

Evaluation of Chemicals in Public Drinking Water Dorado Groundwater Contamination Site

Dorado, Puerto Rico | June 2023

Summary of ATSDR's Health Consultation

The Agency for Toxic Substances and Disease Registry (ATSDR) has released for public comment a draft report evaluating whether exposure to volatile organic compounds (VOCs) in the Dorado public drinking water system might make people sick. The main VOCs of concern were tetrachloroethylene (PCE) and trichloroethylene (TCE). ATSDR also evaluated disinfectants and disinfection by-products such as trihalomethanes, which were detected at low levels in the drinking water.



Key Findings

- ◆ People in the Dorado area who have used public water for drinking, cooking, and bathing from 1984 until now are not likely to have health problems from these exposures because of the low levels of the chemicals in the water.
- ◆ ATSDR does not know where the PCE and TCE contamination is coming from. ATSDR does not have enough information to know if possible exposure from contaminated soil or vapor intrusion in some of the buildings on the site or in nearby residences might make people sick.

This fact sheet summarizes the findings of ATSDR's evaluation of chemicals in public drinking water at the Dorado Groundwater Contamination site and tells how to submit comments on the report. You can find the report at: [Puerto Rico | Public Assessment & Health Consultation | ATSDR \(cdc.gov\)](#).

Who is ATSDR?

The Agency for Toxic Substances and Disease Registry (ATSDR) is an environmental public health agency that is part of the U.S. Department of Health and Human Services. ATSDR protects communities from harmful health effects that can happen when people spend time around natural and man-made chemicals. ATSDR works together with other environmental and public health agencies and tribal, state, and local governments to help keep communities safe from environmental health threats.

What did ATSDR do?

The Dorado Groundwater Contamination site is in a residential neighborhood that has commercial and industrial businesses in Dorado, Puerto Rico. The groundwater is contaminated with VOCs, mainly PCE and TCE. Currently, the source of the groundwater contamination is unknown. PCE and TCE are usually used in dry cleaning and metal degreasing activities. The groundwater contamination has affected wells in the Maguayo and Dorado Urbano public water systems that supply water to more than 67,000 people. In 1990, contaminated wells in the public drinking water systems were closed by the Environmental Protection Agency (EPA). In 2001, the Super Aqueduct System (blended groundwater and surface water) was connected to the Dorado groundwater systems to supplement the current water supply. Because the Dorado Groundwater Contamination site is listed on EPA's National Priorities List, ATSDR is evaluating whether people might get sick from exposure to VOCs in the Dorado public drinking water system.

ATSDR reviewed groundwater and soil samples collected between 2002 and 2019 by EPA Region 2 and the Puerto Rico Aqueduct and Sewer Authority (PRASA). We evaluated data for approximately 150 chemicals in 1,500 water samples.



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Health and Human Services**
Agency for Toxic Substances
and Disease Registry

What did ATSDR find?

Some chemicals were found in the water at wells that supply public drinking water to the area. Other chemicals were found in a connecting water source that was contaminated with disinfection-by-products.

Finding 1 – People in the Dorado area using public water for drinking, cooking, and bathing are not likely to have health problems from the low levels of chemicals in the water.

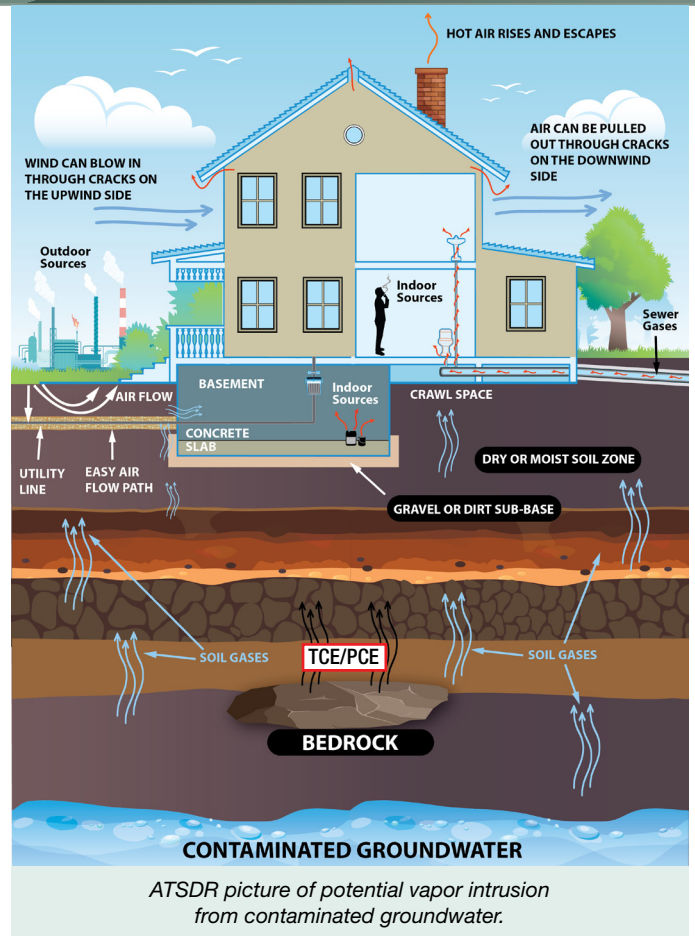
- Few drinking water samples contained TCE and PCE above drinking water standards.
- Wells with higher levels were closed.
- The estimated amount of TCE and PCE people were exposed to were smaller than those shown to cause health problems.
- The risk of developing cancer is very low based on the amount of TCE and PCE people might be exposed to over a lifetime.

Disinfection-Related Chemicals: PRASA adds chlorine, a disinfecting chemical, to the public drinking water to kill germs. When chlorine is added to the water, a chemical reaction occurs forming other chemicals such as monochloramine and dichloramine along with trihalomethanes, which are byproducts of the disinfection process with chlorine. These new chemicals can cause health problems if they reach high levels; but the levels of chemicals related to water disinfection were below EPA's safe drinking water standards and below the levels where ATSDR would expect to see health problems.

ATSDR doesn't have enough water sampling data to know whether coming into contact with disinfectants and disinfection byproducts in the drinking water at the Dorado site could cause an increase in the risk of cancer over a lifetime. We do know that the benefits of using disinfecting chemicals to kill germs in the water keep people from becoming sick with illnesses associated with polluted water like cholera, typhoid, or dysentery.

What are ATSDR's recommendations?

- ATSDR will evaluate additional data collected by EPA and the Puerto Rico Department of Health (PRDOH) and update the findings of this report, if necessary.
- EPA and the Puerto Rico Environmental Quality Board (PREQB) have agreed to:
 - » continue efforts to identify the source of contamination;
 - » collect additional samples to determine the level of contamination; and
 - » take action to address and prevent future groundwater contamination.
- PRDOH will continue to conduct routine water monitoring, as required by the Safe Drinking Water Act, with the assistance of EPA.



Finding 2 – ATSDR does not know the source of the groundwater contamination or where it is coming from. ATSDR cannot tell if anyone is coming into contact with soil or air in buildings that could make them sick from high levels of VOCs through vapor intrusion.

- Vapor intrusion is a way that VOCs, in soil and groundwater can enter and build up inside buildings.
- Source areas may have higher levels of contamination that would be very different from locations where samples were taken.
- EPA continues to investigate and sample to identify possible sources of the contamination.



What are the next steps?

You can read the full draft report at [Puerto Rico | Public Assessment & Health Consultation | ATSDR \(cdc.gov\)](#). Copies of the report can also be reviewed from Monday - Friday, 8:00 a.m. to 4:00 p.m. at the:

Director's Office of Municipal Emergency Management (OMME)

Carr. 693 Km. 7.7 Solar 2 Barrio Higuillar
Dorado, Puerto Rico 00646
POC: Mr. Eliezer González, (787) 796-1230 Ext. 4502,
eliezer.gonzalez@dorado2025.com

The Jane Stern Dorado Community Library

331 Méndez Vigo Rd., Dorado, Puerto Rico 00646
POC: Ms. Johana Morales (787) 796-3675
johanamorales@jsdcl.org

Comments on the report may be submitted to atsdrrecordscenter@cdc.gov or mailed to:

Agency for Toxic Substances and Disease Registry

Attn: Records Center
Re: Dorado Groundwater Site, Dorado, PR
4770 Buford Highway, NE (MS S106-5)
Chamblee, Georgia 30341

Comments received during the public comment period and ATSDR responses, will appear in an appendix to the final report. The report will not include the names of people submitting comments. However, names may be released if ATSDR receives a U.S. Freedom of Information Act (FOIA) request.

How can I protect my health?

If you are worried about being exposed to chemicals through your drinking water, we recommend you talk to your doctor about your concerns. You can also talk with doctors at the Region 2 Pediatric Environmental Health Specialty Unit (PEHSU) at the Icahn School of Medicine at Mount Sinai for concerns about children's health. These doctors specialize in environmental exposures and their health effects.

Region 2 Pediatric Environmental Health Specialty Unit at the Icahn School of Medicine at Mount Sinai

Website: [Region 2 PEHSU](#)

Phone: (866) 265-6201

How can I learn more?

You can learn more about the Dorado Groundwater Contamination site by reading the full ATSDR draft report at: [Puerto Rico | Public Assessment & Health Consultation | ATSDR \(cdc.gov\)](#).

More information on the different contaminants present at the Dorado Groundwater Contamination site can be found at the websites below.

ATSDR:

PCE Information: [Tetrachloroethylene \(PERC\) | ToxFAQs™ | ATSDR \(cdc.gov\)](#)

TCE Information: [Trichloroethylene \(TCE\) | ToxFAQs™ | ATSDR \(cdc.gov\)](#)

CDC:

[Trichloroethylene | NIOSH | CDC](#)

[Disinfection By-Products | The Safe Water System | CDC](#)

EPA:

[EPA Superfund Site Page](#)

[Public Water Systems, Disinfection Byproducts, and the Use of Monochloramine](#)

[Basic Information about Chloramines and Drinking Water](#)

Who can I contact if I have more questions?

If you have questions or comments change to Luis O. Rivera-Gonzalez, PhD, lqx8@cdc.gov, ATSDR, Region 2, Toxicologist at (732) 906-6933