

## Summary

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### Introduction

The New Jersey Department of Health and Senior Services (NJDHSS) and the Agency for Toxic Substances and Disease Registry (ATSDR) have reviewed environmental data to evaluate the public health implications of tetrachloroethylene (PCE) and trichloroethylene (TCE) contamination in groundwater at the Pohatcong Valley Groundwater Contamination Superfund site located in Franklin Township, Washington Township, and Washington Borough in Warren County. Currently the site is divided into three operable units (OU1, OU2 and OU3) by the United States Environmental Protection Agency (US EPA).

The top priority of ATSDR and NJDHSS is to ensure that the community around the site has the best information possible to safeguard its health.

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### Conclusions

*NJDHSS and ATSDR have reached six conclusions regarding potential health implications of exposures to contaminants related to the Pohatcong Valley Groundwater Contamination Superfund site:*

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#### Conclusion 1

*NJDHSS and ATSDR conclude that past ingestion and inhalation exposures to PCE and TCE in drinking water from the public supply system and PCE in domestic wells within the OU2 area will not have harmed people's health. Drinking water from domestic (private) wells that have Point-of-Entry Treatment (POET) systems installed will not harm people's health, as long as the POET systems are properly designed and maintained.*

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#### Basis for Conclusion

Concerning ingestion of untreated water from the public water supply during the 1972 through 1981 period, exposure doses calculated did not indicate exposures were harmful to residents. Since 1981, residents who were connected to the public supply system were not exposed to contaminants in drinking water, since a treatment system was put into operation for the Vannatta Street well. For domestic wells in the OU2 area, exposures were stopped for residents when POET systems were installed during 2002 through 2010. It should be noted that these exposures are only considered eliminated if POET systems are properly designed and maintained.

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Next Steps

The US EPA has completed a Remedial Investigation/Feasibility Study (RI/FS) and has issued a Record of Decision (ROD) selecting the remedial action for the OU2 study area. This action includes the installation and supply of public water to accessible residences and monitoring of POET systems for remote residences outside the accessible limits of the public water supply system. The US EPA refers residences to the New Jersey Department of Environmental Protection (NJDEP) for further action when required concerning confirmation sampling, installation and monitoring of POET systems. Until residents are connected to the public water supply system, it is recommended that the NJDEP continue to ensure proper operation/maintenance of the installed POET systems at affected residences.

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Conclusion 2

*NJDHSS and ATSDR conclude that past ingestion and inhalation exposures to TCE in contaminated domestic wells within the OU1 area (prior to POET installation) may have harmed people's health.*

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Basis for Conclusion

For domestic wells at approximately 48 residences within the OU1 area, exposures to TCE contaminated groundwater occurred prior to connection to the public water service (these connections occurred during the 1980s in the OU1 area) or the installation of the POET systems in both the OU1 and OU2 areas (2002 through 2010).

The cumulative lifetime excess cancer risk from ingestion and inhalation exposures to contaminants in domestic well water are considered to have posed a low increase in risk of cancer when compared to the background risk of cancer. Exposures to residents who used contaminated water from untreated domestic wells as a potable source for drinking and showering are of concern for the increased risk of adverse non-cancer health effects to occur, specifically fetal heart malformations. This is of particular concern to children of unborn pregnant women exposed to TCE at the upper end of detected concentrations in domestic well water.

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Conclusion 3

*NJDHSS and ATSDR conclude that current ingestion and inhalation exposures to PCE and TCE in drinking water from domestic wells may have harmed people's health for residents who either do not have POET systems installed or are not connected to the public water supply.*

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Basis for Conclusion

In an effort to identify remaining residences within the OU1 and OU2 study areas which are not connected to public water or have POET

systems, the US EPA has reached out to homeowners, and continues to do so, to arrange for water testing and corrective actions for the supply of safe potable water. These efforts have been assisted by the NJDEP, the Warren County Health Department and the New Jersey American Water Company. In the past, some homeowners, specifically within the OU1 study area, have elected not to connect to the public water system and not to have POET systems installed on their domestic wells. The US EPA continues with these efforts; however for homeowners whose domestic wells remain untested, *in addition to past exposures*, current and future exposures are assumed to be similar for the past exposure scenario evaluated for the OU1 and OU2 study areas.

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Next Steps

The US EPA should continue with their efforts to identify residences within the OU1 and OU2 study areas who are not connected to the public water supply and do not have POET systems installed on their domestic wells. Once identified, US EPA should take appropriate actions to address any exposure pathways.

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Conclusion 4

*NJDHSS and ATSDR conclude that past exposures to TCE in indoor air for one residence within the OU2 study area may have harmed people's health. Current and future exposures are considered to be interrupted due to completed remedial actions at this residence.*

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Basis for Conclusion

TCE concentrations in indoor air at this residence were considered a concern for an increased risk of adverse non-cancer health effects (fetal heart malformations in unborn children) for exposures occurring to pregnant women prior to remedial actions taken at this property. Inhalation exposures are considered to be interrupted with the operation of vapor intrusion remedial system in 2007 designed to prevent subsurface contaminant vapors from entering this residence.

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Next Steps

Until a remedial measure(s) removes the threat of vapor intrusion, short-term solutions, such as venting systems, should continue to be considered for buildings impacted by this pathway. Specifically, these solutions are warranted when elevated concentrations of site-related contaminants are present in soil gas increasing the threat of vapor intrusion.

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Conclusion 5

*NJDHSS and ATSDR conclude that past, current and future exposures to 1,2-DCA, PCE, and TCE in indoor air at remaining evaluated residences are not expected to harm people's health.*

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Basis for Conclusion

For the remaining residences, schools and day-care facilities evaluated, completed exposures to children and adults to these contaminants of concern in indoor air are not expected to cause adverse non-cancer health effects as contaminant concentrations were determined to not pose a health risk based on current health-based comparison values. These exposures are considered to pose a no apparent increase in risk of cancer when compared to the background risk of cancer.

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Next Steps

The US EPA should continue remedial investigations, including vapor intrusion, and evaluate feasibility studies to implement a remedy for the contaminated groundwater plume to eliminate remaining ingestion and vapor intrusion pathways.

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Conclusion 6

*NJDHSS and ATSDR conclude that past, current and future exposures to PCE in surface water within the Pohatcong and Shabbecong Creeks and the former Edison Quarry are not expected to harm people's health.*

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Basis for Conclusion

Exposures to children and adults during recreational activities in the Pohatcong and Shabbecong Creeks and the former Edison Quarry are not expected to cause adverse non-cancer health effects as contaminant concentrations remain below health-based comparison values. There is no expected increase in the risk of cancer to individuals using these creeks and the quarry for recreational purposes.

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Next Steps

The US EPA should continue remedial investigations and evaluate feasibility studies to implement a remedy for contaminated groundwater and other site-related sources (i.e., surface water run-off) to eliminate the discharge of contaminants to the Pohatcong and Shabbecong Creeks and the former Edison Quarry.

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**For More  
Information**

Copies of this public health assessment will be provided to concerned residents in the vicinity of the site via the township libraries and the Internet. NJDHSS will notify area residents that this report is available for their review and provide a copy upon request. Questions about this Public Health Assessment should be directed to the NJDHSS at (609) 826- 4984.

Comments to this public health assessment are requested within 30 calendar days from the date its release and can be directed to:

Environmental and Occupational Health Surveillance Program  
New Jersey Department of Health and Senior Services  
Consumer, Environmental and Occupational Health Service  
P.O. Box 369  
Trenton, New Jersey 08625-0369

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