8/28/25

Todd Parfitt, Director
Wyoming Department of Environmental Quality
200 W. 17th St. 2nd Floor,
Cheyenne, WY 82002

Re: Petition to investigate groundwater ammonia contamination adjacent to Town of Jackson Wastewater Lagoons (WYPDES Permit No. WY0021458)

Dear Mr. Parfitt:

On behalf of Protect Our Water Jackson Hole (POWJH), I am writing pursuant to the authority granted in W.S. §35-11-701(a) to urge the Wyoming Department of Environmental Quality (WDEQ) to promptly investigate the potential for ongoing groundwater contamination adjacent to the above-referenced wastewater treatment facility (Lagoons). Existing groundwater data indicates an ongoing contamination problem but monitoring was discontinued in 2012. Nearby groundwater quality is already suffering from wastewater pollution and the facility's fragile and important location dictate swift action to remediate what could now be decades of groundwater contamination from our community's largest point source discharge of nutrients into the watershed.

Background

POWJH is a locally-based nonprofit organization dedicated to serving Teton County, Wyoming, as a powerful catalyst and advocate for restoring and protecting the quality of ground and surface waters in the Upper Snake River Watershed. POWJH has twice provided comments on draft discharge permits for the Lagoons: once in October 2022 and again in July 2024. In our July 2024 comment letter, we raised various concerns over the potential for ongoing contamination from ammonia in groundwater wells adjacent to the Lagoons. This petition serves as a formal request for WDEQ to investigate those concerns.

The Lagoons rest on the floodplain between the Snake River and Flat Creek south of the Town of Jackson (Town) and north of Hoback Junction. The entire upstream length of the Snake River, until it passes beneath the Hwy. 22 bridge in Wilson several miles north of the facility, is a Class 1 waterbody[1]. From this point downstream, it is a Class 2AB waterbody. Just a few miles downstream, the Snake River has been designated a National Wild and Scenic River due in part to its exceptional water quality, scenic beauty, and extraordinary recreation opportunities. Flat Creek, also a Class 2AB waterbody in Wyoming, is an important waterway already suffering from detrimental human impacts. Designated uses for Class 2AB waterbodies include drinking water, game and non-game fish, fish consumption, aquatic life other than fish, recreation, agriculture, wildlife, industry, and scenic value. Flat Creek is also listed on Wyoming's 2022/2024 Integrated 305(b) and 303(d) Report. The section between Cache Creek and High School Rd. and High School Rd. to the confluence with the Snake River have not supported designated uses for Aquatic Life Other Than Fish and Cold Water Game Fish due to Physical Substrate Habitat Alterations since 2008. The section between High School Rd. and the confluence with the Snake River also has not supported Recreation due to excess *E. coli* bacteria since 2020. Finally, The groundwater in the

[1] Wyoming Surface Water Classification List

Alluvial Aquifer along Snake River is classified as Class I according to Wyoming Water Quality Rules and Regulations (WQRR), Chapter 8. Groundwater of Class I shall not be degraded to make it unusable as a source of water for its intended use (drinking water). The majority of Teton County residents rely on groundwater to meet our drinking water needs. What's more, Teton County's surface water and groundwater resources constitute the majority of the Source Area for the Eastern Snake River Plain Sole Source Aquifer.

In addition to the important context above, POWJH provided the following background information in our July 2024 review letter:

"...the segment of the Snake River immediately south of the Jackson sewage plant is considered "high quality" water under both federal and state water quality regulations. 40 C.F.R. 131.12(a)(2); WDEQ Chapter 1, Section 8(a) ("Those surface waters not designated as Class 1, but whose quality is better than the standards contained in these regulations, shall be maintained at that higher quality.") With regard to such waters, the Clean Water Act requires that "[t]he State shall assure that there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control."

Drinking water resources in localities south of Town are already being impacted by nonpoint pollution from inadequately managed wastewater. In December 2024, WDEQ and Teton County finalized their investigation into nitrate contamination in Hoback Junction, which found that poorly-treated wastewater from tightly clustered septic systems was the most likely source of the contamination. In addition, there are several public water systems just upstream from the Lagoons that are showing concerning increases in nitrate levels. In summer 2024, Pub Place reported nitrate levels of 15 mg/L, which triggered an enforcement action by the EPA. The enforcement order did not require the system to provide an alternative water source, and resulted in the installation of a nitrate treatment unit. **Figure A1** in the Appendix shows climbing nitrate levels at both Old West Cabins and Pub Place.

Rationale

The 2021 Technical Review Report[2], prepared by TriHydro Corporation in conjunction with ten public stakeholders and a steering committee composed of American Rivers, Northern Rockies Ducks Unlimited, Snake River Fund, Teton Conservation District, the Wyoming Game and Fish Department, and POWJH to review current performance and upgrade options for the Lagoons. The report provides some important information on the facility that is relevant to this petition:

- According to the Lagoons' design records, cells 1 and 2 are lined with bentonite clay, while the remaining 8 cells are lined with a geosynthetic liner of bentonite plus a fabric membrane. The cell's contents are mixed by floating aerators (cells 1 – 3B2) and subsurface coarse aeration (cells 4A-5).
- The report did not evaluate the geosynthetic clay liner integrity installed in secondary Cells 3B1, 3B2, 4A, 4B, 4C, 4D, and 5 as part of the Wastewater Treatment Facility Expansion & Modification Phase I project (1995), when portions of Cells 2 and 3A received partial polyvinyl chloride (PVC) lining. The PVC lining was placed on approximately the upper four feet of the slope at the high-water line and did not line the entire area of Cells 2 and 3A.

[2] *2021 Wastewater Treatment Plant Technical Review, Town of Jackson, Wyoming*

- Lagoon systems require the least amount of power for treatment, but struggle to remove ammonia in the winter because nitrifying bacteria become almost dormant at temperatures less than 15C (59F).
- Current influent ammonia loadings are below the 1,193 lb/day design loadings. However, if the influent flow rate increases to 5.0 MGD, ammonia loadings are projected to surpass design loadings.

Despite matching descriptions within the Lagoons' WYPDES permit and the 2021 review, questions about the integrity of the lagoon liners, particularly in cells 1 and 2, persist. Furthermore, the United States Environmental Protection Agency (USEPA) raised concerns over a potential hydrologic connection to nearby Flat Creek in their review letter of the July 2024 draft permit:

"(The draft permit's Statement of Basis) states, 'While the facility does not discharge to Flat Creek, subsurface flow patterns between the facility and between the receiving wetlands and Flat Creek are currently unknown.' Although the subsurface flow patterns are unknown, the USEPA recommends documenting information such as the status of lagoon cell liners and any other relevant hydrologic information related to understanding the potential for a subsurface hydrologic connection."

Despite the facility's record of achieving effluent limits set forth on their WYPDES permit, POWJH is concerned that ammonia is escaping the facility in concentrations which exceed WDEQ WQRR Chapter 8 standards for Class I groundwater. In our July 2024 review letter, we laid out our concerns and requested an investigation:

"The WDEQ's 1995 Permit to Construct, Permit No. 94-545, dated 7/14/95 (authorizing the modification of this facility) contains a number of Special Conditions, including conditions 11-15 requiring groundwater monitoring. Condition 11 required that: 'The discharge of wastes from the sewage treatment lagoons to the subsurface by natural seepage, infiltration or percolation shall not cause a groundwater quality concentration of any constituent in the aquifer immediately below the facility to exceed the class of use standard for Class I groundwater as contained in Chapter 8, WWQRR. The points of compliance shall be monitor wells identified as #1, #2, #3, #4, #5, #6, #7 and #8.' We have reviewed the results of groundwater monitoring provided to POWJH in response to public records request # 24-540. Our review has revealed what appears to have been a large number of exceedances of Chapter 8 groundwater quality standards for ammonia over a period of many years. See ***Figure 1*** *below for a summation of these results. Based on that, we recommend that WDEQ undertake an investigation pursuant to W.S. 35-11-701 (Complaint and Request for Investigation) to determine whether groundwater quality standards are being met."*

In the October 2024 response to these comments, WDEQ responded with the following statement:

"WDEQ will consider an investigation of groundwater quality in and around the project area, but it will be separate from conditions established in this WYPDES permit renewal."

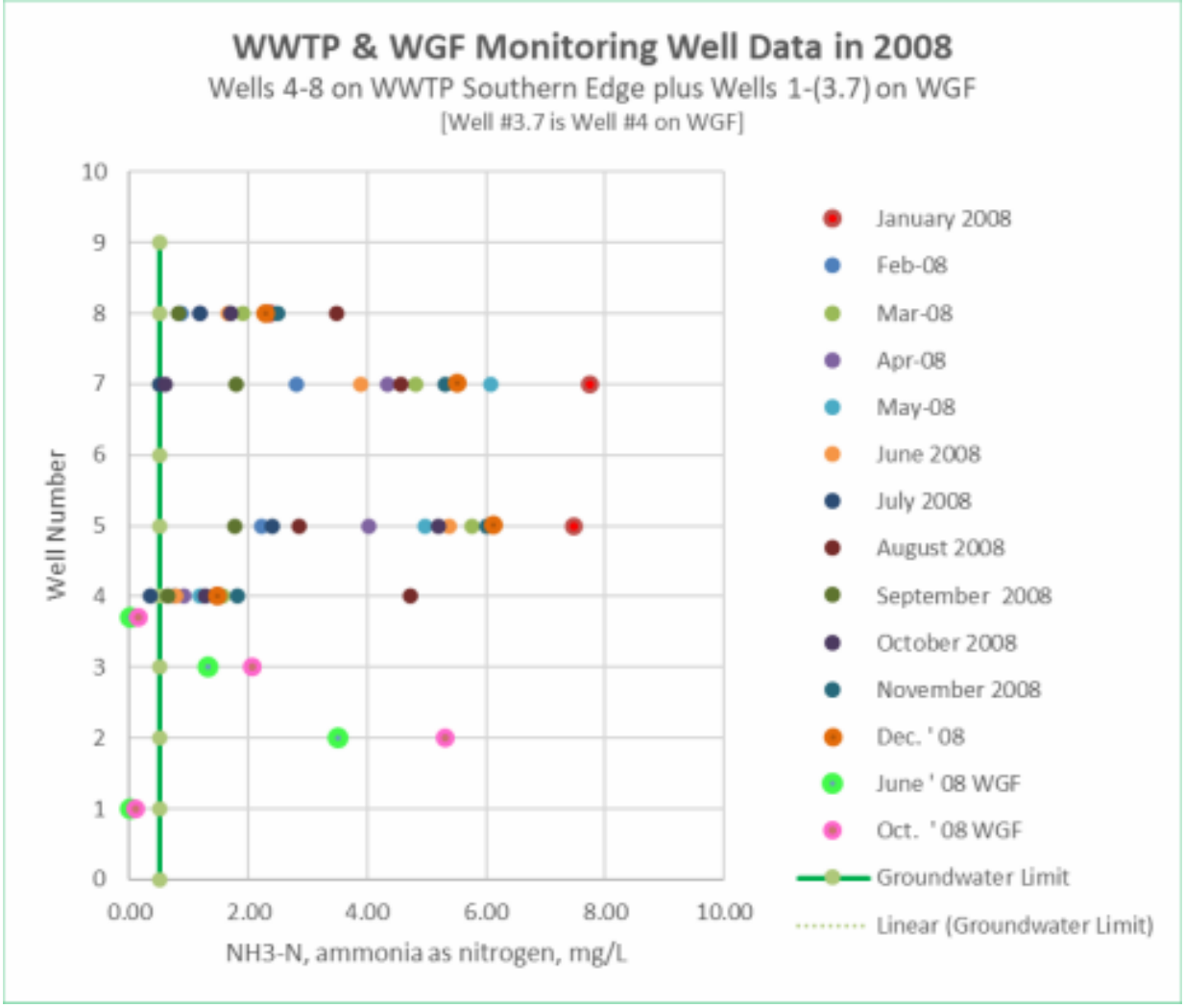

Figure 1: 2008 Monitoring Well Data. Representative of years 2007-2012[3]

Petition

It is time for WDEQ to answer several important questions for our community.

1. Are groundwater ammonia levels downgradient of the facility still exceeding WQRR Ch. 8 standards for Class I groundwater?
2. If so, what is the source of this contamination?

Once we have answers to these questions, we can take meaningful steps to address them. The more we understand potential issues with our wastewater infrastructure, the better prepared we will be to improve and/or upgrade critical infrastructure and ultimately reduce the amount of nutrient pollution entering our watershed.

[3] Credit: POWJH Boardmember Kay Modi, 6/26/24.

Conclusion

POWJH is grateful for our relationships with both the Town and WDEQ. Our shared reverence for and goal to protect water resources for current and future Wyoming residents will continue to guide many important collaborative efforts to come. In the hopes that we can come to a prudent conclusion to the above questions - one which informs better wastewater management and accurate public understanding - we would welcome the opportunity to discuss this petition with staff from the Town, the WDEQ, and/or other stakeholders included in this correspondence.

Thank you for your commitment to protect public health and the environment. We look forward to hearing your response to this petition and moving forward together.

Sincerely,

Phil Powers
Executive Director

Matthew Bambach
Water Resources Program Manager

CC
-Jennifer Zygmunt, Administrator, WDEQ/WQD
-Lily Barkau, Groundwater Section Manager, WDEQ
-Floren Poliseo, Public Works Director, Town of Jackson, WY
-Johnny Ziem, Assistant Public Works Director, Town of Jackson, WY
-Dustin Christensen, Wastewater Manager, Town of Jackson, WY
-Stephanie Dejong, Manager, Clean Water Branch, USEPA Region 8

Enclosures
-POWJH Comments on Town of Jackson Wastewater Lagoon, Permit No. WY0021458
-WDEQ RESPONSE TO COMMENTS RELATED TO PROPOSED RENEWAL OF WYOMING POLLUTANT DISCHARGE ELIMINATION SYSTEM (WYPDES) PERMIT WY0021458 (TOWN OF JACKSON – WASTEWATER LAGOONS)
-EPA Comments on the Town of Jackson Wastewater Lagoon Draft National Pollutant Discharge Elimination System Permit - WY0021458
-TriHydro Corporation TECHNICAL REVIEW REPORT - 2021 WASTEWATER TREATMENT PLANT TECHNICAL REVIEW - TOWN OF JACKSON, WYOMING

Appendix

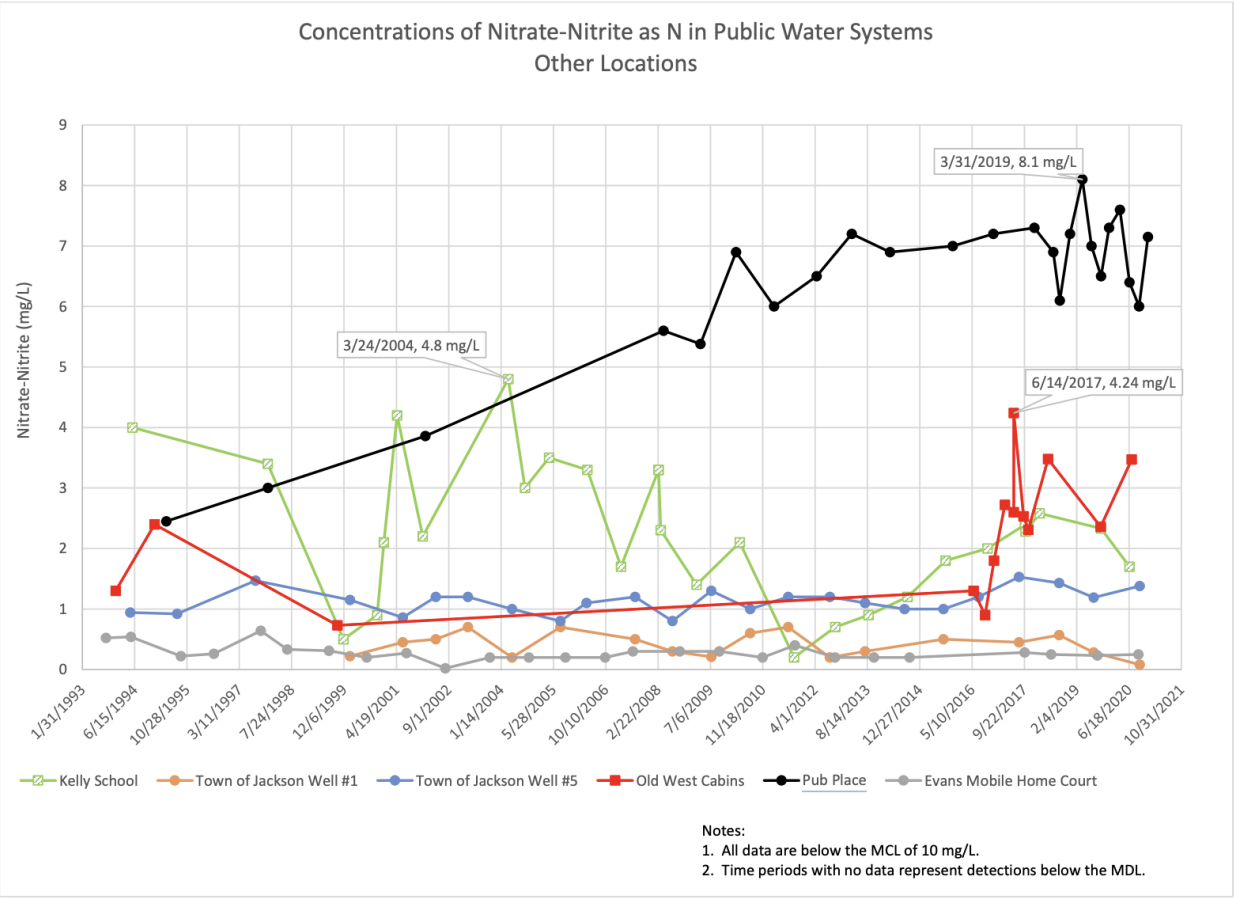

Figure A1: Concentrations of Nitrate-Nitrite as N in Public Water Systems - Other Locations[4]

[4] Teton County Water Quality Management Plan Appendix C5