is generally not effective with regards to successfully maintaining vapor mitigation systems.

PROPOSAL

We propose the establishment of a stand-alone Vapor Contamination, Mitigation, and Stewardship cleanup fund. The cleanup fund will be all-inclusive and will support:

- Source identification (soil, groundwater, and vapor investigations);
- Protection of building occupants (design, installation, and commissioning of vapor mitigation systems);
- Vapor mitigation operation, monitoring and maintenance costs (pre- and post-case closure);
- Long-term stewardship of vapor mitigation systems; and
- Source cleanup/reduction to reduce or eliminate need for vapor mitigation.

To accomplish the objectives listed above, we also propose the following funding mechanisms for consideration.

These draft issue papers and recommendations were developed by the Remediation and Redevelopment External Advisory Group and members of the public, and do not necessarily represent the opinions or the position of the Wisconsin Department of Natural Resources or other state agencies.

Potential options for funding sources:

- Revitalize Wisconsin (as drafted)
- Stand-alone program funded through legislative/statutory process
- Bad-player tax (chronic polluters)
- Acquisition, cleanup, and resale of old-dog sites
- Movement of fees for environmental programs (matching funds, cost-recovery, fines) from general fund back to DNR
- Vapor Mitigation System Inspection Fees
- Capture gas tax revenue used on former PECFA program
- Create Environmental Bonding Authority exclusively for Environmental Repair Sites
- Environmental surcharges for development at non-brownfield sites
- Prime Real Estate development fees

On February 2, 2024, eighteen state Representatives and five state Senators introduced 2023 Assembly Bill 1055 proposing the elimination of the existing drycleaner environmental response program fund and establishing a Revitalize Wisconsin Program that would provide aid to “address the discharge of a hazardous substance or the existence of environmental pollution...” This group of state representatives and senators may be advocates for environmental repair and restoration.

The provisions outlined in Assembly Bill 1055 indicate an interest in providing solutions to the lack of funding mechanisms for remediation and maintaining Continuing Obligations (COs) at sites that may have previously been closed but require continual operation, monitoring and maintenance for the protection of human health and the environment. The risk of interruption in protection is highest with active vapor mitigation systems that rely on a mechanical fan known to have a limited lifespan, averaging from four to ten years. This is especially true for vapor mitigation systems that have been forgotten in property ownership transfers, intentionally or inadvertently shut down, or are no longer operational due to mechanical failure or other equipment-related event.

It is the opinion of this subgroup that legislative support is needed to establish the cleanup fund as a solution to the VI issues as well as that of other site remediation needs.

As such, this committee requests direction from the DNR on the procedures/protocols for reaching out to the members of the legislature that drafted and submitted Assembly Bill 1055.

RESOURCES NEEDED

For discussion.

ENVIRONMENTAL JUSTICE

The establishment of a cleanup fund would support site remediation and CO system operation and maintenance at all sites not just those that are desirable for redevelopment. Most VI sites where an RP is not addressing the vapor concerns are in underserved communities. In addition, the fees collected as part of a Prime Real Estate Development surcharge would be a direct benefit to underserved communities.

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SOURCES

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- ¹⁵ Chiu WA, Jinot J, Scott CS, Makris SL et al. 2013. Human health effects of trichloroethylene: key findings and scientific issues. *Environ Health Perspect* 121:303-311.
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Vapor Intrusion Contamination, Mitigation, and Stewardship Fund Recommendations

EAG Funding Sustainability Subgroup

Notes from Ad hoc meeting: Kurt McClung, Shar TeBeest, Chris Valcheff, Mark Rutkowski

The EAG posed a number of punch list items for further consideration by the subgroup.

- Include ranking for highest risk sites, including sites with no RP (causer)
- Include eligibility criteria to explain which sites need funding assistance
- Develop factors that department will consider when allocating the funds
- Consider costs to provide outreach residents to get access agreements
- Consider a cost recovery option to the RP
- Define underserved communities – use various criteria for different programs
- Multi-faceted evaluation
- Innocent landowner definition should also be clarified
- EAG could recommend approving paper, or EAG members could seek other partners.

As a group, it was decided that the recommendations need to remain at a high level as it easy to get bogged down in the specific details of each of the items listed above.

Our group defined objective of addressing the punch list was to recommend the methods to the DNR. It is up to the DNR to determine how to implement the recommendations.

Funding Prioritization Categories

A reevaluation of a scoring matrix and the punch list items above identified three general categories to prioritize sites for funding:

- **Site-specific:** Considers presence of a hazard at a property, the exposure levels associated with a do-nothing scenario, building occupancy, and building type.
- **Regulatory/compliance:** Applies when a known source is defined or delineated, there is active vapor mitigation, and the responsible party can continue to support the mitigation. Access agreements and telemetry equipment may be needed as part of the long-term stewardship of the mitigation system.
- **Public interest:** May be at the request of the EAG to address underserved communities and require an innocent landowner statement. There are existing definitions of underserved communities and innocent landowner.

Recommendations

- The DNR should use criteria already defined in state and federal statutes to define underserved community/environmental justice and innocent landowners.
- The DNR should have agency discretion, similar to EPA enforcement discretion, to determine the eligibility of an innocent landowner for funding under any Vapor Funding Program.
- To avoid potential inequities, funding through any future Vapor Funding Program should not award funds through a first-in/first-out system.
- Funding should be available to innocent landowners required to mitigate hazardous vapors as part of an emergency response.

Next Steps

- The subgroup will integrate ad hoc group recommendations into the existing paper, as needed.
- The final paper will be circulated to the subgroup for final review before the next EAG meeting.
- The subgroup will present the final paper to the EAG for approval.

RR Program External Advisory Group

2025 Meeting Proposal

November 2024

Proposal

Over the 2025 calendar year, the RR program will host in-person meetings for the full EAG only. Meeting topics will encourage discussion designed to solicit input from the EAG members on program-related issues while also offering training opportunities for the EAG and other interested stakeholders.

Objectives:

- Receive timely input and feedback on RR program topics through discussion with the full EAG
- Increase in-person interaction between stakeholders and the DNR RR program team
- Meet the request for training on RR program topics to grow knowledge and increase opportunities for engagement with stakeholders

Background

The Remediation and Redevelopment Program (RR Program) at the Wisconsin Department of Natural Resources (DNR) oversees the investigation and cleanup of environmental contamination and the redevelopment of contaminated properties. The RR program established an external advisory group (EAG) in an effort to receive constructive and practical input from, and provide information to, interested parties on a wide variety of regulatory and policy issues. In 2022 and 2023 the EAG, with support from the DNR, created EAG subgroups. The subgroups are dedicated to the development of recommendations and deliverables related to funding sustainability, NR 700, vapor intrusion, contaminated sediment and environmental justice.

The EAG and the EAG subgroups meet quarterly. Following the subgroup meetings on December 5, the EAG and subgroups will have met 13 times in 2024. All meetings were offered as a hybrid or virtual meeting. Since 2020, in-person attendance has declined in favor of virtual attendance. Discussion by the full-EAG is abbreviated due to the creation of the subgroups.

In October 2024, the DNR's current rulemaking efforts were suspended and no timeframe for future rulemaking is set. At the EAG meeting in October 2024, the group discussed the impact of suspended rulemaking efforts on the EAG and the subgroups. The EAG recommended that subgroups meet on December 5, 2024 to consider next steps given the current status of rulemaking. The EAG requested consideration of the structure of the EAG and the subgroups. The EAG also directed subgroups to consider options for training newer consultants, which could increase engagement with the EAG, and subsequently the DNR. The RR program previously hosted an in-person Consultant's Day designed to provide information and training on RR program topics. Future EAG meetings may offer a forum to not only receive constructive and practical input from EAG members, but also offer needed training and information to stakeholders.

Approach

The EAG subgroups will complete issue papers currently in development by the EAG meeting in January 2025. Further actions related to the recommendations and finding that require legislative changes or updated authority will be tabled until a later date.

The DNR will schedule and host four in-person EAG meetings in 2025. There will be no subgroup meetings in 2025. If the EAG determines that a topic requires additional discussion, an ad hoc meeting

will be scheduled. Regional DNR staff will host “pop-up” locations to enable interested stakeholders to attend the meetings in-person. The in-person attendance will encourage consultants and regional staff to meet face-to-face, offering opportunities for additional discussion and engagement. Meeting dates and training topics will be scheduled in advance.

Summary of Actions

- Complete issue papers currently in development
- Present final issue papers to EAG in January 2025
- Host in-person, quarterly meetings of the full EAG; suspend subgroup meetings in 2025
- Schedule the meetings as full-day meetings, allowing conversation over the lunch hour
- Offer regional locations for interested individuals, who are not EAG members, to attend in-person
- Provide training and education on NR700 related topics as part of every agenda in an effort to meet the needs of both newer and more experienced stakeholders
- Craft agendas to address the most pressing and timely issues
- Provide refreshments in the morning
- Announce the meetings by RR Report, email and listservs, and personal outreach

Example Agenda

9:30 – 10:00 Coffee and conversation
10:00 – 12:00 EAG meeting (to include DNR updates)
12:00 – 12:45 Lunch
12:45 – 2:00 Training
2:00 – 2:30 Adjourn EAG meeting