

STATE OF WISCONSIN DEPARTMENT OF NATURAL RESOURCES

NOTICE OF FINAL DETERMINATION TO REISSUE A WISCONSIN POLLUTANT DISCHARGE  
ELIMINATION SYSTEM (WPDES) PERMIT No. WI-0031232-10-0

Permittee: HEART OF THE VALLEY METRO SEW DIST, 801 Thilmany Rd, Kaukauna, WI, 54130-1642

Facility Where Discharge Occurs: Heart of the Valley Metro Sewerage District, 801 Thilmany Road

Receiving Water And Location: Fox River in Fox River/Appleton of Fox River (lower) in Outagamie County

**Brief Facility Description:** The Heart of the Valley Metropolitan Sewerage District (HOV) Wastewater Treatment Facility (WWTF) provides treatment of domestic, commercial and industrial wastewater from the municipalities of Combined Locks, Kaukauna, Kimberly, Little Chute and Darboy. The sanitary sewer collection system is separate from the storm sewer system in the HOV's WWTF's service area.

All influent raw wastewater arrives at the facility through "Special Manhole-#1", which contains a motorized weir gate. Influent flows in excess of 25 MGD are diverted around the "Normal Flow Headworks" and into the "Peak Flow Headworks", which has a 35 MGD design. The Normal Headworks contains dual, automatic mechanical bar screens, and the Peak Headworks has a single bar screen. Both Headworks are equipped with 36" Parshall flumes and all influent flow measurement, sampling and screening is conducted at the two locations. Influent samples are collected at the normal flow headworks location.

Flows exiting the Normal Headworks and Peak Headworks are pumped separately to a splitter box, which feeds dual, 30 MGD Vortex-grit removal systems. All grit is processed through a lone, Coanda grit washer, and all grit removal effluent flows to the influent channel of the Actiflo Ballasted Sedimentation System. Two Actiflo treatment trains exist which include coagulation, injection, maturation and settling. Ferric sulfate, polymer and ballast-sand are added to the Actiflo influent. These addition rates are increased if influent flows are greater than 15.6 MGD. Hydro-cyclones separate the ballast-sand and primary sludge from the solids collected by the Actiflo system, and the sand is reused. The primary sludge is discharged to the Gravity Thickener tank.

An Actiflo effluent flow of 26.4 MGD is allowed to enter the Biostyr Biological Aerated Filter system (BAF). Flows in excess of 26.4 MGD are automatically diverted to the Peak Flow Chlorine Contact Tanks. The BAF system is an up-flow biological aerated filter technology which removes suspended solids, BOD and Ammonia nitrogen, with eight cells available. Under normal flow the BAF cells are backwashed every approximately every 30 hours. Flow to the secondary treatment (BAF) system is measured by a magnetic meter.

BAF effluent flows by gravity to the Normal Flow Chlorine Contact Tank. Sodium-hypochlorite disinfectant is introduced just ahead of both the Normal Flow and Peak Flow Contact Tanks, and sodium-bisulfite is added downstream of each tank to destroy residual chlorine. Effluent flow from the Normal Flow Contact Tank is measured by a 7 foot wide by 9 inch tall, rectangular weir. Peak Flow Contact Tank discharge and emergency bypass flows are measured by a Flow Velocity meter located at manhole #3. All effluent is combined and discharged through the 48-inch outfall 001, to a backwater segment of the Fox River, which is just downstream from the Kaukauna Govt. Lock #5.

All HOV biosolids removal, treatment and disposal includes: Actiflo scum and primary sludge settling, gravity thickening of primary sludge, mechanical Dissolved Air Floatation Thickening (DAFT) of Primary and BAF solids, Auto-Thermal Thermophilic Aerobic Digestion (ATAD) of thickened sludge and Post-ATAD nitrification.

The Class A liquid biosolids are stored onsite in two fiberglass coated steel tank (2.35 MG or 1.6 MG). A contractor performs the seasonal hauling and land application injection of the stabilized liquid on department approved farm fields. Class A liquid biosolids are not currently distributed.

Permit Drafter's Name, Address and Phone: Jennifer Jerich, DNR, N7725 Hwy 28, Horicon, WI, 53032, (920) 450-4078

Basin Engineer's Name, Address, and Phone: Barti Oumarou, 625 E County Road Y, Suite 700, Oshkosh, WI 54901, (920) 424-4013

Date Permit Signed/Issued: December 19, 2025

Date of Effectiveness: January 1, 2025

Date of Expiration: December 31, 2030

Public Informational Hearing Held On: N/A

Following the public notice period the Department has made a final determination to reissue the WPDES permit for the above-named permittee for this existing discharge. The permit application information from the WPDES permit file, comments received on the proposed permit and applicable Wis. Adm. Codes were used as a basis for this final determination.

The Department has the authority to issue, modify, suspend, revoke and reissue or terminate WPDES permits and to establish effluent limitations and permit conditions under ch. 283, Stats.

Following is a summary of significant comments and any significant changes which have been made in the terms and conditions set forth in the draft permit:

**Comments Received from the Applicant, Individuals or Groups and Any Permit Changes as Applicable**

Comments received from Brian Helminger, District Director Heart of the Valley Metropolitan Sewerage District (HOV) dated November 18, 2025. Comments below are summarized.

**HOV Comment #1:** Sampling Frequency - Influent and Effluent BOD & TSS; HOVMSD has concerns related to permit required daily testing that we believe are unnecessary and lack the necessity for change. We did not request this change and the 5x a week prior sampling frequency provided the District with flexibility in its operations. The District has tested and reported more frequently than is required by its current permit as part of close process control, but yet we retained the flexibility to omit testing on any given day. The 5 day per week testing requirement allows the District flexibility in testing that a daily frequency doesn't allow in the event a sampler malfunctions or is inadvertently not restarted. The daily testing requirement in the noticed permit takes this flexibility away and creates a permit violation in the event that no data is available to report to DNR. The District opposes this change absent being given a valid reason. HOVMSD is not being treated similarly to other permit holders. Please advise.

**DNR Reply Comment #1:** The "Monitoring Frequencies for Individual Wastewater Permits" guidance document (EGAD Number: 3400-2021-07) established a base-line standard monitoring frequency for pollutants based on the size and type of the facility. The document also establishes minimum monitoring frequencies with the goal that facilities will eventually have more consistent monitoring requirements through permit reissuances as the guidance is implemented. Discharge data from facilities statewide was analyzed to determine the monitoring categories and frequencies recommended by the guidance. It was developed to help both department staff and permittees improve compliance with permit requirements.

The department understands that equipment failures and human mistakes occur sometimes and cannot be planned. If a day of monitoring is missed, it should be reported on the eDMR with an explanation in the comments box. Your compliance engineer will review the information and determine the appropriate response. The department's stepped enforcement process considers the reason(s) and explanations provided for permit violations in the determination of a response.

The monitoring frequencies of BOD, TSS and Ammonia for both influent and effluent were increased to daily in the draft permit to be consistent with each other, which is permit drafting policy. Based on the information about HOV, the department will proceed with inclusion of the daily data collection in the next issuance of the permit as it follows the monitoring frequency guidance as well as will provide a more complete dataset for a facility that discharges 2-5 million gallons of treated effluent per day.

**HOV Comment #2:** Blending; HOVMSD appears to have a new outfall of SP 113. The existing permit refers to the blended waters as "In Plant Diversion" and is SP 112. Please confirm that SP 113 references the same waters as SP 112 contained in the current permit?

**DNR Reply Comment #2:** The draft permit includes only Sample Point 112 as a sample point to characterize the blending activity for the facility. No change made.

**HOV Comment #3:** Total Suspended Solids - Recalculated weekly and monthly mass limits; How can the District's TSS allocation drop not only once but twice in the past year? HOVMSD has no confidence in the calculations used to determine mass values in its permit. Further, the District's allocation for TSS and phosphorus were set with the acceptance of the Lower Fox TMDL and there is no basis that has been communicated for these changes. Unless DNR is "recalculating" every other permit holder's TMDL allocation, the District should not and will not accept disparate treatment with respect to its permit. What other municipal facility that discharges to the Lower Fox, as does the District, have had their TMDL allocation "recalculated" and mass limits reduced? Please advise which the Lower Fox permit holders who have had their TMDL allocations reduced? The District rejects this permit modification and opposes any recalculation of limits that further restricts its operation and unilaterally reduced limits to its discharge. The District has literally just completed a major project that has placed HOVMSD under 20 years of bond repayments and now the DNR is immediately changing its TMDL allocation in its successor permit. This is unacceptable.

**DNR Reply Comment #3:** The department reviewed and evaluated the TMDL TSS limits for HOV and the history of expression of these limits in past/current permits. The department has determined that the change in the limits from those in the -09 permit term is warranted because an incorrect calculation method was used. The 10/11/2024 WQBEL uses the correct calculation method. The public noticed permit and fact sheet included the updated expression of WLA limits using the correct calculation method and also to reflect the increased sample frequency of daily. However, if the correct calculation method had been used in the current/-09 permit the proposed permit would have included a weekly average limit of 1,100 lbs/day

and monthly average 700 lbs/day, which is consistent with program policy. The explanation for these limits is in Part 5 'TMDL Limits – TSS' section of the 10/11/2024 WQBEL. The department determined that additional reevaluation of these limits due to the change in sample frequency was not warranted at this permit reissuance because the permittee is meeting these limits. When a permittee is meeting the TMDL allocation, and in the absence of a calculation error during a previous permit term, the expression of the limits is not reevaluated at each permit term.

**HOV Comment #4:** E Coli monitoring & 10% Rule; HOVMSD has tested E Coli and does not anticipate problems meeting the 126 cfu geometric mean limitation. The transition from Fecal coliform to E Coli should not be problematic. The new limit, whereby no more than 10% of E Coli results be over 410 cfu, will almost certainly create compliance issues. The District seeks DNR guidance on the following inevitable scenario that will come up. A permit holder like the District will run 1 test per week as required by permit. What happens when the result for week 4 of the compliance month (days 21-28) comes up over 410 cfu? There is no longer 7 more days left in the month to sample and test to meet the less than 10% requirement. The permit holder would not be able to "test" their way out of noncompliance for the month. The inclusion of this requirement, and depending on the time on the month a test is run, will create permit violations that permit holders seemingly cannot avoid. This additional requirement will most certainly will result in the points being assessed on permit holders' annual CMAR. Achieving compliance with our permit should not depend on the week of the month an E Coli test is performed. Please advise on how compliance can be achieved in the scenario detailed above.

**DNR Reply Comment #4:** The department identified an error in the sampling frequency for E.coli. increasing to 2/week which is the standard sample frequency for major municipal dischargers. This sample frequency addresses the concerns listed in HOV comment #4. Additionally, the limit for E. coli is a geometric mean monthly limit to reflect the specifics of E. coli parameter. Sample frequency for E. coli sampling changed to 2/week in response to this comment.

**HOV Comment #5:** Chlorine residual daily test frequency; HOVMSD does not object to daily testing on weekends as its rather quick and inexpensive to perform this analysis.

**DNR Reply Comment #5:** No change requested, no changes made.

**HOV Comment #6:** Ammonia daily testing; The DNR has years and years of ammonia data and can see that this facility fully nitrifies and effluent ammonia concentrations over 1 mg/ L are exceedingly rare. The labor time doing the digestion and the testing supplies for running ammonia analysis is not inexpensive. Given the fact that District effluent does not vary much day to day as evidenced by past data is this frequency change necessary or required by Code? The District would prefer no change to the frequency of analysis.

**DNR Reply Comment #6:** See reply comment #1. The sampling frequency for HOV was determined after evaluation of the specific conditions are HOV and in coordination with the guidance on sampling frequency. No change made.

**HOV Comment #7:** SP 701 Effluent; Please verify that SP 701 reflects the location of the effluent sampler that was moved to collect samples after effluent filtration and before disinfection. The old location was described as Biostyr effluent and collected as the treated effluent discharged from the Biostyr process. While that sampler remains in place, we no longer collect and report the Biostyr effluent and the effluent sample moved with the conclusion and startup of the disk filters.

**DNR Reply Comment #7:** After meeting with HOV it was determined that this question is regarding the sampling point description for Sample Point 001 not 701. The sample point frequency for Sample Point 001 was updated to reflect the sampler location. The approval for the sampler move was not evaluated as part of this permit reissuance.

**HOV Comment #8:** PFOA & PFAS Analysis; The additional sampling and analysis were anticipated as part of a successor permit and we see no issues or complications in meeting this requirement.

**DNR Reply Comment #8:** No change requested, no changes made. The department reviewed the draft permit to ensure it include the most up to date PFAS and PFOA testing including the list of parameters and standard language on the testing. Slight changes were made to ensure the language and list of parameters is the most up to date.

**HOV Comment #9:** HOVMSD conducted a biological capacity test, in conjunction with Donohue its engineer, during the winter months of 2022. The study results indicated that latent capacity exists within the facility that is not recognized in its official rated capacity. This rerate is critical to future planning and had it been timely processed, it

would have reduced the District's CMAR points in past years. The District requests that DNR prioritize their review and act upon the rerate request from Donohue dated Aug 30, 2022.

**DNR Reply Comment #9:** The department does not hold up permit reissuances for rating capacity requests because it does not change things in the permit itself but rather impacts larger decisions on facility upgrades and CMAR calculations. The department will communicate with you directly when this review is completed.

Comments Received from EPA or Other Government Agencies and Any Permit Changes as Applicable

No comments received. The department made minor editorial changes to increase clarity. Language regarding explanation of PFAS sludge monitoring updated to reflect the most up to date language. Additionally, the department added clarity to the table note for effluent BOD<sub>5</sub> monitoring and limits to reflect that BOD sampling is required year-round.

As provided by s. 283.63, Stats., and ch. 203, Wis. Adm. Code, persons desiring further adjudicative review of this final determination may request a public adjudicatory hearing. A request shall be made by filing a verified petition for review with the Secretary of the Department of Natural Resources within 60 days of the date the permit was signed (see permit signature date above). Further information regarding the conduct and nature of public adjudicatory hearings may be found by reviewing ch. NR 203, Wis. Adm. Code, s. 283.63 Stats., and other applicable law, including s. 227.42, Stats.

Information on file for this permit action may be inspected and copied at either the above-named permit drafter's address or the above-named basin engineer's address, Monday through Friday (except holidays), between 9:00 a.m. and 3:30 p.m. Information on this permit action may also be obtained by calling the permit drafter at (920) 450-4078 or by writing to the Department. Reasonable costs (15 cents per page for copies and 7 cents per page for scanning) will be charged for copies of information in the file other than the public notice and fact sheet. Pursuant to the Americans with Disabilities Act, reasonable accommodation, including the provision of informational material in an alternative format, will be made to qualified individuals upon request.