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FACT SHEET

GROUNDWATER RECLASSIFICATION-BENNINGTON AREA DUE TO CONTAMINATION OF GROUNDWATER WITH PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS)

February 16, 2021
Updated: April 19, 2021
Updated January 27, 2022

Overview

The State of Vermont Agency of Natural Resources (ANR) has reclassified groundwater from a Class III to a Class IV designation for an area located in the Towns of Bennington and Shaftsbury and the Village of North Bennington. A Class IV designation means that that at least a portion of the underlying groundwater is not suitable as drinking water due to the presence of per- and polyfluoroalkyl substances (PFAS) in groundwater.

This reclassification of groundwater will protect people living and working in Bennington by providing restrictions and requirements for the installation of new wells within the reclassification area. These requirements include specifications for well construction, sampling and long-term monitoring, and treatment (if needed). This reclassification also serves as a formal notification to landowners, well drillers, and permitting agencies that at least some portion of the underlying groundwater is or may be contaminated by per- and poly-fluoroalkyl substances (PFAS) and not suitable as drinking water.

GROUNDWATER RECLASSIFICATION-BENNINGTON AREA
FREQUENTLY ASKED QUESTIONS (FAQ)

Updated April 19, 2021
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Why is the groundwater being reclassified?

Groundwater in Vermont, by default, is considered Class III groundwater, which means it can be used as a potable or public water resource unless it has been reclassified.

In Bennington, the purpose of the reclassification of area-wide groundwater from a Class III to a Class IV is to protect human health and safety due the expected presence of elevated PFAS in some parts of the underlying groundwater for greater than 5 years, likely decades.

ANR recognizes that not all the groundwater within this reclassification area is contaminated with PFAS due to the 130 plus drinking water wells with no PFAS or PFAS below the standards. However, based on our understanding of the area-wide presence of PFAS at elevated levels, particularly in shallow groundwater, there is a high potential that anywhere a new well is drilled within this reclassification area either elevated PFAS will be found or the drilling will have to at least pass through a contaminated portion of the groundwater to get to underlying, cleaner water.

This reclassification protects people living and working in Bennington by providing restrictions and requirements for installing new drinking water wells. ANR recognizes that there are areas within the reclassification where the drilling of a new well is the only feasible option for a water supply. The reclassification provides a formal notification to landowners, well drillers, and permitting agencies that groundwater not suitable for drinking water is likely present in at least a portion of the underlying groundwater due to PFAS levels.

The reclassification area can be found on this map.

What are the current groundwater and drinking water standards for PFAS and can they change in the future?

There are two PFAS standards that apply to water supply sources: one is the Vermont Groundwater Enforcement Standards, which applies to water supplies, like residential wells, that are not public systems, and the other is the maximum contaminant limits (MCLs), which is the maximum permissible level of a contaminant in water that is delivered to any user of a public system.

The PFAS groundwater enforcement standards and maximum contaminant limits (MCLs) are the same in Vermont, that is 20 nanograms/L or parts per trillion (ppt) for the cumulative concentrations of five PFAS-perfluorooctanoic acid (PFOA), perfluorooctane sulfonate PFOS), perfluoroheptanoic acid (PFHpA), perfluorononanoic acid (PFNA), and perfluorohexane sulfonate (PFHxS).

It is possible that the groundwater enforcement standards, MCLs, or both, may change in the future, as more scientific work is performed on these chemicals and the risk they pose is further understood. However, there are no current plans to change these standards.

How was this reclassification area determined?

Barr Engineering (Barr), on behalf of Saint-Gobain, submitted to ANR a Groundwater Reclassification Petition, dated January 28, 2021. ANR directed Saint-Gobain to prepare the petition given that the 2019 Settlement Agreement states that groundwater will be reclassification in accordance with requirement in Section 12-502 of the Vermont Groundwater Protection Rule and Strategy (VGPRS). ANR reviewed and determined that the petition was administratively and technically complete and ready to be released to the public for review and comment.

The area for reclassification is the same as the Corrective Action Area boundary as established in the 2019 settlement agreement, with the addition of one parcel (northeast section of area) due to the presence of PFAS above the groundwater enforcement standards in water supply sources (see the Groundwater Reclassification Boundary Map). The boundary determination was made based on the following:

- the degree and extent of PFAS contamination in groundwater and its movement through the environment obtained from the collection and analysis of data and information summarized in the 2018 Barr report entitled, Conceptual Site Model Site Investigation Report: Bennington, Vermont: and

- the PFAS sampling results from over 650 water sources, serving single-family and multi-family homes, churches, schools, and businesses.

How did such a large area get contaminated with PFAS and why isn't it getting cleaned up?

In February 2016, PFAS were discovered in drinking water sources, mainly wells, in the vicinity of the former Teflon coating facility in North Bennington (former Chemfab). Subsequent sampling found PFAS contamination in over 330 drinking water sources above the Vermont Groundwater Enforcement Standards within Bennington, the Village of North Bennington, and portions of Shaftsbury.

Over the next several years, ANR worked with multiple parties to install treatment systems; to connect residences and businesses to municipal waterlines or replacement wells (where feasible); to perform multiple site investigations (soil boring, monitoring wells, sample collection of groundwater, surface water, sediment, and fish); and to develop a conceptual site model using the information collected from the site investigation.

The conceptual site model provides a representation of the likely major contaminant sources; how the contaminants are moving through the environmental, particularly groundwater; and an understanding of the degree and extent of the contamination. It also serves as a way to evaluate further response actions and will be updated as needed based on future monitoring results or new information.

ANR determined that past air emissions from two former Teflon-coating facilities caused area-wide PFAS contamination in groundwater based on data and information collected during the area-wide PFAS response, including data and information provided in the 2018 Barr Conceptual Site Model Site Investigation Report: Bennington Vermont,

PFAS in groundwater is expected to exceed the applicable groundwater and drinking water standards for over five years, if not decades, given the persistence of PFAS in the environment.

ANR concluded that it is not possible to completely remove PFAS contamination from the affected area. Therefore, the corrective action remedies focused on providing long-term drinking water remedies to eliminate the drinking of contaminated water and to reclassify groundwater as an institutional control. Formal groundwater reclassification ensures that there are measures (well construction and monitoring requirements) in place to increase the chances, to the extend practical, that a new water well will provide potable water, given the reality that the drilling of any new well would require passing through groundwater that likely has PFAS levels above the applicable groundwater standards.

My well tested clean or tested below the applicable groundwater standard. Why is my property included within the reclassification area?

Although a well may be clean, it does not mean that all parts of the underlying groundwater are not contaminated with PFAS. The "clean" well has fortunately tapped into a cleaner, most likely deeper, part of the aquifer. Based on the site investigation work and the Conceptual Site Model developed from this investigation, past air-emissions from the former Chemfab facilities have caused area-wide contamination of groundwater, particularly within the shallow groundwater. There are several examples where one well on a property has no PFAS and the other well or spring has PFAS above the applicable groundwater standards. For these reasons, conditions related to well construction are included in the reclassification order to reduce the potential of shallow groundwater contaminating the new well with PFAS.

How does reclassification affect the use or status of my existing water supply well and will the status of my water supply well change if property ownership changes?

The reclassification does not affect the use or status of an existing water supply wells nor the ability of a new property owner to use an existing water supply into the future. Also, the reclassification does not affect Saint-Gobain's obligation under the Settlement Agreement. See responses later in this FAQ about Saint-Gobain's obligation.

What were the major documents used by ANR in preparing this reclassification order?

The major documents were the following:

- A groundwater reclassification petition dated January 28, 2021, from Barr Engineering (Barr) on behalf of Saint-Gobain Performance Plastics for the Bennington Area.
- Conceptual Site Model Site Investigation Report: Bennington, Vermont, prepared by Barr Engineering (Barr), dated March 2018; and
- Comparative Analysis of Corrective Action Options and Evaluation of Corrective Action Alternatives: Corrective Action Area II (Appendix C and Appendix C1) of the Consent Order prepared by Barr;

Other applicable documents include:

- 2019 Consent Order and Appendix D and Appendix D1 of the Consent Order;
- Interim Measures Corrective Action Plan for Public Water System (PWS) Extensions Corrective Action Area I Operable Unit A, dated August 11, 2017;
- Interim Measures Corrective Action Plan for Public Water System (PWS) Extensions Corrective Action Area II Operable Unit A, dated June 7, 2019;
- Corrective Action Plan for Public Water System (PWS) Extensions Corrective Action Area II Operable Unit C, dated March 19, 2020; and
- Corrective Action Plan 2-Corrective Action Areas I and II – Operable Unit B North Bennington and Bennington, dated March 2020,

Are there any other Institutional Controls being considered to restrict groundwater use for drinking water?

ANR is talking with the Town of Bennington about possible changes to the zoning or municipal ordinances that will require new developments to connect to municipal water in areas that are currently served by municipal water or in areas where the Town plan recommends that new developments be connected to municipal water. This conversation is ongoing. ANR encourages these changes, where practical, to ensure that there is more than one institutional control to reduce the potential of groundwater with PFAS levels above the applicable groundwater and drinking water standards to be used as a drinking water supply.

Can I drill or construct a drinking water source (well or spring) within the Reclassification area?

Connecting buildings or sructures to municipal water where it is available is the most reliable long-term drinking remedy to protect public health, however, in some cases, a new well can be installed. Any new potable or public water source within the reclassification area will require a permit through the Drinking Water and Groundwater Protection Division.

A new source for a potable or public water supply must meet the following requirements:

- minimum well construction requirements, with allowances for extenuating circumstances;
- sampling requirements for PFAS: short-term and long-term; and
- the need for drinking water mitigation measures, such as a point-of-entry treatment systems, if there are levels of PFAS above the Vermont Groundwater Enforcement Standards or maximum contaminant levels (MCLs);

This reclassification order prohibits the use of overburden wells or springs as a new potable or public water source given the likelihood that such a well will have groundwater that is contaminated with PFAS. The order also prohibits the installation of new drinking water sources for potable or public use for any building or structure within 200 feet of an existing waterline or waterlines, with allowances for extenuating circumstances (a variance) approved by ANR.

What is the purpose of having minimum well construction requirements?

Based on the conceptual site model for the area-wide PFAS contamination, PFAS travelled through the air and deposited on the ground surface. The PFAS then infiltrated, which is still occurring, through the the soil or bedrock and eventually into groundwater. The purpose of these minimum well construction requirements is to separate, to the extent practical, shallow groundwater, which is likely contaminated with PFAS,from the deeper bedrock aquifer by sealing the well through the overburden material into bedrock. Besides potentially providing a potable water source, this well construction approach also reduces the potential for degrading groundwater quality and spreading contamination inadvertently due to drilling new wells within the Class IV area.

The reclassification will have provision for variances to this well construction requirement because DEC recognizes that there are some areas in Bennington where the minimum well construction requirements are not feasible.

Who is responsible for constructing new drinking water wells installed within the Class IV area that are not part of a required Corrective Action?

The permittee is responsible to hire a Vermont licensed driller to construct any new wells consistent with the requirements and conditions of any applicable permit or reclassification.

What happens if I live near a water line but want to have my own drinking water well drilled?"

If your structure or building is within 200 feet of a waterline you must connect to municipal water unless the Secretary of ANR determines that there are extenuating circumstances, as provided by the permittee, warranting a variance. Even if a structure or building is located beyond 200 feet, the permittee will be encouraged to connect to municipal water if there is a waterline nearby.

If I need to replace my drinking water well will this require a permit?

Yes, a permit is required for a replacement well, which is subject to the requirements of the reclassification order.

Will this Class IV designation affect my property values?

Here is our experience:

- If there is any effect on property value it is due to the PFAS levels in groundwater and not the reclassification.
- We've seen that more certainty helps with the transfers of properties. Having a formal plan in place, and defined solutions, creates greater certainty.
- In nation-wide studies examining the affect that groundwater contamination has on property values, their outcomes varied. Many factors affect property values.

Is it possible that the Class IV designation can be changed or returned back to a Class III (potable) classification?

Yes, as part of the requirements of the 2019 Consent Order and March 2020 Corrective Action Plan 2-, Saint-Gobain is obligated to perform long-term monitoring. This long-term monitoring will provide ANR with groundwater data to determine whether adjustments to the Class IV boundary will be needed in the future. These adjustments could expand, contract, or remove the Class IV area. Adjustments could also be made if there are future changes to the groundwater enforcement standards or MCLs for PFAS.

Can I install a new well for non-potable uses, such as agricultural, industrial, or commercial, and geothermal?

The Agency of Agriculture, Food, and Markets must be notified prior to any new well being installed for agricultural use, so they can assess the suitability of such well or use considering the Class IV designation.

Prior to any new well being installed for all non-potable uses that are not agricultural uses, including ones used for industrial, commercial, or geothermal purposes, the VT Department of Environmental Conservation Waste Management and Prevention Division will need to be notified so they can assess the suitability of such well or use considering the Class IV designation.

What is Saint-Gobain's responsibility if a new drinking water well has PFAS concentrations above the groundwater enforcement standards or MCLs?

New wells in Operable Unit B (see Groundwater Reclassification Boundary Map for Operable Unit boundaries)

Under the settlement agreement, Saint-Gobain must test all new wells in Operable Unit B upon request of the state and the well owner. If the PFAS levels are at or above the groundwater enforcement standard or MCL, whichever is applicable, Saint-Gobain will immediately provide bottled water and install a point-of entry treatment system within 30 days of receipt of the laboratory analysis. ANR may authorize Saint-Gobain to connect the residence or business to a municipal water line or install a replacement well if technically feasible and the property owner(s) concur. If the PFAS concentrations are below the Vermont Groundwater Enforcement Standard or Maximum Contaminant Levels, then the new well, if authorized by the property owner, will be included in Saint-Gobain's long-term monitoring program.

New wells in Operable Unit A and Operable Unit C

Under the 2019 Consent Order, Saint-Gobain is not obligated to test, monitor, or provide a drinking water remedy for any new or existing wells located in Operable Unit A or Operable Unit C (Areas where municipal waterlines were extended). Testing and treatment requirements for any newly permitted well in these areas will be the responsibility of the permittee.

How does reclassification of the groundwater affect Saint-Gobain's obligation with respect to drinking water sources and treatment systems?

It does not affect Saint Gobain's obligation under the 2019 Consent Order and approved Corrective Action Plans (CAPs).

Operable Unit B

Saint-Gobain is still obligated to perform the following activities related to drinking water sources within Operable Unit B:

- Perform long-term PFAS monitoring for all drinking water sources (potable and public);
- Provide bottled water for any drinking water source that exceeds the PFAS groundwater enforcement standard or MCL until treatment is shown to be working or the resident/business is connected to municipal water or a new, uncontaminated source is installed, and sampling shows it will remain below groundwater enforcement standards or MCL;
- Install, monitor and maintain any treatment system at a source location that exceeds the PFAS groundwater enforcement standard or MCL;
- Assess the feasibility of alternative long-term drinking water remedies, such as replacement wells: and
- Implement an alternative long-term drinking water remedy, if directed by VT ANR, pursuant to the requirements in the 2019 settlement agreement and approved corrective action plan(s).

Operable Unit A

Under the 2019 Consent Order, Saint-Gobain is obligated to provide municipal water to existing residences and businesses within Operable Unit A. Once the waterlines are completed for a given area, Saint-Gobain is no longer required to monitor or maintain treatment systems for those residences and businesses that chose not to connect to municipal water.

Operable Unit C

Under the 2019 settlement agreement, Saint-Gobain no longer has monitoring or corrective action obligations in Operable Unit C. ANR has taken the lead for this area, and as in Operable Unit A, is providing the opportunity for all existing residences and businesses to connect to municipal water. If a resident or business chooses not to connect to municipal water, then that resident or business will be responsible to continue monitoring and maintaining any treatment system once the waterline work is completed in Operable Unit C, which is expected to happen in August-September 2021.

Why were not all areas within the Corrective Action Areas and groundwater reclassification areas connected to public water?

The Agency of Natural Resources (ANR) is required to evaluate several criteria when selecting a corrective action, including those providing a long-term drinking water remedy. These criteria are:

(1) compliance with legal requirements;
(2) protection of human health and the environment;
(3) long-term effectiveness and permanence:
(4) reduction in toxicity, mobility, or volume of contamination through treatment;
(5) short-term effectiveness;
(6) implementability;
7) cost;
(8) environmental impact and sustainability, and
(9) community acceptance.

As a general matter, ANR's preference to address contaminated water supply wells is to connect impacted parties to a municipal water line given the certainty, stability, and predictability associated with a municipal water source. However, connection to a municipal water system in some cases was not practicable for a variety of technical and economic factors. For example, connecting one home at the end of a long water line may create water quality problems (e.g., harmful disinfection by-products) because water may sit stagnant in the line. Also, Saint-Gobain was not willing to enter into a settlement agreement that would extend waterlines into areas where only a limited number of wells had PFOA levels above the standards.