Permit Fact Sheet

General Information

Permit Number	WI-0031232-10-0
Permittee Name and Address	HEART OF THE VALLEY METRO SEW DIST 801 Thilmany Rd, Kaukauna, WI 54130-1642
Permitted Facility Name and Address	Heart of the Valley Metro Sewerage District 801 Thilmany Road
Permit Term	January 1, 2026 to December 31, 2030
Discharge Location	South shore of a side channel of the Fox River, downstream from the Kaukauna Lock (#5) SE ¼ of the SW ¼ of Sec. 18, T21N – R19E, in the City of Kaukauna, Outagamie County
Receiving Water	Fox River in Fox River/Appleton of Fox River (lower) in Outagamie County
Stream Flow ($Q_{7,10}$)	The Fox River 7Q10 at Wrightstown is 970 cfs 10 to 1 dilution factor is utilized since the river does not exhibit uni-directional flow at the discharge point.
Stream Classification	Fish and Aquatic Life – Warm water sport fish community in the Great Lakes Basin Non-public water supply
Discharge Type	Existing, Continuous
Annual Average Design Flow (MGD)	8.5 MGD
Industrial or Commercial Contributors	Yes, there are 4 categorical industrial and 17 other significant (non-categorical) industrial users.
Plant Classification	A1 - Suspended Growth Processes; B - Solids Separation; C - Biological Solids/Sludges; P - Total Phosphorus; D - Disinfection; L - Laboratory; SS - Sanitary Sewage Collection System
Approved Pretreatment Program?	N/A

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 adding 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. The BAF cells are backwashed based on their time in service or elapsed time since the last backwash. The BAF filters, if in idle mode and not required to run continuously, are backwashed after not more than 40 hours. BAF effluent flows by gravity to a splitter structure where effluent can be directed one of three places: one being the chlorine contact tank for disinfection and the other two feed to the tertiary filters for either chemical treatment and filtration or directly to the filters without chemical addition. 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.

Sample Point/Outfall descriptions have been updated. Shaded cells in the remainder of the permit reflect changes.

Substantial Compliance Determination

After a desk top review of all discharge monitoring reports, CMARs, land application reports, compliance schedule items, and a site visit on 10/9/2024, this facility has been found to be in substantial compliance with their current permit.

Compliance determination made by Barti Oumarou on 11/6/2024. Inspection of the Class A sludge was completed by Fred Hegeman for this permit reissuance.

Sample Point Descriptions

Sample Point Designation		
Sample Point Number	**Discharge Flow, Units, and Averaging Period**	**Sample Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)**
701	7.22 MGD (2024)	Influent: 24-Hr flow proportional sampler located at the headworks prior to the bar screen. Flow meter located ahead of the influent step screens.
101	2.91 MGD (2024)	Effluent Reuse: Sample point for reporting amount of effluent flow diverted to the Fox Energy LLC electric generating power plant for its process water needs.
111	N/A	Field Blank: Sample point for reporting results of Mercury field blanks collected using standard sample handling procedures.
112	0.01 MGD (2024)	Blending: Sample point for reporting diverted flow from the Actiflo process during high flow events. Wastewater flow bypasses the Actiflo process and the Biostyr The permittee shall notify the Department when blending occurs. See “Blending” requirements in the Standard Requirements section of the permit.
001	4.36 MGD (2024)	Effluent: 24-Hr flow proportional sampler located directly after effluent filtration before disinfection. Grab samples collected at the Biostyr outfall manhole 4 after dechlorination. Flow meter located at the outfall of the chlorine contact tank.
601		River Monitoring: Lower Fox River data collected at the Appleton Lutz Park-USGS/ACOE Gauge Station - and/or other alternative method or site approved by the Department - as reported by the Lower Fox River Discharger's Association shall be used in the determination of the daily BOD5 waste load allocation.
003	990 dry US Ton (2024 permit application)	Land Application: Class A, Autothermal Thermophilic Aerobically Digested (ATAD) treated, Liquid Sludge from storage.
012	New Outfall	Land Application: Class A, Autothermal Thermophilic Aerobically Digested (ATAD) treatment process & Post-Digestion (ATAD) VAR, Liquid Sludge.
011	New Sampling Point	Land Application (In-Plant): Class B, Pre-ATAD Treatment Process, Pre-Digestion, Pre-VSR(ATAD), Liquid Sludge
008	Not used during previous permit term.	Land Application: Class B, DAF treated, Thickened Liquid Sludge.

Permit Requirements

1 Influent – Monitoring Requirements

1.1 Sample Point Number: 701- Influent

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Daily	Continuous	
BOD5, Total		mg/L	Daily	24-Hr Flow Prop Comp	
Suspended Solids, Total		mg/L	Daily	24-Hr Flow Prop Comp	
Cadmium, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	
Chromium, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	
Copper, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	
Lead, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	
Nickel, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	
Zinc, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	
Mercury, Total Recoverable		ng/L	Quarterly	Grab	See Mercury section.

Changes from Previous Permit:

Influent limitations and monitoring requirements were evaluated for this permit term and the following changes were made from the previous permit. See additional explanation of limits under "Explanation of Limits and Monitoring Requirements" below.

- BOD and TSS: Sampling frequency increased to daily to match the sampling frequency at the effluent Sampling Point.

Explanation of Limits and Monitoring Requirements

Monitoring of influent flow, BOD5 and total suspended solids is required by s. NR 210.04(2), Wis. Adm. Code, to assess wastewater strengths and volumes and to demonstrate the percent removal requirements in s. NR 210.05, Wis. Adm. Code, and in the Standard Requirements section of the permit. The HOV discharges more than 5 MGD and is currently required to administer a pretreatment program. Monthly monitoring is required for cadmium, chromium, copper, lead, nickel, and zinc. This permit includes mercury influent monitoring for mercury monitoring, per ch. NR 106.145, Wis. Adm. Code.

2 Inplant - Monitoring and Limitations

2.1 Sample Point Number: 101- Effluent Reuse

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Unregulated		MGD	Daily	Continuous	

Changes from Previous Permit:

In-plant limitations and monitoring requirements were evaluated for this permit term and no changes were required in this permit section.

Explanation of Limits and Monitoring Requirements

This is an operational parameter to provide data regarding the amount of effluent reused by the Fox Energy power plant.

2.2 Sample Point Number: 111- Field Blank

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Mercury, Total Recoverable		ng/L	Quarterly	Blank	

Changes from Previous Permit:

In-plant limitations and monitoring requirements were evaluated for this permit term and no changes were required in this permit section.

Explanation of Limits and Monitoring Requirements

Mercury Field Blank- Monitoring is included in the permit pursuant to s. NR 106.145, Wis. Adm. Code. Field blanks must meet the requirements under s. NR 106.145(9) and (10), Wis. Adm. Code. The permittee shall collect a mercury field blank for each set of mercury samples (a set of samples may include a combination of influent, effluent or other samples all collected on the same day). Field blanks are required to verify a sample has not been contaminated during collection, transportation or analysis.

2.3 Sample Point Number: 113- BLENDING

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Per Occurrence	Continuous	See 'Blending Flow' permit section.
Time		hours	Per Occurrence	Continuous	Report the total duration of blending within a given day

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
					(12:00am - 11:59pm) in which blending occurs. See 'Blending Flow' permit section.

Changes from Previous Permit:

In-plant limitations and monitoring requirements were evaluated for this permit term and no changes were required in this permit section. This is a new sample point.

Explanation Monitoring Requirements

The department previously determined that the facility is able to practice blending pursuant to s. NR 210.12, Wis. Adm. Code. This sample point was added to track the volume of wastewater that bypasses the aeration basins, final clarifiers and tertiary treatment and the duration of the blending event pursuant s. NR 210.12(6), Wis. Adm. Code. Additionally, the permittee is required to notify the department when blending occurs.

3 Surface Water - Monitoring and Limitations

3.1 Sample Point Number: 001- Effluent

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Daily	Continuous	
BOD5, Total	Weekly Avg	45 mg/L	Daily	24-Hr Flow Prop Comp	Monitoring year-round. Limit effective November – April.
BOD5, Total	Monthly Avg	30 mg/L	Daily	24-Hr Flow Prop Comp	Monitoring year-round. Limit effective November – April.
Suspended Solids, Total	Weekly Avg	45 mg/L	Daily	24-Hr Flow Prop Comp	
Suspended Solids, Total	Monthly Avg	30 mg/L	Daily	24-Hr Flow Prop Comp	
Suspended Solids, Total	Weekly Avg	1,100 lbs/day	Daily	Calculated	
Suspended Solids, Total	Monthly Avg	700 lbs/day	Daily	Calculated	
Suspended Solids, Total		lbs/month	Monthly	Calculated	Calculate the Total Monthly Discharge of TSS and report on the last day of

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
					the month on the DMR. See TMDL Calculations section.
Suspended Solids, Total		lbs/yr	Monthly	Calculated	Calculate the 12-month rolling sum of total monthly mass of TSS discharged and report on the last day of the month on the DMR. See TMDL Calculations section.
pH Field	Daily Max	9.0 su	Daily	Grab	
pH Field	Daily Min	6.0 su	Daily	Grab	
E. coli	Geometric Mean - Monthly	126 #/100 ml	2/Week	Grab	May - September
E. coli	% Exceedance	10 Percent	Monthly	Calculated	May - September. See the E. coli Percent Limit section. Enter the result in the DMR on the last day of the month.
Chlorine, Total Residual	Daily Max	38 ug/L	Daily	Grab	May - September
Chlorine, Total Residual	Weekly Avg	38 ug/L	Daily	Grab	May - September
Chlorine, Total Residual	Monthly Avg	38 ug/L	Daily	Grab	May - September
Nitrogen, Ammonia (NH3-N) Total	Daily Max	17 mg/L	Daily	24-Hr Flow Prop Comp	
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	28 mg/L	Daily	24-Hr Flow Prop Comp	January - March
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	29 mg/L	Daily	24-Hr Flow Prop Comp	April
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	17 mg/L	Daily	24-Hr Flow Prop Comp	May, and October - December
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	11 mg/L	Daily	24-Hr Flow Prop Comp	June - September
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	10 mg/L	Daily	24-Hr Flow Prop Comp	January - March

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	11 mg/L	Daily	24-Hr Flow Prop Comp	April - May
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	4.4 mg/L	Daily	24-Hr Flow Prop Comp	June - September
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	18 mg/L	Daily	24-Hr Flow Prop Comp	October - December
Phosphorus, Total	Monthly Avg	1.0 mg/L	Daily	24-Hr Flow Prop Comp	Limit maintained to prevent backsliding.
Phosphorus, Total	Monthly Avg	31.5 lbs/day	Daily	Calculated	
Phosphorus, Total	6-Month Avg	10.5 lbs/day	Daily	Calculated	
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 Calculations section.
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 Calculations section.
Mercury, Total Recoverable		ng/L	Quarterly	Grab	See permit for pollutant minimization measures and report submittal.
Cadmium, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	
Chromium, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	
Copper, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	
Lead, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	
Nickel, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	
Zinc, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Chloride		mg/L	Monthly	24-Hr Comp	Monitoring only in 2028.
PFOS		ng/L	1/ 2 Months	Grab	Monitoring only. See 'PFOS/PFOA Minimization Plan Determination of Need' in the schedules section.
PFOA		ng/L	1/ 2 Months	Grab	Monitoring only. See 'PFOS/PFOA Minimization Plan Determination of Need' in the schedules section.
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	Total Nitrogen shall be calculated as the sum of reported values for Total Kjeldahl Nitrogen and Total Nitrite + Nitrate Nitrogen.
Acute WET		TUa	See Listed Qtr(s)	24-Hr Flow Prop Comp	See WET section.
Chronic WET	Monthly Avg	11 TUc	See Listed Qtr(s)	24-Hr Flow Prop Comp	See WET section.
WLA BOD5 Value		lbs/day	Daily	See Table	May - October
WLA Adjusted Value		lbs/day	Daily	Calculated	May - October
WLA BOD5 Discharged	Daily Max - Variable	lbs/day	Daily	Calculated	May - October
WLA 7 Day Sum Of WLA Values		lbs/day	Daily	Calculated	May - October
WLA 7 Day Sum Of BOD5 Discharged	Daily Max - Variable	lbs/day	Daily	Calculated	May - October

Changes from Previous Permit

Effluent limitations and monitoring requirements were evaluated for this permit term and the following changes were made from the previous permit. See additional explanation of limits under "Explanation of Limits and Monitoring Requirements" below.

- **Sample frequency-** BOD, TSS, TP, Ammonia, pH, and chlorine sampling frequency has been increased to daily.

- **E. coli-** Fecal coliform monitoring and limits have been replaced with Escherichia coli (E. coli) monitoring and limits.
- **TSS and TP-** TSS and TP final limits effective, WQT requirements removed, and TMDL TSS and TP reporting requirements added. Sample frequency increased to daily. See WQBEL for explanation of changes in the TSS mass limits including in this permit.
- **Mercury-** Mercury interim limit and variance requirements removed. Continued sampling and implementation of PMPs is required.
- **Chloride-** New timeframe for chloride monitoring is now calendar year 2028.
- **PFOS/PFOA-** Monitoring once per two months for PFOS and PFOA is included in the permit in accordance with s. NR 106.98(2)(b), Wis. Adm. Code.
- **Total Nitrogen Monitoring (TKN, N02+N03 and Total N)-** Quarterly monitoring is required as outlined in the permit.
- **WLA BOD Value, WLA Adjusted Value, WLA BOD Discharged, WLA 7 Day Sum of WLA Values, WLA 7 Day sum of BOD Discharged-** These parameters were previously reported under Outfall 006. This update for consistency with e-reporting and the outfall in which these limits are effective.

Explanation of Limits and Monitoring Requirements

Detailed discussions of limits and monitoring requirements can be found in the attached water quality-based effluent limits (WQBEL) memo dated October 11, 2024.

Monitoring Frequencies- The Monitoring Frequencies for Individual Wastewater Permits guidance (April 12, 2021) recommends that standard monitoring frequencies be included in individual wastewater permits based on the size and type of the facility, in order to characterize effluent quality and variability, to detect events of noncompliance, and to ensure consistency in permits issued across the state. Guidance and requirements in administrative code were considered when determining the appropriate monitoring frequencies for pollutants that have final effluent limits in effect during this permit term. Sampling frequencies were increased to be in line with facilities of a similar size.

Lower Fox Wolf River Total Maximum Daily Load (TMDL): The permitted facility is located within the Lower Fox Wolf River Basin Total Maximum Daily Load (LFWRB TMDL), which was approved by EPA in March 2012. The TMDL establishes Waste Load Allocations (WLAs) for point source dischargers and determines the maximum amounts of phosphorus and total suspended solids that can be discharged and still protect water quality. The final effluent limits and monitoring expressed in the permit were derived from and comply with the applicable water quality criterion and are consistent with the assumptions and requirements of the EPA-approved WLAs in the TMDL, which are 3,467 lbs/yr for phosphorus and 147,003 lbs/yr for TSS for the permitted facility.

The department updated the expression of the TSS weekly average and monthly average limits. The details of this decision can be found in the WQBEL.

Mercury – In pervious permit terms the permittee was granted a mercury variance. The currently available effluent data from the previous five years indicates that reasonable potential to exceed mercury limits has not been demonstrated. The permittee is required to continue the actions in the pollutant minimization plan to maintain effluent quality at or below current levels. This limit removal meets the antidegradation/antibacksliding requirements of ch. NR 207, Wis. Adm. Code, because mercury PMP efforts are recommended to continue in the reissued permit.

PFOS and PFOA– NR 106 Subchapter VIII – Permit Requirements for PFOS and PFOA Dischargers became effective on August 1, 2022. At the first reissuance of a WPDES permit after August 1, 2022, the new rule requires WPDES permits for major municipal dischargers, with an average flow rate greater than or equal to 5 MGD, at a minimum sample effluent on a monthly basis for PFOS and PFOA pursuant s. NR 106.98(2)(a), Wis. Adm. Code. The initial determination of the need for sampling shall be conducted for up to two years in order to determine if the permitted discharge has the

reasonable potential to cause or contribute to an exceedance of the PFOS or PFOA standards under s. NR 102.04(8)(d)1, Wis. Adm. Code.

BOD WLA- Sample Point 006 is used for reporting compliance with WLA limits for discharges from outfall 001, in accordance with ch. NR 212, Wis. Adm. Code.

3.2 Sample Point Number: 601- River Monitoring

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
WLA Previous Day River Flow		cfs	Daily	Gauge Station	May through October
WLA Previous 4 Day Avg River Flow		cfs	Daily	Calculated	May through October
WLA Previous Day River Temp		deg F	Daily	Calculated	May through October

Changes from Previous Permit

Effluent limitations and monitoring requirements were evaluated for this permit term and no changes were required in this permit section. Sampling requirements and frequencies are the same as the previous permit.

Explanation of Limits and Monitoring Requirements

Sample Point 601 is used for reporting the flow and temperature values used for determining the wasteload allocation (WLA) values for BOD_5, in accordance with ch. NR 212, Wis. Adm. Code, which apply May – October and are specified in Tables 1-5, in Section 3.2.3.1.6, of the permit.

4 Land Application - Monitoring and Limitations

Municipal Sludge Description						
Sample Point	**Sludge Class (A or B)**	**Sludge Type (Liquid or Cake)**	**Pathogen Reduction Method**	**Vector Attraction Method**	**Reuse Option**	**Amount Reused/Disposed (Dry Tons/Year)**
003	A	Liquid	Fecal coliform and ATAD	VSR pre/post, Injection, and/or Incorporation	Distributed or Land Applied	990
012	A	Liquid	Fecal coliform and ATAD	VSR pre/post, Injection, and/or Incorporatio	Distributed or Land Applied	New Outfall

Municipal Sludge Description						
Sample Point	**Sludge Class (A or B)**	**Sludge Type (Liquid or Cake)**	**Pathogen Reduction Method**	**Vector Attraction Method**	**Reuse Option**	**Amount Reused/Disposed (Dry Tons/Year)**
				n		
011	B	Liquid	N/A	VSR pre/post	N/A	N/A
008	B	Thickened Liquid	Fecal coliform and ATAD	Injection or incorporation	Land Applied or Hauled to other Facility	Not used during previous permit term.
Does sludge management demonstrate compliance? **Yes**						
Is additional sludge storage required? **No**						
Is Radium-226 present in the water supply at a level greater than 2 pCi/liter? **Yes** If yes, special monitoring and recycling conditions will be included in the permit to track any potential problems in landapplying sludge from this facility						
Is a priority pollutant scan required? **Yes** Priority pollutant scans are required once every 10 years at facilities with design flows between 5 MGD and 40 MGD, and once every 5 years if design flow is greater than 40 MGD.						

4.1 Sample Point Number: 003- Class A 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	
Lead Dry Wt	High Quality	300 mg/kg	Quarterly	Composite	

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
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	
Radium 226 Dry Wt		pCi/g	Quarterly	Composite	
Nitrogen, Total Kjeldahl		Percent	Quarterly	Composite	Required in quarters in which land application and/or EQ distribution occurs.
Nitrogen, Ammonium (NH4-N) Total		Percent	Quarterly	Composite	Required in quarters in which land application and/or EQ distribution occurs.
Phosphorus, Total		Percent	Quarterly	Composite	Required in quarters in which land application and/or EQ distribution occurs.
Phosphorus, Water Extractable		% of Tot P	Quarterly	Composite	Required in quarters in which land application and/or EQ distribution occurs.
Potassium, Total Recoverable		Percent	Quarterly	Composite	Required in quarters in which land application and/or EQ distribution occurs.
PCB Total Dry Wt	Ceiling	50 mg/kg	Once	Composite	Once in 2026.
PCB Total Dry Wt	High Quality	10 mg/kg	Once	Composite	Once in 2026.
PFOA + PFOS		ug/kg	Annual	Calculated	Report the sum of PFOA and PFOS. See PFAS Permit Sections for more information.

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
PFAS Dry Wt			Annual	Calculated	Perfluoroalkyl and Polyfluoroalkyl Substances based on updated DNR PFAS List. See PFAS Permit Sections for more information.
Municipal Sludge Priority Pollutant Scan			Once	Composite	As specified in ch. NR 215.03 (1-4), Wis. Adm. Code

Changes from Previous Permit:

Sludge limitations and monitoring requirements were evaluated for this permit term and no changes were required in this permit section.

- **PFAS** – Monitoring is required annually pursuant to s. NR 204.06(2)(b)9, Wis. Adm. Code.
- **List 2-** Monitoring for List 2 (nutrients) only required in quarters that land application occurs in.

Explanation of Limits and Monitoring Requirements

Requirements for disposal, including land application of municipal sludge, are determined in accordance with ch. NR 204, Wis. Adm. Code. Ceiling and high-quality limits for metals in sludge are specified in s. NR 204.07(5), Wis. Adm. Code. Requirements for pathogens are specified in s. NR 204.07(6) and in s. NR 204.07 (7), Wis. Adm. Code for vector attraction requirements. Limitations for PCBs are addressed in s. NR 204.07(3)(k), Wis. Adm. Code. Radium requirements are addressed in s. NR 204.07(3)(n), Wis. Adm. Code. Municipal sludge priority pollutant scan included in this outfall for this permit term because of the changes that have taken place in the sludge treatment and processes. In future permit terms this scan will return to being in the permit based on the sample frequency determined based on design flow of the facility.

The United States Environmental Protection Agency (USEPA) developed 40 CFR 503 relating to the treatment and use of sewage sludge, commonly referred to as biosolids, when treated. 40 CFR 503 only pertains to sewage sludge requirements when the sewage sludge is land applied, surface disposed or incinerated. However, this is not the case with respect to the requirements of ch. NR 204, Wis. Adm. Code. The State of Wisconsin is a delegated entity for implementing 40 CFR 503 and delegated entities such as the State of Wisconsin may have more stringent requirements for sewage sludge than required by USEPA. Algae solids generated during the treatment of domestic sewage is treated as sewage sludge pursuant to the definition of sewage sludge in Wisconsin Administrative Code:

> Section NR 204.03(55), Wis. Adm. Code: “Sewage sludge" or “sludge" or “biosolids" means the solid, semi-solid or liquid residue generated during the treatment of domestic sewage in a treatment works. Sewage sludge includes scum or solids removed in primary, secondary or advanced wastewater treatment processes and material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of a sewage sludge incinerator or grit and screenings generated during preliminary treatment of domestic sewage in a treatment works. (emphasis added)

PFAS- The presence and fate of PFAS in municipal and industrial sludges is an emerging public health concern. EPA has developed a draft risk assessment to determine future land application rates and released this risk assessment in January of 2025. The Department is evaluating this new information. Until a decision is made, the “Interim Strategy for Land Application of Biosolids and Industrial Sludges Containing PFAS” should be followed.

Collecting sludge data on PFAS concentrations from a wide range of wastewater treatment facilities will help protect public health from exposure to elevated levels of PFAS and determine the department's implementation of EPA's recommendations. To quantitate this risk, PFAS sampling has been included in the proposed WPDES permit pursuant to ss. NR 214.18(5)(b) and NR 204.06(2)(b)9, Wis. Adm. Code.

4.2 Sample Point Number: 012- Class A Liquid Sludge

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Solids, Total		Percent	Quarterly	Composite	

Changes from Previous Permit:

Sludge limitations and monitoring requirements were evaluated for this permit term and updates to all the land application outfalls were done to reflect the sludge operations at HOV.

Explanation of Limits and Monitoring Requirements

Sampling Point 012 is a new sampling point and is used to only for reporting of sampling required to meet Class A sludge. At this outfall the permittee samples for % total solids.

Requirements for disposal, including land application of municipal sludge, are determined in accordance with ch. NR 204, Wis. Adm. Code.

The United States Environmental Protection Agency (USEPA) developed 40 CFR 503 relating to the treatment and use of sewage sludge, commonly referred to as biosolids, when treated. 40 CFR 503 only pertains to sewage sludge requirements when the sewage sludge is land applied, surface disposed or incinerated. However, this is not the case with respect to the requirements of ch. NR 204, Wis. Adm. Code. The State of Wisconsin is a delegated entity for implementing 40 CFR 503 and delegated entities such as the State of Wisconsin may have more stringent requirements for sewage sludge than required by USEPA. Algae solids generated during the treatment of domestic sewage is treated as sewage sludge pursuant to the definition of sewage sludge in Wisconsin Administrative Code:

> Section NR 204.03(55), Wis. Adm. Code: "Sewage sludge" or "sludge" or "biosolids" means the solid, semi-solid or liquid residue generated during the treatment of domestic sewage in a treatment works. Sewage sludge includes scum or solids removed in primary, secondary or advanced wastewater treatment processes and material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of a sewage sludge incinerator or grit and screenings generated during preliminary treatment of domestic sewage in a treatment works. (emphasis added)

4.3 Sample Point Number: 011- In-Plant Pre-VSR Liquid Sludge

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Solids, Total		Percent	Quarterly	Composite	

Changes from Previous Permit:

Sludge limitations and monitoring requirements were evaluated for this permit term and this sampling was added as a new location for required sampling. This is not an outfall, discharge from this Sampling Point is not authorized.

Explanation of Limits and Monitoring Requirements

Similar to Sampling Point 012, this sample point is for demonstration of compliance with sludge quality regulations.

4.4 Point Number: 008- 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	
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	
Nitrogen, Total Kjeldahl		Percent	Quarterly	Composite	Required in quarters in which land application occurs.
Nitrogen, Ammonium (NH4-N) Total		Percent	Quarterly	Composite	Required in quarters in which land application occurs.
Phosphorus, Total		Percent	Quarterly	Composite	Required in quarters in which land application occurs.
Phosphorus, Water Extractable		% of Tot P	Quarterly	Composite	Required in quarters in which land application occurs.

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Potassium, Total Recoverable		Percent	Quarterly	Composite	Required in quarters in which land application occurs.

Changes from Previous Permit:

Sludge limitations and monitoring requirements were evaluated for this permit term and the following changes were made from the previous permit. See additional explanation of limits under "Explanation of Limits and Monitoring Requirements" below.

- Radium sampling removed from this outfall but is retained in other outfalls more appropriate for this testing.
- Monitoring for List 2 (nutrients) only required in quarters that land application occurs in.

Explanation of Limits and Monitoring Requirements

Requirements for disposal, including land application of municipal sludge, are determined in accordance with ch. NR 204, Wis. Adm. Code. Ceiling and high-quality limits for metals in sludge are specified in s. NR 204.07(5), Wis. Adm. Code. Requirements for pathogens are specified in s. NR 204.07(6) and in s. NR 204.07 (7), Wis. Adm. Code for vector attraction requirements.

5 Schedules

5.1 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
Mercury Report: Submit a mercury report. The mercury progress report shall summarize success in maintaining mercury concentrations in the effluent, as well as the anticipated future efforts to maintain mercury concentrating in the effluent. The report shall summarize mercury pollutant minimization activities that have been implemented during the current permit term. The report shall include an analysis of trends in quarterly 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.	12/31/2029

Explanation of Schedule

The permittee is required to continue the actions in the pollutant minimization plan to maintain effluent quality at or below current levels. This schedule requires a report once prior to permit reissuance documenting the continued measures.

5.2 PFOS/PFOA Minimization Plan Determination of Need

Required Action	Due Date
Report on Effluent Discharge: Submit a report on effluent PFOS and PFOA concentrations and include an analysis of trends in monthly and annual average PFOS and PFOA concentrations. This	01/01/2027

analysis should also include a comparison to the applicable narrative standard in s. NR 102.04(8)(d), Wis. Adm. Code. This report shall include all additional PFOS and PFOA data that may be collected including any influent, intake, in-plant, collection system sampling, and blank sample results.	
Report on Effluent Discharge and Evaluation of Need: Submit a final report on effluent PFOS and PFOA concentrations and include an analysis of trends in monthly and annual average PFOS and PFOA concentrations of data collected over the last 24 months. The report shall also provide a comparison on the likelihood of the facility needing to develop a PFOS/PFOA minimization plan. This report shall include all additional PFOS and PFOA data that may be collected including any influent, intake, in-plant, collection system sampling, and blank sample results. The permittee shall also submit a request to the department to evaluate the need for a PFOS/PFOA minimization plan. If the Department determines a PFOS/PFOA minimization plan is needed based on a reasonable potential evaluation, the permittee will be required to develop a minimization plan for Department approval no later than 90 days after written notification was sent from the Department. The Department will modify or revoke and reissue the permit to include PFOS/PFOA minimization plan reporting requirements along with a schedule of compliance to meet WQBELs. Effluent monitoring of PFOS and PFOA shall continue as specified in the permit until the modified permit is issued. If, however, the Department determines there is no reasonable potential for the facility to discharge PFOS or PFOA above the narrative standard in s. NR 102.04(8)(d), Wis. Adm. Code, no further action is required and effluent monitoring of PFOS and PFOA shall continue as specified in the permit.	01/01/2028

5.2.1 Explanation of Schedule

As stated above, ch. NR 106 Subchapter VIII – Permit Requirements for PFOS and PFOA Dischargers became effective on August 1, 2022. Section NR 106.98, Wis. Adm. Code, specifies steps to generate data in order to determine the need for reducing PFOS and PFOA in the discharge. Data generated per the effluent monitoring requirements will be used to determine the need for developing a PFOS/PFOA minimization plan. As part of the schedule, the permittee is required to submit two annual Reports on Effluent Discharge.

If the Department determines that a minimization plan is needed, the permit will be modified or revoked/reissued to include additional requirements.

5.3 Sludge Management Plan

A sludge management plan is required.

Required Action	Due Date
Sludge Management Plan Submittal for Class A facilities: Submit a sludge management plan (SMP) to optimize the sludge management performance and demonstrate compliance with Ch. NR 204, Wis. Adm. Code, by the Due Date. This management plan shall include sufficient detail of the sludge management program for the facility. The plan shall include separate sections for each type of sewage sludge included in this permit. The SMP shall provide standardized information for communication to operators and the department including but not limited to the following: 1) Specify information on the sludge treatment processes for each sampling point and outfall;	01/01/2027

2) Show and describe sample point and outfall monitoring locations on a schematic and provide photos of the specific sampling points; 3) Show, describe and tabulate the monitoring requirements at each sampling point and outfall locations; 4) Show, describe and explain sampling protocols for each location listing parameters to be monitored including: a)Pollutants, b)Nutrients, c)Pathogen treatment process requirements including treatment temperature, moisture content (total solids) and pathogen densities (fecal concentrations), d)Vector Reduction appropriate for the pathogen treatment process such as but not limited to temperatures, volatile solids reduction, moisture content, etc. as required by the WPDES permit and Ch. NR 204, Wis. Adm. Code; 5) Monitoring frequencies at each sample point and outfall; 6) Analytical methods with appropriate hold times and chain of custody procedures; 7) Documentation relating to temperature monitoring data recording, retrieval and printing out the data when requested; 8) Storage, verification monitoring, loading, transportation and discharge details associated with all outfalls; 9) Collection, storage, disposal information for sludge detailing pickups including loading and similar details; 10) Collection, storage and disposal processes of sludge when the sludge does not meet minimum requires to meet Class A and EQ requirements. [Note: EQ and Class A are similar, but are different. Explain.] 11) Identify land application sites; 12) Describe site limitations; 13) Address vegetative cover management and removal including loading to crop needs, crop harvesting; 14) Specific the availability of storage for sludge; 15) Describe the type of transportation and spreading vehicles; 16) Track site loadings to facility's land application sites; 17) Address contingency plans for adverse weather and odor/nuisance abatement; 18) Address construction contingencies when treatment equipment is out of service; and 19)Include any other pertinent information. Once approved, all sludge management 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. Note: The SMP is a living document and should be designed and constructed to allow for future updates. Consider providing an overview to explain the facilities solids flow processes, then using sections and appendices to provide more details. The use of appendices to explain start up, operation and shutdown of the sludge treatment units is encouraged to show that all sludge particles meet Class	

A requirements.	

Explanation of Schedule

An up-to-date Sludge Management Plan is required that documents how the permittee will manage the land application of biosolids consistent with ch. NR 204, Wis. Adm. Code

Other Comments

None

Attachments

Water Quality Based Effluent Limits with maps dated 10/11/2024

Justification Of Any Waivers From Permit Application Requirements

No waivers requested or granted as part of this permit reissuance.

Prepared By: Jennifer Jerich, Wastewater Specialist

Date: 5/8/2025
Revision date post fact check: 10/15/2025
Revision date post public notice: 12/19/2025, see NFD