OFFICIAL NOTICE AND AGENDA
of a meeting of a City Board, Commission, Department Committee, Agency, Corporation, Quasi-Municipal Corporation, or Sub-unit thereof.

A Meeting of **Wausau Water Works Commission** will be held in the **Council Chambers, 1st Floor City Hall, Wausau, WI 54403** at **6 : 00 p.m.** on **Tuesday, March 1st, 2022.**

Members: Katie Rosenberg (President), Dawn Herbst, Jim Force, Joe Gehin, John Robinson

AGENDA

1. Approve Minutes of January 4th & February 15th, 2022 Meeting.
2. Director's Report on Utility Operations
   - Update on PFAS Standards in Drinking Water
   - Wastewater Plant Permit Limits
   - Continued Usage of Magnesium Hydroxide
   - Sewer Maintainer Resigned
   - 3 Vacancies: Wastewater Plant Operation Tech, Collection System, & Sewer Maintainer
   - Requisition forms/job description submitted to Human Resources
   - Summer Aide Requisition submitted to Human Resources
   - Wisconsin Pollutant Discharge Elimination System (WPDES) Draft Modification Permit
   - Informative letter sent to residents
   - Industrial Park force main scheduled for cleaning
   - Wastewater Plant Construction
   - Old Plant Generator Sold
3. Presentation on Temporary and Permanent Perfluoroalkyl and Polyfluoroalkyl (PFAS) Removal Options and Discussion on a Path Forward (Donohue & Associates and Becher Hoppe).
4. Discussion and Possible Action to Approve Funding for a Pilot Study and Scope of Services for PFAS Removal at the new Drinking Water Treatment Facility with Donohue & Associates & Becher Hoppe.
5. Discussion and Possible Action on Interim PFAS Remedial Options Including Funding Recommendations until the new Drinking Water Treatment Facility is Operational.
6. Discussion and Possible Action on Approving terms of Settlement Agreement between Wisconsin Department of Natural Resources (WDNR) and the City of Wausau, Providing for Dismissal of both Contested Case and Petition for Judicial Review (Marathon County Case No. 19CV32).
7. Discussion and Possible Action on a Budget Modification for the Burek Ave/ Campus Drive Water Main Project.
8. Discussion and Possible Action on Utility Policy Addressing PFAS Issues in Water and Wastewater Treatment Systems.
9. Discussion on Possible Steps Moving Forward on PFAS Removal in Water and Wastewater Treatment Systems.
10. Discussion on Future Meeting Dates and Times for Wausau Water Works Commission.

Adjourn.

Next meeting scheduled for **April 5th 2022. (Please Note: Council Chambers is NOT available that day, reserved for Election)*

Signed by: /s/ Katie Rosenberg, Mayor
Presiding Officer or Designee

It is possible and likely that members of, and possibly a quorum of the Council and/or members of other Committees of the Common Council of the City of Wausau may be in attendance at the above-mentioned meeting to gather information. **No Action will be taken by any such groups at the above-mentioned meeting other than the committee specifically referred to in this notice.**

THIS NOTICE POSTED AT CITY HALL AND EMAILED TO CITY PAGES AND DAILY HERALD: February 25th, 2022 at 2:00 p.m.

This meeting is being held in person and via teleconference by calling 1-408-418-9388. The WebEx Access Code is 2487 707 4355 and the password is WausauH2O.

All public participants' phones will be muted during the meeting. Members of the public who do not wish to appear in person may view the meeting live over the internet on the City's YouTube Channel http://tinyurl.com/WAAMedia, live by cable TV, Channel 981, and a video is available in its entirety and can be accessed at https://tinyurl.com/wausaucitycouncil. Any person wishing to offer public comment who does not appear in person to do so, may e-mail gina.vang@ci.wausau.wi.us with "Water Commission Public Comment" in the subject line prior to the meeting start. All public comment, either by email or in person, will be limited to items on the agenda at this time. The messages related to agenda items received prior to the start of the meeting will be provided to the Chair.

In accordance with the requirements of Title II of the Americans with Disabilities Act of 1990 (ADA), the City of Wausau will not discriminate against qualified individuals with disabilities on the basis of disability in its services, programs or activities. If you need assistance or reasonable accommodations in participating in this meeting or event due to a disability as defined under the ADA, please call the ADA Coordinator at (715) 261-6590 or ADAServices@ci.wausau.wi.us to discuss your accessibility needs. We ask your request be provided a minimum of 72 hours before the scheduled event or meeting. If a request is made less than 72 hours before the event the City of Wausau will make a good faith effort to accommodate your request.

Minutes of January 4, 2022

A meeting of the Wausau Water Works Commission was called to order at 1:30 p.m. in City Hall on Tuesday, January 4th, 2022. In compliance with Wisconsin Statutes, this meeting was posted and receipted for by the Wausau Daily Herald on December 29, 2021.

Members Present: President Rosenberg, Commissioners Herbst, Gehin, Force, Via WebEx: Robinson
Others Present: Eric Lindman, Scott Boers, Ben Brooks, Valerie Swanborg, Ryan Dwelly, Stephen Opatik/ Becher-Hoppe

1) **Approve Minutes of December 7th, 2021 Meeting.**

Herbst moved to approve the minutes of the December 7th, 2021 meeting. Seconded by Gehin.

Force and Robinson commented on housekeeping items that have now been revised.

Gehin questioned if we received any quotes from agenda item four for the pipe fittings.

Lindman replied we have not received any quotes yet.

Motion carried 4-0.

2) **Director's Report on Utility Operations.**

Lindman asked if there were any questions on the specific items.

Robinson questioned vacancies to see if there were more nontraditional approaches that could be taken to improve number of applicants whether it be internships or training opportunities provided.

Lindman replied they are looking into internships and other options department wide.

Rosenberg stated that upon speaking with the Mayor of Madison, apprenticeships have been working well.

Herbst questioned if there was any way we could offer a better wage as the City of Oconomowoc (smaller than Wausau) is able to start their salary range for the same position we have at a greater amount.

Lindman replied that we have a salary scale and there would be issues because we have no mechanisms to bring up current employees who have been with the City a couple of years and hiring new employees at higher rates with same or lesser skills.

Force questioned the qualifications of applicants.

Lindman replied that only HR sees all applicants and HR determines who is minimally qualified with no involvement from department staff or experts. HR only forwards applicants they deem qualified. The CDL (Commercial Driver's License) required can be reworded to be obtained within 9, 10, or 12 months within the date of hire. We don't have anyone in house to train for CDLs but we may contract with NTC (Northcentral Technical College) or find other private entities.

Director's Report placed on file.

3) **Discussion and Possible Action on Project Priority Updates for the Water and Wastewater Budgets.**

Lindman asked if there were any questions concerning the updates of both budgets for the Water and Wastewater that were adjusted and included the highlighted project. He wanted to bring this to the Commission for approval.

Force questioned if Lindman knew if there would be any future borrowing interest rates.

Lindman replied he can ask the Finance Department but doesn't know.

Gehin questioned if the cost was driven by the size like with the 14" pipe proposed.

Boers replied that the cost can go up or down by going to a 12" pipe or an 18" pipe.

Lindman stated the piping on Bugbee and Campus Drive would be an 18" pipe that was recommended when the hydraulic analysis took place.

No further comments.

Gehin motioned to approve budgets proposed for both the Water and Wastewater. Seconded by Herbst.

Motion carried 4-0.

4) **Discussion and Possible Action on Approval of Another 2-year Contract with Hydro Corp.**

Lindman stated Hydro Corp was a cross connection consultant.

Gehin questioned if the total $94,464 was for one year of both years and follow up inspections.

Boers replied it was the total cost for 2-year contract. He clarified that it would include 615 non-residential inspections with a total up to 756 leaving a leeway for 141 re-inspections if it's needed.

Robinson questioned if there were any comparisons and if time/material/prices were compared because it seemed high.

Boers replied that Wausau has way more volume and there is no other comparison but when you compare time/material/administrative costs, Hydro Corp can do this for less than if we were to do it inhouse and this breaks it down to $153.60 per inspection.

Gehin moved to approve the 2-year contract with Hydro Corp. Seconded by Force.

Motion carried 4-0.

5) **Discussion Between Staff of the Growing Concerns Related to PFAS (Polyfluoroalkyl Substances) in Drinking Water with WDNR.**

Boers stated this is being considered since Rib Mountain had a well test positive for significant PFAS. DNR (Department of Natural Resources) requested PFAS samples. We sampled our raw water back in 2019 and the results at the time were compared to the 70 ppt (Parts Per Trillion) EPA health advisory but there are no actual set standards. Our preliminary results indicated we did have some but there were questions on whether the samples were contaminated. Combined total PFOS/PFAS between 23-28 ppt with some found in each well.

Robinson added that the EPA's (Environmental Protection Agency) health advisory is 70 ppt. PFAS/PFOS in drinking water can affect a person's overall health. Taking samples is a good idea.

Boers replied we anticipate the new water plant to be up and running in about 9 months but we are heading into unmarked territory and need to start strategically planning. We've spoken with labs that run our tests for us who's confirmed that we can do the samplings ourselves for the PFAS. If we do sample the water, we should get a result back to the Commission around March but will have to keep in mind there are no set standards.

Robinson stated there would be 3 set standards but EPA's developing rules with 70 ppt per health advisories but nothing is set yet.

Discussion only- No action needed.

6) **Discussion and Possible Action on a Sole Source for Purchase of Magnesium Hydroxide Chemical for the Wastewater Treatment Facility.**

Lindman stated this is a new chemical for the Wastewater Treatment Facility that helps with the alkalinity adjustment and the PH level. Midwest Chemical was the lowest quote. We are proposing to go with Midwest Chemical for 3 months interim and will look at preparing bids for the remaining year.

Force moved to approve this sole source purchase of Magnesium Hydroxide. Seconded by Gehin.

Motion carried 4-0.

7) **Adjourn.**

There being no further business to discuss, motion to adjourn by Herbst, seconded by Gehin.

Link to view meeting in its entirety: https://tinyurl.com/wausaucitycouncil

Gina Vang, Recording Secretary
S:\WaterWorks\Common\WaterCommission\2022\March\WWWC_20220104_Minutes.doc.

Minutes of February 15, 2022

A meeting of the Wausau Water Works Commission was called to order at 9:05 a.m. in City Hall on Tuesday, February 15th, 2022. In compliance with Wisconsin Statutes, this meeting was posted and receipted for by the Wausau Daily Herald on February 14th, 2022.

Members Present: President Rosenberg, Commissioners Herbst, Gehin, Force, Robinson
Others Present: Eric Lindman, Scott Boers, Ben Brooks, Council Members: Becky McElhaney, Tom Kilian, Debra Ryan, Citizens of Wausau- Via Webex: Dr. Sarah Yang/Department of Health Services (DHS), Kyle Burton/Department of Natural Resources (DNR)

1) **Pre- Registered Citizens for Matters Appearing on the Agenda and Other Public Comment.**

Rosenberg allowed the pre-registered Citizens present to speak.

G. Gisselman: 319 Park Ave- Requested that Wausau Water Commission take swift/ decisive action in dealing with PFAS in our water.

B. Grau: 1115 N 10th St- Requested that future meetings be reviewed because working families couldn't attend. We need to hear that you will take action in both short/long term protection against PFAS contamination and take action to conduct meetings convenient to working families.

Dr. R. Baker: 3308 Springdale Ave- Stated that in August 2020 we ran water test on our zip code that found 11 contaminants by going to ewg.org. It's not just PFAS but other contaminants as well that needs to be addressed especially for our children. Bottled water was suggested but plastics from the bottled water have at least 38 chemicals with some being carcinogenic. EPA has known about PFAS since 1998 and yet there are no standards, DNR is looking into this but anyone can look at environmentalworkinggroup.org to find what's happening in their water supply.

D. Ryan: 702 Elm St- Presented with the option of possibly having water filters provided but not sure the cost of these filters or an alternative can also be using stainless steel pots.

T. Killian: 133 E Thomas St- Pointed that on the City's Website page under Wausau Water Works, there are statements you can read about what you can use with Wausau Water and suggested that foods made from powder or gelatin should use water from a safe source. We can find clarity on the website and forgo any confusion or inconsistency in other public messages. Residents would like immediate interim solution either by use of mobile filtration at the plant or home filtering options and/or use federal funds which include ARPA (American Rescue Plan Act) Funding.

S. Kelch: 802 Augusta Ave- Requested that in planning interim of long/short term solutions, we need to make sure everyone has access to safe water including the low income.

D. Diny: 708 Fulton St- Agree that we should not let urgency trump time on setting meetings. We need to not panic and prioritize what numbers mean and what experts say.

We have to get this right. Maybe we can drill test wells or confirm that we have it in entire Aquaphor. Can we prioritize wells or buy water from neighboring community? PFAS is a statewide emerging issue and we need to put our best minds to work.

M. Duginske: 2901 N 7th St- Requested if there was a medical lab test that can be performed to measure PFAS in the body and a safe temporary solution.

Rosenberg stated with no further comments, we will be moving on.

No Action needed.

2) Presentation and Discussion on Perfluoroalkyl and Polyfluoroalklyl (PFAS) in City Water.

Rosenberg stated we have folks from Department of Natural Resources (DNR) and Department of Health Services (DHS) via WebEx to address any questions the Commission may have regarding PFAS. In January, Wausau Water Works worked with DNR and DHS to voluntarily test our wells for PFAS. All 6 of those wells exceed the proposed standards. Our results ranged from 23-48 Parts Per Trillion (ppt). DNR is proposing 20 ppt or less for municipal water.

Kyle Burton (with WDNR) started with the brief description of the samples in January 2022 from the 6 wells to better understand the quality of the water. Results shared with us (DNR) and DHS that exceeded the recommended standard of 20 ppt. which prompted a requirement to notify the public.

Lindman reiterated that the City has and continues to meet Safe Drinking Water Standards, we take direction from the DNR who regulates drinking water in the State, at this time we have been given no direction or action items given to us, but should that change, we will react and immediately notify the public of any changes. We are in the process of setting up a pilot bench test for removal of PFAS to be proactive as we know this is a concern to residents. We are looking at the best short and long term options to provide the safest water possible to the City residents. Wausau Water Works is committed to providing safe water to the residents. We will keep you informed as we work through this process in finding solutions and this discussion is the start of that.

Robinson began that in 2016 the Environmental Protection Agency (EPA) established the health advisory level of 70 ppt that has been driving the discussion. States such as New Jersey, California, New Hampshire, Minnesota, Michigan, Massachusetts and Vermont have all adopted standards for PFOA and PFOS that are below the recommended standard for the State of Wisconsin. The issue before us as a Commission is how will we responsibly react while we don't have standards at this time until EPA acts. We are not likely to take action until EPA has a standard but we know there are effects on human health, immune system, developmental issues, birth weights, cancer in liver, bio accumulations in the body, they pose a lasting problem and PFAS are everywhere. If you're interested you can go to your doctor and ask for a blood serum test. You can get PFAS through grilling your food or eating fast food in various containers. We have an obligation to try to minimize the impact in our water system. What will we use? I would propose we look to the superfund record for the evaluation process and at short term and long-term effectiveness and if we can accelerate the construction of the treatment plant. In the long term we need to identify the source but in short term how do we provide safe water. EPA is in the process of revising the 70 ppt and may have a proposal by end of this fall, proposed rules next year. We need to act now and we can look at the new facility coming up online to see if we can accelerate that process.

Force stated he agrees with Robinson. How did we determine the establishment or the scientific reasoning for 20 ppt instead of 10 ppt or 30 ppt? Is there a solution to what seems to be working for the removal of PFAS in other communities?

Dr. Yang (with DHS) replied that the 20 ppt was reached utilizing scientific based models. We looked at what was available from EPA and looked at Federal and State agencies and what peer review scientific information was out there. We then looked at risks in unborn babies and breastfed infants. Because health effects are different from animals than in people, we used a model that estimated the levels that the research animals were exposed to and what it would be equivalent to in humans. In 2016, EPA used the levels of exposure to a pregnant mom and determined that the best way to estimate that would be the exposure in that baby. The unborn baby and a breastfed baby. We used the study that used that modeling method to predict exposure and that was how we got the 20 ppt compared to the 70 ppt is to make sure we protect the most sensitive population.

Rosenberg reiterated Force's second question on how we can get solutions from other communities that are working for the removal of PFAS.

Burton (with DNR) replied every community are doing things differently, but the difference is that not all the sources were affected in the communities that were over the recommended standard. They were able to eliminate sources and still have capacity to serve water such as turning off wells or shut certain wells off. There were some other States such as Woodbury, Minnesota using granulated activated carbon for PFAS. They constructed a whole new treatment plant but Wausau is ahead because there is a new plant coming in where we can have the opportunity to work with techs and professionals and construct it into the new plant.

Gehin stated that we've been having issues over the years but did I hear you say we could drink the water.

Dr. Yang stated that they were recommending people reduce their exposure to the water but are not telling people to stop drinking the water. We know people who have been exposed to high levels in their drinking water that switched had levels go down, so the sooner you switch your drinking water source, the better for your health.

Gehin asked if the studies were tied with a certain volume of water consumed by an individual.

Dr. Yang recommended standards were based on a young child who consumes 1 liter a day but that's protectant to all populations. The general amount of water maybe 2 liters for an adult consumption?

Gehin asked Mr. Burton for the characterized standard of PFAS if this was per individual PFAS element or an additive?

Burton (with DNR) replied standard being proposed was for 2 PFAS compounds, PFOA and PFOS in the sum of 20 alone per contaminant or combined is standard, it's a combined standard. As a note, we do have recommended standards for additional PFAS compounds, and we do add 4 additional to that combined standard but for simplicity it makes sense to look at just the two compounds that are of concern.

Gehin asked if we were under any orders at this time or directives. We wouldn't want to rush into something that could cause unexpected outcomes or cause other issues, so we needed to do this carefully. The example of lead water service was brought up to shed light on the difficulty of people responding to requests to change the private side of their water line services.

Burton (with DNR) replied that because this is an unregulated contaminant, we as a State Agency do not have authority to require corrective action, but we have been working closely with Wausau and the only thing we were requiring was notification to the public which was announced.

Robinson questioned Burton to see if other communities left their wells in service that tested with PFAS and if we had the ability to tap into other community wells for a blending process.

Burton (with DNR) replied that the measure of the quality of the water at the finished water point for what's going out to the customer. There have been situations where communities were able to blend the water to where the other side to the customers did not exceed the levels recommended.

Lindman replied that it's the volume needed.

Rosenberg stated the question from a citizen regarding bottled water.

Dr. Yang (with DHS) replied stating that the FDA does have some standards regarding PFAS in bottled water but doesn't know the number. You could go online to the FDA website and look for bottled water to see what they are striving for. You could look for one that is filtered then you would know it's being treated via reverse osmosis or filtered. If bottled at the source then you won't know what's in there.

Rosenberg stated with no further question, moving on to the next Agenda item.

No Action needed.

3) Discussion and Possible Action on Short Term PFAS Removal Options.

Lindman began by saying upon request we have taken a look and brainstormed some options that could possibly be look at for their feasibility so the commission can look at both immediate and what the solution would be as the new treatment facility will have when it goes online. Option 1 is in progress to establish the pilot and the bench testing. There will be options moving forward and we might have some presentations at the March meeting for those options and timelines with the engineering firms that we are working with. We looked at some of the different scenarios but the feasibility of these are extremely challenging and at this time we don't know if we can feasibly implement those options in a more timely, immediate manner that would affect the entire community and be efficient and sustainable. If anyone has any questions or specifics, one of the last options would be bringing in a full filtration system for the water we are currently treating and then distributing that. When you start looking at drinking water, it's a fairly sophisticated process, but when you start changing the chemistry of water in any way shape or form, when you start distributing that in the system, we have a corrosion control treatment to keep the public safe from lead leaching into the water but when you disrupt that chemistry without proper testing we could compromise that corrosion control treatment and that would put the public more at risk so this is very concerning when it comes to providing safe water. We have a direction that we are moving to create a solution and reduce PFAS in the water and moving forward to keep commission and public informed so that they can make the best decision in the best interest of the utility and the users.

Robinson questioned what the daily production of water in gallons were and the reservoir capacity. He also questioned if there would be any potential or concern in us evaluating potential release of residual PFAS in those structures along with the schedule for when the new water plant would be operational or if there are plans to accelerate the construction?

Boers replied with 4.5 million gallons with the reservoir capacity everywhere about 5.5 million gallons. There are concerns in reservoirs and water mains for the potential release of residual PFAS but we will also be evaluating what effects that could have on our water mains and what would have some potential residual release in the future. Barring any further construction issue items and equipment availability, plan is by end of July to early August and at this time it wouldn't be feasible to accelerate the construction at the plant.

Force questioned the pilot study timing and expectation. Maybe some of our water users may be interested in installing filters. I'm not sure what the finances are, but would we consider an in-home treatment device and crediting the water bill sort of like how we did the rain barrels. What can we do at the treatment plant for long term permanent solution that would include a budget issue and meantime we have immediate concern on how people can remove

PFAS quickly so they may be open to installing a filter but we need to move forward.

Lindman replied that once the testing begins, a reasonable expectation within the next 2-3 months to have something to look at to see which options to consider for the Commission. The installation of water filters can be an option for us to look at but we would have to look at the funding source for that. For the rain barrels we had to look at using user rates for certain things or if it was an ARPA option, it would be the decision of the Council.

Robinson recalled that part of the federal infrastructure bill was setting aside $10 billion for PFAS remediation. What can be directed towards treatment technologies on a Statewide basis? Can we request proposal from other firms such as innovative solutions like drip irrigation, firms in California and Massachusetts that are designing ion exchange programs and granulated active carbon filtration systems. Can we be more inclusive to bring the best minds for the solutions.

Rosenberg replied stating the document for the Build Back Better plan infrastructure on page 237 talking about money flowing through the states but are still developing criteria. They are looking for long term solutions but if we find something that would work with treatment facility we could be reimbursed for that assuming what we do is appropriate and scientifically based. UW Milwaukee research on nanopore materials can be something that we can look at and work alongside folks with State and Government to make sure that solution is meeting the expectations, it's promising but it's still new.

Lindman reiterated that the Mayor has been in contact with the DNR's office and trying to figure out when the funding will be available. The city is in a good position right now, we have an open safe drinking water act loan. A lot of the money would be principal forgiveness through that program. The avenue that we would like to take would be that we would be able to access the funds at the time but be a forgivable loan vs tack onto the loan that we have to pay back. That is an option, they have no guarantees at this point but that's an avenue we are pursuing. We can move forward along with direct communication with the DNR because they are the approval authority.

Gehin questioned if we can take well 3 and 6 offline temporarily as an option.

Force questioned what a suitable time would be to offer meetings in the future.

Rosenberg stated we can have feedback on time but what could we do on the short term solutions?

Robinson began that with short term solutions such as in-house filtration systems, there has to be a good understanding of operation and what the expectations are. We need to be cautious in investing short-term. We don't know about the bio accumulative effects but Agency for Toxic Substances and Disease Registry (ATSDR) was looking at 21 ppt for a child as the standard for PFOA and 14 for PFOS. What recommendations would you have regarding children directly and interim basis?

Dr Yang (with DHS) replied stating DHS recommends the 20 ppt for all population that is the level that is suggested for all groups of people. In terms of timing, we don't know how long PFAS has been in the water so we don't know how much time we have left, so that's why we are encouraging people take action now to reduce exposure. We are not telling people to immediately stop drinking their water but if you can think of ways to switch and maybe drink bottled water half a day. At this time, DHS feels there is some health risk associated with this water and we encourage you guys to think on what options make most sense.

McElhaney brought forth the concerns of the residents regarding the health issues right now. Hearing we don't have to move immediately with the short term is not an option. I know we don't want to act to hastily but we don't know what to do so we are not going to do anything is not an option right now. When I voted for the building of the water plant, I did it reluctantly because of the money but I felt that the local government has responsibility of

giving us clean water. I'm disappointed that we are putting this much money into the new system but with this new multi-million dollar system, do we have any PFAS removal planned into the new plant? McElhaney also requested that when we are thinking of treatment options to remove PFAS that the water bills not increase because it is already high.

Lindman stated it was considered during the design which is the reason we pointed towards the anion exchange for the final treatment but because there is no regulation on it, the plant itself and the media we are using with that anion exchange wasn't part of the design which is why we are going back to do the pilot study to take a look at the anion exchange to determine if that additional media is an option as well. We also have planned space and options for emerging contaminants in the future with the anticipation that this is not the only one we are going to see come up in future years, so we may have to expand the plant and account for additional treatment. At the current site we have no additional space for future PFAS or future treatment.

Robinson questioned if there were any opportunities for discussion on options in accelerating the construction of the new plant and having it online or if it was the supply issues solely.

Boers replied stating we can have those discussions but in the lines of taking a conservative approach and looking at having a pilot study done by the time we put that online those timeframes would almost coincide but rushing a pilot study may not be in the best interest of our entire water system. I agree expedited but we have to look at the effects of what it could do to different parts of the system and that July timeframe would fit with what we could do with an expedited pilot. Haste without waste is good.

Force stated that there are a number of things that home-owners are responsible for in maintaining their homes but if they are determined to have the in-home treatment device to help reduce the consumption of PFAS they would be responsible for the maintenance and I don't see a reason why we couldn't supply or fund a treatment for those who want to put them in but what we are hearing is a lot of people want to do something now not in 6 months or a year from now. Residents want the ability to do something in their home now.

Rosenberg stated if the commission had enough information to make a motion.

Rosenberg reiterated the discussion of the made motion to support the pilot program and looking at various media resins with looking at all different approaches and the nanoporous solutions.

Motion by Herbst, Seconded by Gehin.

Motion carried 5-0.

Force motioned for a survey nationwide with engineering firms, governmental agencies, educational institutions who are dealing with PFAS with the consideration that we issue an RFP for engineering services from appropriate candidates. Herbst Seconded.

Gehin stated that review is appropriate but that we shouldn't issue an RFP until we have the data because it doesn't make sense.

Force amended to state that they come back to the commission with a recommendation based on reviews produced then we can recommend RFP at that time.

Rosenberg recapped the motion of surveying engineering firms and bringing that data back to the Commission.

Motion carried 5-0.

Robinson moved to direct staff to evaluate options including accelerating timing of plant construction and other operational changes such as blending supplies. Seconded by Force.

Force reiterated that the options would be evaluating some options like blending with other water sources or shutting down well 3, how do we know there's been an impact, will we test for PFAS again at some point.

Rosenberg stated we will be testing again.

Lindman answered confirming that we will test again with the pilot as we move forward with that.

Rosenberg recapped the motion is to direct staff to evaluate potential operational changes including acceleration of the plant construction, blending water, or shutting down wells or other options we would love to hear those too.

Motion carried 5-0.

Force requested that we make a motion to keep the option of looking into filters in some way but wasn't sure how we would execute that.

Robinson moved to direct staff to continue to evaluate point of source, treatment options for residential and businesses and bringing that report back in a special meeting or our next meeting scheduled for March 1st 2022.

Rosenberg requested to seek clarification on evaluation of the source filtration treatment options for residential and businesses that include schools and daycare centers. We did just mention for in home, in businesses, are we looking at those mobile semi-trucks, we want to continue looking at that filtering the water at the plant or are we mostly just talking about filtration systems in individual places.

Robinson implied for at home.

Force questioned how we were going to estimate how many of our 10,000 users would want to do that because that will determine the financial impact on the utility.

Killian commented that Wausau had over 17,000 households, DHS provides a PDF that includes in home methods to reduce PFAS and a link to certified products. In terms to quantity, these may reduce the quantity to some degree because it's unknown to some degree for filter products but for points of views, that's not much of a mystery. If we were to find the quantity of household coupled with a cost of a system at home then we will find that we have immediate federal funding on the table right now, we could spend ARPA funding to cover every household in town immediately if the Council will pass that. In my part of town, there are a lot of low-income neighbors. May I request that you hold this sooner in perhaps days instead of weeks particularly with pregnant women or nursing mothers. If households do not feel comfortable with the level in their water and realistically the money just isn't there right now, so if there were eligible federal funding then we can move it along a little bit sooner.

Rosenberg motioned along with directive to have staff evaluate, requesting finance committee consider costs with us in parallel.

Robinson stated that the Wisconsin Environmental Fund was accessed for funding and it's a different program but maybe there might be some potential funding there.

Burton (with DNR) replied stating the rules in the 738 does not allow Environmental Fund to supply water to public utilities.

Rosenberg recapped the motion to direct staff to evaluate point of source treatment for residents/ businesses etc. and all water users.

Motion carried 5-0.

Robinson requested if we could develop an outreach plan with the state and treatment devices that are available now and in providing education to citizens.

Force added that PFA information receive prominent display on the home page of City of Wausau's Website.

Rosenberg replied it is the case right now. March 1st is the next meeting.

Force requested the next meeting be at 7pm instead of 1pm.

Rosenberg replied there is an economic meeting but if the body wants to move the meeting to 7 or 7:15pm.

Robinson questioned if that would be a good time of day because at 7pm you may be getting people just coming home.

Rosenberg stated she could ask the Economic Committee to see if they may want to switch their time and will follow up with the Commission via email.

4) Adjourn.

There being no further business to discuss, motion to adjourn by Herbst, seconded by Gehin.

Link to view meeting in its entirety: https://tinyurl.com/wausaucitycouncil

Gina Vang, Recording Secretary
S:\WaterWorks\Common\WaterCommission\2022\March\WWWC_20220215_Minutes.doc.

WAUSAU WATER WORKS
FOR YOU!

MEMORANDUM

TO: President Rosenberg
Commissioner Herbst
Commissioner Force
Commissioner Gehin
Commissioner Robinson

FROM: Eric Lindman, P.E.
Director of Public Works & Utilities

SUBJECT: Director's Report – January & February 2022

Update on PFAS drinking water standards

Wausau Drinking Water has and continues to meet all Safe Drinking Water Standards. The water remains safe to drink and use. The USEPA health advisory of 70ppt remains in effect.

On Wednesday February 23, 2022 the WI Natural Resource Board (NRB) took action to recommend a drinking water standard for PFOS/PFOA combined of 70 parts per trillion (ppt), this is the same as the USEPA Health Advisory Level. According to the NRB comments, the DHS and WDNR failed to show enough evidence that a lower standard was warranted, and the economic impact analysis was grossly understated and poorly done. One example of the cost estimates used was the cost for establishing a new municipal drinking water well, their estimate was $50,000 each. In comparison to reality the City of Wausau has looked into establishing a new production well and the costs for doing so are estimated at $1.2 million. The USEPA has set a schedule to provide a recommended standard for PFAS before year end. In the professional water association community there is wide spread support of the NRB decision not to establish standards beyond what the USEPA is recommending and letting the USEPA take the lead as they have the resources and expertise to prepare and complete a well-supported study, both from a health perspective and economic perspective. I believe also that most professionals working in the drinking water field agree that the USEPA will make a recommendation that is less than 70ppt.

The utility continues to focus on maintaining/providing safe water and ensuring safe drinking water standards are met. One way we continue to do this is to pursue a pilot study investigating the best and most economic method to remove PFAS that works with our water chemistry and also ensures our current protection practices remain viable and uncompromised. The two critical items would be the systems corrosion control treatment and the systems disinfection method and

make sure these remain stable with any new treatment processes. Beginning the pilot study and beginning to have communication with the WDNR will assist with timely approvals and set the utility up for requesting necessary funding once it becomes available.

Communication to Public on PFAS

I have added this to the Director Report as one of the commissioners wanted to discuss communication and media coverage. The messaging for this situation was primarily driven by state agencies and health departments and their message was poorly done. The messaging was ambiguous and unclear and created panic and fear in the public. Messaging to the public needs to be clear and concise and the more ambiguous the message the more room for interpretation creating uncertainty which in turn may lead to questioning the integrity of the utility. I believe we should take this as a lesson learned how not to communicate to the public and establish a path of communication moving forward that will be driven and led by the Mayor and Utility for items relating to water and wastewater and ensuring future messages are clear and concise. We do not always have the answers immediately when it comes to emerging contaminants or other items that require further study and investigation; I believe acknowledging this up front would have been the proper way to begin the messaging to the public.

WASTEWATER DIVISION

1. The Wastewater Treatment Plant is on track to meet new permit limits.

2. The Wastewater Plant Magnesium Hydroxide continues to be added to the system for effluent pH stabilization. Currently using 296 gallons per day opposed to the anticipated 800 gallons per day. May change once plant is at full operation.

3. Sewer Maintainer, Levi Williams submitted his letter of resignation, and his last day of employment with the City was February 4, 2022.

4. One position remains vacant for the Wastewater Plant Operations Technician, and two positions now vacant for the Collection Systems, Sewer Maintainer. With snow removal taking precedence, the shortage of employees and everyday demands of the wastewater project have made maintenance on the collection system and wastewater plant slow down. With having only two CDL drivers on the collection system side it has made employee on call rotation difficult as well as completing day to day job task. New Collection System employee Matt Stockman is scheduled to take the behind the wheel Class A driving test March 14, 2022.

5. Sewer Maintainer Requisition form and job description has been submitted to HR for approval and currently being advertised.

6. Wastewater Plant Operations Technician requisition form and job description will be submitted to HR by the end of February 2022.

7. Summer Aide requisition form and job description has been submitted to HR for approval

and currently being advertised.

8. WPDES modified draft permit received on 01/26/2022. Draft has been reviewed, request for new compliance dates were submitted, and new modified draft was received on 2/20/22. DNR is willing to incorporate the compliance dates that Wausau has requested moving Construction Completion from 12/31/22 to 6/30/23 and Final Compliance from 1/32/23 to 12/31/23.

9. An informative “No Wipes Down the Pipes” letter was sent to residents of the Northwestern lift station area as a reminder of what foreign items cause clogging issues at the lift station and potentially causing sewer backups. The Northwestern lift station has a history of clogging issues due to foreign objects being flushed down the toilet.

10. Industrial Park force main is scheduled to be cleaned in April of 2022.

11. Plant construction continues to progress day by day with new equipment start-ups occurring weekly.

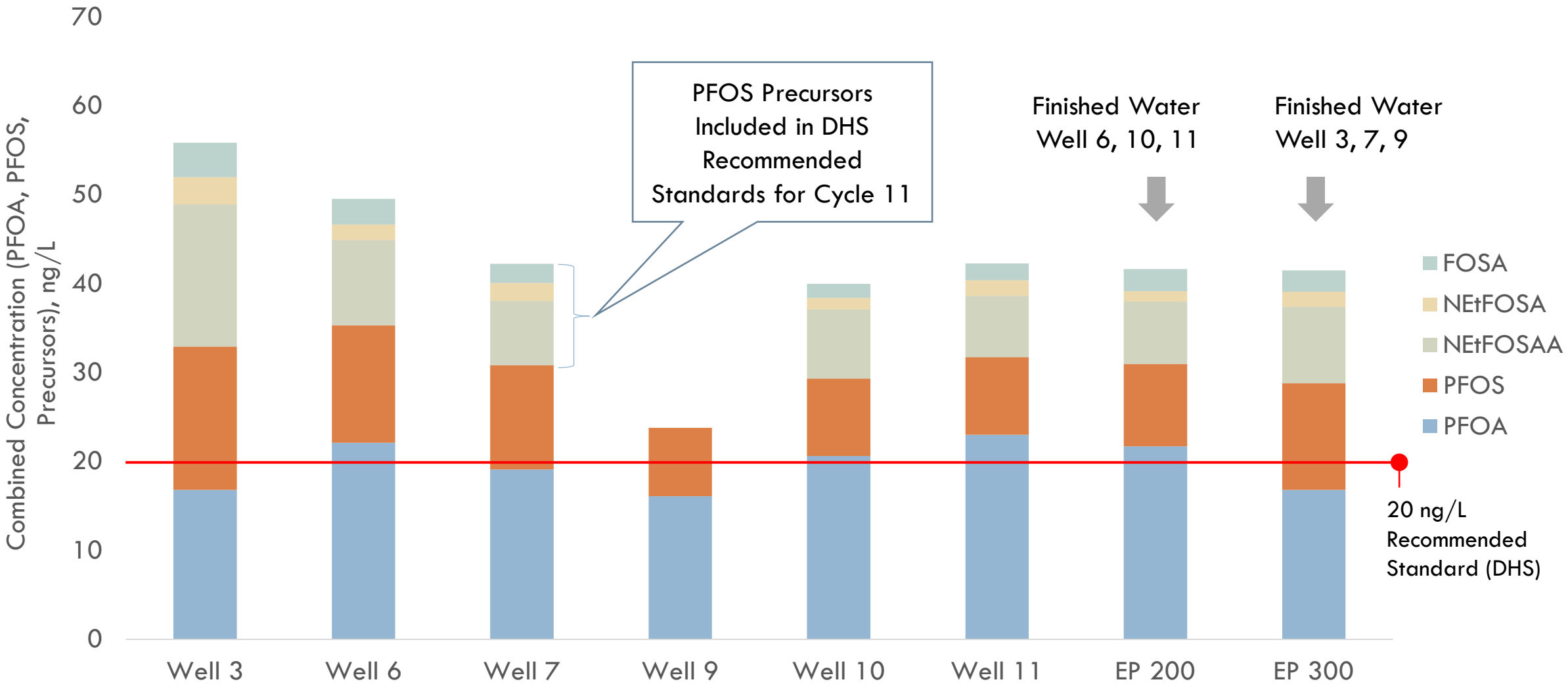
12. Following the last Commission Meeting the old plant generator has been sold for $10,000.00

Wausau Water Works Commission

PFAS Response Strategy Briefing

Tuesday, March 1, 2022
City Hall
407 Grant Street
Wausau, WI

Wausau PFAS Results

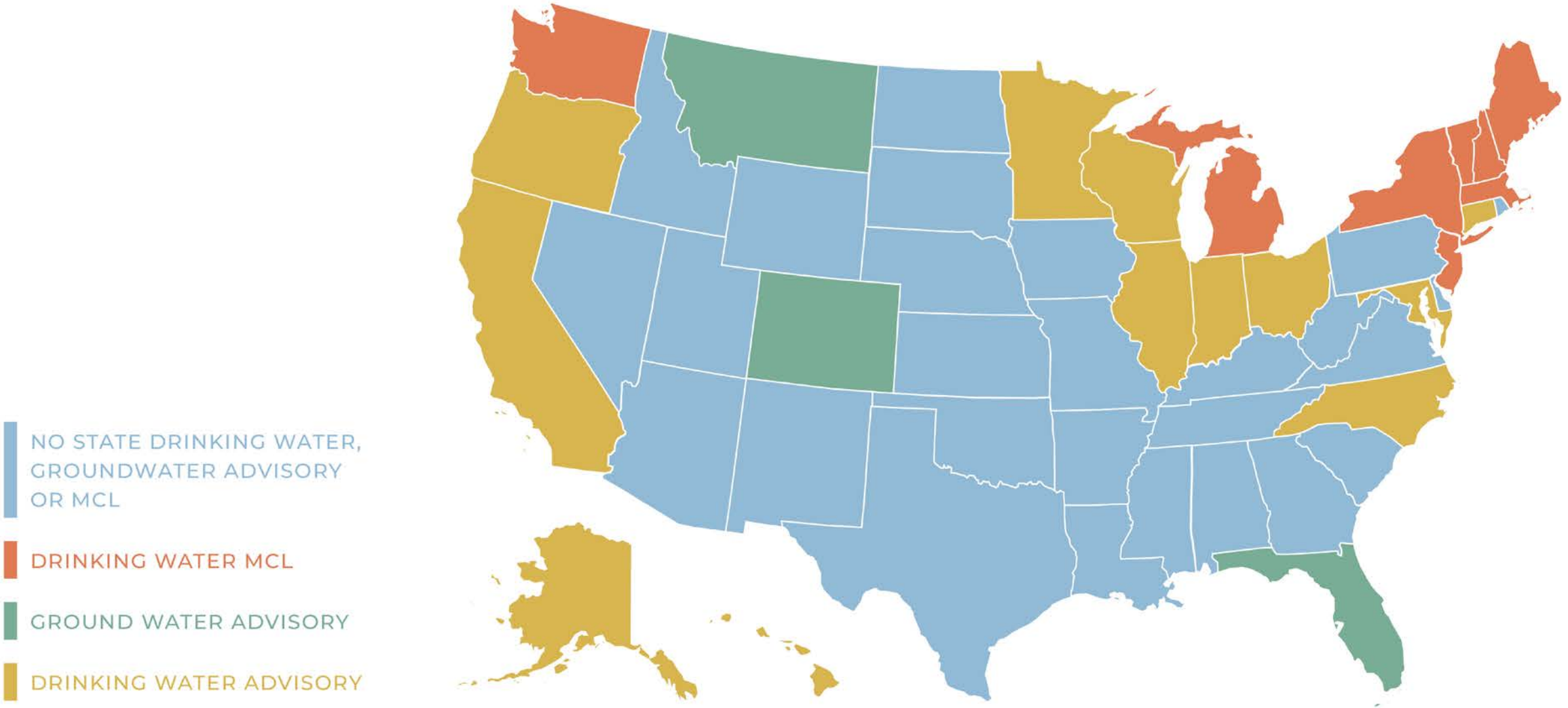


Wausau PFAS Results

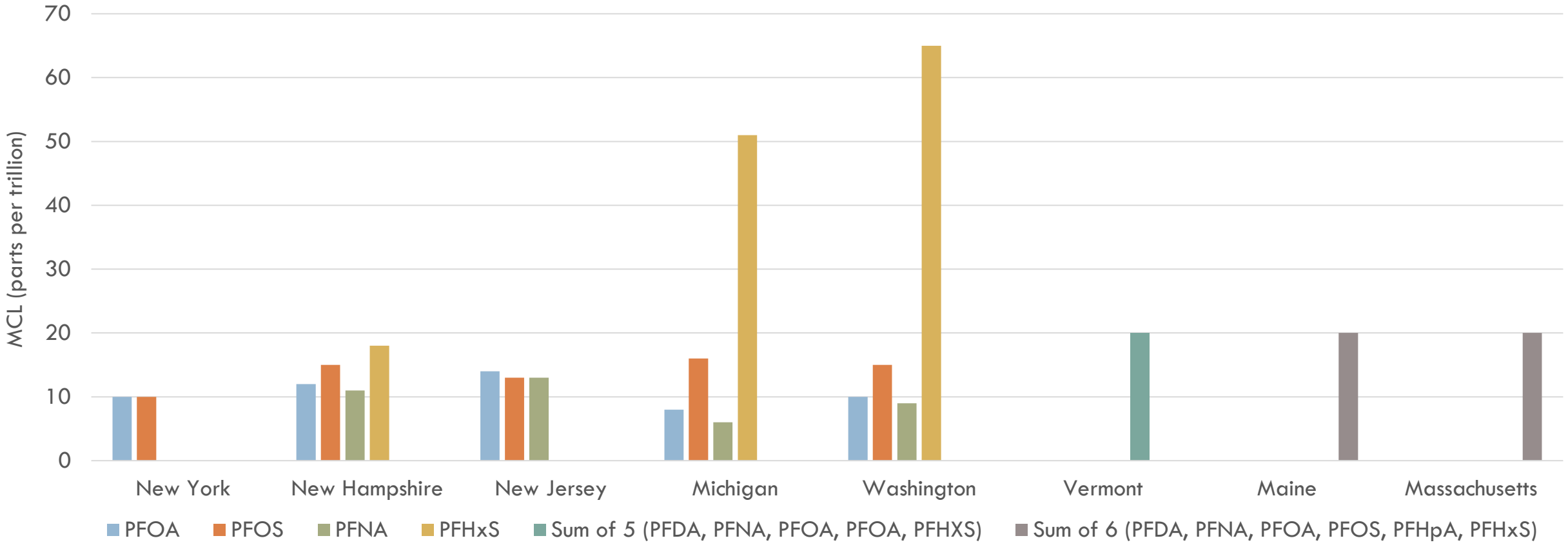
Category	Chemical Name (Abbreviation)	Carbon Chain Length	Maximum Concentration Measured in Finished Water (ng/L)	DHS Recommended Standard (Cycle 11) (ng/L)
PFOA, PFOS & Precursors	PFOA, PFOS, FOSA, NEtFOSA, NEtFOSAA, NEtFOSE	8	41.64	20
Other Carboxylates	PFBA	4	[2.94][1]	10,000
	PFPeA	5	5.03	N/A[2]
	PFHxA	6	6.03	150,000
	PFHpA	7	4.24	N/A[2]
Other Sulfonates	PFBS	4	[2.37][1]	450,000
	PFHxS	6	[1.70][1]	40

[1]Measured below minimum reporting limit but above limit of detection
[2]No recommended standard at this time

PFAS Regulatory Landscape

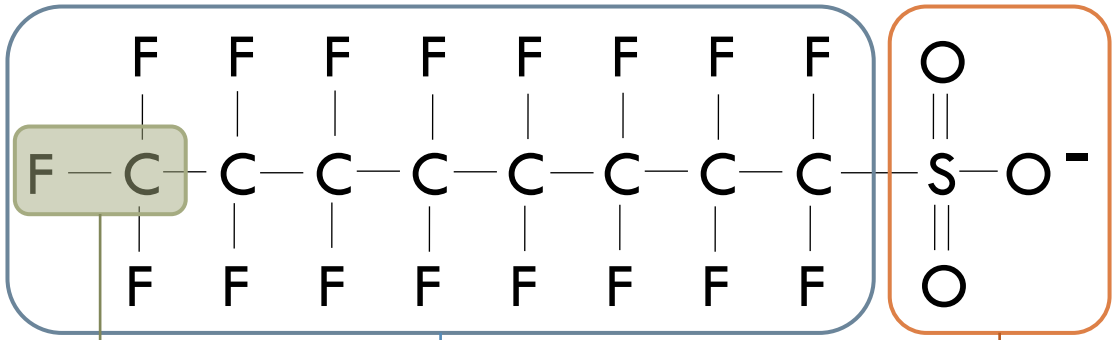


PFAS Regulatory Landscape



- December 2021: UCMR5, sampling for 29 Per- and Polyfluoroalkyl Substances
- Spring 2022: EPA to publish health advisories for GenX and PFBS
- Fall 2022: National MCL for PFOA and PFOS

PFAS Chemical Properties



PFOS (Example PFAS)

Characteristic	Strong Chemical Bonds	Hydrophobic Tail	Anionic/Hydrophilic Head
Commercial Utility	Thermal/Chemical Stability	Oil, Water, Stain Repellant Properties; Surfactants	
Environmental Behavior	Extremely Persistent	Association with Soils	Soluble, Mobile in Water
Treatment Implications	Difficult to Destroy	Can Remove by Adsorption	Can Remove by Ion Exchange

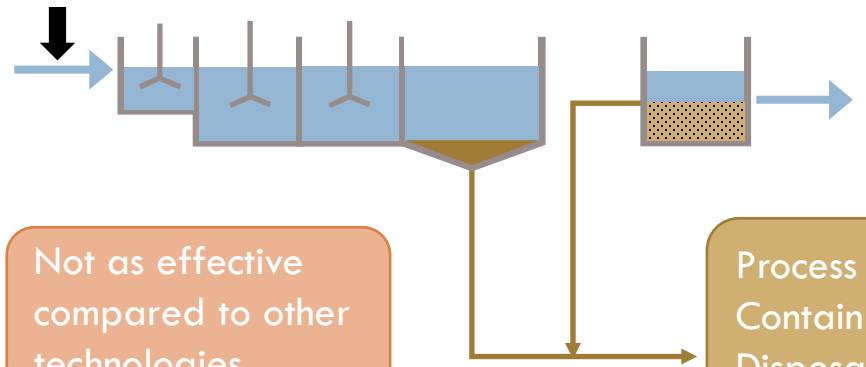
Treatment Technologies

Technology	Mechanism	Status	Effectiveness (for PFAS)
Coagulation/Flocculation/Sedimentation	Separation	Mature	Ineffective
Granular Media Filtration (Sand/Anthracite)	Separation	Mature	Ineffective
Membrane – Microfiltration, Ultrafiltration	Separation	Mature	Ineffective
Membrane – Reverse Osmosis, Nanofiltration	Separation	Mature	Effective
Powdered Activated Carbon	Separation	Mature	Effective
Granular Activated Carbon	Separation	Mature	Effective
Anion Exchange	Separation	Mature	Effective
Oxidation (Chlorine, Permanganate, Ozone) or Advanced Oxidation (Ozone, Peroxide, UV)	Destruction / Transformation	Mature	Ineffective
Biofiltration (Biodegradation)	Destruction / Transformation	Mature	Ineffective
Novel Sorbents (e.g., FLUORO-SORB®)	Separation	Developing	Effective
Foam Fractionation / Ozofractionation	Separation	Developing	Effective
Sonolysis, Electrochemical Oxidation, Plasma, Activated Persulfate (high thermal and/or electrical energy processes)	Destruction / Transformation	Developing	Effective (at reduced scale) (Not cost-effective)

Mature Technologies

Powdered Activated Carbon (PAC)

?

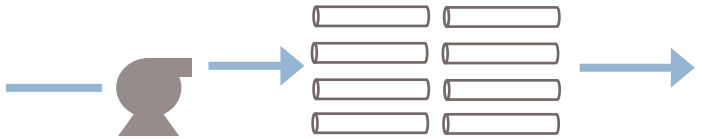


Not as effective compared to other technologies

Process Residuals Contain PFAS Disposal Challenge

Nanofiltration / Reverse Osmosis (NF/RO)

X



70-90% Yield

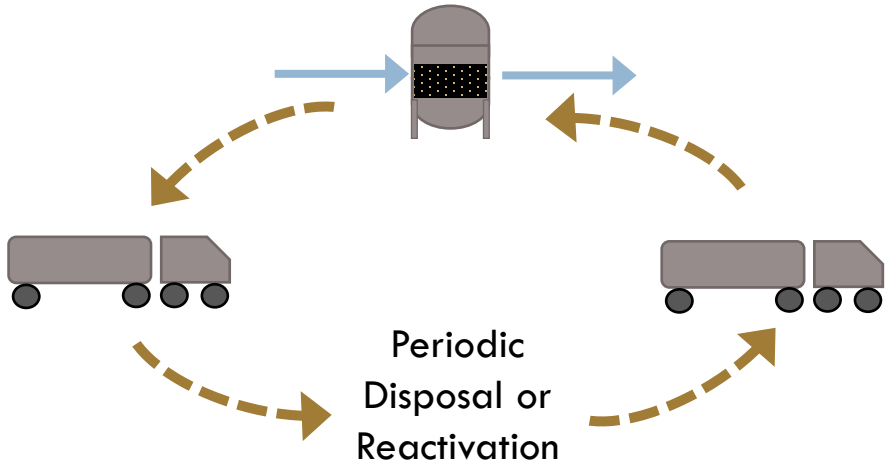
10-30% Waste

High Capital and Energy Costs

Liquid Waste Stream (Concentrated PFAS) Significant Disposal Challenge

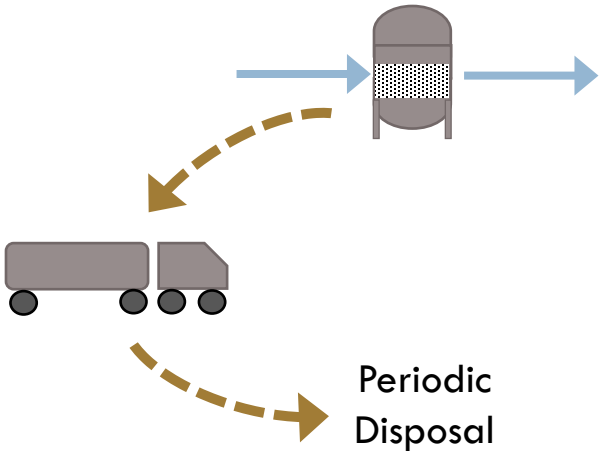
Granular Activated Carbon (GAC)

✓



Ion Exchange (IX)

✓



GAC & IX Installs for PFAS (Drinking Water)

TOTAL U.S.

160 INSTALLATIONS

64 IN PROGRESS

NORTHEAST

46 GAC *+5 IN PROGRESS*

5 IX *+2 IN PROGRESS*

2 UNDEFINED *GAC OR IX*

SOUTHEAST

12 GAC

2 IX

SOUTHWEST

12 GAC *+4 IN PROGRESS*

5 IX *+21 IN PROGRESS*

1 UNDEFINED

MIDWEST + OTHER

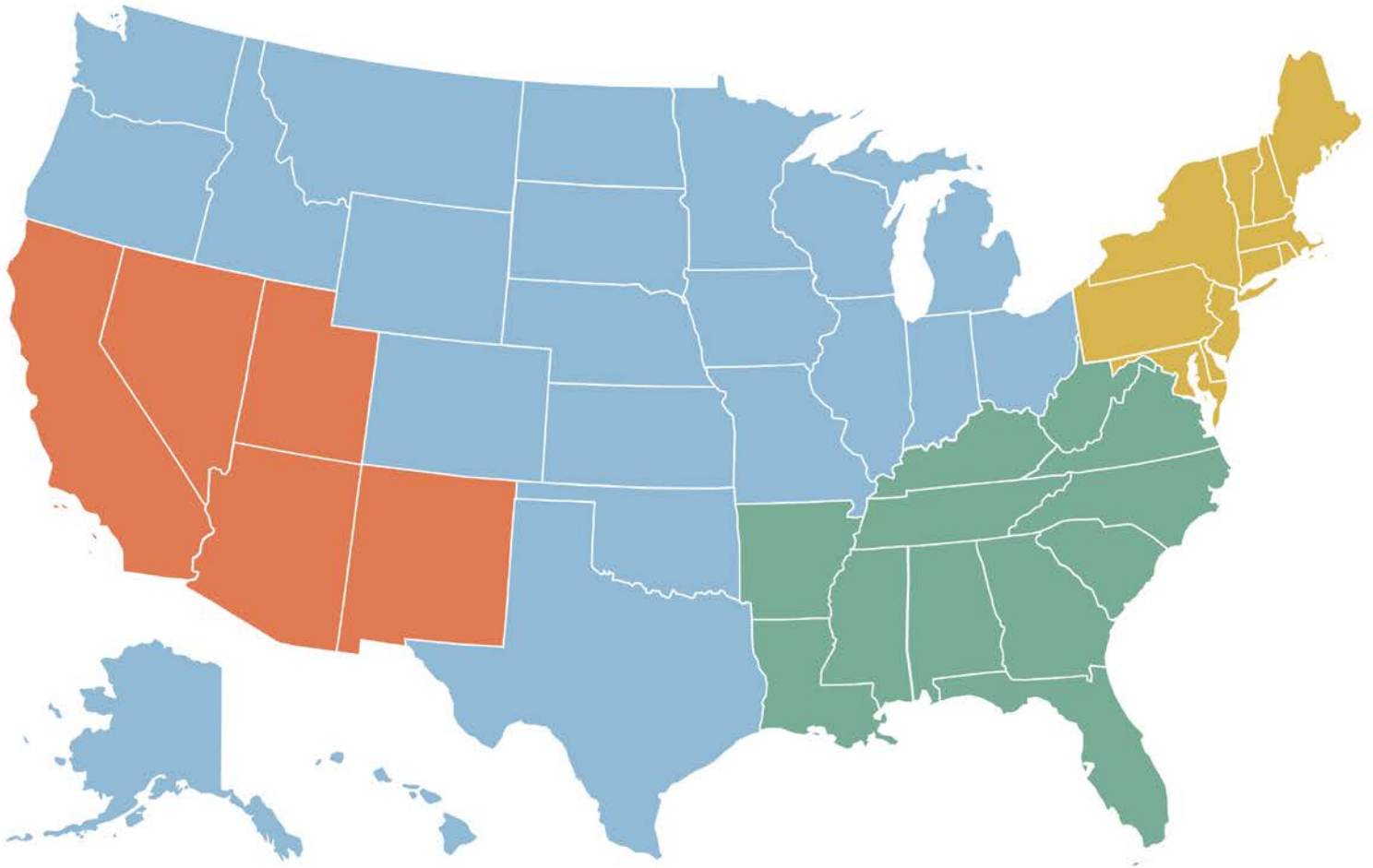
13 GAC

4 IX

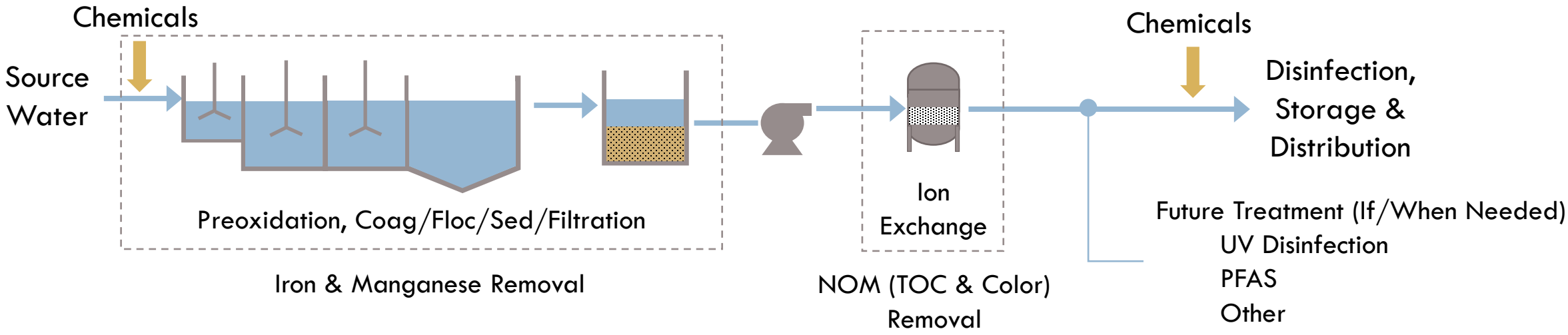
UNSPECIFIED

58 UNDEFINED

SURVEY OF EQUIPMENT SUPPLIERS



New Drinking Water Treatment Facility

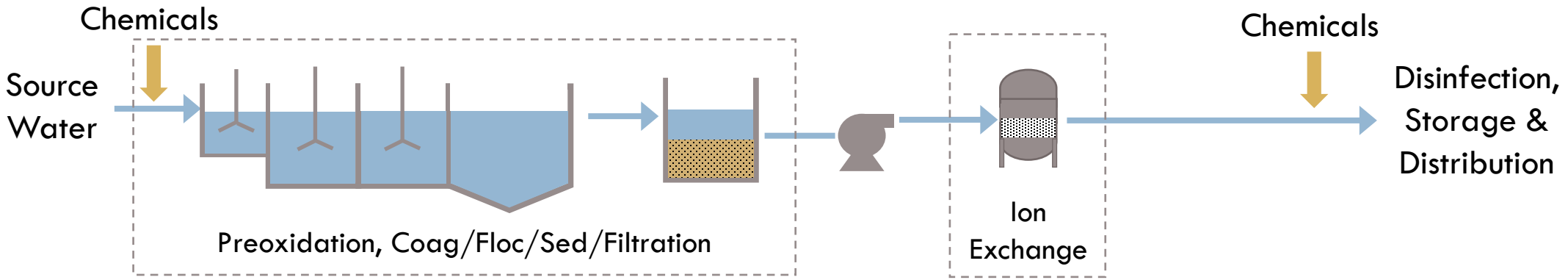


Effective Pretreatment (Iron & Manganese + Natural Organic Matter) ✓

\+ Space and flexibility to incorporate additional unit processes in response to changing regulatory requirements ✓

Utility is well-positioned to accommodate additional objectives

Ion Exchange at the New DWTF

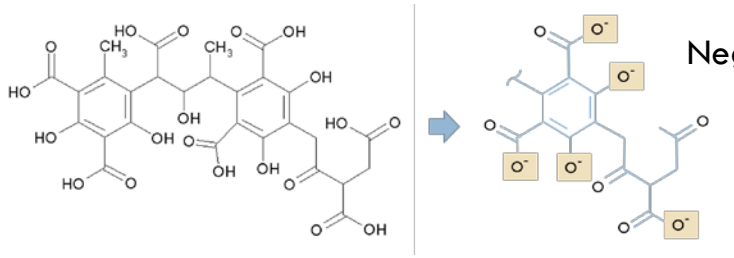


NOM = Natural Organic Matter
Typically measured as Total Organic Carbon (TOC)

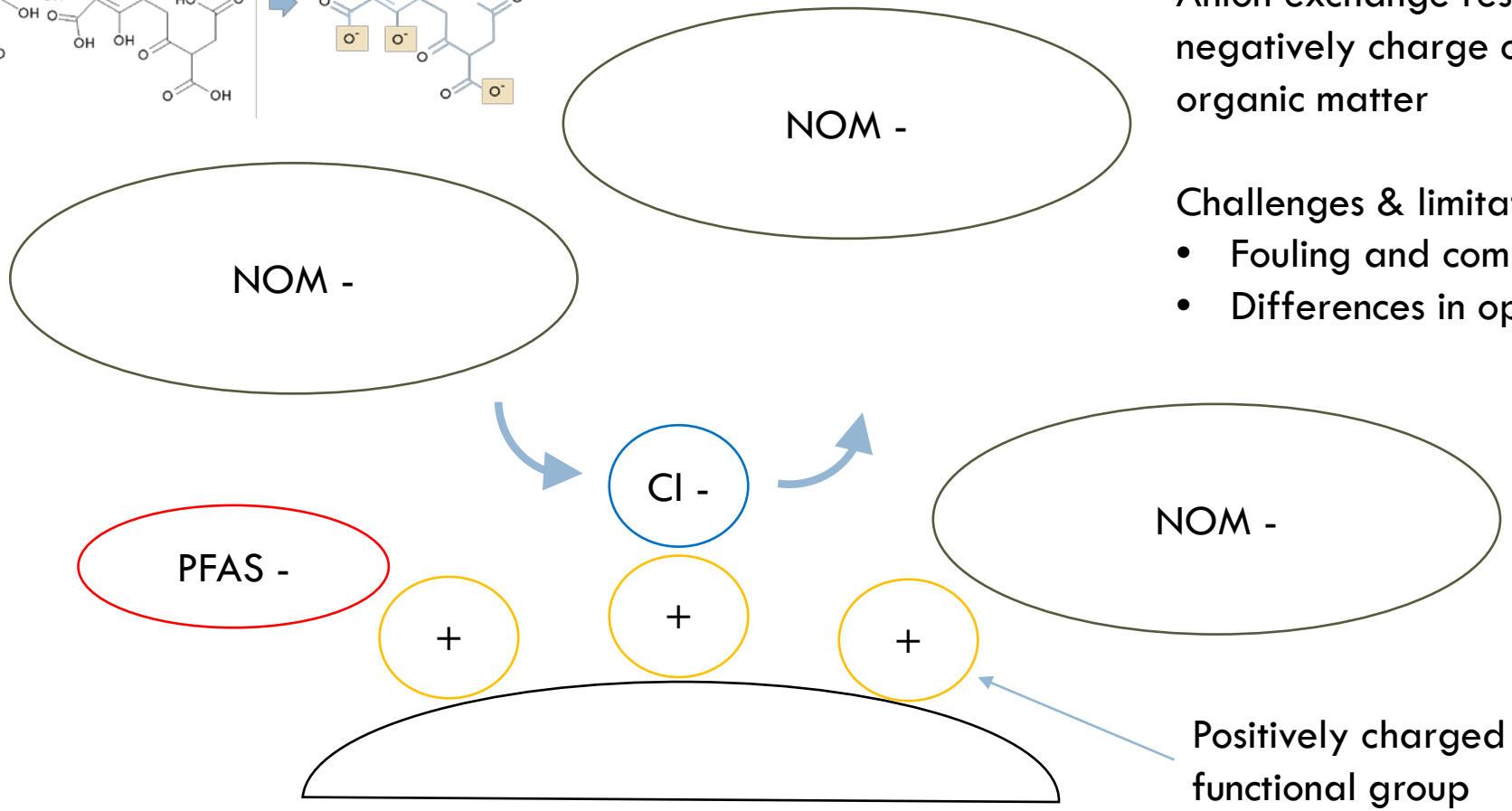
Benefits of ion exchange at the new DWTF include:

- Color removal
- Reduced disinfection byproduct formation potential
- Reduced food for microbiological growth

PFAS Removal at the New DWTF



Negative Charge



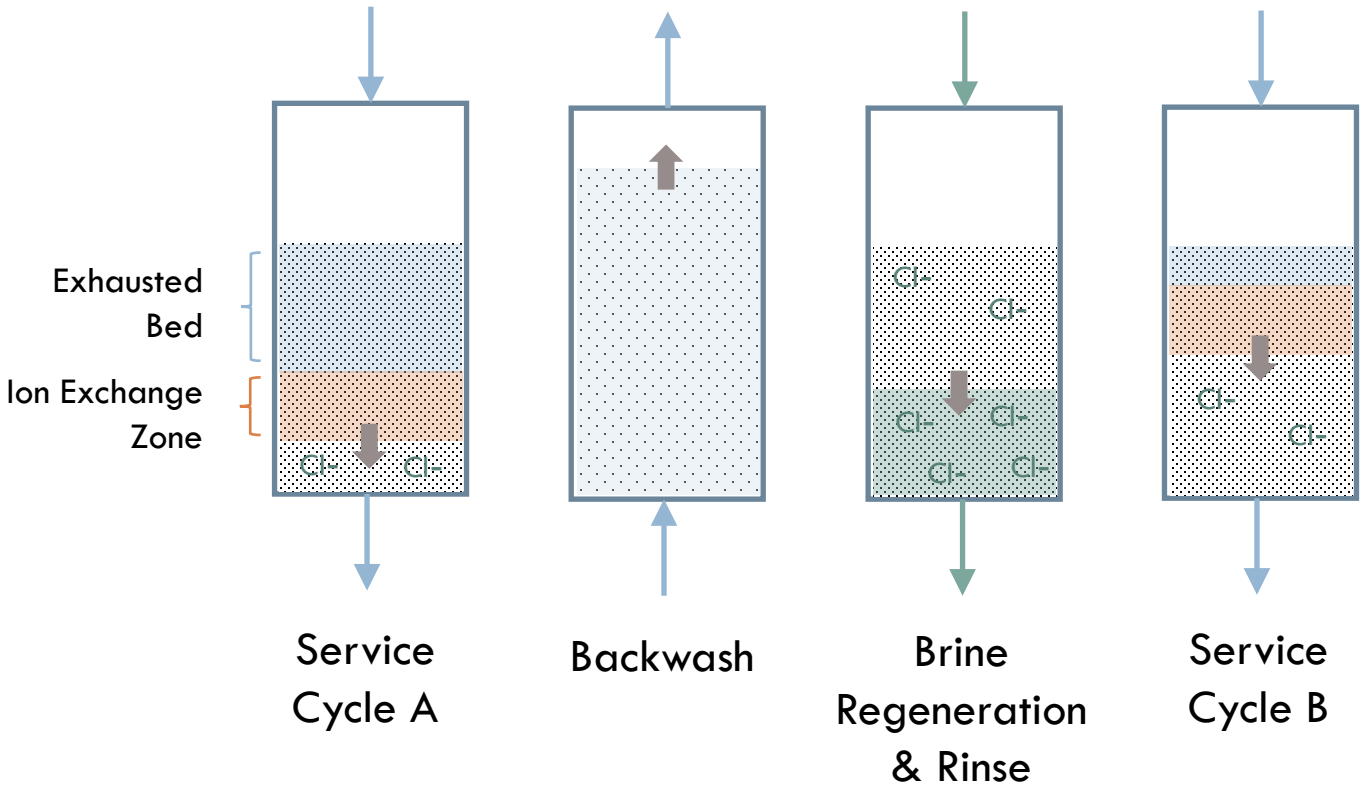
Anion exchange resins can remove PFAS and other negatively charge contaminants in addition to natural organic matter

Challenges & limitations include:

- Fouling and competition from NOM
- Differences in operation for these two applications

Regenerable vs Single Use Ion Exchange

Regenerable Ion Exchange (Organics Removal)



Service Cycle A

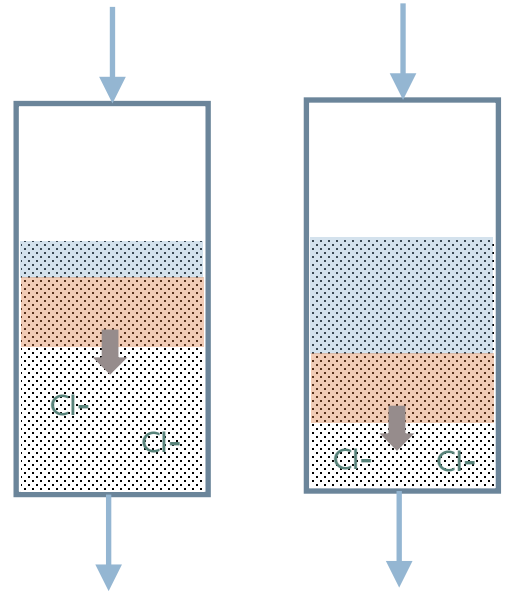
Backwash

Brine Regeneration & Rinse

Service Cycle B

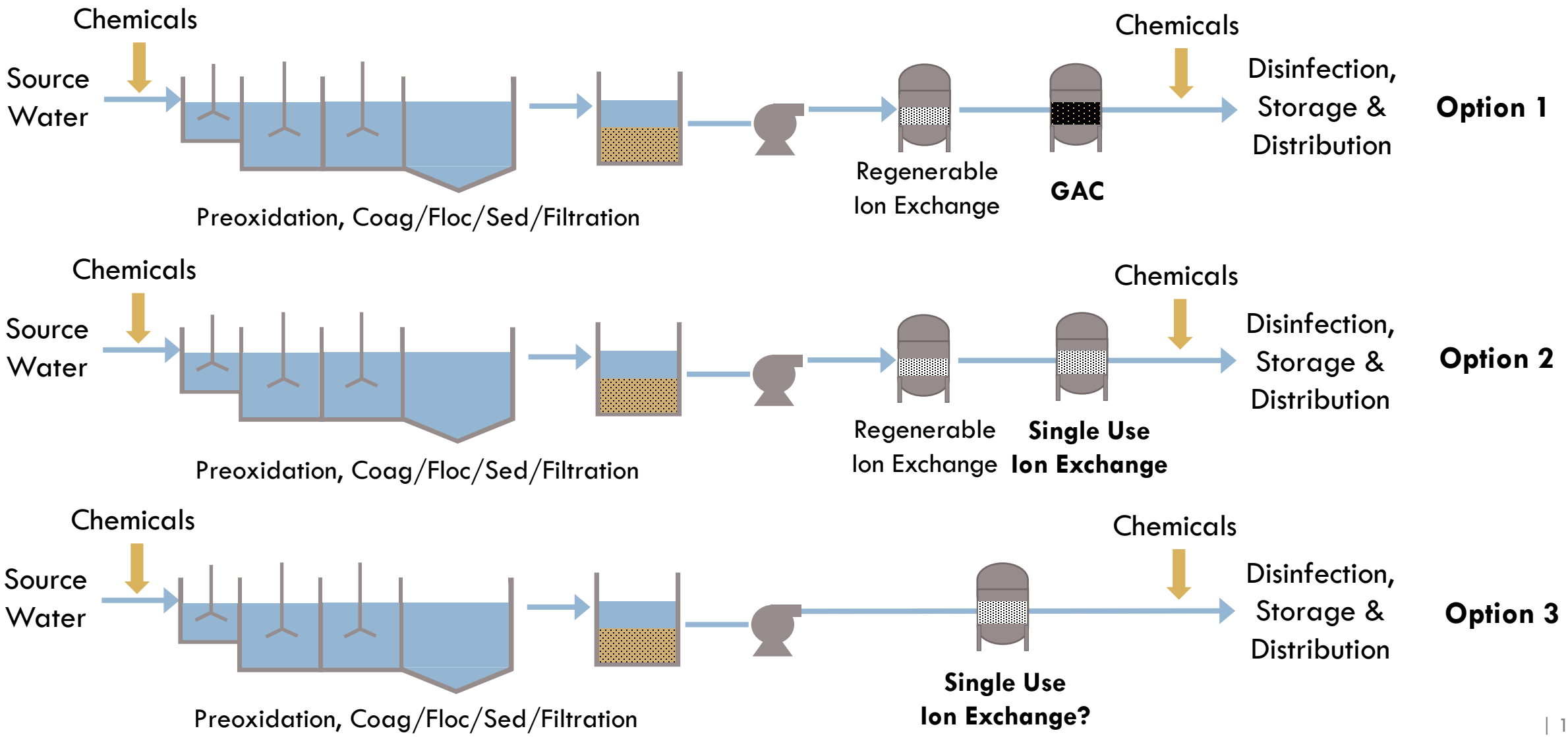
Service Cycle ~8,000 Bed Volumes (Weeks)

Single Use Ion Exchange (PFAS Removal)

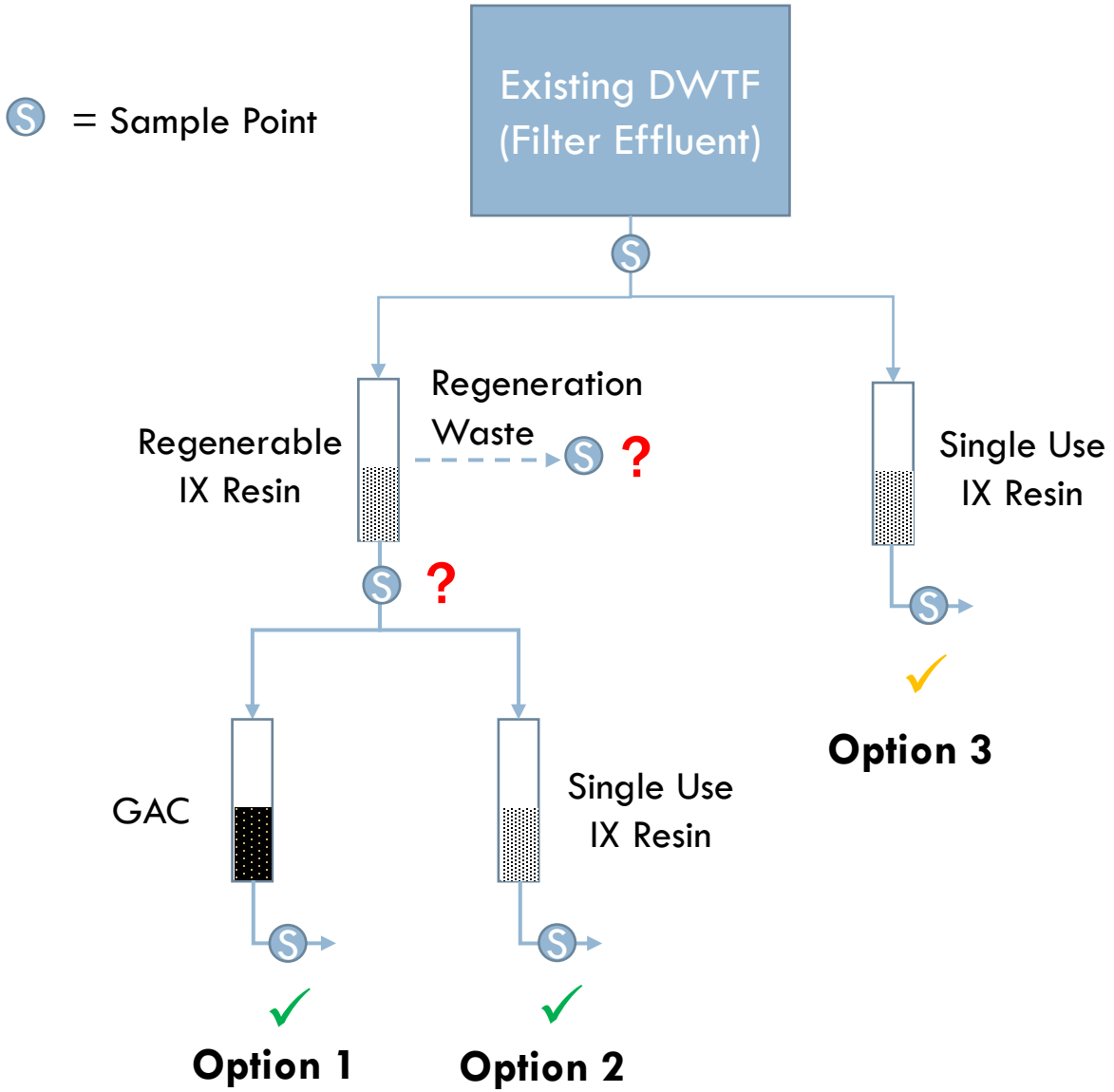


Service Cycle~200,000-400,000 Bed Volumes (Months/Years)

PFAS Removal: Potential Permanent Solutions

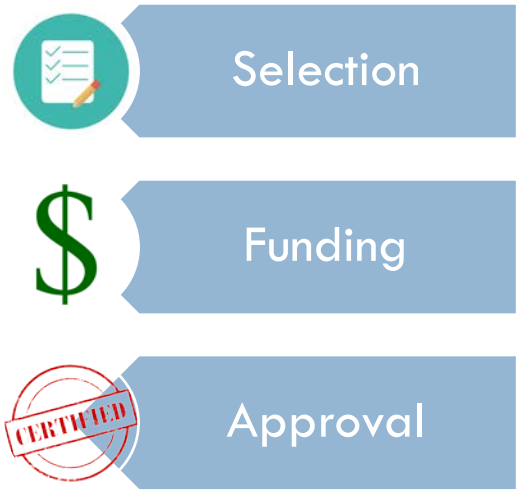


Pilot Testing Overview

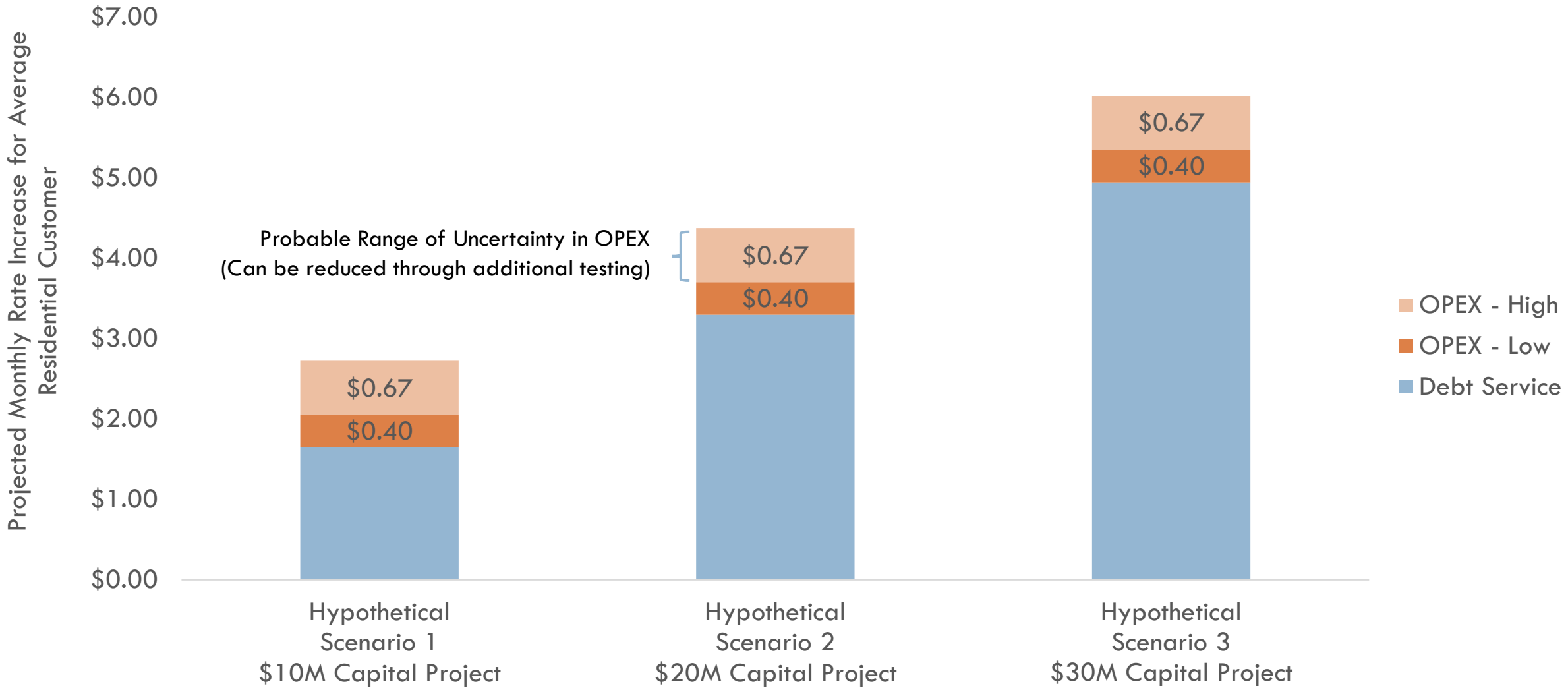


Objectives:

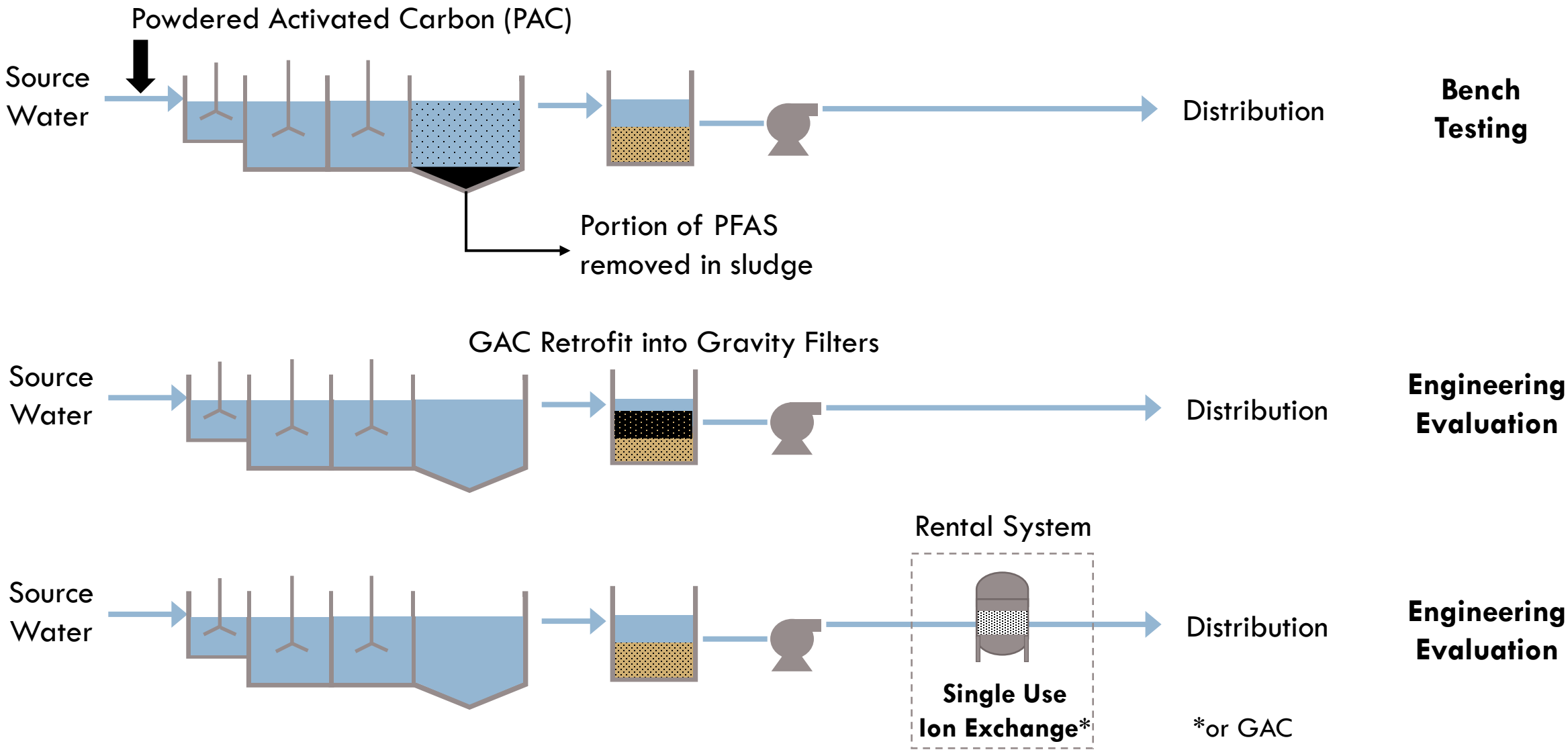
1. Observe performance of Regenerable Ion Exchange Process for PFAS removal
2. Characterize PFAS content of regeneration waste
3. Collect data demonstrating PFAS removal from Wausau's water using two mature, proven technologies



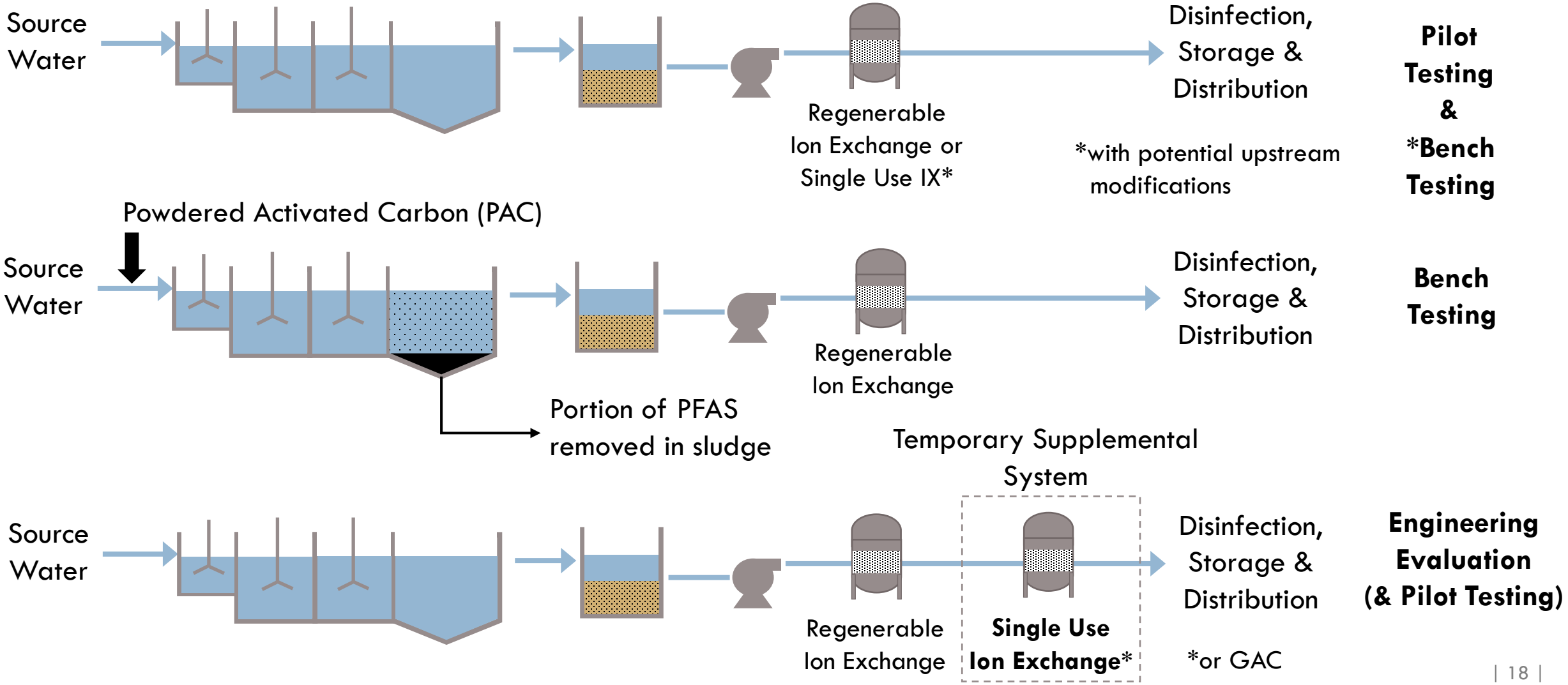
Preliminary Cost Perspective



Rapid Response Solutions at Existing DWTF



Interim Solutions at New DWTF



Agency Coordination & Approvals

Joint Agency Coordination Meeting

DNR plan approval required for any modifications or improvements to water system facilities that affect quality or quantity of water delivered, including water treatment facilities

Water utility shall obtain certificate from PSC before constructing, purchasing, installing, modifying, replacing or placing in operation:

Water treatment facilities

Cost exceeds $432,000

- Engineering Report
- Pilot Study Results
- Worksheets
- Plans & Specs

Drinking Water Facilities also subject to

- **NSF 60/61 certifications for chemicals/components**
- **10 States Standards**

Funding

- Emerging Contaminants/PFAS Funding
  - Bipartisan Infrastructure Law (BIL)
  - Administered by WDNR
  - Address municipal drinking water and wastewater treatment for PFAS
  - 100% principal forgiveness (grants)

Program	Annual Funding Available (2022-2026)
Clean Water Emerging Contaminants	$2.5 – 5.7 million
Drinking Water Emerging Contaminants	$12.8 million

- Federal Direct Appropriations
  - La Crosse - $3.7M

Summary of PFAS Response Strategies

New DWTF Commissioning – Aug/Sep 2022

TBD

Rapid Response

Point of Use

1. Bottled Water
2. Filters

System Wide | Existing DWTF

3. PAC
4. Filter Retrofit with GAC
5. Temporary System | Ion Exchange
6. Temporary System | GAC

Interim

System Wide | New DWTF

1. PAC
2. NOM Ion Exchange
3. PFAS-Targeted Ion Exchange
4. Temporary System | Ion Exchange
5. Temporary System | GAC

Permanent

System Wide | New DWTF

1. PAC
2. Ion Exchange
3. GAC
4. Alternative Source Water

Efforts to Define PFAS Response Strategies

New DWTF Commissioning – Aug/Sep 2022

TBD

Time

Rapid Response

Point of Use

1. Bottled Water
2. Filters

City Pursuing

System Wide | Existing DWTF

3. PAC
4. Filter Retrofit with GAC
5. Temporary System | Ion Exchange
6. Temporary System | GAC

Interim

System Wide | New DWTF

1. PAC
2. NOM Ion Exchange
3. PFAS-Targeted Ion Exchange
4. Temporary System | Ion Exchange
5. Temporary System | GAC

Permanent

System Wide | New DWTF

1. PAC
2. Ion Exchange
3. GAC
4. Alternative Source Water

Bench Testing, Pilot Testing, and Alternative Evaluations

Near-Term Activities

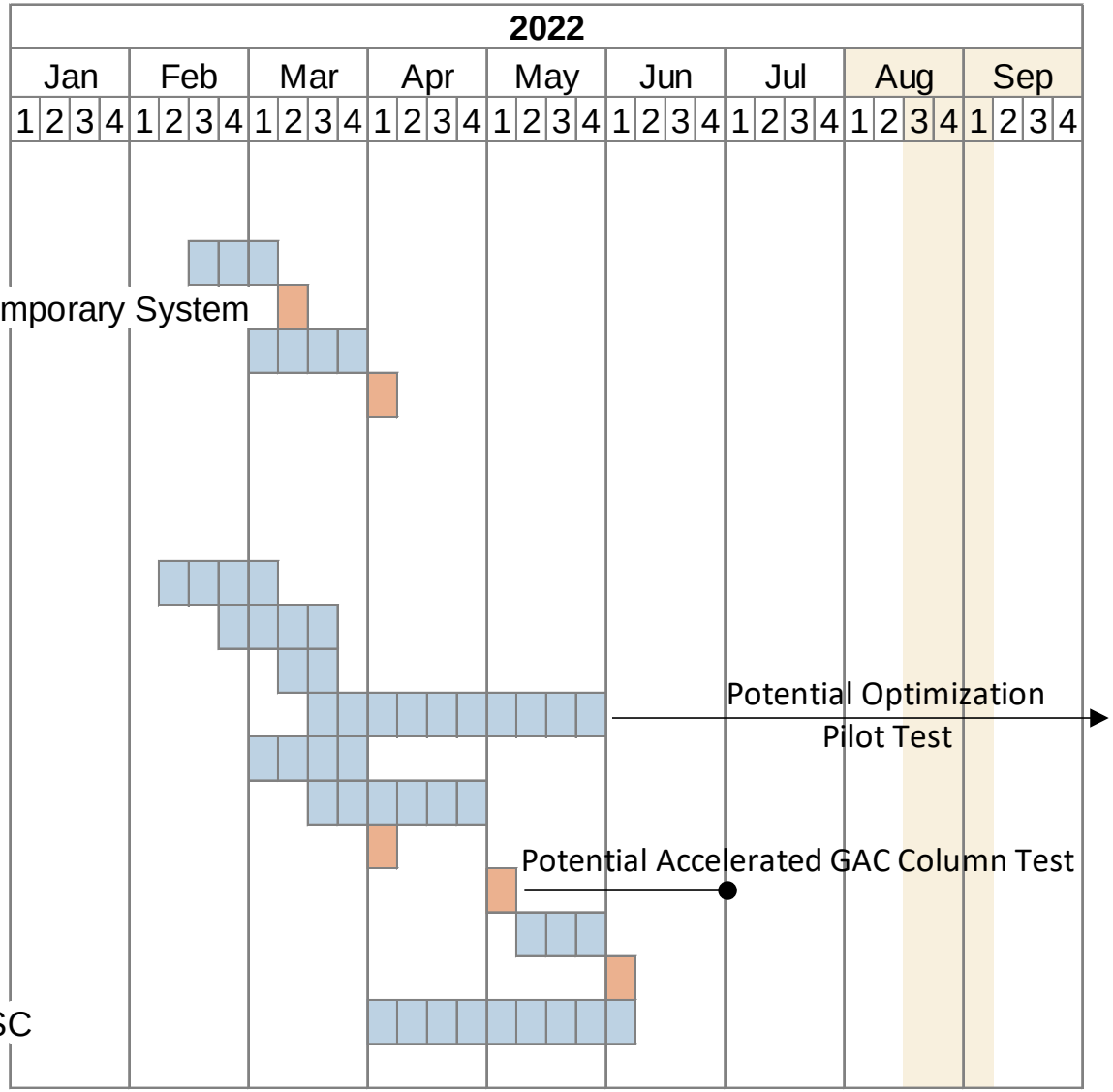
Tasks to Define PFAS Response Strategies

Rapid Response Strategies

- Evaluate Temporary System Alternatives
- Report to Commission: Cost, Configuration, and Schedule for Temporary System
- Bench Testing
- Report to Commission: PAC vs Temporary System

Interim and Permanent Strategies

- Pilot Testing
  - Coordinate with Manufacturers
  - Coordinate with WDNR
  - Equipment Delivery and Setup
  - Perform Pilot Test
- Bench Testing
- Evaluate Interim and Permanent Strategies
- Report to Commission: Interim Strategies
- Report to Commission: Interim and Permanent Strategies
- Refine Evaluation of Interim and Permanent Strategies
- Report to Commission: Permanent Strategies
- Coordinate Interim and Permanent Strategies with WDNR and PSC



Questions

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DONOHUE

CONTINUING PROFESSIONAL SERVICES AGREEMENT

This Agreement is by and between:

City of Wausau (Owner)
407 Grant Street
Wausau, WI 54403

and

Donohue & Associates, Inc. (Donohue)
3311 Weeden Creek Road
Sheboygan, WI 53081

Who agree as follows:

Owner hereby engages Donohue to perform the Services set forth in Part I for the compensation set forth in Part III. Donohue will be authorized to commence the Services upon execution and receipt of this Agreement from Owner. Owner and Donohue agree that this signature page, together with Parts I through IV attached, constitute the entire Agreement for this Project.

APPROVED FOR OWNER

By: _____

Printed Name: _____

Title: _____

Date: _____

APPROVED FOR DONOHUE

By: _____

Printed Name: _____

Title: _____

Date: _____

PART I
PROJECT DESCRIPTION/SCOPE OF SERVICES/TIMING

A. PROJECT DESCRIPTION

Donohue shall perform the Services requested by the Owner and agreed to by Donohue. Such services shall be defined with a written Task Order including Scope of Services, Project Timing, and Compensation. The Task Order will be signed by Donohue and the Owner, and shall be incorporated into this Agreement as a Task Order. This Agreement shall be automatically renewed annually on the anniversary of its original execution. Either Donohue or Owner may terminate this Agreement by giving the other party written notice at least 30 days prior the renewal date.

PART II
OWNER RESPONSIBILITIES

A. In addition to other responsibilities of Owner set forth in this Agreement and each Task Order, Owner shall:

1. Identify a person authorized to act as the Owner's representative to respond to questions and make decisions on behalf of Owner, accept completed documents, approve payments to Donohue, and serve as liaison with Donohue as necessary for Donohue to complete its Services.

2. Furnish to Donohue copies of existing documents and data pertinent to Donohue's Scope of Services, including but not limited to and where applicable: design and record drawings for existing facilities; property descriptions, land use restrictions, surveys, geotechnical and environmental studies, or assessments.

3. Owner shall be responsible for all requirements and instructions that it furnishes to Donohue pursuant to this Agreement, and for the accuracy and completeness of all reports, data, programs, and other information furnished by Owner to Donohue pursuant to this Agreement. Donohue may use and rely upon such requirements, instructions, reports, data, programs, and information in performing or furnishing services under this Agreement, subject to any express limitations or reservations provided by Owner applicable to the furnished items.

4. Provide to Donohue existing information regarding the existence and locations of utilities and underground facilities.

5. Provide Donohue safe access to premises necessary for Donohue to provide the Services.

6. Inform Donohue whenever Owner observes or becomes aware of a Hazardous Environmental Conditions, as defined in Part IV.3. of this Agreement, that may affect Donohue's Scope of Services or time for performance.

PART III
COMPENSATION, BILLING AND PAYMENT

A. Owner shall pay Donohue for Services in accordance with a project specific negotiated fee. Compensation will be designated in each Task Order and will apply only to the Task Order in which it is designated.

B. Donohue will be compensated for professional services on a Task Order basis. Compensation will be either on a lump sum basis or a not-to-exceed basis in accordance with Donohue's standard chargeout rates in effect at the time the Services are performed. Routine expenses will be billed at cost and subconsultant costs will include a 10% markup.

C. Donohue will bill Owner monthly, with net payment due in 30 days. For lump sum Task Orders, the invoice will contain a calculation of the amount of lump sum due based on percentage of Project completed during the billing period.

D. Donohue will notify Owner if Project scope changes require modifications to the Task Order contract value. Services relative to scope changes will not be initiated without authorization from Owner.

PART IV - STANDARD TERMS AND CONDITIONS

1. STANDARD OF CARE. Donohue's Services shall be performed in accordance with the standard of professional practice ordinarily exercised by the applicable profession under similar circumstances at the same time and in the locality where the Services are performed. Professional services are not subject to, and Donohue does not provide, any warranty or guarantee, express or implied. Any warranties or guarantees contained in any purchase orders, requisitions, or notices to proceed issued by Owner are void and not binding upon Donohue. Notwithstanding any other representations made elsewhere in this Agreement or in the execution of the Project, this Standard of Care shall not be modified. Donohue shall act as an independent consultant at all times during the performance of its services, and no terms of this Agreement, either express or implied, shall create an agency or fiduciary relationship.

2. CHANGE OF SCOPE. The Scope of Services set forth in this Agreement is based on facts known at the time of execution of this Agreement, including, if applicable, information supplied by Owner. For some projects involving conceptual or process development services, scope may not be fully definable during initial phases. As the Project progresses, facts discovered may indicate that the scope must be redefined. Donohue will promptly provide Owner with a written amendment to this Agreement to recognize such change.

3. HAZARDOUS ENVIRONMENTAL CONDITIONS. Unless expressly stated otherwise in the Scope of Services (Part I) of this Agreement, Donohue's scope of services does not include any services relating to a Hazardous Environmental Condition, including but not limited to the presence at the Project site of asbestos, mold, PCBs, petroleum, hazardous substances or any other pollutant or contaminant, as those terms are defined in pertinent federal, state, and local laws. In the event Donohue or any other party encounters a Hazardous Environmental Condition, Donohue may at its option suspend performance of services until Owner: a) retains appropriate consultants or contractors to identify and remediate or remove the Hazardous Environmental Condition; and b) warrants that the Project site is in full compliance with all applicable environmental laws.

4. SAFETY. Unless specifically included as a service to be provided under this Agreement, Donohue specifically disclaims any authority or responsibility for general job site safety, or the safety of persons (other than Donohue employees) or property.

5. DELAYS. If performance of Donohue's Services is delayed through no fault of Donohue, Donohue shall be entitled to an extension of time equal to the delay and an equitable adjustment in compensation.

6. TERMINATION/SUSPENSION. Either party may terminate this Agreement upon 30 days written notice to the other party. Owner shall pay Donohue for all Services, including profit relating thereto, rendered prior to termination, plus any expenses of termination. If either party defaults in its obligations under this Agreement (including Owner's obligation to make required payments), the non-defaulting party may, after giving seven days written notice, suspend performance under this Agreement. The non-defaulting party may not suspend performance if the defaulting party commences to cure such default within the seven-day notice period and completes such cure within a reasonable period of time.

Donohue may terminate this Agreement upon seven days written notice if: a) Donohue believes that Donohue is being requested by Owner to perform services contrary to law or Donohue's responsibilities as a licensed professional; or b) Donohue's Services for the Project are delayed, suspended, or interrupted for a period of at least 90 days for reasons not attributable to Donohue's performance of Services; or c) Owner has failed to pay any amount due and owing to Donohue for a period of at least 60 days. Donohue shall have no liability to Owner on account of such termination.

7. OPINIONS OF CONSTRUCTION COST. Any opinion of construction costs prepared by Donohue is supplied for the general guidance of the Owner only. Since Donohue has no control over competitive bidding or market conditions, Donohue cannot guarantee the accuracy of such opinions as compared to contract bids or actual costs to Owner.

8. RELATIONSHIP TO CONTRACTORS. Donohue shall serve as Owner's professional representative for the Services, and may make recommendations to Owner concerning actions relating to Owner's contractors. Donohue specifically disclaims any authority to direct or supervise the means, methods, techniques, sequences or procedures of construction selected or used by Owner's contractors. Donohue neither guarantees the performance of any construction contractor nor assumes responsibility for any contractor's failure to perform in accordance with the construction contract documents.

9. CONSTRUCTION REVIEW. For projects involving construction, Owner acknowledges that under generally accepted professional practice, interpretations of construction documents in the field are normally required, and that performance of construction-related services by the design professional for the Project permits errors or omissions to be identified and corrected at comparatively low cost. Performance of construction-related professional services by a third party or the Owner risks misinterpretation or alternate interpretation of the design intent. Owner agrees to hold Donohue harmless from any claims resulting from performance of construction-related professional services by persons other than Donohue.

10. BETTERMENT. If any item or component of the Project is required due to omission from the construction documents, Donohue's liability shall be limited to the reasonable costs of correction of the construction, less the cost to the Owner if the omitted item or component had been initially included in the construction contract documents. It is intended by this provision that Donohue will not be responsible for any cost or expense that provides betterment, upgrade, or enhancement of the Project.

11. INSURANCE. Donohue will maintain Professional Liability, Commercial General Liability, Automobile, Worker's Compensation, and Employer's Liability insurance coverage in amounts in accordance with legal and Donohue's business requirements. Donohue shall provide to Owner certificates demonstrating such coverage upon request. For projects involving construction, Owner agrees to protect Donohue's interests through appropriate property and liability insurance, and to require its construction contractor, if any, to include Donohue as an additional insured on Contractor's policies relating to the Project. Donohue's coverages referenced above shall, in such case, be excess over contractor's primary coverage.

12. INDEMNIFICATION. To the fullest extent permitted by law, Owner and Donohue each agree to indemnify the other party and the other party's officers, directors, partners, employees, and representatives, but not defend, from and against losses, damages, and judgments arising from claims by third parties, including reasonable attorneys' fees and expenses recoverable under applicable law, but only to the extent they are found to be caused by a negligent act, error, or omission of the indemnifying party or any of the indemnifying party's officers, directors, members, partners, agents, employees, or subconsultants in the performance of services under this Agreement. If claims, losses, damages, and judgments are found to be caused by the joint or concurrent negligence of Owner and Donohue, they shall be borne by each party in proportion to its negligence.

To the fullest extent permitted by law, Owner shall indemnify and hold harmless Donohue, its employees, agents, and representatives, and Donohue's subconsultants, from and against any loss, liability, claims and damages caused by, arising out of, or resulting from the presence at the Project site of asbestos, mold, PCBs, petroleum, hazardous substances, or any other pollutant or contaminant, as those terms are defined in pertinent federal, state, and local laws, except to the extent that the loss, liability, or damages are caused solely by the willful misconduct or negligence of Donohue, its agents or employees.

13. LIMITATIONS OF LIABILITY. No owner, shareholder, principal, employee or agent of Donohue shall have individual liability to Owner; and Owner covenants and agrees not to sue any such individual in connection with the Services under this Agreement.

Neither Donohue, Donohue's subconsultants, nor their agents or employees shall be jointly, severally or individually liable to the Owner in excess of the compensation to be paid pursuant to this Agreement or two hundred fifty thousand dollars ($250,000), whichever is greater, by reason of any act or omission, in tort or contract, including breach of contract, breach of warranty or negligence. To the fullest extent permitted by Laws and Regulations, Owner and Donohue waive against each other, and the other's employees, officers, directors, members, insurers, partners, and consultants, any and all claims for or entitlement to special, incidental, indirect, or consequential damages arising out of, resulting from, or in any way related to this Agreement or the Project, from any cause or causes.

14. OWNERSHIP AND REUSE OF PROJECT DOCUMENTS. All documents and other deliverables, in all media, prepared by or on behalf of Donohue in connection with this Agreement are instruments of service, and Donohue shall hold the copyright to and all other ownership and property interests in such instruments of service. Upon payment for services rendered, Donohue grants Owner a license to use instruments of Donohue's services for the purpose of constructing, occupying or maintaining the Project. Owner shall not reuse any such documents or other deliverables pertaining to the Project for any purpose other than that for which such documents or deliverables were originally prepared. Owner shall not cause or allow the alteration of such documents or deliverables without written verification and approval by Donohue for the specific purpose intended, and any alteration by Owner shall be at the Owner's sole risk. Owner agrees to indemnify and hold harmless Donohue from all claims, damages, and expenses (including reasonable attorneys' and consultants' fees), arising out of such reuse or alteration by Owner or others acting through Owner.

15. ELECTRONIC MEDIA. Copies of documents that may be relied upon by Owner are limited to printed copies that are signed and sealed by Donohue. Files or information in electronic media are furnished by Donohue to Owner solely for convenience of Owner. Because data stored in electronic media format can deteriorate or be modified, the Owner agrees to perform acceptance tests within 60 days. Donohue will not be responsible to correct any errors or for maintenance of documents in electronic media format after the acceptance period.

16. RECORDS RETENTION. Donohue shall retain on file, for a period of five years following completion or termination of its services, copies of contract documents, final deliverables, and accounting records related to Engineer's services under this Agreement. Upon Owner's request, Donohue shall provide a copy of maintained item to Owner at cost.

17. AMENDMENT. This Agreement, upon execution by both parties hereto, can be amended only by a written instrument signed by both parties.

18. SUCCESSORS, BENEFICIARIES AND ASSIGNEES. This Agreement shall be binding upon and inure to the benefit of the owners, administrators, executors, successors, and legal representatives of the Owner and Donohue. The rights and obligations of this Agreement cannot be assigned by either party without written permission of the other party. This Agreement shall be binding upon and inure to the benefit of any permitted assignees.

19. NO THIRD-PARTY BENEFICIARY. Nothing contained in this Agreement, nor the performance of the parties hereunder, is intended to benefit, nor shall inure to the benefit of, any third party, including Owner's construction contractors, if any.

20. STATUTE OF LIMITATION. To the fullest extent permitted by law, parties agree that, except for claims for indemnification, the time period for bringing claims under this Agreement shall expire one year after Substantial Completion, as defined by the construction documents prepared by Donohue, or, if no construction documents are prepared, one year after the submittal date of Donohue's most recent invoice for this Agreement. Any action not brought within that one-year time period shall be barred, without regard to any other limitations period set forth by law or statute.

21. DISPUTE RESOLUTION. Owner and Donohue shall provide written notice of a dispute within a reasonable time and after the event giving rise to the dispute. Owner and Donohue agree to negotiate any dispute between them in good faith for a period of 30 days following such notice. Owner and Donohue may mutually agree to submit any dispute to mediation or binding arbitration, but doing so shall not be required or a prerequisite to initiating a lawsuit to enforce this Agreement.

22. CONTROLLING LAW. This Agreement is governed by the laws of the state in which the Project is located.

23. NO WAIVER. No waiver by either party of any default by the other party in the performance of any particular section of this Agreement shall invalidate any other section of this Agreement or operate as a waiver of any future default, whether like or different in character.

24. SEVERABILITY. The various terms, provisions and covenants herein contained shall be deemed to be separate and severable, and the invalidity or unenforceability of any of them shall not affect or impair the validity or enforceability of the remainder.

25. AUTHORITY. The persons signing this Agreement warrant that they have the authority to sign as, or on behalf of, the party for whom they are signing.

26. SURVIVAL. All express representations, indemnifications and limitations of liability included in this Agreement will survive its completion or termination for any reason.

DONOHUE

TASK ORDER NO. 1 TO
CONTINUING PROFESSIONAL SERVICES AGREEMENT
Between City of Wausau (Owner) and
Donohue & Associates, Inc. (Donohue)
Date of Original Executed Agreement: _____

TASK ORDER NAME/DESCRIPTION: PFAS Treatment Investigation and Pilot Testing

Through voluntary testing of all water supply wells for per- and polyfluoroalkyl substances (PFAS), Wausau Water Works has detected PFAS in all six wells, including PFOA and PFOS at combined concentrations ranging from 24 to 33 parts per trillion (ppt). This sampling also indicated that the existing Drinking Water Treatment Facility is not removing these compounds. The proposed services will assist the City of Wausau with investigation of PFAS treatment options to be implemented at the new Drinking Water Treatment Facility (DWTF) currently under construction.

The new DWTF will include treatment with an anion exchange system. The Tulsion® A-72 MP resin, manufactured by Thermax, to be used in the anion exchange system, was developed for color and total organic carbon (TOC) removal. No data on PFAS removal by this resin is available from the anion exchange system manufacturer or resin manufacturer. It is plausible that the resin has affinity for PFAS and therefore, at least temporarily or to some degree, may reduce PFAS concentrations in water treated through the anion exchange system. A pilot study with an anion exchange column operating at the existing DWTF is an opportunity to collect information about the PFAS removal capabilities of this resin.

There are several potential limitations associated with using the Tulsion A-72 MP Thermax resin for removal of PFAS, which will need to be evaluated in the pilot study:

- Competition from TOC and other anions might cause PFAS breakthrough at a frequency that makes use of the resin for PFAS removal cost-prohibitive
- There are some differences in how anion exchange systems for TOC removal are operated relative to anion exchange systems for PFAS removal, which may make it difficult to use the same anion exchange system and resin for both TOC and PFAS removal. For example, regular backwashing and regeneration of the resin for TOC removal might disrupt PFAS removal or make PFAS breakthrough less predictable.

Evaluation of the Tulsion A-72 MP Thermax resin and a second ion exchange resin that has proven PFAS removal capability will help to address these limitations and provide valuable information for selection of a PFAS removal strategy.

In order to expedite testing, pilot testing equipment will be installed in the existing DWTF. The pilot study will include installation and operation of up to four pilot test columns in three treatment scenarios. One

column will contain Tulsion A-72 MP Thermax resin, one column will contain GAC, and two columns will contain a resin that has proven PFAS removal capability.

Three parallel treatment trains will be evaluated. Train 1 will be the Tulsion A-72 MP Thermax resin and the resin with proven PFAS removal capability in series. Train 2 will be the Tulsion A-72 MP Thermax resin and GAC in series. Train 3 will be one column with the PFAS-proven resin.

Pilot Column Trains, Scenarios and Objectives

	Train 1	Train 2	Train 3
Column 1	Tulsion A-72 MP Thermax resin (same column used in both trains)		SORBIX resin from ECT2 with proven PFAS removal capabilities
Column 2	SORBIX resin from ECT2 with proven PFAS removal capabilities	GAC	N/A
Operating Strategy	Regenerate and backwash Thermax resin as planned for new DWTF; no regeneration or backwash for second column	Regenerate and backwash Thermax resin as planned for new DWTF; no regeneration or backwash for second column	No regeneration or backwash
Simulated Scenario	Additional anion exchange system downstream of system used for TOC/color removal	GAC system downstream of anion exchange system used for TOC/color removal	Installation of a different anion exchange resin in the existing vessels in lieu of the A-72 MP resin
Objectives	• Understand performance and limitations of Thermax resin as a combined solution for NOM and PFAS removal • Demonstrate proof-of-concept of Thermax resin as pre-treatment for PFAS removal by second anion exchange resin	• Demonstrate proof-of-concept of Thermax resin as pre-treatment for PFAS removal by GAC	• Understand performance and limitations of a resin with proven PFAS-removal capability in lieu of Thermax resin, with no pre-treatment for NOM and color removal

For Train 1 and 2, PFAS in the effluent from each column will be measured over multiple regeneration cycles of the Thermax resin; concentration of PFAS in brine waste from regeneration of the Thermax resin will also be measured. Train 3 will be tested for PFAS removal and for effluent color and TOC.

Anticipated proof-of-concept information may include:

- Detection of PFAS in the Tulsion A-72 MP (Thermax) resin effluent
- Elevated differential pressure, color breakthrough, elevated TOC, and/or PFAS breakthrough in effluent from anion exchange resin operated in parallel with (i.e., in lieu of) the Thermax resin

- Non-detectable PFAS in effluent from anion exchange resin or GAC column operated in series with Thermax resin.

The Task Order 1 pilot testing will provide valuable information about the viability and non-viability of various treatment approaches. If the City wishes or, because of regulatory requirements, needs to accelerate full-scale implementation of a PFAS treatment system at the new DWTF, the proof-of-concept information generated from this pilot study may support such an approach along with other data, case studies, and precedent from other states that could be presented in discussions with WDNR. Additional pilot testing may be desired or required for one or more of the following reasons and objectives:

- Develop more accurate operating and life cycle cost projections for a proposed media or resin
- Compare the performance of multiple GAC products, ion exchange resins, or other media candidates over a duration sufficient to define differences in site-specific media replacement frequency and thereby select a technology estimated to provide PFAS removal at an optimized life cycle cost
- Should WDNR require piloting GAC or ion exchange columns to "breakthrough" – when effluent PFAS exceeds treatment goals or limits of detection--before approving an installation, testing could take 12-18 months depending on water quality and the media selected.

A. SCOPE OF SERVICES

The pilot testing strategy described above is designed to provide an immediate response to the detection of PFAS by proof-of-concept exploration of available approaches for PFAS removal to assess certain approaches as either non-viable or worthy of further evaluation. In order to provide a comprehensive response, evaluation of additional treatment options such as powdered activated carbon and other modifications to the planned new DWTF treatment train, which can be screened with bench testing, is included in the scope of the study.

The following tasks will be completed as part of the pilot study program:

1. Obtain pilot test columns and associated equipment and anion exchange resins and Install equipment at existing DWTF with assistance from Wausau Water Works staff.
2. Prepare pilot study test protocol as required by Wisconsin Department of Natural Resources (WDNR). Submit protocol to WDNR for review and approval. Pilot study test protocol will include the following elements required by Wisconsin Administrative Code NR 811.45(1):
    a. Pilot plan treatment design and operating parameters
    b. Length of pilot plant operation. (Code requires minimum of 2 treatment cycles, which will not be feasible given anticipated breakthrough time for ion exchange)
    c. Chemicals and chemical feed equipment to be used along with chemical dosing rates
    d. Waste disposal
    e. Operator safety
    f. Backflow prevention for protection of water system facilities supplying the pilot test equipment.
3. Operate pilot testing equipment.
    a. Check pilot testing equipment weekly

b. Collect laboratory samples from pilot test columns as needed.
c. Evaluate laboratory sample results as they are received.

4. Prepare report summarizing the results of the pilot testing. The report will be submitted to WDNR in accordance with Wisconsin Administrative Code NR 811.45(2).
5. Prepare cost opinions and engineering evaluation of PFAS treatment and response options based on those determined to be viable, and document in technical memorandum. Treatment/response options to be evaluated include:
    a. GAC after Ion Exchange: obtain manufacturer recommendations for media and equipment, prepare schematic layout for installation at new DWTF and perform cost analysis
    b. Ion Exchange (for PFAS) after Ion Exchange: obtain manufacturer recommendations for resin and equipment, prepare schematic layout for installation at new DWTF and perform cost analysis
    c. Alternate well locations: conduct review of local geological mapping and well construction data and prepare cost estimates.
6. Screen and evaluate additional alternatives involving potential upstream modifications to the new DWTF train that could make use of the new DWTF while providing cost-optimized solutions for PFAS removal and document in technical memorandum.
    a. PAC: perform bench testing of PAC for feasibility screening, obtain manufacturer recommendations for equipment, prepare schematic layout for installation in new DWTF and perform cost analysis
    b. Other modifications to new DWTF treatment train: perform bench testing for feasibility screening, prepare schematic of DWTF modifications and perform cost analysis.

Once the results of the pilot testing and bench scale testing are obtained and a preferred path forward is identified, it is anticipated that detailed coordination with various state and local regulatory agencies for implementation of proposed option(s) will be performed under a subsequent task order.

B. PROJECT TIMING

The proposed services will be performed in two parallel tracks, shown in the table below. Work on both Track 1 and Track 2 will begin immediately after authorization of Task Order 1.

Project Timing

Track 1	Track 2
1. Obtain/install pilot test equipment 2. Prepare pilot test proposal for WDNR review/approval 3. Operate pilot test 4. Prepare pilot test report	5. Prepare cost opinions and engineering evaluation of treatment and response options including GAC, IEX and alternate wells 6. Screen and evaluate additional alternatives involving potential upstream modifications to new DWTF 7.

Compensation for the scope of services is based on operating the pilot test columns for six months. It is anticipated that all other services will be completed within six months of authorization by Owner.

C. COMPENSATION

Compensation for this Task Order will be not to exceed $155,375 in accordance with Donohue's standard chargeout rates in effect at the time the Services are performed. Owner will be responsible for [1] laboratory analysis fees and [2] fees for pilot equipment rental and initial technician installation and start-up support from equipment vendor.

Fee Estimate Table

Task	Gerbitz $ 250	Wojtkiewicz $ 185	Dow $ 185	Matthias $ 120	Opatik $ 165	Ligman $ 165	Patterson $ 165	Total Hours	Labor Cost	Travel	Total Cost
1 Project Management and Pilot-Test Equipment Procurement/Installation											**$19,440**
a Produce Project Workplan		4						4	$740		$740
b Project Managemen and Coordination Activities (6 mor	10	20						30	$6,200		$6,200
c Procure Equipment and Coordinate Installation			10	20	10		40	80	$12,500		$12,500
2 Pilot Test Protocol/Agency Coordination											**$9,800**
a Produce Pilot Test Protocol for Owner and WDNR Review/Approval		10	20	20				50	$7,950		$7,950
b WDNR Review/Response		5	5					10	$1,850		$1,850
3 Pilot Testing											**$43,860**
a Check Pilot Test Equipment Weekly (6 months)							96	96	$15,840		$15,840
b Collect Samples (6 months)							96	96	$15,840		$15,840
c Compile and Evaluate Lab Samples (monthly for 6 months)		12	12	48			12	84	$12,180		$12,180
4 Pilot Test Report											**$13,850**
a Prepare and Submit Pilot Test Report to WDNR		10	20	40			10	80	$12,000		$12,000
b Respond to WDNR Comments		5	5					10	$1,850		$1,850
5 Evaluate Full-Scale PFAS Alternatives											**$42,425**
a Treatment alternatives: IEX+GAC, IEX+IEX, and IEX. Produce schematic layouts and cost opinions.		5	60	60	10		5	140	$21,700		$21,700
b Alternate Well Locations. Review of local geological mapping and well construction data. Prepare cost estimates.		40			10	10		60	$10,700		$10,700
c Produce and Submit Technical Memorandum	5	10	20	20	5			60	$10,025		$10,025
6 Bench Testing of PFAS-Related Chemical Conditioning Enhancements											**$26,000**
a Powdered Activated Carbon: perform bench testing of PAC for feasibility screening, obtain manufacturer recommendations for equipment, prepare schematic layout for installation in new DWTF and perform cost analysis.		5	40	10	5		10	70	$12,000	$2,000	$14,000
b Other modifications to new DWTF treatment train: perform bench testing for feasibility screening, prepare schematic of DWTF modifications and perform cost analysis.		5	40	10	5		10	70	$12,000		$12,000
Total	15	131	232	228	45	10	279	940	$153,375	$2,000	**$155,375**
Total Labor Dollars by Staff	$ 3,750	$ 24,235	$ 42,920	$ 27,360	$ 7,425	$ 1,650	$ 46,035				

Donohue
Becher Hoppe

APPROVED FOR OWNER

By: _____

Printed Name: _____

Title: _____

Date: _____

APPROVED FOR DONOHUE

By: _____

Printed Name: _____

Title: _____

Date: _____

DONOHUE

TASK ORDER NO. 2 TO
CONTINUING PROFESSIONAL SERVICES AGREEMENT
Between City of Wausau (Owner) and
Donohue & Associates, Inc. (Donohue)
Date of Original Executed Agreement: _____

TASK ORDER NAME/DESCRIPTION: On-call services related PFAS response and communication efforts

A. SCOPE OF SERVICES

As requested by the Owner, provide engineering support related to developing and considering strategies to implement temporary PFAS removal systems. These might be full-scale systems at the existing drinking water treatment facility or reduced-scale systems located at several points in the distribution system.

As requested by Owner, support staff with communication and information sharing related to PFAS treatment – e.g., [1] preparing materials for meetings (Commission, Council, and public information), [2] attending meetings, and [3] preparing material for public distribution.

B. PROJECT TIMING

Services will begin immediately upon authorization of this Task Order and will be performed as requested by Owner.

C. COMPENSATION

Compensation for this Task Order will not exceed $30,000, with hourly rates in accordance with Donohue's standard chargeout rates in effect at the time the Services are performed.

APPROVED FOR OWNER	**APPROVED FOR DONOHUE**
By: _____	By: _____
Printed Name: _____	Printed Name: _____
Title: _____	Title: _____
Date: _____	Date: _____

The WI DNR prepared a draft permit last fall, to which the City responded with draft comments, assisted by Attorney.Wishart of Stafford Rosenbaum. On 12/12/18, the DNR reissued a Wisconsin Pollutant Discharge Elimination System (WPDES) permit to the wastewater treatment facility (effective 1/1/19), which contained a very stringent phosphorous limit allowed to be discharged into the Wisconsin River.

Attorney Wishart proposed on 1/9/19 to file both a petition for judicial review in the circuit court (30 days from notice of final determination) and contested case petition (60 days) for the reissued permit, because the contested case is partly based on a fairly novel argument that the permit should not have been reissued with final phosphorus limits while a TMDL is pending. A TMDL is the calculation of the maximum amount of a pollutant allowed to enter a waterbody so that the waterbody will meet and continue to meet water quality standards for that particular pollutant (Total Maximum Daily Load) and describes a plan for restoring impaired waters. Because she had not seen the DNR grant a contested case on these grounds, she felt it advisable to file for judicial review as well.

The City filed a petition for judicial review on 1/11/19, along with a petition for hearing before the WI DNR. On 1/31/19, a Stipulation for Stay of Judicial Review was filed and an Order, staying Judicial Review was entered 2/1/19, 7/30/19, 8/2/19, and another Stipulation on 2/3/20.

The City planned to proceed instead, on the hearing that was granted on its petition for same before the agency, regarding the phosphorous levels contained in its WDPES Permit.

On 1/31/19, the City was notified that its request for a contested case hearing was granted. It was then the decision was made to stay the circuit court case.

On the circuit court case side (Marathon County Case No. 19CV32), A Stipulation and Order for Stay of Judicial Review was filed 8/2/19. The Court requested on 2/4/20 to know the status of this case from counsel. On 2/19/20, the Court was notified that the City continues to pursue resolution through the administrative hearing process with the DNR and are awaiting legislative and executive approval of an administrative rule that will facilitate resolution. On 7/31/20, Judge O'Neill of Branch 1 was assigned to this case.

On 10/4/21, a Status Conference is set, as permit modification was being pursued. Subsequent status conferences were set for 2/21/22 and 3/2/22.

On the agency side, a contested hearing did not occur, as negotiations continued on the revision of the permit. The City asked for a modification to the compliance schedule with the SSC TMDL limits by 12/31/23, given the construction completion date of the wastewater treatment facility upgrade on 6/3/23.

On 1/25/22, the City received a draft of the modified permit from the DNR. The City reiterated its request for a compliance time schedule 6 months after the anticipated completion date, and

DNR acknowledged receipt of those comments on 2/8/22 and on 2/15/22, accepted the requested compliance dates to be incorporated into the draft permit and include a requirement for a sludge management plan with an associated compliance date. The modified permit was received from the DNR on 2/21/22.

The DNR has proposed a Settlement Agreement between them and the City to resolve a pending contested case challenge brought by the City.

Following a public notice and comment period, if the proposed Permit is modified according to the terms of the Attachment A to the Agreement (draft revised Permit), and no third party challenge is filed, the City will withdraw its Petition for a Contested Case and Petition for Judicial Review, thus resolving the issue in both the agency and circuit court setting.

WPDES PERMIT

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

PERMIT TO DISCHARGE UNDER THE WISCONSIN POLLUTANT DISCHARGE ELIMINATION SYSTEM

Wausau Water Works

is permitted, under the authority of Chapter 283, Wisconsin Statutes, to discharge from a facility located at
435 Adrian Street, Wausau, WI 54403
NW ¼ of NW ¼ of Section 1, T28N, R7E, City of Wausau, Marathon County
to
the Wisconsin River located in the Lower Eau Claire River Watershed of the Central Wisconsin River Basin in Marathon County

Outfall: Lat: 44.94404° N / Lon: 89.62826° W

in accordance with the effluent limitations, monitoring requirements and other conditions set forth in this permit.

The permittee shall not discharge after the date of expiration. If the permittee wishes to continue to discharge after this expiration date an application shall be filed for reissuance of this permit, according to Chapter NR 200, Wis. Adm. Code, at least 180 days prior to the expiration date given below.

State of Wisconsin Department of Natural Resources
For the Secretary

By _____
Geisa Thielen
Wastewater Field Supervisor

_____
Date Permit Signed/Issued for Modification

PERMIT TERM: EFFECTIVE DATE – January 01, 2019 **EXPIRATION DATE - December 31, 2023**
EFFECTIVE DATE OF MODIFICATION: July 01, 2022

TABLE OF CONTENTS

1 Influent Requirements

1.1 Sampling Point(s)

Sampling Point Designation	
Sampling Point Number	**Sampling Point Location, WasteType/Sample Contents and Treatment Description (as applicable)**
701	Representative composite influent samples shall be taken from the influent pump discharge pipe.

1.2 Monitoring Requirements

The permittee shall comply with the following monitoring requirements.

1.2.1 Sampling Point 701 - INFLUENT TO PLANT

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Continuous	Continuous	
BOD_5, Total		mg/L	5/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total		mg/L	5/Week	24-Hr Flow Prop Comp	
Mercury, Total Recoverable		ng/L	Monthly	24-Hr Flow Prop Comp	See subsections 1.2.1.1 and 1.2.1.2.
Cadmium, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	See subsection 1.2.1.2.
Chromium, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	See subsection 1.2.1.2.
Copper, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	See subsection 1.2.1.2.
Cyanide, Total		µg/L	Monthly	24-Hr Flow Prop Comp	See subsection 1.2.1.2.
Lead, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	See subsection 1.2.1.2.
Nickel, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	See subsection 1.2.1.2.
Silver, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	See subsection 1.2.1.2.
Zinc, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	See subsection 1.2.1.2.

1.2.1.1 Mercury Monitoring

The permittee shall collect and analyze all mercury samples according to the data quality requirements of ss. NR 106.145(9) and (10), Wisconsin Administrative Code. The limit of quantitation (LOQ) used for the effluent and field blank shall be less than 1.3 ng/L, unless the samples are quantified at levels above 1.3 ng/L. The permittee shall

collect at least one mercury field blank for each set of mercury samples (a set of samples may include combinations of intake, influent, effluent or other samples all collected on the same day). The permittee shall report results of samples and field blanks to the Department on Discharge Monitoring Reports.

1.2.1.2 Sample Analysis for Pretreatment Parameters

These are pretreatment parameters. Sampling for pretreatment parameters shall be done during a day each month when industrial discharges are occurring at normal to maximum levels. The sampling of the effluent for these parameters shall be coordinated with the sampling of influent.

Samples shall be analyzed using a method which provides adequate sensitivity so that results can be quantified, unless not possible using the most sensitive approved method.

2 In-Plant Requirements

2.1 Sampling Point(s)

Sampling Point Designation	
Sampling Point Number	**Sampling Point Location, WasteType/Sample Contents and Treatment Description (as applicable)**
104	The field blank shall be collected using standard handling procedures every day that mercury samples are collected at influent and effluent.

2.2 Monitoring Requirements and Limitations

The permittee shall comply with the following monitoring requirements and limitations.

2.2.1 Sampling Point 104 - Mercury field blank

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Mercury, Total Recoverable		ng/L	Monthly	Blank	See subsection 2.2.1.1 for mercury monitoring requirements.

2.2.1.1 Mercury Monitoring

The permittee shall collect and analyze all mercury samples according to the data quality requirements of ss. NR 106.145(9) and (10), Wisconsin Administrative Code. The limit of quantitation (LOQ) used for the effluent and field blank shall be less than 1.3 ng/L, unless the samples are quantified at levels above 1.3 ng/L. The permittee shall collect at least one mercury field blank for each set of mercury samples (a set of samples may include combinations of intake, influent, effluent or other samples all collected on the same day). The permittee shall report results of samples and field blanks to the Department on Discharge Monitoring Reports.

3 Surface Water Requirements

3.1 Sampling Point(s)

Sampling Point Designation	
Sampling Point Number	**Sampling Point Location, WasteType/Sample Contents and Treatment Description (as applicable)**
001	Representative effluent samples, except those for fecal coliform, shall be collected at the disinfection channel prior to disinfection; samples for fecal coliform shall be collected after disinfection.
601	Temperature and flow of the Wisconsin River shall be monitored for determination of Wasteload Allocated (WLA) limits at Outfall 001. See subsections below for specific monitoring information.

3.2 Monitoring Requirements and Effluent Limitations

The permittee shall comply with the following monitoring requirements and limitations.

3.2.1 Sampling Point (Outfall) 001 - EFFLUENT TO WISCONSIN RIVER

Monitoring Requirements and Effluent Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Continuous	Continuous	
BOD_5, Total	Monthly Avg	30 mg/L	5/Week	24-Hr Flow Prop Comp	
BOD_5, Total	Weekly Avg	45 mg/L	5/Week	24-Hr Flow Prop Comp	
WLA BOD_5 Discharged	Daily Max - Variable	lbs/day	5/Week	Calculated	See section 3.2.1.2.
WLA Value		lbs/day	5/Week	See Table	Report applicable variable limit on DMR. See section 3.2.1.2 for variable limits.
Suspended Solids, Total	Monthly Avg	30 mg/L	5/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total	Weekly Avg	45 mg/L	5/Week	24-Hr Flow Prop Comp	
Phosphorus, Total	Monthly Avg	1.0 mg/L	5/Week	24-Hr Flow Prop Comp	
Phosphorus, Total	Monthly Avg	34 lbs/day	5/Week	Calculated	Final TMDL SSC-derived mass limit. Monitoring only upon permit effective date. See section 3.2.1.3. Final limit goes into effect pursuant to the phosphorus compliance schedule at section 5.1.

Monitoring Requirements and Effluent Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Phosphorus, Total		lbs/month	Monthly	Calculated	Calculate the Total Monthly Discharge of phosphorus and report on the last day of the month on the DMR. See TMDL section below.
Phosphorus, Total		lbs/yr	Monthly	Calculated	Calculate the 12-month rolling sum of total monthly mass of phosphorus discharged and report on the last day of the month on the DMR. See TMDL section below.
pH Field	Daily Max	9.0 su	5/Week	Grab	
pH Field	Daily Min	6.0 su	5/Week	Grab	
Fecal Coliform	Geometric Mean - Monthly	400 #/100 ml	Weekly	Grab	Monitoring and limits apply May 1 through September 30 annually.
Fecal Coliform	Geometric Mean - Wkly	656 #/100 ml	Weekly	Grab	Monitoring and limits apply May 1 through September 30 annually.
Nitrogen, Ammonia (NH_3-N) Total		mg/L	Monthly	24-Hr Flow Prop Comp	Monitor Only - November 1 through April 30 annually.
Nitrogen, Ammonia (NH_3-N) Total		mg/L	Quarterly	24-Hr Flow Prop Comp	Monitor Only - May 1 through October 31 annually.
Nitrogen, Total Kjeldahl		mg/L	Quarterly	24-Hr Flow Prop Comp	
Nitrogen, Nitrite + Nitrate Total		mg/L	Quarterly	24-Hr Flow Prop Comp	
Nitrogen, Total		mg/L	Quarterly	Calculated	
Hardness, Total as $CaCO_3$		mg/L	Monthly	24-Hr Flow Prop Comp	
Copper, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	See section 3.2.1.4.
Cadmium, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	See section 3.2.1.4.
Chromium, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	See section 3.2.1.4.
Lead, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	See section 3.2.1.4.
Nickel, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	See section 3.2.1.4.
Silver, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	See section 3.2.1.4.

Monitoring Requirements and Effluent Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Zinc, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	See section 3.2.1.4.
Cyanide, Total		µg/L	Monthly	24-Hr Flow Prop Comp	See section 3.2.1.4.
Mercury, Total Recoverable	Daily Max	3.8 ng/L	Monthly	Grab	This is an Alternative Mercury Effluent Limit. See sections 3.2.1.5 for mercury monitoring requirements and 3.2.1.6 for mercury variance information.
Pentachloro- phenol		µg/L	Monthly	Grab	
Acute WET		TU_a	See Listed Qtr(s)	24-Hr Flow Prop Comp	See section 3.2.1.7 for Whole Effluent Toxicity (WET) testing dates and WET requirements.
Chronic WET		TUc	See Listed Qtr(s)	24-Hr Flow Prop Comp	See section 3.2.1.7 for Whole Effluent Toxicity (WET) testing dates and WET requirements.

3.2.1.1 Annual Average Design Flow

The annual average design flow of the permittee's wastewater treatment facility is 8.2 MGD.

3.2.1.2 Waste Load Allocation (WLA) Limits for BOD5

WASTELOAD ALLOCATED (WLA) LIMITS IN LBS/DAY FOR BOD5

RIVER MILE 265.0 TO 260.0

MAY-JUNE

River Temperature (previous day average in °F)	Flow at Rothschild Dam (previous day average in cfs)																	
	980 or Less	981 to 1220	1221 to 1470	1471 to 1730	1731 to 1990	1991 to 2260	2261 to 2540	2541 to 2830	2831 to 3130	3131 to 3430	3431 to 3780	3781 to 4230	4231 to 4730	4731 to 5250	5251 to 5780	5781 to 6340	6341 to 6910	6911 or More
	← A →		← B →			← C →												
≥78	1314	1275	1321	1422	1494	1541	1624	1729	1862	2002	2179	2406	2709	3051	3415	3822	4103	4597
74 to 77	1213	1228	1339	1462	1617	1610	1736	1898	2078	2287	2507	2806	3195	3620	4103	4456	5097	5811
70 to 73	1152	1213	1350	1476	1552	1700	1880	2089	2147	2586	2864	3235	3728	4103	4716	5433	6236	6982
66 to 69	1170	1253	1412	1534	1696	1905	2143	2413	2712	3029	3372	3840	4244	4961	5757	6640	7616	7706
62 to 65	1195	1394	1534	1721	1959	2240	2557	2907	3278	3685	4103	4525	5353	6279	7317	7706	7706	7706
58 to 61	1350	1538	1761	2046	2384	2773	3195	3656	4103	4492	5105	5944	7065	7706	7706	7706	7706	7706
54 to 57	1541	1804	2165	2590	3069	3599	4103	4622	5339	6131	7000	7706	7706	7706	7706	7706	7706	7706
50 to 53	1844	2291	2838	3454	4103	4708	5577	6546	7605	7706	7706	7706	7706	7706	7706	7706	7706	7706
46 to 49	2413	3123	3959	4658	5721	6928	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706
42 to 45	3404	4298	5598	7112	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706
≤41	4921	6787	7707	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706

JULY-AUGUST

River Temperature (previous day average in °F)	Flow at Rothschild Dam (previous day average in cfs)																	
	980 or Less	981 to 1220	1221 to 1470	1471 to 1730	1731 to 1990	1991 to 2260	2261 to 2540	2541 to 2830	2831 to 3130	3131 to 3430	3431 to 3780	3781 to 4230	4231 to 4730	4731 to 5250	5251 to 5780	5781 to 6340	6341 to 6910	6911 or More
	A	← B →			← C →													
≥78	1426	1415	1498	1617	1696	1732	1822	1930	2067	2215	2381	2611	2910	3242	3606	4017	4254	4784
74 to 77	1332	1383	1509	1617	1685	1790	1927	2089	2269	2474	2698	2986	3375	3808	4103	4643	5274	5977
70 to 73	1278	1365	1516	1617	1721	1876	2060	2273	2503	2763	3040	3408	3908	4244	4885	5595	6387	7259
66 to 69	1289	1397	1566	1689	1858	2064	2309	2579	2871	3191	3530	4009	4406	5115	5908	6776	7706	7706
62 to 65	1314	1534	1675	1869	2111	2392	2712	3058	3429	3847	4103	4679	5508	6423	7447	7706	7706	7706
58 to 61	1476	1671	1898	2193	2536	2921	3346	3815	4103	4651	5260	6092	7209	7706	7706	7706	7706	7706
54 to 57	1664	1941	2305	2737	3220	3757	4128	4784	5497	6290	7155	7706	7706	7706	7706	7706	7706	7706
50 to 53	1974	2435	2986	3606	4103	4874	5750	6719	7707	7706	7706	7706	7706	7706	7706	7706	7706	7706
46 to 49	2557	3278	4103	4834	5905	7115	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706
42 to 45	3573	4103	5804	7328	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706
≤41	5133	7025	7707	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706

SEPTEMBER

River Temperature (previous day average in °F)	Flow at Rothschild Dam (previous day average in cfs)																	
	980 or Less	981 to 1220	1221 to 1470	1471 to 1730	1731 to 1990	1991 to 2260	2261 to 2540	2541 to 2830	2831 to 3130	3131 to 3430	3431 to 3780	3781 to 4230	4231 to 4730	4731 to 5250	5251 to 5780	5781 to 6340	6341 to 6910	6911 or More
	← A →		← B →			← C →												
≥78	1062	1062	1062	1062	1062	1062	1174	1293	1448	1610	1786	2038	2370	2723	3109	3516	3977	4294
74 to 77	1062	1062	1062	1062	1062	1195	1350	1523	1725	1938	2183	2503	2896	3336	3829	4168	4827	5555
70 to 73	1062	1062	1062	1062	1167	1343	1545	1768	2017	2287	2575	2964	3465	4031	4452	5195	6016	6921
66 to 69	1062	1062	1076	1185	1376	1595	1851	2132	2446	2777	3127	3588	4103	4737	5551	6452	7447	7706
62 to 65	1062	1062	1203	1419	1675	1966	2298	2662	3044	3454	3912	4305	5151	6092	7144	7706	7706	7706
58 to 61	1062	1210	1466	1772	2132	2528	2964	3429	3948	4276	4896	5746	6888	7706	7706	7706	7706	7706
54 to 57	1195	1505	1891	2334	2831	3368	3977	4402	5123	5926	6802	7706	7706	7706	7706	7706	7706	7706
50 to 53	1520	2002	2572	3206	3912	4467	5346	6322	7393	7706	7706	7706	7706	7706	7706	7706	7706	7706
46 to 49	2093	2831	3663	4388	5458	6672	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706
42 to 45	3073	4103	5292	6812	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706
≤41	4535	6413	7707	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706

OCTOBER

River Temperature (previous day average in °F)	Flow at Rothschild Dam (previous day average in cfs)																	
	980 or Less	981 to 1220	1221 to 1470	1471 to 1730	1731 to 1990	1991 to 2260	2261 to 2540	2541 to 2830	2831 to 3130	3131 to 3430	3431 to 3780	3781 to 4230	4231 to 4730	4731 to 5250	5251 to 5780	5781 to 6340	6341 to 6910	6911 or More
	← A →		← B →			← C →												
≥78	1062	1062	1062	1062	1062	1062	1062	1138	1275	1448	1621	1866	2190	2550	2925	3332	3775	4103
74 to 77	1062	1062	1062	1062	1062	1062	1206	1379	1566	1779	2028	2334	2737	3177	3653	4103	4618	5342
70 to 73	1062	1062	1062	1062	1062	1203	1408	1631	1880	2143	2428	2820	3318	3865	4283	5011	5825	6722
66 to 69	1062	1062	1062	1062	1249	1473	1721	2006	2312	2644	2997	3454	4092	4579	5386	6279	7270	7706
62 to 65	1062	1062	1087	1303	1559	1855	2186	2543	2925	3332	3775	4168	5004	5937	6985	7706	7706	7706
58 to 61	1062	1102	1358	1667	2020	2420	2853	3314	3818	4146	4759	5602	6737	7706	7706	7706	7706	7706
54 to 57	1091	1401	1783	2226	2719	3256	3750	4276	4993	5789	6658	7706	7706	7706	7706	7706	7706	7706
50 to 53	1419	1898	2464	3098	3790	4341	5213	6186	7245	7706	7706	7706	7706	7706	7706	7706	7706	7706
46 to 49	1984	2723	3545	4258	5324	6528	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706
42 to 45	2950	4089	5148	6658	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706
≤41	6388	6250	7707	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706

Definitions

Point source allocation values (pounds per day BOD) in the above tables represent water quality related effluent limitations. The flow and temperature conditions (reported at Sample Point 601) used to determine a point source allocation value for a given day shall be the representative measurements of the flow and temperature. River flows used should be those collected and reported by Wisconsin Valley Improvement Company (WVIC) for the period beginning at 7 a.m. of the previous day and ending at 7 a.m. of the current day. Temperature values used should be those collected and reported by Wisconsin Public Service Corporation for the period beginning at 12 midnight of the previous day and ending 12 midnight of the current day. Wasteload Allocation (WLA) limits shall be calculated with BOD_5 values of samples collected for the current day, which are collected by Wausau for the period from 7 a.m. of the current day to 7 a.m. of the following day.

Monitoring Requirements: The same 24-hour period shall be utilized for the collection of composite and continuous samples for river flow and temperature and all effluent characteristics including effluent flow and BOD_5. Presently, the WVIC utilizes the 24-hour monitoring period ending at 7 a.m. for river flow.

Reporting Requirements: During the months of May through October inclusive the permittee shall report the following information:

The daily river flow (cfs);

The daily river temperature (oF);

The daily point source allocation value (lbs BOD_5 per day);

The actual daily discharge value of BOD_5 (lbs BOD_5 per day);

WLA Water Quality Related Effluent Limitations Restriction: In no case shall the WLA water quality related effluent limitations be less stringent than the applicable categorical effluent limitations contained in the effluent limits and monitoring table.

3.2.1.3 Total Maximum Daily Load (TMDL) Limitations for Total Phosphorus

Approved TMDL: The Wisconsin River Basin TMDL for total phosphorus was approved by the U.S. Environmental Protection Agency on April 26, 2019. Additional Site-Specific Criteria (SSC) for Lakes Petenwell, Castle Rock, and Wisconsin and the related Waste Load Allocation (WLA) included in Appendix K of the TMDL report were adopted by rule in s. NR 102.06 (7), Wis. Adm. Code, on June 1, 2020, and approved by the U.S. Environmental Protection Agency on July 9, 2020. The permittee's approved SSC-based WLA is 9,145 lbs/yr and results in a calculated phosphorus mass limit of 34 lbs/day as a monthly average that goes into effect pursuant to the Compliance Schedule at section 5.1. The 12-month rolling sum of total monthly phosphorus (lbs/yr) shall be reported each month for direct comparison to the facility's WLA.

The technology based effluent limit for phosphorus of 1.0 mg/L set in accordance with s. NR 217.04(1)(a)1, Wis. Adm. Code, will remain in effect unless a more stringent limit is required at a future permit issuance by ss. NR 217.13 or NR 217.16(2), Wis. Adm. Code, or the limit is relaxed following procedures outlined in ch. NR 207, Wis. Adm. Code. Sampling and reporting of phosphorus concentrations and masses discharged shall begin upon the permit effective date.

Effluent results shall be calculated as follows:

Total Monthly Discharge (lbs/month): = monthly average concentration (mg/L) x total flow for the month (MG/month) x 8.34.

12-Month Rolling Sum of Total Monthly Discharge (lbs/yr): =the sum of the most recent 12 consecutive months of Total Monthly Discharges.

3.2.1.4 Sample Analysis for Pretreatment Parameters

These are pretreatment parameters that shall be done during a day in each month when industrial discharges are occurring at normal to maximum levels. This monthly sampling shall be coordinated with the sampling of the influent.

Samples shall be analyzed using a method which provides adequate sensitivity so that results can be quantified at a level of quantitation below the calculated/potential effluent limit, unless not possible using the most sensitive approved method.

3.2.1.5 Mercury Monitoring

The permittee shall collect and analyze all mercury samples according to the data quality requirements of ss. NR 106.145(9) and (10), Wisconsin Administrative Code. The limit of quantitation (LOQ) used for the effluent and field blank shall be less than 1.3 ng/L, unless the samples are quantified at levels above 1.3 ng/L. The permittee shall collect at least one mercury field blank for each set of mercury samples (a set of samples may include combinations of intake, influent, effluent or other samples all collected on the same day). The permittee shall report results of samples and field blanks to the Department on Discharge Monitoring Reports.

3.2.1.6 Mercury Variance – Implement Pollutant Minimization Plan

This permit contains a variance to the water quality-based effluent limit (WQBEL) for mercury granted in accordance with s. 283.15, Stats. As conditions of this variance the permittee shall (a) maintain effluent quality at or below the interim effluent limitation specified in the table above, (b) implement the mercury pollutant minimization measures specified in the "Mercury Pollutant Minimization Program, Wausau Water Works, June 2018 Revision", (c) follow the Pollutant Minimization Plan and (d) perform the actions listed in the compliance schedule. (See the Schedules section herein.):

3.2.1.7 Whole Effluent Toxicity (WET) Testing

Primary Control Water: Wisconsin River

Instream Waste Concentration (IWC): 6%

Acute Mixing Zone Concentration: N/A

Dilution series: At least five effluent concentrations and dual controls must be included in each test.

- **Acute:** 100, 50, 25, 12.5, 6.25% and any additional selected by the permittee.
- **Chronic:** 100, 30, 10, 3, 1% and any additional selected by the permittee.

WET Testing Frequency:

Acute tests shall be conducted once each year in rotating quarters in order to collect seasonal information about the discharge. Tests are required during the following quarters.

- **Acute:** 3rd quarter (July-Sep) 2022
  1st quarter (Jan-March) 2023

  Acute WET testing shall continue after the permit expiration date (until the permit is reissued) in accordance with the WET requirements specified for the last full calendar year of this permit. For example, the next test would be required in the 1st quarter (Jan-March) 2024.

Chronic tests shall be conducted once each year in rotating quarters in order to collect seasonal information about the discharge. Tests are required during the following quarters.

- **Chronic:** 3rd quarter (July-Sep) 2022
  1st quarter (Jan-March) 2023

  Chronic WET testing shall continue after the permit expiration date (until the permit is reissued) in accordance with the WET requirements specified for the last full calendar year of this permit. For example, the next test would be required in the 1st quarter (Jan-March) 2024.

Testing: WET testing shall be performed during normal operating conditions. Permittees are not allowed to turn off or otherwise modify treatment systems, production processes, or change other operating or treatment conditions during WET tests.

Reporting: The permittee shall report test results on the Discharge Monitoring Report form, and also complete the "Whole Effluent Toxicity Test Report Form" (Section 6, "*State of Wisconsin Aquatic Life Toxicity Testing Methods Manual, 2nd Edition*"), for each test. The original, complete, signed version of the Whole Effluent Toxicity Test Report Form shall be sent to the Biomonitoring Coordinator, Bureau of Water Quality, 101 S. Webster St., P.O. Box 7921, Madison, WI 53707-7921, within 45 days of test completion. The Discharge Monitoring Report (DMR) form shall be submitted electronically by the required deadline.

Determination of Positive Results: An acute toxicity test shall be considered positive if the Toxic Unit - Acute (TU_a) is greater than 1.0 for either species. The TU_a shall be calculated as follows: $TU_a = 100 \div LC_{50}$. A chronic toxicity test shall be considered positive if the Toxic Unit - Chronic (TU_c) is greater than 17 for either species. The TU_c shall be calculated as follows: $TU_c = 100 \div IC_{25}$.

Additional Testing Requirements: Within 90 days of a test which showed positive results, the permittee shall submit the results of at least 2 retests to the Biomonitoring Coordinator on "Whole Effluent Toxicity Test Report Forms". The 90 day reporting period shall begin the day after the test which showed a positive result. The retests shall be completed using the same species and test methods specified for the original test (see the Standard Requirements section herein).

3.2.2 Sampling Point 601 - WISCONSIN RIVER

Monitoring Requirements and Effluent Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
WLA Previous Day River Flow		cfs	5/Week	Measure	Monitoring required May through October when Waste Load Allocated BOD_5 limits apply. See subsection 3.2.2.1.
WLA Previous Day River Temp		deg F	5/Week	Measure	Monitoring required May through October when Waste Load Allocated BOD_5 limits apply. See subsection 3.2.2.1.

3.2.2.1 Definitions

River flow shall be defined as the daily average flow value derived from continuous river flow monitoring data for the Wisconsin River collected at the Rothschild Dam. If such flow data is unavailable for any day, flow shall be calculated by multiplying by 1.3 the daily average flow value derived from continuous stream flow monitoring data for the Wisconsin River collected at the Merrill Dam to correspond to the flow at Rothschild Dam. Daily average flow values reported by the Wisconsin Valley Improvement Co. for the Rothschild Dam and Merrill Dam locations are acceptable.

Temperature shall be defined as the daily average temperature value derived from continuous river temperature monitoring data for the Wisconsin River collected at the Wisconsin Public Service Corporation, Weston Generating Station. If such temperature data is unavailable for any day, a single grab sample for river temperature collected at the Domtar raw river water intake may be substituted for continuous river temperature monitoring. Daily average temperature values, or alternately, daily temperatures, reported by the Wisconsin Valley Improvement Company for the Weston Generating Station and Domtar locations are acceptable.

4 Land Application Requirements

4.1 Sampling Point(s)

The discharge(s) shall be limited to land application of the waste type(s) designated for the listed sampling point(s) on Department approved land spreading sites or by hauling to another facility.

Sampling Point Designation	
Sampling Point Number	**Sampling Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)**
010	Class B, Liquid, Anaerobically digested thickened biosolids. Representative composite samples shall be collected from the dewatering feed pumps prior to the dewatering belt filter presses. Sludge must be mixed prior to sampling and monitored quarterly for metals (List 1) and vector attraction reduction (List 4) if using volatile solids reduction to show compliance with vector attraction reduction requirements at outfalls 002 and 003. With department approval this sample point may be used to satisfy monitoring requirements for metals (List 1) for outfalls 002, 003, 004, 005 and 006. The permittee shall demonstrate to the satisfaction of the department that the results for this outfall can be correlated with monitoring results for these other sample points and/or outfalls. This is a common sample point for metals (List 1), PPS and PCBs and is not an outfall for distribution.
003	Class B, Liquid, Anaerobically digested thickened biosolids. Representative composite samples shall be collected from the dewatering feed pumps prior to land application. Sludge must be mixed prior to sampling and monitored quarterly for metals (List 1), nutrients (List 2), pathogen control (List 3) and vector attraction reduction (List 4). With department approval metals monitoring performed at outfall 010 may be used to satisfy monitoring requirements for metals (List 1) at this outfall provided the results can be correlated with monitoring results for sample point 010. The permittee may request that vector attraction reduction (List 4) monitoring performed at outfall 010 be used to meet vector attraction reduction requirements at this outfall if the permittee is using volatile solids reduction to meet List 4 requirements. This outfall is inactive for land application. The permittee shall obtain Departmental approval prior to landspreading liquid sludge and therefore commencing use of Outfall 003.
002	Class B, Cake, Anaerobically digested dewatered biosolids. Representative composite samples shall be collected from the wet cake loadout valve prior to land application. Sludge must be mixed prior to sampling and monitored quarterly for metals (List 1), nutrients (List 2), pathogen control (List 3) and vector attraction reduction (List 4). With department approval metals monitoring performed at outfall 010 may be used to satisfy monitoring requirements for metals (List 1) at this outfall provided the results can be correlated with monitoring results for sample point 010. The permittee may request that vector attraction reduction (List 4) monitoring performed at outfall 010 be used to meet vector attraction reduction requirements at this outfall if the permittee is using volatile solids reduction to meet List 4 requirements.
011	Class A, Cake, Heat dried exceptional quality biosolids. Representative composite samples shall be collected immediately after the sludge dryer for pathogen control treatment process monitoring (List 3). This is a sample point and not an outfall for distribution.

Sampling Point Designation	
Sampling Point Number	**Sampling Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)**
004	Class A, Cake Biosolids, Heat dried exceptional quality biosolids for distribution to the public, land application or landfilling. Representative samples shall be collected from the truck load-out area and monitored quarterly for metals (List 1), nutrients (List 2), pathogen control (List 3) and vector attraction reduction (List 4). Pathogen control (List 3) monitoring is not required if the sludge is not stored at this location. All pathogen control samples shall be discrete samples. Each pathogen control sample shall meet the pathogen limit to prove effective pathogen treatment. With department approval metals monitoring performed at outfall 010 may be used to satisfy monitoring requirements for metals (List 1) at this outfall provided the results can be correlated with monitoring results for sample point 010. This outfall is inactive for distribution. See section 4.2.4.5 for requirements for activating this outfall. Notify the Department 30 days prior to distributing Class A Sludge product.
005	Class A, Cake Biosolids, Heat dried exceptional quality biosolids from the biosolids storage building for distribution to the public, land application or landfilling. Representative samples shall be collected from the dried biosolids piles in the storage building and monitored quarterly for metals (List 1), nutrients (List 2) and pathogen control (List 3). Monitoring is not required during quarters when there is no public distribution. Retesting for pathogen control (List 3) is required prior to distribution of Class A sludge product to the public. With Department approval metals monitoring performed at outfall 010 may be used to satisfy monitoring requirements for metals (List 1) at this outfall provided the results can be correlated with monitoring results for sample point 010. This outfall is inactive for distribution. See section 4.2.4.5 for requirements for activating this outfall. Notify the Department 30 days prior to distributing Class A sludge product.
006	Class A, Heat dried cake sludge, collected as dust prior to distribution or disposal. Representative samples shall be collected at the dust collector and monitored quarterly for metals (List 1), nutrients (List 2), pathogen control (List 3) and vector attraction reduction (List 4). With department approval metals monitoring performed at outfall 010 may be used to satisfy monitoring requirements for metals (List 1) at this outfall provided the results can be correlated with monitoring results for sample point 010. Monitoring at outfall 006 is not required during quarters when there is no public distribution. This outfall is inactive for distribution. See section 4.2.4.5 for requirements for activating this outfall. Permittee shall notify the department 30 days prior to distribution.

4.2 Monitoring Requirements and Limitations

The permittee shall comply with the following monitoring requirements and limitations.

4.2.1 Sampling Point (Outfall) 010 - CLASS B LIQUID SLUDGE

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Solids, Total		Percent	Quarterly	Composite	
Arsenic Dry Wt	Ceiling	75 mg/kg	Quarterly	Composite	
Arsenic Dry Wt	High Quality	41 mg/kg	Quarterly	Composite	
Cadmium Dry Wt	Ceiling	85 mg/kg	Quarterly	Composite	
Cadmium Dry Wt	High Quality	39 mg/kg	Quarterly	Composite	
Copper Dry Wt	Ceiling	4,300 mg/kg	Quarterly	Composite	
Copper Dry Wt	High Quality	1,500 mg/kg	Quarterly	Composite	
Lead Dry Wt	Ceiling	840 mg/kg	Quarterly	Composite	

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Lead Dry Wt	High Quality	300 mg/kg	Quarterly	Composite	
Mercury Dry Wt	Ceiling	57 mg/kg	Quarterly	Composite	
Mercury Dry Wt	High Quality	17 mg/kg	Quarterly	Composite	
Molybdenum Dry Wt	Ceiling	75 mg/kg	Quarterly	Composite	
Nickel Dry Wt	Ceiling	420 mg/kg	Quarterly	Composite	
Nickel Dry Wt	High Quality	420 mg/kg	Quarterly	Composite	
Selenium Dry Wt	Ceiling	100 mg/kg	Quarterly	Composite	
Selenium Dry Wt	High Quality	100 mg/kg	Quarterly	Composite	
Zinc Dry Wt	Ceiling	7,500 mg/kg	Quarterly	Composite	
Zinc Dry Wt	High Quality	2,800 mg/kg	Quarterly	Composite	

Other Sludge Requirements	
Sludge Requirements	**Sample Frequency**
List 4 Requirements – Vector Attraction Reduction: The vector attraction reduction shall be satisfied prior to, or at the time of land application as specified in List 4.	**Quarterly**

4.2.1.1 Changes in Feed Sludge Characteristics

If a change in feed sludge characteristics, treatment process, or operational procedures occurs which may result in a significant shift in sludge characteristics, the permittee shall reanalyze the sludge for List 1and 4 parameters each time such change occurs.

4.2.1.2 Lists 1and 4

List 1 **TOTAL SOLIDS AND METALS** See the Monitoring Requirements and Limitations table above for monitoring frequency and limitations for the List 1 parameters
Solids, Total (percent)
Arsenic, mg/kg (dry weight)
Cadmium, mg/kg (dry weight)
Copper, mg/kg (dry weight)
Lead, mg/kg (dry weight)
Mercury, mg/kg (dry weight)
Molybdenum, mg/kg (dry weight)
Nickel, mg/kg (dry weight)
Selenium, mg/kg (dry weight)
Zinc, mg/kg (dry weight)

List 4
VECTOR ATTRACTION REDUCTION

The permittee shall implement any one of the vector attraction reduction options specified in List 4. The Department shall be notified of the option utilized and shall be notified when the permittee decides to utilize an alternative option.

One of the following shall be satisfied prior to, or at the time of land application as specified in List 4.

Option	Limit	Where/When it Shall be Met
Volatile Solids Reduction	≥38%	Across the process
Specific Oxygen Uptake Rate	≤1.5 mg O_2/hr/g TS	On aerobic stabilized sludge
Anaerobic bench-scale test	<17 % VS reduction	On anaerobic digested sludge
Aerobic bench-scale test	<15 % VS reduction	On aerobic digested sludge
Aerobic Process	>14 days, Temp >40°C and Avg. Temp > 45°C	On composted sludge
pH adjustment	>12 S.U. (for 2 hours) and >11.5 (for an additional 22 hours)	During the process
Drying without primary solids	>75 % TS	When applied or bagged
Drying with primary solids	>90 % TS	When applied or bagged
Equivalent Process	Approved by the Department	Varies with process
Injection	-	When applied
Incorporation	-	Within 6 hours of application

4.2.2 Sampling Point (Outfall) 003 - CLASS B LIQUID SLUDGE; 002 - CLASS B CAKE SLUDGE

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Solids, Total		Percent	Quarterly	Composite	
Arsenic Dry Wt	Ceiling	75 mg/kg	Quarterly	Composite	
Arsenic Dry Wt	High Quality	41 mg/kg	Quarterly	Composite	
Cadmium Dry Wt	Ceiling	85 mg/kg	Quarterly	Composite	
Cadmium Dry Wt	High Quality	39 mg/kg	Quarterly	Composite	
Copper Dry Wt	Ceiling	4,300 mg/kg	Quarterly	Composite	
Copper Dry Wt	High Quality	1,500 mg/kg	Quarterly	Composite	
Lead Dry Wt	Ceiling	840 mg/kg	Quarterly	Composite	
Lead Dry Wt	High Quality	300 mg/kg	Quarterly	Composite	
Mercury Dry Wt	Ceiling	57 mg/kg	Quarterly	Composite	
Mercury Dry Wt	High Quality	17 mg/kg	Quarterly	Composite	
Molybdenum Dry Wt	Ceiling	75 mg/kg	Quarterly	Composite	
Nickel Dry Wt	Ceiling	420 mg/kg	Quarterly	Composite	
Nickel Dry Wt	High Quality	420 mg/kg	Quarterly	Composite	
Selenium Dry Wt	Ceiling	100 mg/kg	Quarterly	Composite	
Selenium Dry Wt	High Quality	100 mg/kg	Quarterly	Composite	
Zinc Dry Wt	Ceiling	7,500 mg/kg	Quarterly	Composite	
Zinc Dry Wt	High Quality	2,800 mg/kg	Quarterly	Composite	

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Nitrogen, Total Kjeldahl		Percent	Quarterly	Composite	
Nitrogen, Ammonium (NH_4-N) Total		Percent	Quarterly	Composite	
Phosphorus, Total		Percent	Quarterly	Composite	
Phosphorus, Water Extractable		% of Tot P	Quarterly	Composite	
Potassium, Total Recoverable		Percent	Quarterly	Composite	

Other Sludge Requirements	
Sludge Requirements	**Sample Frequency**
List 3 Requirements – Pathogen Control: The requirements in List 3 shall be met prior to land application of sludge.	**Quarterly**
List 4 Requirements – Vector Attraction Reduction: The vector attraction reduction shall be satisfied prior to, or at the time of land application as specified in List 4.	**Quarterly**

4.2.2.1 List 2 Analysis

If the monitoring frequency for List 2 parameters is more frequent than "Annual" then the sludge may be analyzed for the List 2 parameters just prior to each land application season rather than at the more frequent interval specified.

4.2.2.2 Changes in Feed Sludge Characteristics

If a change in feed sludge characteristics, treatment process, or operational procedures occurs which may result in a significant shift in sludge characteristics, the permittee shall reanalyze the sludge for List 1, 2, 3 and 4 parameters each time such change occurs.

4.2.2.3 Multiple Sludge Sample Points (Outfalls)

If there are multiple sludge sample points (outfalls), but the sludges are not subject to different sludge treatment processes, then a separate List 2 analysis shall be conducted for each sludge type which is land applied, just prior to land application, and the application rate shall be calculated for each sludge type. In this case, List 1, 3, and 4 and PCBs need only be analyzed on a single sludge type, at the specified frequency. If there are multiple sludge sample points (outfalls), due to multiple treatment processes, List 1, 2, 3 and 4 and PCBs shall be analyzed for each sludge type at the specified frequency.

4.2.2.4 Sludge Which Exceeds the High Quality Limit

Cumulative pollutant loading records shall be kept for all bulk land application of sludge which does not meet the high quality limit for any parameter. This requirement applies for the entire calendar year in which any exceedance of Table 3 of s. NR 204.07(5)(c), is experienced. Such loading records shall be kept for all List 1 parameters for each site land applied in that calendar year. The formula to be used for calculating cumulative loading is as follows:

[(Pollutant concentration (mg/kg) x dry tons applied/ac) ÷ 500] + previous loading (lbs/acre) = cumulative lbs pollutant per acre

When a site reaches 90% of the allowable cumulative loading for any metal established in Table 2 of s. NR 204.07(5)(b), the Department shall be so notified through letter or in the comment section of the annual land application report (3400-55).

4.2.2.5 Lists 1, 2, 3, and 4

List 1 **TOTAL SOLIDS AND METALS** See the Monitoring Requirements and Limitations table above for monitoring frequency and limitations for the List 1 parameters
Solids, Total (percent)
Arsenic, mg/kg (dry weight)
Cadmium, mg/kg (dry weight)
Copper, mg/kg (dry weight)
Lead, mg/kg (dry weight)
Mercury, mg/kg (dry weight)
Molybdenum, mg/kg (dry weight)
Nickel, mg/kg (dry weight)
Selenium, mg/kg (dry weight)
Zinc, mg/kg (dry weight)

List 2 **NUTRIENTS** See the Monitoring Requirements and Limitations table above for monitoring frequency for the List 2 parameters
Solids, Total (percent)
Nitrogen Total Kjeldahl (percent)
Nitrogen Ammonium (NH4-N) Total (percent)
Phosphorus Total as P (percent)
Phosphorus, Water Extractable (as percent of Total P)
Potassium Total Recoverable (percent)

List 3
PATHOGEN CONTROL FOR CLASS B SLUDGE

The permittee shall implement pathogen control as listed in List 3. The Department shall be notified of the pathogen control utilized and shall be notified when the permittee decides to utilize alternative pathogen control.

The following requirements shall be met prior to land application of sludge.

Parameter	**Unit**	**Limit**
Fecal Coliform*	MPN/gTS or CFU/gTS	2,000,000
OR, ONE OF THE FOLLOWING PROCESS OPTIONS		
Aerobic Digestion	Air Drying	
Anaerobic Digestion	Composting	
Alkaline Stabilization	PSRP Equivalent Process	
* The Fecal Coliform limit shall be reported as the geometric mean of 7 discrete samples on a dry weight basis.		

List 4
VECTOR ATTRACTION REDUCTION

The permittee shall implement any one of the vector attraction reduction options specified in List 4. The Department shall be notified of the option utilized and shall be notified when the permittee decides to utilize an alternative option.

One of the following shall be satisfied prior to, or at the time of land application as specified in List 4.

Option	Limit	Where/When it Shall be Met
Volatile Solids Reduction	≥38%	Across the process
Specific Oxygen Uptake Rate	≤1.5 mg O_2/hr/g TS	On aerobic stabilized sludge
Anaerobic bench-scale test	<17 % VS reduction	On anaerobic digested sludge
Aerobic bench-scale test	<15 % VS reduction	On aerobic digested sludge
Aerobic Process	>14 days, Temp >40°C and Avg. Temp > 45°C	On composted sludge
pH adjustment	>12 S.U. (for 2 hours) and >11.5 (for an additional 22 hours)	During the process
Drying without primary solids	>75 % TS	When applied or bagged
Drying with primary solids	>90 % TS	When applied or bagged
Equivalent Process	Approved by the Department	Varies with process
Injection	-	When applied
Incorporation	-	Within 6 hours of application

4.2.2.6 Daily Land Application Log

Daily Land Application Log

Discharge Monitoring Requirements and Limitations

The permittee shall maintain a daily land application log for biosolids land applied each day when land application occurs. The following minimum records must be kept, in addition to all analytical results for the biosolids land applied. The log book records shall form the basis for the annual land application report requirements**.**

Parameters	Units	Sample Frequency
DNR Site Number(s)	Number	Daily as used
Outfall number applied	Number	Daily as used
Acres applied	Acres	Daily as used
Amount applied	As appropriate * /day	Daily as used
Application rate per acre	unit */acre	Daily as used
Nitrogen applied per acre	lb/acre	Daily as used
Method of Application	Injection, Incorporation, or surface applied	Daily as used

*gallons, cubic yards, dry US Tons or dry Metric Tons

4.2.3 Sampling Point (Outfall) 011 - CLASS A EQ SLUDGE

This is a sample point to monitor for pathogen control treatment processing immediately after the Class A treatment process. Composite samples shall be collected after the sludge heat dryer. This is not an outfall for distribution.

4.2.3.1 Changes in Feed Sludge Characteristics

If a change in feed sludge characteristics, treatment process, or operational procedures occurs which may result in a significant shift in sludge characteristics, the permittee shall reanalyze the sludge for List, 3 parameters each time such change occurs.

List 3 **PATHOGEN CONTROL FOR CLASS A SLUDGE** The permittee shall implement pathogen control as listed in List 3. The Department shall be notified of the pathogen control utilized and shall be notified when the permittee decides to utilize alternative pathogen control. The following requirements shall be met prior to land application of sludge.		
Parameter	**Unit**	**Limit**
Fecal Coliform*	MPN/gTS	1000
OR		
Salmonella	MPN/4gTS	3
AND, ONE OF THE FOLLOWING PROCESS OPTIONS		
Temp/Time based on % Solids	Alkaline Treatment	
Prior test for Enteric Virus/Viable Helminth Ova	Post test for Enteric Virus/Viable Helminth Ova	
Composting	Heat Drying	
Heat Treatment	Thermophilic Aerobic Digestion	
Beta Ray Irradiation	Gamma Ray Irradiation	
Pasteurization	PFRP Equivalent Process	
* The Fecal Coliform limit shall be reported as the geometric mean of 7 discrete samples on a dry weight basis.		

4.2.4 Sampling Point (Outfall) 004 - CLASS A EQ SLUDGE DISTRIBUTION; 005 - CLASS A EQ SLUDGE STORAGE; 006 - CLASS A EQ DUST

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Solids, Total		Percent	Quarterly	Composite	
Arsenic Dry Wt	Ceiling	75 mg/kg	Quarterly	Composite	
Arsenic Dry Wt	High Quality	41 mg/kg	Quarterly	Composite	
Cadmium Dry Wt	Ceiling	85 mg/kg	Quarterly	Composite	
Cadmium Dry Wt	High Quality	39 mg/kg	Quarterly	Composite	
Copper Dry Wt	Ceiling	4,300 mg/kg	Quarterly	Composite	
Copper Dry Wt	High Quality	1,500 mg/kg	Quarterly	Composite	
Lead Dry Wt	Ceiling	840 mg/kg	Quarterly	Composite	
Lead Dry Wt	High Quality	300 mg/kg	Quarterly	Composite	
Mercury Dry Wt	Ceiling	57 mg/kg	Quarterly	Composite	
Mercury Dry Wt	High Quality	17 mg/kg	Quarterly	Composite	
Molybdenum Dry Wt	Ceiling	75 mg/kg	Quarterly	Composite	

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Nickel Dry Wt	Ceiling	420 mg/kg	Quarterly	Composite	
Nickel Dry Wt	High Quality	420 mg/kg	Quarterly	Composite	
Selenium Dry Wt	Ceiling	100 mg/kg	Quarterly	Composite	
Selenium Dry Wt	High Quality	100 mg/kg	Quarterly	Composite	
Zinc Dry Wt	Ceiling	7,500 mg/kg	Quarterly	Composite	
Zinc Dry Wt	High Quality	2,800 mg/kg	Quarterly	Composite	
Nitrogen, Total Kjeldahl		Percent	Quarterly	Composite	
Nitrogen, Ammonium (NH_4-N) Total		Percent	Quarterly	Composite	
Phosphorus, Total		Percent	Quarterly	Composite	
Phosphorus, Water Extractable		% of Tot P	Quarterly	Composite	
Potassium, Total Recoverable		Percent	Quarterly	Composite	

Other Sludge Requirements	
Sludge Requirements	**Sample Frequency**
List 3 Requirements – Pathogen Control: The requirements in List 3 shall be met prior to land application of sludge.	**Quarterly**
List 4 Requirements – Vector Attraction Reduction: The vector attraction reduction shall be satisfied prior to, or at the time of land application as specified in List 4.	**Quarterly**

4.2.4.1 List 2 Analysis

If the monitoring frequency for List 2 parameters is more frequent than "Annual" then the sludge may be analyzed for the List 2 parameters just prior to each land application season rather than at the more frequent interval specified.

4.2.4.2 Changes in Feed Sludge Characteristics

If a change in feed sludge characteristics, treatment process, or operational procedures occurs which may result in a significant shift in sludge characteristics, the permittee shall reanalyze the sludge for List 1, 2, 3 and 4 parameters each time such change occurs.

4.2.4.3 Multiple Sludge Sample Points (Outfalls)

If there are multiple sludge sample points (outfalls), but the sludges are not subject to different sludge treatment processes, then a separate List 2 analysis shall be conducted for each sludge type which is land applied, just prior to land application, and the application rate shall be calculated for each sludge type. In this case, List 1, 3, and 4 and PCBs need only be analyzed on a single sludge type, at the specified frequency. If there are multiple sludge sample points (outfalls), due to multiple treatment processes, List 1, 2, 3 and 4 and PCBs shall be analyzed for each sludge type at the specified frequency.

4.2.4.4 Sludge Which Exceeds the High Quality Limit

Cumulative pollutant loading records shall be kept for all bulk land application of sludge which does not meet the high quality limit for any parameter. This requirement applies for the entire calendar year in which any exceedance of Table 3 of s. NR 204.07(5)(c), is experienced. Such loading records shall be kept for all List 1 parameters for each site land applied in that calendar year. The formula to be used for calculating cumulative loading is as follows:

[(Pollutant concentration (mg/kg) x dry tons applied/ac) ÷ 500] + previous loading (lbs/acre) = cumulative lbs pollutant per acre

When a site reaches 90% of the allowable cumulative loading for any metal established in Table 2 of s. NR 204.07(5)(b), the Department shall be so notified through letter or in the comment section of the annual land application report (3400-55).

4.2.4.5 Activating Outfalls 004, 005 and 006 – Class A EQ Sludge Product

Prior to distribution of exceptional quality (EQ) sludge from Outfalls 004, 005 and 006 the permittee shall contact the department to arrange for the statewide biosolids coordinator to inspect the treatment equipment and review process related data. Prior to distribution of EQ sludge, the department shall inspect the Class A sludge treatment (belt dryer) process, material handling equipment and storage processes. The department shall also review the associated operational and monitoring data, sample collection and monitoring procedures, and record keeping and reporting procedures. Upon a favorable inspection, the permittee will then be authorized to distribute EQ sludge from the requested outfall.

4.2.4.6 Lists 1, 2, 3, and 4

List 1 **TOTAL SOLIDS AND METALS** See the Monitoring Requirements and Limitations table above for monitoring frequency and limitations for the List 1 parameters
Solids, Total (percent)
Arsenic, mg/kg (dry weight)
Cadmium, mg/kg (dry weight)
Copper, mg/kg (dry weight)
Lead, mg/kg (dry weight)
Mercury, mg/kg (dry weight)
Molybdenum, mg/kg (dry weight)
Nickel, mg/kg (dry weight)
Selenium, mg/kg (dry weight)
Zinc, mg/kg (dry weight)

List 2 **NUTRIENTS** See the Monitoring Requirements and Limitations table above for monitoring frequency for the List 2 parameters
Solids, Total (percent)
Nitrogen Total Kjeldahl (percent)
Nitrogen Ammonium (NH4-N) Total (percent)
Phosphorus Total as P (percent)
Phosphorus, Water Extractable (as percent of Total P)
Potassium Total Recoverable (percent)

List 3
PATHOGEN CONTROL FOR CLASS A SLUDGE

The permittee shall implement pathogen control as listed in List 3. The Department shall be notified of the pathogen control utilized and shall be notified when the permittee decides to utilize alternative pathogen control.

The following requirements shall be met prior to land application of sludge.

Parameter	Unit	Limit
Fecal Coliform*	MPN/gTS	1000
OR		
Salmonella	MPN/4gTS	3
AND, ONE OF THE FOLLOWING PROCESS OPTIONS		
Temp/Time based on % Solids	Alkaline Treatment	
Prior test for Enteric Virus/Viable Helminth Ova	Post test for Enteric Virus/Viable Helminth Ova	
Composting	Heat Drying	
Heat Treatment	Thermophilic Aerobic Digestion	
Beta Ray Irradiation	Gamma Ray Irradiation	
Pasteurization	PFRP Equivalent Process	

* The Fecal Coliform limit shall be reported as the geometric mean of 7 discrete samples on a dry weight basis.

List 4
VECTOR ATTRACTION REDUCTION

The permittee shall implement any one of the vector attraction reduction options specified in List 4. The Department shall be notified of the option utilized and shall be notified when the permittee decides to utilize an alternative option.

One of the following shall be satisfied prior to, or at the time of land application as specified in List 4.

Option	Limit	Where/When it Shall be Met
Volatile Solids Reduction	≥38%	Across the process
Specific Oxygen Uptake Rate	≤1.5 mg O_2/hr/g TS	On aerobic stabilized sludge
Anaerobic bench-scale test	<17 % VS reduction	On anaerobic digested sludge
Aerobic bench-scale test	<15 % VS reduction	On aerobic digested sludge
Aerobic Process	>14 days, Temp >40°C and Avg. Temp > 45°C	On composted sludge
pH adjustment	>12 S.U. (for 2 hours) and >11.5 (for an additional 22 hours)	During the process
Drying without primary solids	>75 % TS	When applied or bagged
Drying with primary solids	>90 % TS	When applied or bagged
Equivalent Process	Approved by the Department	Varies with process
Injection	-	When applied
Incorporation	-	Within 6 hours of application

4.2.4.7 Daily Land Application Log

Daily Land Application Log		
Discharge Monitoring Requirements and Limitations The permittee shall maintain a daily land application log for biosolids land applied each day when land application occurs. The following minimum records must be kept, in addition to all analytical results for the biosolids land applied. The log book records shall form the basis for the annual land application report requirements**.**		
Parameters	**Units**	**Sample Frequency**
DNR Site Number(s)	Number	Daily as used
Outfall number applied	Number	Daily as used
Acres applied	Acres	Daily as used
Amount applied	As appropriate * /day	Daily as used
Application rate per acre	unit */acre	Daily as used
Nitrogen applied per acre	lb/acre	Daily as used
Method of Application	Injection, Incorporation, or surface applied	Daily as used

*gallons, cubic yards, dry US Tons or dry Metric Tons

5 Schedules

5.1 Wisconsin River Basin TMDL SSC-derived Limits for Total Phosphorus

The permittee shall comply with the Wisconsin River Basin Total Maximum Daily Load (TMDL) SSC-derived limits for total phosphorus as specified. No later than 14 days following each compliance date, the permittee shall notify the Department in writing of its compliance or noncompliance. If a submittal is required, a timely submittal fulfills the notification requirement.

Required Action	Due Date
Complete Construction: The permittee shall complete construction of wastewater treatment system upgrades.	06/30/2023
Achieve Compliance: The permittee shall achieve compliance with final TMDL SSC-derived total phosphorus limits as soon as possible but not later than the specified date.	12/31/2023

5.2 Mercury Pollutant Minimization Program

As a condition of the variance to the water quality based effluent limitation(s) for mercury granted in accordance with s. NR 106.145(6), Wis. Adm. Code, the permittee shall perform the following actions.

Required Action	Due Date
Final Mercury Report: Submit a final report documenting the success in reducing mercury concentrations in the effluent, as well as the anticipated future reduction in mercury sources and mercury effluent concentrations. The report shall summarize mercury pollutant minimization activities that have been implemented during the current permit term and state which, if any, pollutant minimization activities from the approved pollutant minimization plan were not pursued and why. The report shall include an analysis of trends in monthly and annual total effluent mercury concentrations based on mercury sampling during the current permit term. The report shall also include an analysis of how influent and effluent mercury varies with time and with significant loading of mercury such as loads from industries into the collection system. If the permittee intends to reapply for a mercury variance per s. NR 106.145, Wis. Adm. Code, for the reissued permit, a detailed pollutant minimization plan outlining the pollutant minimization activities proposed for the upcoming permit term shall be submitted along with the final report.	01/31/2023
Annual Mercury Reports After Permit Expiration: In the event that this permit is not reissued on time, the permittee shall continue to submit annual mercury reports each year covering pollutant minimization activities implemented and mercury concentration trends.	

5.3 Sludge Management Plan

A sludge management plan is required.

Required Action	Due Date
Sludge Management Plan Submittal: Submit a sludge management plan to the department for approval by October 1, 2022. The sludge management plan (SMP) shall optimize the land application system performance and demonstrate compliance with s. NR 204, Wis. Adm. Code. This management plan shall 1) specify information on pretreatment processes (if any); 2) identify land application sites; 3) describe site limitations; 4) address vegetative cover management and removal; 5) specify availability of storage; 6) describe the type of transporting and spreading	10/01/2022

vehicle(s); 7) specify monitoring procedures; 8) track site loading; 9) address contingency plans for adverse weather and odor/nuisance abatement; and 10) include any other pertinent information. Once approved, all landspreading activities shall be conducted in accordance with the plan. Any changes to the plan must be approved by the Department prior to implementing the changes.	

6 Standard Requirements

NR 205, Wisconsin Administrative Code: The conditions in ss. NR 205.07(1) and NR 205.07(2), Wis. Adm. Code, are included by reference in this permit. The permittee shall comply with all of these requirements. Some of these requirements are outlined in the Standard Requirements section of this permit. Requirements not specifically outlined in the Standard Requirement section of this permit can be found in ss. NR 205.07(1) and NR 205.07(2).

6.1 Reporting and Monitoring Requirements

6.1.1 Monitoring Results

Monitoring results obtained during the previous month shall be summarized and reported on a Department Wastewater Discharge Monitoring Report. The report may require reporting of any or all of the information specified below under 'Recording of Results'. This report is to be returned to the Department no later than the date indicated on the form. A copy of the Wastewater Discharge Monitoring Report Form or an electronic file of the report shall be retained by the permittee.

Monitoring results shall be reported on an electronic discharge monitoring report (eDMR). The eDMR shall be certified electronically by a responsible executive or municipal officer, manager, partner or proprietor as specified in s. 283.37(3), Wis. Stats., or a duly authorized representative of the officer, manager, partner or proprietor that has been delegated signature authority pursuant to s. NR 205.07(1)(g)2, Wis. Adm. Code. The 'eReport Certify' page certifies that the electronic report form is true, accurate and complete.

If the permittee monitors any pollutant more frequently than required by this permit, the results of such monitoring shall be included on the Wastewater Discharge Monitoring Report.

The permittee shall comply with all limits for each parameter regardless of monitoring frequency. For example, monthly, weekly, and/or daily limits shall be met even with monthly monitoring. The permittee may monitor more frequently than required for any parameter.

6.1.2 Sampling and Testing Procedures

Sampling and laboratory testing procedures shall be performed in accordance with Chapters NR 218 and NR 219, Wis. Adm. Code and shall be performed by a laboratory certified or registered in accordance with the requirements of ch. NR 149, Wis. Adm. Code. Groundwater sample collection and analysis shall be performed in accordance with ch. NR 140, Wis. Adm. Code. The analytical methodologies used shall enable the laboratory to quantitate all substances for which monitoring is required at levels below the effluent limitation. If the required level cannot be met by any of the methods available in NR 219, Wis. Adm. Code, then the method with the lowest limit of detection shall be selected. Additional test procedures may be specified in this permit.

6.1.3 Pretreatment Sampling Requirements

Sampling for pretreatment parameters (cadmium, chromium, copper, lead, nickel, zinc, and mercury) shall be done during a day each month when industrial discharges are occurring at normal to maximum levels. The sampling of the influent and effluent for these parameters shall be coordinated. All 24 hour composite samples shall be flow proportional.

6.1.4 Recording of Results

The permittee shall maintain records which provide the following information for each effluent measurement or sample taken:

- the date, exact place, method and time of sampling or measurements;
- the individual who performed the sampling or measurements;
- the date the analysis was performed;
- the individual who performed the analysis;
- the analytical techniques or methods used; and
- the results of the analysis.

6.1.5 Reporting of Monitoring Results

The permittee shall use the following conventions when reporting effluent monitoring results:

- Pollutant concentrations less than the limit of detection shall be reported as < (less than) the value of the limit of detection. For example, if a substance is not detected at a detection limit of 0.1 mg/L, report the pollutant concentration as < 0.1 mg/L.

- Pollutant concentrations equal to or greater than the limit of detection, but less than the limit of quantitation, shall be reported and the limit of quantitation shall be specified.

- For purposes of calculating NR 101 fees, the 2 mg/l lower reporting limits for BOD_5 and Total Suspended Solids shall be considered to be limits of quantitation

- For the purposes of reporting a calculated result, average or a mass discharge value, the permittee may substitute a "0" (zero) for any pollutant concentration that is less than the limit of detection. However, if the effluent limitation is less than the limit of detection, the department may substitute a value other than zero for results less than the limit of detection, after considering the number of monitoring results that are greater than the limit of detection and if warranted when applying appropriate statistical techniques.

- If no discharge occurs through an outfall, flow related parameters (e.g. flow rate, hydraulic application rate, volume, etc.) should be reported as "0" (zero) at the required sample frequency specified for the outfall. For example: if the sample frequency is daily, "0" would be reported for any day during the month that no discharge occurred.

6.1.6 Compliance Maintenance Annual Reports

Compliance Maintenance Annual Reports (CMAR) shall be completed using information obtained over each calendar year regarding the wastewater conveyance and treatment system. The CMAR shall be submitted and certified by the permittee in accordance with ch. NR 208, Wis. Adm. Code, by June 30, each year on an electronic report form provided by the Department.

In the case of a publicly owned treatment works, a resolution shall be passed by the governing body and submitted as part of the CMAR, verifying its review of the report and providing responses as required. Private owners of wastewater treatment works are not required to pass a resolution; but they must provide an Owner Statement and responses as required, as part of the CMAR submittal.

The CMAR shall be certified electronically by a responsible executive or municipal officer, manager, partner or proprietor as specified in s. 283.37(3), Wis. Stats., or a duly authorized representative of the officer, manager, partner or proprietor that has been delegated signature authority pursuant to s. NR

205.07(1)(g)2, Wis. Adm. Code. The certification verifies that the electronic report is true, accurate and complete.

6.1.7 Records Retention

The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings or electronic data records for continuous monitoring instrumentation, copies of all reports required by the permit, and records of all data used to complete the application for the permit for a period of at least 3 years from the date of the sample, measurement, report or application. All pertinent sludge information, including permit application information and other documents specified in this permit or s. NR 204.06(9), Wis. Adm. Code shall be retained for a minimum of 5 years.

6.1.8 Other Information

Where the permittee becomes aware that it failed to submit any relevant facts in a permit application or submitted incorrect information in a permit application or in any report to the Department, it shall promptly submit such facts or correct information to the Department.

6.1.9 Reporting Requirements – Alterations or Additions

The permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is only required when:

- The alteration or addition to the permitted facility may meet one of the criteria for determining whether a facility is a new source.
- The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification requirement applies to pollutants which are not subject to effluent limitations in the existing permit.
- The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use of disposal sites not reported during the permit application process nor reported pursuant to an approved land application plan. Additional sites may not be used for the land application of sludge until department approval is received.

6.2 System Operating Requirements

6.2.1 Noncompliance Reporting

Sanitary sewer overflows and sewage treatment facility overflows shall be reported according to the 'Sanitary Sewer Overflows and Sewage Treatment Facility Overflows' section of this permit.

The permittee shall report the following types of noncompliance by a telephone call to the Department's regional office within 24 hours after becoming aware of the noncompliance:

- any noncompliance which may endanger health or the environment;
- any violation of an effluent limitation resulting from a bypass;
- any violation of an effluent limitation resulting from an upset; and
- any violation of a maximum discharge limitation for any of the pollutants listed by the Department in the permit, either for effluent or sludge.

A written report describing the noncompliance shall also be submitted to the Department's regional office within 5 days after the permittee becomes aware of the noncompliance. On a case-by-case basis, the Department may waive the requirement for submittal of a written report within 5 days and instruct the permittee to submit the written report with the next regularly scheduled monitoring report. In either case, the written report shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times; the steps taken or planned to reduce, eliminate and prevent reoccurrence of the noncompliance; and if the noncompliance has not been corrected, the length of time it is expected to continue.

A scheduled bypass approved by the Department under the 'Scheduled Bypass' section of this permit shall not be subject to the reporting required under this section.

NOTE: Section 292.11(2)(a), Wisconsin Statutes, requires any person who possesses or controls a hazardous substance or who causes the discharge of a hazardous substance to notify the Department of Natural Resources **immediately** of any discharge not authorized by the permit. **The discharge of a hazardous substance that is not authorized by this permit or that violates this permit may be a hazardous substance spill**. **To report a hazardous substance spill, call DNR's 24-hour HOTLINE at 1-800-943-0003.**

6.2.2 Flow Meters

Flow meters shall be calibrated annually, as per s. NR 218.06, Wis. Adm. Code.

6.2.3 Raw Grit and Screenings

All raw grit and screenings shall be disposed of at a properly licensed solid waste facility or picked up by a licensed waste hauler. If the facility or hauler are located in Wisconsin, then they shall be licensed under chs. NR 500-555, Wis. Adm. Code.

6.2.4 Sludge Management

All sludge management activities shall be conducted in compliance with ch. NR 204 "Domestic Sewage Sludge Management", Wis. Adm. Code.

6.2.5 Prohibited Wastes

Under no circumstances may the introduction of wastes prohibited by s. NR 211.10, Wis. Adm. Code, be allowed into the waste treatment system. Prohibited wastes include those:

- which create a fire or explosion hazard in the treatment work;
- which will cause corrosive structural damage to the treatment work;
- solid or viscous substances in amounts which cause obstructions to the flow in sewers or interference with the proper operation of the treatment work;
- wastewaters at a flow rate or pollutant loading which are excessive over relatively short time periods so as to cause a loss of treatment efficiency; and
- changes in discharge volume or composition from contributing industries which overload the treatment works or cause a loss of treatment efficiency.

6.2.6 Bypass

This condition applies only to bypassing at a sewage treatment facility that is not a scheduled bypass, approved blending as a specific condition of this permit, a sewage treatment facility overflow or a controlled diversion as provided in the sections titled 'Scheduled Bypass', 'Blending' (if approved), 'SSO's and Sewage Treatment Facility Overflows' and 'Controlled Diversions' of this permit. Any other

bypass at the sewage treatment facility is prohibited and the Department may take enforcement action against a permittee for such occurrences under s. 283.89, Wis. Stats. The Department may approve a bypass if the permittee demonstrates all the following conditions apply:

- The bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
- There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities or adequate back-up equipment, retention of untreated wastes, reduction of inflow and infiltration, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance. When evaluating feasibility of alternatives, the department may consider factors such as technical achievability, costs and affordability of implementation and risks to public health, the environment and, where the permittee is a municipality, the welfare of the community served; and
- The bypass was reported in accordance with the Noncompliance Reporting section of this permit.

6.2.7 Scheduled Bypass

Whenever the permittee anticipates the need to bypass for purposes of efficient operations and maintenance and the permittee may not meet the conditions for controlled diversions in the 'Controlled Diversions' section of this permit, the permittee shall obtain prior written approval from the Department for the scheduled bypass. A permittee's written request for Department approval of a scheduled bypass shall demonstrate that the conditions for bypassing specified in the above section titled 'Bypass' are met and include the proposed date and reason for the bypass, estimated volume and duration of the bypass, alternatives to bypassing and measures to mitigate environmental harm caused by the bypass. The department may require the permittee to provide public notification for a scheduled bypass if it is determined there is significant public interest in the proposed action and may recommend mitigation measures to minimize the impact of such bypass.

6.2.8 Controlled Diversions

Controlled diversions are allowed only when necessary for essential maintenance to assure efficient operation. Sewage treatment facilities that have multiple treatment units to treat variable or seasonal loading conditions may shut down redundant treatment units when necessary for efficient operation. The following requirements shall be met during controlled diversions:

- Effluent from the sewage treatment facility shall meet the effluent limitations established in the permit. Wastewater that is diverted around a treatment unit or treatment process during a controlled diversion shall be recombined with wastewater that is not diverted prior to the effluent sampling location and prior to effluent discharge;
- A controlled diversion does not include blending as defined in s. NR 210.03(2e), Wis. Adm. Code, and as may only be approved under s. NR 210.12. A controlled diversion may not occur during periods of excessive flow or other abnormal wastewater characteristics;
- A controlled diversion may not result in a wastewater treatment facility overflow; and
- All instances of controlled diversions shall be documented in sewage treatment facility records and such records shall be available to the department on request.

6.2.9 Ammonia Limit Not Needed - Continue to Optimize Removal of Ammonia

Applying the procedures in s. NR 106.05, Wis. Adm. Code, to ammonia data that is representative of the current operations of the wastewater treatment plant resulted in a determination that ammonia effluent limits are not necessary in this permit. Pursuant to NR 106.33, throughout the term of this permit, the wastewater treatment plant shall continue to be operated in a manner that optimizes the removal of ammonia within the design capabilities of the wastewater treatment plant.

6.2.10 Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training as required in ch. NR 114, Wis. Adm. Code, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit.

6.2.11 Operator Certification

The wastewater treatment facility shall be under the direct supervision of a state certified operator. In accordance with s. NR 114.53, Wis. Adm. Code, every WPDES permitted treatment plant shall have a designated operator-in-charge holding a current and valid certificate. The designated operator-in-charge shall be certified at the level and in all subclasses of the treatment plant, except laboratory. Treatment plant owners shall notify the department of any changes in the operator-in-charge within 30 days. Note that s. NR 114.52(22), Wis. Adm. Code, lists types of facilities that are excluded from operator certification requirements (i.e. private sewage systems, pretreatment facilities discharging to public sewers, industrial wastewater treatment that consists solely of land disposal, agricultural digesters and concentrated aquatic production facilities with no biological treatment).

6.3 Sewage Collection Systems

6.3.1 Sanitary Sewage Overflows and Sewage Treatment Facility Overflows

6.3.1.1 Overflows Prohibited

Any overflow or discharge of wastewater from the sewage collection system or at the sewage treatment facility, other than from permitted outfalls, is prohibited. The permittee shall provide information on whether any of the following conditions existed when an overflow occurred:

- The sanitary sewer overflow or sewage treatment facility overflow was unavoidable to prevent loss of life, personal injury or severe property damage;
- There were no feasible alternatives to the sanitary sewer overflow or sewage treatment facility overflow such as the use of auxiliary treatment facilities or adequate back-up equipment, retention of untreated wastes, reduction of inflow and infiltration, or preventative maintenance activities;
- The sanitary sewer overflow or the sewage treatment facility overflow was caused by unusual or severe weather related conditions such as large or successive precipitation events, snowmelt, saturated soil conditions, or severe weather occurring in the area served by the sewage collection system or sewage treatment facility; and

- The sanitary sewer overflow or the sewage treatment facility overflow was unintentional, temporary, and caused by an accident or other factors beyond the reasonable control of the permittee.

6.3.1.2 Permittee Response to Overflows

Whenever a sanitary sewer overflow or sewage treatment facility overflow occurs, the permittee shall take all feasible steps to control or limit the volume of untreated or partially treated wastewater discharged, and terminate the discharge as soon as practicable. Remedial actions, including those in NR 210.21 (3), Wis. Adm. Code, shall be implemented consistent with an emergency response plan developed under the CMOM program.

6.3.1.3 Permittee Reporting

Permittees shall report all sanitary sewer overflows and sewage treatment overflows as follows:

- The permittee shall notify the department by telephone, fax or email as soon as practicable, but no later than 24 hours from the time the permittee becomes aware of the overflow;
- The permittee shall, no later than five days from the time the permittee becomes aware of the overflow, provide to the department the information identified in this paragraph using department form number 3400-184. If an overflow lasts for more than five days, an initial report shall be submitted within 5 days as required in this paragraph and an updated report submitted following cessation of the overflow. At a minimum, the following information shall be included in the report:

  ◦The date and location of the overflow;
  ◦The surface water to which the discharge occurred, if any;
  ◦The duration of the overflow and an estimate of the volume of the overflow;
  ◦A description of the sewer system or treatment facility component from which the discharge occurred such as manhole, lift station, constructed overflow pipe, or crack or other opening in a pipe;
  ◦The estimated date and time when the overflow began and stopped or will be stopped;
  ◦The cause or suspected cause of the overflow including, if appropriate, precipitation, runoff conditions, areas of flooding, soil moisture and other relevant information;
  ◦Steps taken or planned to reduce, eliminate and prevent reoccurrence of the overflow and a schedule of major milestones for those steps;
  ◦A description of the actual or potential for human exposure and contact with the wastewater from the overflow;
  ◦Steps taken or planned to mitigate the impacts of the overflow and a schedule of major milestones for those steps;
  ◦To the extent known at the time of reporting, the number and location of building backups caused by excessive flow or other hydraulic constraints in the sewage collection system that occurred concurrently with the sanitary sewer overflow and that were within the same area of the sewage collection system as the sanitary sewer overflow; and
  ◦The reason the overflow occurred or explanation of other contributing circumstances that resulted in the overflow event. This includes any information available including whether the overflow was unavoidable to prevent loss of life, personal injury, or severe property damage and whether there were feasible alternatives to the overflow.

  NOTE: A copy of form 3400-184 for reporting sanitary sewer overflows and sewage treatment facility overflows may be obtained from the department or accessed on the department's web site at http://dnr.wi.gov/topic/wastewater/SSOreport.html. As

indicated on the form, additional information may be submitted to supplement the information required by the form.

- The permittee shall identify each specific location and each day on which a sanitary sewer overflow or sewage treatment facility overflow occurs as a discrete sanitary sewer overflow or sewage treatment facility overflow occurrence. An occurrence may be more than one day if the circumstances causing the sanitary sewer overflow or sewage treatment facility overflow results in a discharge duration of greater than 24 hours. If there is a stop and restart of the overflow at the same location within 24 hours and the overflow is caused by the same circumstance, it may be reported as one occurrence. Sanitary sewer overflow occurrences at a specific location that are separated by more than 24 hours shall be reported as separate occurrences; and
- A permittee that is required to submit wastewater discharge monitoring reports under NR 205.07 (1) (r) shall also report all sanitary sewer overflows and sewage treatment facility overflows on that report.

6.3.1.4 Public Notification

The permittee shall notify the public of any sanitary sewer and sewage treatment facility overflows consistent with its emergency response plan required under the CMOM (Capacity, Management, Operation and Maintenance) section of this permit and s. NR 210.23 (4) (f), Wis. Adm. Code. Such public notification shall occur promptly following any overflow event using the most effective and efficient communications available in the community. At minimum, a daily newspaper of general circulation in the county(s) and municipality whose waters may be affected by the overflow shall be notified by written or electronic communication.

6.3.2 Capacity, Management, Operation and Maintenance (CMOM) Program

- The permittee shall have written documentation of the Capacity, Management, Operation and Maintenance (CMOM) program components in accordance with s. NR 210.23(4), Wis. Adm. Code. Such documentation shall be available for Department review upon request. The Department may request that the permittee provide this documentation or prepare a summary of the permittee's CMOM program at the time of application for reissuance of the WPDES permit.
- The permittee shall implement a CMOM program in accordance with s. NR 210.23, Wis. Adm. Code.
- The permittee shall at least annually conduct a self-audit of activities conducted under the permittee's CMOM program to ensure CMOM components are being implemented as necessary to meet the general standards of s. NR 210.23(3), Wis. Adm. Code.

6.3.3 Sewer Cleaning Debris and Materials

All debris and material removed from cleaning sanitary sewers shall be managed to prevent nuisances, run-off, ground infiltration or prohibited discharges.

- Debris and solid waste shall be dewatered, dried and then disposed of at a licensed solid waste facility.
- Liquid waste from the cleaning and dewatering operations shall be collected and disposed of at a permitted wastewater treatment facility.
- Combination waste including liquid waste along with debris and solid waste may be disposed of at a licensed solid waste facility or wastewater treatment facility willing to accept the waste.

6.4 Surface Water Requirements

6.4.1 Permittee-Determined Limit of Quantitation Incorporated into this Permit

For pollutants with water quality-based effluent limits below the Limit of Quantitation (LOQ) in this permit, the LOQ calculated by the permittee and reported on the Discharge Monitoring Reports (DMRs) is incorporated by reference into this permit. The LOQ shall be reported on the DMRs, shall be the lowest quantifiable level practicable, and shall be no greater than the minimum level (ML) specified in or approved under 40 CFR Part 136 for the pollutant at the time this permit was issued, unless this permit specifies a higher LOQ.

6.4.2 Appropriate Formulas for Effluent Calculations

The permittee shall use the following formulas for calculating effluent results to determine compliance with average concentration limits and mass limits and total load limits:

Weekly/Monthly/Six-Month/Annual Average Concentration = the sum of all daily results for that week/month/six-month/year, divided by the number of results during that time period. [Note: When a six-month average effluent limit is specified for Total Phosphorus the applicable periods are May through October and November through April.]

Weekly Average Mass Discharge (lbs/day): Daily mass = daily concentration (mg/L) x daily flow (MGD) x 8.34, then average the daily mass values for the week.

Monthly Average Mass Discharge (lbs/day): Daily mass = daily concentration (mg/L) x daily flow (MGD) x 8.34, then average the daily mass values for the month.

Six-Month Average Mass Discharge (lbs/day): Daily mass = daily concentration (mg/L) x daily flow (MGD) x 8.34, then average the daily mass values for the six-month period. [Note: When a six-month average effluent limit is specified for Total Phosphorus the applicable periods are May through October and November through April.]

Annual Average Mass Discharge (lbs/day): Daily mass = daily concentration (mg/L) x daily flow (MGD) x 8.34, then average the daily mass values for the entire year.

Total Monthly Discharge: = monthly average concentration (mg/L) x total flow for the month (MG/month) x 8.34.

Total Annual Discharge: = sum of total monthly discharges for the calendar year.

12-Month Rolling Sum of Total Monthly Discharge: = the sum of the most recent 12 consecutive months of Total Monthly Discharges.

6.4.3 Effluent Temperature Requirements

Weekly Average Temperature – If temperature limits are included in this permit, Weekly Average Temperature shall be calculated as the sum of all daily maximum results for that week divided by the number of daily maximum results during that time period.

Cold Shock Standard – Water temperatures of the discharge shall be controlled in a manner as to protect fish and aquatic life uses from the deleterious effects of cold shock pursuant to Wis. Adm. Code, s. NR 102.28. 'Cold Shock' means exposure of aquatic organisms to a rapid decrease in temperature and a sustained exposure to low temperature that induces abnormal behavior or physiological performance and may lead to death.

Rate of Temperature Change Standard – Temperature of a water of the state or discharge to a water of the state may not be artificially raised or lowered at such a rate that it causes detrimental health or reproductive effects to fish or aquatic life of the water of the state pursuant to Wis. Adm. Code, s. NR 102.29.

6.4.4 Visible Foam or Floating Solids

There shall be no discharge of floating solids or visible foam in other than trace amounts.

6.4.5 Surface Water Uses and Criteria

In accordance with NR 102.04, Wis. Adm. Code, surface water uses and criteria are established to govern water management decisions. Practices attributable to municipal, industrial, commercial, domestic, agricultural, land development or other activities shall be controlled so that all surface waters including the mixing zone meet the following conditions at all times and under all flow and water level conditions:

a) Substances that will cause objectionable deposits on the shore or in the bed of a body of water, shall not be present in such amounts as to interfere with public rights in waters of the state.

b) Floating or submerged debris, oil, scum or other material shall not be present in such amounts as to interfere with public rights in waters of the state.

c) Materials producing color, odor, taste or unsightliness shall not be present in such amounts as to interfere with public rights in waters of the state.

d) Substances in concentrations or in combinations which are toxic or harmful to humans shall not be present in amounts found to be of public health significance, nor shall substances be present in amounts which are acutely harmful to animal, plant or aquatic life.

6.4.6 Percent Removal

During any 30 consecutive days, the average effluent concentrations of BOD_5 and of total suspended solids shall not exceed 15% of the average influent concentrations, respectively. This requirement does not apply to removal of total suspended solids if the permittee operates a lagoon system and has received a variance for suspended solids granted under NR 210.07(2), Wis. Adm. Code.

6.4.7 Fecal Coliform

The monthly limit for fecal coliform shall be expressed as a geometric mean. In calculating the geometric mean, a value of 1 is used for any result of 0.

6.4.8 Seasonal Disinfection

Disinfection shall be provided from May 1 through September 30 of each year. Monitoring requirements and the limitations for Fecal Coliform apply only during the period in which disinfection is required. Whenever chlorine is used for disinfection or other uses, the limitations and monitoring requirements for residual chlorine shall apply. A dechlorination process shall be in operation whenever chlorine is used.

6.4.9 Whole Effluent Toxicity (WET) Monitoring Requirements

In order to determine the potential impact of the discharge on aquatic organisms, static-renewal toxicity tests shall be performed on the effluent in accordance with the procedures specified in the *"State of Wisconsin Aquatic Life Toxicity Testing Methods Manual, 2nd Edition" (PUB-WT-797*, November 2004) as required by NR 219.04, Table A, Wis. Adm. Code). All of the WET tests required in this permit, including any required retests, shall be conducted on the *Ceriodaphnia dubia* and fathead minnow

species. Receiving water samples shall not be collected from any point in contact with the permittee's mixing zone and every attempt shall be made to avoid contact with any other discharge's mixing zone.

6.4.10 Whole Effluent Toxicity (WET) Identification and Reduction

Within 60 days of a retest which showed positive results, the permittee shall submit a written report to the Biomonitoring Coordinator, Bureau of Water Quality, 101 S. Webster St., PO Box 7921, Madison, WI 53707-7921, which details the following:

- A description of actions the permittee has taken or will take to remove toxicity and to prevent the recurrence of toxicity;

- A description of toxicity reduction evaluation (TRE) investigations that have been or will be done to identify potential sources of toxicity, including some or all of the following actions:

  (a) Evaluate the performance of the treatment system to identify deficiencies contributing to effluent toxicity (e.g., operational problems, chemical additives, incomplete treatment)
  (b) Identify the compound(s) causing toxicity
  (c) Trace the compound(s) causing toxicity to their sources (e.g., industrial, commercial, domestic)
  (d) Evaluate, select, and implement methods or technologies to control effluent toxicity (e.g., in-plant or pretreatment controls, source reduction or removal)

- Where corrective actions including a TRE have not been completed, an expeditious schedule under which corrective actions will be implemented;

- If no actions have been taken, the reason for not taking action.

The permittee may also request approval from the Department to postpone additional retests in order to investigate the source(s) of toxicity. Postponed retests must be completed after toxicity is believed to have been removed.

6.4.11 Reopener Clause

Pursuant to s. 283.15(11), Wis. Stat. and 40 CFR 131.20, the Department may modify or revoke and reissue this permit if, through the triennial standard review process, the Department determines that the terms and conditions of this permit need to be updated to reflect the highest attainable condition of the receiving water.

6.5 Pretreatment Program Requirements

The permittee is required to operate an industrial pretreatment program as described in the program initially approved by the Department of Natural Resources including any subsequent program modifications approved by the Department, and including commitments to program implementation activities provided in the permittee's annual pretreatment program report, and that complies with the requirements set forth in 40 CFR Part 403 and ch. NR 211, Wis. Adm. Code. To ensure that the program is operated in accordance with these requirements, the following general conditions and requirements are hereby established:

6.5.1 Inventories

The permittee shall implement methods to maintain a current inventory of the general character and volume of wastewater that industrial users discharge to the treatment works and shall provide an updated industrial user listing annually and report any changes in the listing to the Department by March 31 of each year as part of the annual pretreatment program report required herein.

6.5.2 Regulation of Industrial Users

6.5.2.1 Limitations for Industrial Users:

The permittee shall develop, maintain, enforce and revise as necessary local limits to implement the general and specific prohibitions of the state and federal General Pretreatment Regulations.

6.5.2.2 Control Documents for Industrial Users (IUs)

The permittee shall control the discharge from each significant industrial user through individual discharge permits as required by s. NR 211.235, Wis. Adm. Code and in accordance with the approved pretreatment program procedures and the permittee's sewer use ordinance. The discharge permits shall be modified in a timely manner during the stated term of the discharge permits according to the sewer use ordinance as conditions warrant. The discharge permits shall include at a minimum the elements found in s. NR 211.235(1), Wis. Adm. Code and references to the approved pretreatment program procedures and the sewer use ordinance.

6.5.2.3 Review of Industrial User Reports, Inspections and Compliance Monitoring

The permittee shall require the submission of, receive, and review self-monitoring reports and other notices from industrial users in accordance with the approved pretreatment program procedures. The permittee shall randomly sample and analyze industrial user discharges and conduct surveillance activities to determine independent of information supplied by the industrial users, whether the industrial users are in compliance with pretreatment standards and requirements. The inspections and monitoring shall also be conducted to maintain accurate knowledge of local industrial processes, including changes in the discharge, pretreatment equipment operation, spill prevention control plans, slug control plans, and implementation of solvent management plans.

The permittee shall inspect and sample the discharge from each significant industrial user as specified in the permittee's approved pretreatment program or as specified in NR 211.235(3). The permittee shall evaluate whether industrial users identified as significant need a slug control plan according to the requirements of NR 211.235(4). If a slug control plan is needed, the plan shall contain at a minimum the elements specified in s. NR 211.235(4)(b), Wis. Adm. Code.

6.5.2.4 Enforcement and Industrial User Compliance Evaluation & Violation Reports

The permittee shall enforce the industrial pretreatment requirements including the industrial user discharge limitations of the permittee's sewer use ordinance. The permittee shall investigate instances of noncompliance by collecting and analyzing samples and collecting other information with sufficient care to produce evidence admissible in enforcement proceedings or in judicial actions. Investigation and response to instances of noncompliance shall be in accordance with the permittee's sewer use ordinance and approved Enforcement Response Plan.

The permittee shall make a semiannual report on forms provided or approved by the Department. The semiannual report shall include an analysis of industrial user significant noncompliance (i.e. the Industrial User Compliance Evaluation, also known as the SNC Analysis) as outlined in s.NR 211.23(1)(j), Wis.

Adm. Code, and a summary of the permittee's response to all industrial noncompliance (i.e. the Industrial User Violation Report). The Industrial User Compliance Evaluation Report shall include monitoring results received from industrial users pursuant to s. NR 211.15(1)-(5), Wis. Adm. Code. The Industrial User Violation Report shall include copies of all notices of noncompliance, notices of violation and other enforcement correspondence sent by the permittee to industrial users, together with the industrial user's response. The Industrial User Compliance Evaluation and Violation Reports for the period January through June shall be provided to the Department by September 30 of each year and for the period July through December shall be provided to the Department by March 31 of the succeeding year, unless alternate submittal dates are approved.

6.5.2.5 Publication of Violations

The permittee shall publish a list of industrial users that have significantly violated the municipal sewer use ordinance during the calendar year, in the largest daily newspaper in the area by March 31 of the following year pursuant to s. NR 211.23(1)(j), Wis. Adm. Code. A copy of the newspaper publication shall be provided as part of the annual pretreatment report specified herein.

6.5.2.6 Multijurisdictional Agreements

The permittee shall establish agreements with all contributing jurisdictions as necessary to ensure compliance with pretreatment standards and requirements by all industrial users discharging to the permittee's wastewater treatment system. Any such agreement shall identify who will be responsible for maintaining the industrial user inventory, issuance of industrial user control mechanisms, inspections and sampling, pretreatment program implementation, and enforcement.

6.5.3 Annual Pretreatment Program Report

The permittee shall evaluate the pretreatment program, and submit the Pretreatment Program Report to the Department on forms provided or approved by the Department by March 31 annually, unless an alternate submittal date is approved. The report shall include a brief summary of the work performed during the preceding calendar year, including the numbers of discharge permits issued and in effect, pollution prevention activities, number of inspections and monitoring surveys conducted, budget and personnel assigned to the program, a general discussion of program progress in meeting the objectives of the permittee's pretreatment program together with summary comments and recommendations.

6.5.4 Pretreatment Program Modifications

- Future Modifications: The permittee shall within one year of any revisions to federal or state General Pretreatment Regulations submit an application to the Department in duplicate to modify and update its approved pretreatment program to incorporate such regulatory changes as applicable to the permittee. Additionally, the Department or the permittee may request an application for program modification at any time where necessary to improve program effectiveness based on program experience to date.

- Modifications Subject to Department Approval: The permittee shall submit all proposed pretreatment program modifications to the Department for determination of significance and opportunity for comment in accordance with the requirements and conditions of s. NR 211.27, Wis. Adm. Code. Any substantial proposed program modification shall be subject to Department public noticing and formal approval prior to implementation. A substantial program modification includes, but is not limited to, changes in enabling legal authority to administer and enforce pretreatment conditions and requirements; significant changes in program administrative or operational procedures; significant reductions in monitoring

frequencies; significant reductions in program resources including personnel commitments, equipment, and funding levels; changes (including any relaxation) in the local limitations for substances enforced and applied to users of the sewerage treatment works; changes in treatment works sludge disposal or management practices which impact the pretreatment program; or program modifications which increase pollutant loadings to the treatment works. The Department shall use the procedures outlined in s. NR 211.30, Wis. Adm. Code for review and approval/denial of proposed pretreatment program modifications. The permittee shall comply with local public participation requirements when implementing the pretreatment program.

6.5.5 Program Resources

The permittee shall have sufficient resources and qualified personnel to carry out the pretreatment program responsibilities as listed in ss. NR 211.22 and NR 211.23, Wis. Adm. Code.

6.6 Land Application Requirements

6.6.1 Sludge Management Program Standards And Requirements Based Upon Federally Promulgated Regulations

In the event that new federal sludge standards or regulations are promulgated, the permittee shall comply with the new sludge requirements by the dates established in the regulations, if required by federal law, even if the permit has not yet been modified to incorporate the new federal regulations.

6.6.2 General Sludge Management Information

The General Sludge Management Form 3400-48 shall be completed and submitted prior to any significant sludge management changes.

6.6.3 Sludge Samples

All sludge samples shall be collected at a point and in a manner which will yield sample results which are representative of the sludge being tested, and collected at the time which is appropriate for the specific test.

6.6.4 Land Application Characteristic Report

Each report shall consist of a Characteristic Form 3400-49 and Lab Report. The Characteristic Report Form 3400-49 shall be submitted electronically by January 31 following each year of analysis.

Following submittal of the electronic Characteristic Report Form 3400-49, this form shall be certified electronically via the 'eReport Certify' page by a responsible executive or municipal officer, manager, partner or proprietor as specified in s. 283.37(3), Wis. Stats., or a duly authorized representative of the officer, manager, partner or proprietor that has been delegated signature authority pursuant to s. NR 205.07(1)(g)2, Wis. Adm. Code. The 'eReport Certify' page certifies that the electronic report is true, accurate and complete. The Lab Report must be sent directly to the facility's DNR sludge representative or basin engineer unless approval for not submitting the lab reports has been given.

The permittee shall use the following convention when reporting sludge monitoring results: Pollutant concentrations less than the limit of detection shall be reported as < (less than) the value of the limit of detection. For example, if a substance is not detected at a detection limit of 1.0 mg/kg, report the pollutant concentration as < 1.0 mg/kg.

All results shall be reported on a dry weight basis.

6.6.5 Calculation of Water Extractable Phosphorus

When sludge analysis for Water Extractable Phosphorus is required by this permit, the permittee shall use the following formula to calculate and report Water Extractable Phosphorus:

Water Extractable Phosphorus (% of Total P) =

[Water Extractable Phosphorus (mg/kg, dry wt) ÷ Total Phosphorus (mg/kg, dry wt)] x 100

6.6.6 Monitoring and Calculating PCB Concentrations in Sludge

When sludge analysis for "PCB, Total Dry Wt" is required by this permit, the PCB concentration in the sludge shall be determined using either congener-specific analysis or Aroclor analysis. The permittee may decide which of these analyses is performed. Analyses shall be performed in accordance with the following provisions and Table EM in s. NR 219.04, Wis. Adm. Code:

- If congener-specific analysis is employed: All PCB congeners shall be delineated. Non-detects shall be treated as zero. The values that are between the limit of detection (LOD) and the limit of quantitation shall be used when calculating the total value of all congeners. All results shall be added together and the total PCB concentration by dry weight reported.

- If Aroclor analysis is employed, reporting protocols, consistent with s. NR 106.07(6)(e), should be as follows: If all Aroclors are less than the LOD, then the Total PCB Dry Wt result should be reported as less than the highest LOD. If a single Aroclor is detected, then that is what should be reported for the Total PCB result. If multiple Aroclors are detected, they should be summed and reported as Total PCBs. If the LOD cannot be achieved after using the appropriate clean up techniques, a reporting limit that is achievable for the Aroclors or each congener for the sample shall be determined. This reporting limit shall be reported and qualified indicating the presence of an interference.

6.6.7 Annual Land Application Report

Land Application Report Form 3400-55 shall be submitted electronically by January 31, each year whether or not non-exceptional quality sludge is land applied. Non-exceptional quality sludge is defined in s. NR 204.07(4), Wis. Adm. Code. Following submittal of the electronic Annual Land Application Report Form 3400-55, this form shall be certified electronically via the 'eReport Certify' page by a responsible executive or municipal officer, manager, partner or proprietor as specified in s. 283.37(3), Wis. Stats., or a duly authorized representative of the officer, manager, partner or proprietor that has been delegated signature authority pursuant to s. NR 205.07(1)(g)2, Wis. Adm. Code. The 'eReport Certify' page certifies that the electronic report form is true, accurate and complete.

6.6.8 Other Methods of Disposal or Distribution Report

The permittee shall submit electronically the Other Methods of Disposal or Distribution Report Form 3400-52 by January 31, each year whether or not sludge is hauled, landfilled, incinerated, or exceptional quality sludge is distributed or land applied. Following submittal of the electronic Report Form 3400-52, this form shall be certified electronically via the 'eReport Certify' page by a responsible executive or municipal officer, manager, partner or proprietor as specified in s. 283.37(3), Wis. Stats., or a duly authorized representative of the officer, manager, partner or proprietor that has been delegated signature authority pursuant to s. NR 205.07(1)(g)2, Wis. Adm. Code. The 'eReport Certify' page certifies that the electronic report form is true, accurate and complete.

6.6.9 Approval to Land Apply

Bulk non-exceptional quality sludge as defined in s. NR 204.07(4), Wis. Adm. Code, may not be applied to land without a written approval letter or Form 3400-122 from the Department unless the Permittee has obtained permission from the Department to self approve sites in accordance with s. NR 204.06 (6), Wis. Adm. Code. Analysis of sludge characteristics is required prior to land application. Application on frozen or snow covered ground is restricted to the extent specified in s. NR 204.07(3) (l), Wis. Adm. Code.

6.6.10 Soil Analysis Requirements

Each site requested for approval for land application must have the soil tested prior to use. Each approved site used for land application must subsequently be soil tested such that there is at least one valid soil test in the four years prior to land application. All soil sampling and submittal of information to the testing laboratory shall be done in accordance with UW Extension Bulletin A-2100. The testing shall be done by the UW Soils Lab in Madison or Marshfield, WI or at a lab approved by UW. The test results including the crop recommendations shall be submitted to the DNR contact listed for this permit, as they are available. Application rates shall be determined based on the crop nitrogen recommendations and with consideration for other sources of nitrogen applied to the site.

6.6.11 Land Application Site Evaluation

For non-exceptional quality sludge, as defined in s. NR 204.07(4), Wis. Adm. Code, a Land Application Site Request Form 3400-053 shall be submitted to the Department for the proposed land application site. The Department will evaluate the proposed site for acceptability and will either approve or deny use of the proposed site. The permittee may obtain permission to approve their own sites in accordance with s. NR 204.06(6), Wis. Adm. Code.

6.6.12 Class A Sludge: Fecal Coliform Density Requirement

The fecal coliform density which must be < 1000 MPN/g TS as required in s. NR 204.07, Wis. Adm. Code, shall be satisfied immediately after the treatment process is completed. If the material is bagged or distributed at that time, no re-testing is required. If the material is bagged, distributed or land applied at a later time, the sludge shall be re-tested and this requirement satisfied at that time also, to ensure that regrowth of bacteria has not occurred. See Municipal Wastewater Sludge Guidance Memo #3 (Fecal Coliform Monitoring - Sampling and Analytical Procedures).

6.6.13 Class A Sludge: Heat Drying Process

Dry the sludge by direct or indirect contact with hot gases to reduce the moisture content of the sludge to 10% or lower. Either the temperature of the sewage sludge particles shall exceed 80° C or the wet bulb temperature of the gas in contact with the sludge as the sludge leaves the dryer shall exceed 80° C.

6.6.14 Class B Sludge: Fecal Coliform Limitation

Compliance with the fecal coliform limitation for Class B sludge shall be demonstrated by calculating the geometric mean of at least 7 separate samples. (Note that a Total Solids analysis must be done on each sample). The geometric mean shall be less than 2,000,000 MPN or CFU/g TS. Calculation of the geometric mean can be done using one of the following 2 methods.

Method 1:

Geometric Mean = $(X_1 \times X_2 \times X_3 \ldots \times X_n)^{1/n}$

Where X = Coliform Density value of the sludge sample, and where n = number of samples (at least 7)

Method 2:

Geometric Mean = antilog[$(X_1 + X_2 + X_3 \ldots + X_n) \div n$]

Where X = $\log_{10}$ of Coliform Density value of the sludge sample, and where n = number of samples (at least 7)

Example for Method 2

Sample Number	Coliform Density of Sludge Sample	$\log_{10}$
1	6.0×10^5	5.78
2	4.2×10^6	6.62
3	1.6×10^6	6.20
4	9.0×10^5	5.95
5	4.0×10^5	5.60
6	1.0×10^6	6.00
7	5.1×10^5	5.71

The geometric mean for the seven samples is determined by averaging the $\log_{10}$ values of the coliform density and taking the antilog of that value.

$(5.78 + 6.62 + 6.20 + 5.95 + 5.60 + 6.00 + 5.71) \div 7 = 5.98$

The antilog of $5.98 = 9.5 \times 10^5$

6.6.15 Class B Sludge: Anaerobic Digestion

Treat the sludge in the absence of air for a specific mean cell residence time at a specific temperature. Values for the mean cell residence time and temperature shall be between 15 days at 35° C to 55° C and 60 days at 20° C. Straight-line interpolation to calculate mean cell residence time is allowable when the temperature falls between 35° C and 20° C.

6.6.16 Vector Control: Volatile Solids Reduction

The mass of volatile solids in the sludge shall be reduced by a minimum of 38% between the time the sludge enters the digestion process and the time it either exits the digester or a storage facility. For calculation of volatile solids reduction, the permittee shall use the Van Kleeck equation or one of the other methods described in "Determination of Volatile Solids Reduction in Digestion" by J.B. Farrell, which is Appendix C of EPA's *Control of Pathogens in Municipal Wastewater Sludge* (EPA/625/R-92/013). The Van Kleeck equation is:

$$VSR\% = \frac{VS_{IN} - VS_{OUT}}{VS_{IN} - (VS_{OUT} \times VS_{IN})} \times 100$$

Where: VS_{IN} = Volatile Solids in Feed Sludge (g VS/g TS)

VS_{OUT} = Volatile Solids in Final Sludge (g VS/g TS)

VSR% = Volatile Solids Reduction, (Percent)

6.6.17 Vector Control: Drying With Primary Solids

Dry the sludge to 90% total solids when the sludge contains unstabilized solids from primary treatment. This shall be met at the time the sludge is bagged, distributed, land applied or disposed of.

6.6.18 Class B Sludge - Vector Control: Injection

No significant amount of the sewage sludge shall be present on the land surface within one hour after the sludge is injected.

6.6.19 Class A Sludge - Vector Control: Incorporation

Class A sludge shall be surface applied within 8 hours after being discharged from a pathogen treatment process and then be incorporated within 6 hours of surface application.

6.6.20 Class B Sludge - Vector Control: Incorporation

Class B sludge shall be incorporated within 6 hours of surface application, or as approved by the Department.

6.6.21 Landfilling of Sludge

General: Sewage sludge may not be disposed of in a municipal solid waste landfill unless the landfill meets the requirements of chs. NR 500 to 536, Wis. Adm. Code, and is an approved facility as defined in s. 289.01(3), Wis. Stats. Any facility accepting sewage sludge shall be approved by the Department in writing to accept sewage sludge. Disposal of sewage sludge in a municipal solid waste landfill shall be in accordance with ss. NR 506.13 and 506.14. Sewage sludge may not be disposed of in a surface disposal unit as defined in s. NR 204.03(62).

Approval: The permittee shall obtain approval from the Department prior to the disposal of sludge at a Wisconsin licensed landfill.

6.6.22 Sludge Landfilling Reports

The permittee shall report the volume of sludge disposed of at any landfill facility on Form 3400-52. The permittee shall include the name and address of the landfill, the Department license number or other state's designation or license number for all landfills used during the report period and a letter of acceptability from the landfill owner. In addition, any permittee utilizing landfills as a disposal method shall submit to the Department any test results used to indicate acceptability of the sludge at a landfill. Form 3400-52 shall be submitted annually by January 31, each year whether or not sludge is landfilled.

7 Summary of Reports Due

FOR INFORMATIONAL PURPOSES ONLY

Description	Date	Page
Wisconsin River Basin TMDL SSC-derived Limits for Total Phosphorus - Complete Construction	December 31, 2022	24
Wisconsin River Basin TMDL SSC-derived Limits for Total Phosphorus - Achieve Compliance	December 31, 2023	24
Mercury Pollutant Minimization Program -Final Mercury Report	January 31, 2023	24
Mercury Pollutant Minimization Program -Annual Mercury Reports After Permit Expiration	See Permit	24
Sludge Management Plan -Sludge Management Plan Submittal	October 1, 2022	24
Compliance Maintenance Annual Reports (CMAR)	by June 30, each year	27
Industrial User Compliance Evaluation and Violation Reports	Semiannual	38
Pretreatment Program Report	Annually	38
General Sludge Management Form 3400-48	prior to any significant sludge management changes	39
Characteristic Form 3400-49 and Lab Report	by January 31 following each year of analysis	39
Land Application Report Form 3400-55	by January 31, each year whether or not non-exceptional quality sludge is land applied	40
Other Methods of Disposal or Distribution Report Form 3400-52	by January 31, each year whether or not sludge is hauled, landfilled, incinerated, or exceptional quality sludge is distributed or land applied	40
Wastewater Discharge Monitoring Report	no later than the date indicated on the form	26

Report forms shall be submitted electronically in accordance with the reporting requirements herein. Any facility plans or plans and specifications for municipal, industrial, industrial pretreatment and non industrial wastewater systems shall be submitted to the Bureau of Water Quality, P.O. Box 7921, Madison, WI 53707-7921. All other submittals required by this permit shall be submitted to:

West Central Region, 1300 W. Clairemont Ave., Eau Claire, WI 54701

SETTLEMENT AGREEMENT

This Settlement Agreement ("Agreement") is made effective this ___ day of March, 2022 between the Wisconsin Department of Natural Resources ("WDNR") and the City of Wausau ("City") to resolve a pending contested case challenge brought by the City.

BACKGROUND

WHEREAS, WDNR issued a Wisconsin Pollution Discharge Elimination System ("WPDES") permit to the City that contains water quality based effluent limitations ("WQBELs") for phosphorus, Permit No. WI-0025739-09-0 ("Permit");

WHEREAS, the City filed a Petition for Contested Case and a Petition for Judicial Review on January 11, 2019, which both challenge the reasonableness and necessity of the effluent limitations for phosphorus in Sections 3.2.1, 3.2.1.3, 3.2.1.4, 3.2.1.5, and 3.2.1.6 of the Permit, and the related compliance schedule in Section 5.1.

WHEREAS, the City and the WDNR have reached an agreement regarding the issues raised in the City's Petition for Contested Case and Petition for Judicial Review.

IT IS HEREBY AGREED:

1. No later than thirty (30) days following the effective date of this Agreement, WDNR shall provide public notice, in accordance with Wis. Stat. § 283.39, of a proposed modification of the Permit ("Public Notice Date"), with terms and conditions as set forth in Attachment A ("Modified Permit").

2. The City's limits and schedule for phosphorus are set forth in §§ 3.2.1, 3.2.1.3, and 5.1 of the Modified Permit.

3. The City retains its right to request a variance under applicable law including, in particular, Wis. Stat. §§ 283.15 and 283.16.

4. Following the public notice and comment period, if the Permit is modified according to the terms of Attachment A and no timely third-party challenge to the Modified Permit is filed, the City shall withdraw the Petition for Contested Case and Petition for Judicial Review filed on January 11, 2019, within seventy (70) days after notice of final decision of the effective date of the Modified Permit.

5. If the Permit is modified according to the terms of Attachment A anytime within sixty (60) days following the Public Notice Date, WDNR and the City agree they will not seek review pursuant to Wis. Stat. §§ 283.63 or 227.42 of the Modified Permit.

6. If the Permit is not modified according to the terms of Attachment A anytime within sixty (60) days following the Public Notice Date, the City may continue to pursue its Petition for contested Case and Petition for Judicial Review.

7. The City expressly reserves and retains its right to challenge any terms and conditions contained in the Modified Permit to the extent the Modified Permit contains terms and conditions that are contrary to the terms and condition contained in Attachment A. Nothing in this Agreement affects the City's ability to challenge terms and conditions of future WPDES permits.

8. This Agreement may be executed and delivered in counterpart signature pages executed and delivered via facsimile transmission or via email with scan or email attachment, and any such counterpart executed and delivered via facsimile transmission or via email with scan or email attachment will be deemed an original.

CITY OF WAUSAU

By: _____

Katie Rosenberg
Mayor, City of Wausau

WISCONSIN DEPARTMENT of NATURAL RESOURCES

By: _____

Preston D. Cole, Secretary

Department of Public Works

Eric Lindman, P.E.
Director of Public Works and Utilities

TO: Wausau Waterworks Commission

FROM: Eric Lindman, P.E.
Director of Public Works & Utilities

DATE: March 1, 2022

SUBJECT: 2022 Capital project Burek/Campus Budget Modification

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The capital Budgets for Water and Sewer were previously approved by the commission in summer of 2021 and then modified January 2022. We have recently received competitive bids for the Burek & Campus Drive water main extension project and they have come in $400,000 over budget. Some of the increases were increased material costs, increased labor costs and during final design the pipe sizing was increased from 14" to 18" diameter piping.

The revisions to the budget in January included adjustments as noted below.

	Water Capital		
	Current	Proposed	Difference
Borrow	$2,155,000	$1,750,000	($405,000)
Operating	$770,000	$1,110,000	$340,000

	Wastewater Capital		
	Current	Proposed	Difference
Borrow	$1,705,000	$1,785,000	$80,000
Operating	$1,085,000	$985,000	($100,000)

It would be proposed to increase the water division borrowing amount originally requested and approved in 2021.

The other option for the commission would be to make a recommendation to council to cover the shortfall of the project using ARPA funding.