August 26, 2024

Bureau of Water Pollution Control
Nevada Division of Environmental Protection
901 S Stewart Street #4001
Carson City, NV 89701

To: Nevada Division of Environmental Protection

Subject: OneWater Nevada Category A+ Application Public Workshop Comments [NAC 445A.27614]

Truckee Meadows Water Authority and the City of Reno held a public workshop concerning the proposed indirect potable reuse facility near the Reno Stead Water Reclamation Facility (Advanced Purified Water Facility at American Flat). This workshop was held on November 16, 2023 from 6pm-8pm at the Reno Stead Airport. The public workshop and public notice followed NAC 445A.27614 requirements.

Public notice was provided on November 1, 2023, which was at least 15 days prior to the workshop date. Notice was posted online at the State of Nevada Public Notice website, on Truckee Meadows Water Authority's website, on the City of Reno's website, and on OneWater Nevada's website. Email notices were sent to TMWA, City of Reno and OneWater Nevada email lists on November 1, 2023. Additionally, notice was printed in the Reno Gazette Journal on November 6, 2023. A copy of the notice is attached.

The workshop consisted of a 45-minute presentation summarizing the project followed by a group question and answer period. Following the question and answer period, members of the public could make public comment verbally or provide it in writing on a comment card. A recorder was present at the meeting and an official transcript of the questions asked have been included in this document. The remainder of the meeting allowed for attendees to walk around the room to different subject displays and ask one on-one-questions. 11 people attended the workshop. Public comment following the meeting could be submitted online on the OneWater Nevada website or through email to apwf@onewaternevada.com. The public comment submission period was open from November 1, 2023, through December 11, 2023 which meets the 30 day comment collection period minimum.

In an effort to reach more community members, two unofficial workshops presenting the same material were held on August 29, 2023 and October 5, 2023 at the Reno Stead Airport. Postcards were mailed to 12,427 residents in the North Valleys/Ward 4 area. A recording of the presentation was also posted on the OneWater Nevada website to reach additional members of the public who were unable to attend the in-person presentations.

The comments received and the responses in accordance to NAC 445a.27614 are attached. Responses will be published on www.onewaternevada.com.

1. **"This new facility will cost the everyday 2 to 4 member household water user how much more per month? An average is fine. Please do not respond with nonsensical scientific numbers. Every person who has to pay for a water bill needs basic cost analysis."**

   ***Response**: For TMWA water customers, the construction costs of this project will be 100% funded by development, so there will be no impact on existing customers for that component. The operating costs are estimated at a level to represent between 0.5% and 1.0% of total TMWA operating costs, which could result in an increase in the average monthly bill of $0.25-$0.50, for a $50 bill. For a larger bill (summertime usage), it could be an increase of $1.00 - $2.00 per month.*

   For City of Reno sanitary sewer customers, project costs will be split between sewer user fees and developer connection fees. The current sewer fund along with proposed bond funding is sufficient to fund the project construction and operating costs. User/connection fees are not anticipated to increase at this time. The City of Reno undertakes a sewer user and connection fee rate sufficiency analysis every two years to ensure program viability.

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2. **"When you put the water into the ground and it travels about to the uptake wells, is the water then treated again or is the plan to treat it again when it comes out of the ground? When it's going through this process, you talked about shutting down the system if you saw an irregularity. What measurement tools are you using?"**

   ***Response:** The water that is injected into the aquifer must meet United States Environmental Protection Agency (EPA) National Primary Drinking Water Standards and State of Nevada Secondary Drinking Water Standards. Because this water meets drinking water standards, it will not need to be treated after it is extracted from the well. Chlorine will be added to the extracted water before being served to customers. This is a requirement under the EPA's Safe Drinking Water Act.*

   The treatment plant and injection wells will have a significant amount of online water quality analyzers and instrumentation that will be frequently verified by laboratory testing. Automatic shutdowns will be programmed into the treatment plant if any of the analyzers or processes do not meet operational goals and requirements. When the water is extracted from the wells, just like any other water utility groundwater well in the United States, sampling must occur to ensure the water is safe. A compliance schedule for sampling and reporting based on EPA standards is set for each well.

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3. **"In response to notification of Public Comment Period and Public Workshop Regarding OneWater Nevada's Proposed Advance Purified Water Facility Comment Workshop, Thursday, November 16, 2023 our Silver Knolls Community Organization would like to submit the following questions and requests for response "for the record".**
    a) **We understand that TMWA currently recharges potable water in existing municipal wells to the east of the Silver Knolls neighborhood. Please explain how TMWA manages their aquifer storage and recovery program in a sustainable manner and how neighboring domestic well and septic system owners are not negatively impacted by this existing operation?"**

Response: *TMWA has been recharging water in a well located to the southwest of the Silver Knolls neighborhood for a couple decades as part of our larger aquifer storage and recovery (ASR) program. The purpose of the ASR program in Stead is to improve water quality. A secondary benefit is to stabilize groundwater levels such that TMWA pumping in the area does not adversely affect domestic wells. Over the last six years TMWA has injected more water than has been pumped with an average annual net injection of 12 acre-feet. This means that on average we are adding water to the aquifer which helps stabilize water levels.*

    b) **"The project proposes to recharge up to 2 million gallons per day of advanced purified water into the aquifer at American Flat. What assurances can you provide that this groundwater recharge and reclamation program will not negatively impact neighboring domestic wells and septic systems? Our concerns include water quality, possible flooding issues, and the possibility of any water reduction which would otherwise naturally flow into our aquifer."**

Response: *The Advanced Purified Water Project at American Flat will include a robust monitoring program to ensure that the local water quality is safe. There will be a total of 10 monitoring wells at the American Flat site where regular water quality sampling will take place to make sure the aquifer is maintained within drinking water quality standards set forth by the Environmental Protection Agency. Groundwater levels will be measured frequently in the monitoring wells to ensure that no undesirable shallow groundwater conditions occur. Computer groundwater modeling is also being done to aid in ongoing aquifer management and to confirm that naturally occurring recharge is not negatively affected.*

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4. **"Over half of the population takes Rx drugs or illicit drugs. These get excreted into our waterways affecting aquatic & other life forms. How is this facility able to treat wastewater in such a way that not only are wildlife but also humans are not affected by these chemicals?"**

Response: *Pharmaceuticals and personal care products are commonly referred to as contaminants of emerging concern. Most of these contaminants are removed during the wastewater treatment process at RSWRF. Trace concentrations that may remain are reduced to non-detectable levels or below concentrations of significance through the advanced purified water treatment process. There are multiple treatment processes including ozonation, biological activated carbon filtration, granular activated carbon, and a PFAS treatment step that target the removal of contaminants of emerging concern. This removal is closely and strategically monitored to ensure that the treatment processes are functioning as designed.*

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5. **"I attended one of the public workshops about a month ago. Thank you for having that session and the small "army" of experts on hand. Having the presentation followed by chatting with subject matter experts was an excellent format. This facility is a badge of honor for our region and the people who are making it possible! Keep up the good work.**

   Please send me the name of the regulatory agency that oversees the A+ rating system. It's time for regulators to begin developing regs for putting this water into the potable water system. We need a grade better than A+.

   Two opportunities for improvement, which are likely out of scope. Maybe it's helpful anyways. Pumping the water into an aquifer is a waste of money and 30 years! These are rhetorical questions. I don't expect anyone to spend time actually replying to me, but it will hopefully help facilitate your long-term processes and goals, if not already in consideration. Completely understand this is a regulator issue - Do what you gotta do for now!
   1. **How many millions of dollars can be saved if we don't need the aquifer-related infrastructure?**
   2. **How many millions of new revenue could be generated if the water can be sold as potable?**
   3. **How many domestic well concerns would immediately go away?**
   4. **This tech can be utilized in places like Chalk Bluff or TMWRF if the aquifer requirement is eliminated.**
   5. **The scale is too small. This project is a "drop in the bucket" for RSWRF capacity, but you gotta start somewhere likely limited by the aquifer again.**

   Thanks again, keep up the good work!"

   Response: *The Nevada Division of Environmental Protection is the agency which oversees and regulates Category A+ reuse water. Category A+ regulations were adopted in 2016 under NAC 445A.27612. Current Nevada Category A+ regulations allow for "indirect potable reuse" which requires an environmental buffer, such as injection into a groundwater aquifer through a well. Many states throughout the United States have state specific regulations that allow for indirect potable reuse using varying environmental buffers such as groundwater injection or surface water bodies.*

   Colorado adopted new regulations in November 2022 to authorize direct potable reuse; California recently adopted regulations in December 2023. Direct potable reuse involves advanced treatment and distribution without an environmental buffer. Nevada does not currently have regulations that allow for direct potable reuse.

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6. **"When you made your comment that there will be some waste, and that it would be taken care of appropriately. How much and where is that going to be disposed of? Where will the old media go? What are some of the things they use it for?"**

   Response: *The spent granular activated carbon and PFAS treatment media will require changeout that will be performed by the manufacturer. The spent GAC media can either be reactivated and reused for water treatment, or it can be repurposed for a new use such as for odor control within various industrial applications. The spent PFAS media will be handled by PFAS manufacturer by either reactivating the media (similar to GAC media) or disposing it in the appropriate landfill. Carbon and media lifetimes will be better understood when the treatment plant is operational. It is estimated the GAC needed for treatment will be 2,700 cubic feet and the PFAS media needed will be 750 cubic feet.*

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7. **"I live in Golden Valley. The first speaker touched on this idea, but you compared reverse osmosis brine to this process. I'm a little concerned this process seems like an immaculate process. It has no waste, but I know that's not true. Anytime you have a reaction, you have the product you want, and you have a waste product. So, what happens to that?"**

   Response: *The Advanced Purified Water Facility will take highly treated effluent and further purify it to produce high-quality drinking water. The process developed for our region is a biological treatment process for removing trace levels of organic matter which results in a small quantity of inert biomass (<20 lb/day for the 2 million gallons of advanced purified water produced), which will be processed at the Reno-Stead Water Reclamation Facility along with other biomass produced from the existing conventional wastewater treatment. The other waste produced from this facility is the activated carbon media (similar to charcoal or material found in your refrigerator filter) and PFAS treatment media which will be handled by the manufacturer by either reactivating the media or disposing of it in an appropriate landfill. We do not use the Reverse Osmosis process which is an alternative to our APWF because we have low salinity water and do not have an outlet to discharge the brine waste.*

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8. **"This is great and should be accelerated. The technology is straightforward and proven in other settings/industry."**

   Response: *No response required.*

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9. **"Does that water, is the water you pull back out of the ground, you said you just did the chlorination to it, do these fail-safe measures, do you check that water for any of those? Because otherwise, wherever you inject it in, you just add a whole bunch more variables to your final product."**

   Response: *See response to Question #2.*

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10. **"I am a resident of Washoe County and have a military background in the Financial Management and Comptroller career field of the United States Air Force. The Nevada Department of Environmental Protection should not permit the Advanced Purified Water Facility at American Flat.**

    These presentations and meetings are designed to do nothing more than to generate public support and placate our community with a false sense of security. The level of security at the Advanced Purified Water Facility should be equal to or greater than the level of security at a nuclear power plant, yet this is not openly addressed anywhere. Can the facility be accessed remotely by the internet? What would a critical failure at this facility look like? Are there fail-safes in place to avert a catastrophe? If a critical malfunction occurs to where toxic contaminants are pumped into the aquifer, what remediation is there other than you telling us that you're sorry for destroying our aquifer and literally poisoning the well?

    You boast that the biological activated carbon filtration is state-of-the-art, which it degrades and removes compounds interacting with it. However, the PFAS, pharmaceuticals, and other toxic wastes do not magically disappear. The bacteria present in the biological activated carbon filter consume the toxic compounds and in turn produce metabolites and various byproducts, which are not necessarily caught by the granular activated carbon. These byproducts can have a wide range of unknown side effects on human biology and the human body's microbiome. A potential solution to this problem might be to add in an additional step of ozone treatment preceding the biological activated carbon filtration in an attempt to break down and destroy the microbial byproducts that the granular activated carbon is incapable of filtering out.

    This pilot run is nothing more than a huge experiment, and we are the lab rats. Nevada only has regulations for indirect potable reuse, not direct potable reuse. If this facility is successful and the kinks are worked out, instead of simply pumping the purified water into the ground for later use, the next phase will be to pump the purified water directly to homes for immediate use. The concern surrounding microbial metabolites and their byproducts being present in the purified water only becomes greater since instead of it undergoing natural treatment and being diluted by a massive amount of water present in the aquifer, it would be more concentrated at the tap.

    The Advanced Purified Water Facility costs $120 million and has the potential to reap huge dividends. Once this technology is perfected, other wastewater reclamation facilities in Washoe County will be retrofitted and upgraded to meet this new standard. After it has been rolled out across Nevada, it will be rolled out across the interior United States.

    For these reasons, the Nevada Department of Environmental Protection should not permit the Advanced Purified Water Facility at American Flat."

    Response: *The advanced purified water facility (APWF) takes highly treated effluent from RSWRF and further purifies it into high-quality drinking water. This is a well proven process in our region (through pilot scale demonstrations at RSWRF) and has been implemented in other parts of the US at full scale since 1975.*

The APWF Supervisory Control and Data Acquisition (SCADA) network will be protected through a myriad of security strategies and technologies that are presently employed across the entire TMWA SCADA network. First and foremost, the APWF SCADA will be architectured so that it remains entirely disconnected from TMWA's business networks sharing zero infrastructure resources between the two and thus being fully insulated from the internet. Within the APWF SCADA network itself, TMWA will employ zero trust modeling to define critical process and control zones, segmenting away those logical areas from non-critical zones, while tightly controlling data flow between and across those boundaries. To maximize the security posture of the APWF plant and all its SCADA computing structure, TMWA will employ security defense layering technologies, to actively protect and monitor activity on all SCADA computing infrastructure, from the Human Machine Interface (HMI) Hosts all the way to the Logic Controllers. Finally, to safeguard the human element all HMI stations and SCADA related servers shall require Multi Factor Authentication (MFA) for access and use of those systems.

The APWF includes the ozonation process preceding the biological activated carbon filtration (BACF). The highly treated effluent from RSWRF may contain trace amounts of organic matter which are disintegrated in the ozonation processes and converted into biomass and carbon dioxide in the Biological Activated Carbon (BAC) process. This biomass waste is regularly backwashed from BACF and is treated at RSWRF along with other biomass produced from the existing RSWRF wastewater treatment. The purpose of ozone-BAC is to accelerate the natural processes to degrade trace organic material, as would happen when the highly treated effluent is discharged into the environment. The ozone-BAC process is used in many drinking water treatment plants around the world to remove trace organic material from source water such as that from a river.

The APWF treatment process includes a standalone granular activated carbon (GAC) and standalone PFAS treatment step downstream of the ozone-BAC process. Other constituents will be reduced to non-detectable levels or below concentrations of significance by the GAC process. The spent media in the GAC step will be reactivated and recycled by the manufacturer or vendor off-site. It is estimated that the GAC media replacement is needed twice per year. PFAS will be reduced to concentrations below regulated PFAS drinking water standards by a standalone PFAS removal step located downstream of the GAC. The spent media in the PFAS treatment step will be handled similarly to GAC media by the manufacturer by either reactivating the media or disposing of the media in an appropriate landfill. It is estimated that the PFAS treatment media replacement is needed once every two years.

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11. **"This is kind of asking about the city of New York, because I read recently about how illicit drugs are getting into wastewater and going into rivers and streams in New York, and causing like feminizing of fish and deformities in aquatic creatures, which ultimately goes up the food chain, and it endangers us too. Are they using a process like this or... Okay, that's why I came to tonight. I was like, is this going to be like New York?"**

Response: *See responses to Question #2 and Question #4.*

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12. **"First of all, I'm very pleased to be around so many experts, and I think that some of us will be talking to you in the future. You realize that out here around Swan Lake we have a unique situation of the groundwater…of the ground contamination around Swan Lake. Now, I'm going to tell you all something that maybe a lot of you don't know, that many of us citizens got together and we have multiple private lab testing on Swan Lake. We have the data, and we're going to be going more to some Boards. We got today, we'll start with one, and we're going to bring it up to the Board of Health.**

    This data shows extreme E.coli and a lot of medical waste within Swan Lake, which was pumped up to American Flats to the alfalfa fields, and the samples up there are tremendous, completely. Now we're getting stalled, but the citizens won't give up. We're going to go and we're going to be doing a mailer for everyone, and we're going to get this exposed. Because not you guys, but politicians are stopping us. We will get it exposed. This is the perfect place to tell you.

    When they did the irrigation system, that great expensive irrigation system that many of us farmers would have loved to have, they put pivot system in and they pumped the sludge from Swan Lake up there. The pivot system got plugged up and it exploded and they had geysers and it was spraying everywhere. It has made some people very sick and some animals extremely ill.

    That was only from... The testing has been done three times. We've got all the data and we're going to be going before the boards. I realize nobody here is responsible. Everyone needs to know what's going to be coming. I think that this is all going to ... This is great. We all want clean water. You can't understand how much...

    I need to talk to a TMWA official, because we're going to get some more private [testing] done on our homes. We're getting more chlorinated water all the time. We can smell it. Something is being covered up, we don't know what. I'm not accusing anyone, but someone is covering something up here, and we have the data.

    So I don't want to take up too much time, but I was going to start with the Board of Sewer Water and Sanitation Board, which is the sub-board of the Health Department. We are sorry that Kevin Dick [Washoe County District Health Officer] will not hear us, but we're not going to stop until we get this exposed. This has to do with everything that you're doing also, because you're going out to American Flats. We probably all ought to be connected, because you're going to be out there. That ground is contaminated. "

    Response: *This question is related to Swan Lake and not the APWF Project. No response required.*