

August 22, 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 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 the health of residents living near the wells and Allegheny County's drinking water; therefore the approval of the permit is a false pretense of safety posed by the U.S. Environmental Protection Agency (EPA).**

In 1970 the EPA agreed to abide by the **Clean Air Act** (42 U.S.C. 7401), taking on the responsibility of not only improving but also protecting the country's air quality. Section 7470 of the U.S.C. specifically tasks the EPA with the goal "to protect public health and welfare from any actual or potential adverse effect which in the Administrator's judgment may reasonably be anticipated to occur from air pollution"¹.

Since October of 2021 our organization has been continuously monitoring ambient volatile organic compounds (VOCs) at 1835 Old Leechburg Rd, New Kensington, PA, approximately 500 feet south of the Sedat 3A injection well. Our recent assessment of the data from the monitor shows the residents living at 1835 Old Leechburg Rd are at high risk of acute health effects from VOC exposure and could potentially experience long-term negative effects due to proximity to the injection well. The health of Pennsylvania residents is actively declining due to the Sedat injection wells, regularly leading to headaches, nausea, dizziness, and vision impairment. **In accordance with the Clean Air Act, we request the EPA as a protection agency denies further permitting for injection wells if they have any interest in avoiding further damage to the lives of more human beings.**

In relation to the direct assurance provided by the EPA to protect the health of our nation from contaminants in our drinking water, the **Safe Drinking Water Act** (SDWA) was established in 1974. The Sedat 4A well presents devastating risks to several downstream Allegheny River public drinking water systems as confirmed by the contamination caused by the approval of the

¹ <[U.S.C. Title 42 - THE PUBLIC HEALTH AND WELFARE \(govinfo.gov\)](https://www.govinfo.gov)>

Sedat 3A well (permit number PAS2D701BALL). 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 zone², **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 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 2015³ 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.

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

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

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 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.

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. It would be in the EPA’s best interest to avoid causing further harm to residents of Pennsylvania, whether by following the Clean Air Act and/or the Safe Drinking Water Act.

Regards,



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