

June 28, 2022

Attn: Ryan Hancharick
Source Water & UIC Section
U.S. EPA Region 3

Re: Comment on Permit #PAS2D702BALL, Penneco Environmental Solutions, Sedat 4A
Underground Injection Well

Dear Mr. Hancharick,

The Safe Drinking Water Act (SDWA) was established in 1974 (with amendments in 1986 and 1996) to ensure the U.S. Environmental Protection Agency (EPA) protects the health of our nation from contaminants in our drinking water. The permit requested by Penneco Energy Solutions (Permit Number PAS2D702BALL) for the injection of hydraulic fracturing fluid waste into the Murrysville Formation in the Sedat 4A well in Plum Borough of Pennsylvania is **a direct threat to public drinking water and therefore a false pretense of safety posed by the EPA**. In addition to Sedat 3A permit number PAS2D701BALL, which led to environmental contamination, Sedat 4A presents devastating risks to several downstream Allegheny River public drinking water systems. Affected systems include the Pittsburgh Water and Sewer Authority, which provides water to hundreds of thousands of City of Pittsburgh residents and businesses.

Five water wells and two streams were identified within the Area of Review for the injection well identified as “Sedat 3A”. Two of the wells were contaminated in July 2021 when the 30-year-old injection well casing failed. Due to the lack of appropriate and detailed engineering review suggesting a leak detection zone¹, **water contamination was identified in residents’ wells**. The Pennsylvania Department of Environmental Protection (DEP) conducted standard parameter testing of the resident’s well water but failed to test parameters that typically indicate injection fluid infiltration. For example, no total suspended solid test was conducted, which would inform sand contamination. In addition — while Penneco’s chosen brand of chemical tracer is not public knowledge — because most chemical tracers in fracking fluid are fluorinated benzoic acids, results of the omitted benzene test would have informed fluid infiltration.

Code of Federal Regulations 40 CFR 144, which prohibits substantial endangerment of human health through the SDWA, establishes the framework for the Underground Injection Control (UIC) system where the consideration of a number of measures is meant to ensure injection

¹ 13 April 2020 Maskol Technical Review of Penneco’s Control and Disposal Plan

activities will not endanger underground sources of drinking water (USDWs). Due to the lack of proper water testing, no evidence disproves the casing failure led to fracking fluid waste leakage into USDWs. Therefore, the permit approval of Sedat 4A is a direct violation of the EPA's adherence to the SDWA by leaving the endangerment of human health to chance because of potential and probable casing failure.

The mechanical integrity test (MIT) conducted on June 11, 2021, following the application of new cement bond logs to Sedat 3A displayed a 3% loss of pressure over 30 minutes; a 5% loss of pressure would have resulted in a failure of the MIT as per EPA methods. While Sedat 3A minimally passed its MIT, we are deeply concerned that the mitigation applied to Sedat 3A was still very near failure for the MIT. The same integrity methods applied to Sedat 3A are proposed for 4A; in our scientific opinion, it is statistically unlikely the same proposed casing mitigations from 3A will be sufficient to protect 4A from failure. Lack of regulatory oversight by the EPA and an engineering review that would have prevented such a failure calls into question EPA's ability to protect the region's drinking water.

A letter containing H-FRAC Consulting Services' Reservoir and Fracture Characterization of the Murrysville Formation sent to the EPA in December 2015² indicated a need to inject fracturing waste into the formation at a pressure "higher than normal" at 1,420 psi. Due to low injection formation permeability of the formation, this suggested pressure could easily lead to increased unnatural faults or a casing failure similar to that which occurred in Sedat 3A.

Code of Federal Regulations 40 CFR 144.12, which prohibits the movement of fluid into USDWs, provides that no underground injection operator "shall construct or operate in a manner that allows movement of fluid containing any contaminant into USDWs if the contaminant may violate 40 CFR 142." The permit approval for injection of waste into Sedat 4A has potential to violate 40 CFR 142 and lead to the movement of fluid into USDWs and therefore should not be issued. Our analyses strongly suggest the EPA withdraw permits for the development of Sedat 4A until/unless mitigation to the currently existing well distinctly passes an MIT. This is particularly important as the suggested injection pressure into the Murrysville Formation greatly exceeds the pressure at which the MIT was conducted for Sedat 3A.

In addition to the integrity of the well casings, we also question the current saturation and ultimate receptivity of the Murrysville Formation. Post waste injection, geological knowledge suggests a porous rock matrix will reach an ultimate point of storage capacity at which it will no longer be able to hold injected fluid. No ultimate receptivity point was reported by Penneco during the geological reporting phases, nor was it provided to the public by the EPA. Because Penneco has requested a disposal of 1.5 million gallons of waste into the Sedat 4A well (far below average for waste injection wells), it is our suspicion the operators calculated and knew the ultimate receptivity of the Area of Review for the Murrysville Formation. Alternatively, we

² 7 December 2015 Jacot Sedat 3A Reservoir and Fracture Characterization for the Murrysville Formation

suspect the 1.5 million gallon proposal reflects an expectation of a casing failure, in which case a permit for fluid injection should never have been initially issued to Penneco.

Research suggests full saturation of a sandstone matrix in combination with high injection pressure may lead to unnatural fracturing and upward and/or downward travel of waste fluid. Travel of waste via natural or unnatural faults through the overlying shale layer threatens a violation of the **Code of Federal Regulations part 40 CFR 144.12**. Therefore, we again emphasize the issuing of permits for the Sedat 4A well is a failure by the EPA to adhere to the SDWA and is a violation of applicable laws and regulations.

Finally, our legal research has resulted in our knowledge that the EPA did not properly adhere to the **Code of Federal Regulations 40 CFR 25.5 or 124.10** regarding public hearings, public notice, and public comment periods. Consistent with the COVID-19 national emergency, the EPA released a statement that they are “supportive of holding public hearings and meetings virtually” but that applicable. States in which hearings are being held must preliminarily approve of the virtual hearing according to their state laws. Because the State of Pennsylvania does not allow fully virtual hearings outside of emergency orders, and the COVID-19 state of emergency was removed in 2021, the **EPA was in direct violation of 40 CFR 25.5** by eluding approval from the State of Pennsylvania for the fully virtual hearing regarding the Sedat 4A well. The **EPA then violated 40 CFR 124.10 sections b and c** by providing improper public notice for the hearing per all four required methods³. Briefly, public notification was not fulfilled in all four required methods (ex. Plum municipality and mailing lists featuring Protect PT contacts should have been notified of the scheduled hearing) and all persons and agencies affected by the Sedat 4A permit were not notified at least 30 days in advance of the hearing.

52 years ago, the EPA was tasked with the development of environmental baselines that **minimize adverse impacts of pollution activities**. Today, we encourage EPA’s adherence to their own baselines by denying permit PAS2D702BALL for Sedat 4A and withdrawing the permit for the Sedat 3A fracturing waste injection well to Penneco Energy Solutions. We also suggest the EPA remedy their violations of **40 CFR 25.5 and 124.10** to avoid future legal involvement.

Regards,



Jenna Rindy, M.S. & M.Sc.
Staff Environmental Scientist
Protect PT

³ See “b” for timing and “c” for methods:
<<https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-124/subpart-A/section-124.10>>