Superior Fresh Modified Permit #2 Fact Sheet

General Information

Permit Number:	WI-0065200-02-02
Permittee Name:	Superior Fresh, LLC, W15506 Superior Fresh Drive, Hixton WI 5463
Discharge Location:	Outfall 001: surface water discharge located on the west bank of Unnamed Creek approximately 3,100 feet South of Pigeon Creek located in Section 22 T23N R6W, Jackson County, WI Outfall 014: surface water discharge to a ditch, which flows about 1500 ft prior to meeting with an unnamed tributary of May Coulee Creek, which then flow into Pigeon Creek Outfalls 002, 004, 005, 006, 007, 009, 010, 016 & 017: land treatment via spray irrigation and seepage in Sections 22 & 23, T23N-R6W, Town of Northfield, Jackson County Outfalls 003, 011 & 012: land application on Department-approved sites in Jackson County
Receiving Water:	Outfall 001: an unnamed tributary to Pigeon Creek located in the Pigeon Creek Watershed within the Trempealeau River Basin in Jackson County Outfall 014: surface water outfall discharges to a ditch, which flows about 1500 ft prior to meeting with an unnamed tributary of May Coulee Creek, which then flow into Pigeon Creek, all located in the Pigeon Creek Watershed within the Trempealeau River Basin in Jackson County Outfalls 002, 004, 005, 006, 007, 009, 010, 016 & 017: spray irrigation land treatment outfalls that discharge to the groundwater of the Pigeon Creek Watershed within the Trempealeau River Basin in Jackson County Outfalls 003, 011 & 012: land application outfalls that discharge to the groundwaters of the Pigeon Creek Watershed within the Trempealeau River Basin in Jackson County
Stream Flow ($Q_{7,10}$) of Pigeon Creek:	0.20 cfs (cubic feet per second)
Stream Classification of Pigeon Creek:	Warm Water Sport Fish (WWSF) community, non-public water supply.
Discharge Type:	Existing

Facility Description

Superior Fresh LLC is a combined aquaponics (aquaculture + aquaponics) facility raising Atlantic salmon along with leafy green vegetables. The water supply for the system is from two private wells and two emergency backup wells. Water from the fish production system (aquaculture) is reused to raise vegetables hydroponically (aquaponic). Effluent from the aquaponics production system is discharged to five storage ponds. Processing fish onsite produces a waste stream containing blood water and a low-level chlorine-based cleaner, and site sanitation practices generate cleaning water that contains antimicrobial additive (peroxyacetic aced and hydrogen peroxide). Both these wastes are added to the storage ponds. Solids slurry from nutrient digesters are discharged to a sand bed for filtration and then discharged via gravity to the storage ponds. From the storage ponds wastewater is discharged to the spray irrigation land treatment system, and is tracked & monitored at outfalls 002, 004, 005, 006, 007, 009, 010. Land treatment Outfall 011 is an absorption pond for backwash water from the greensand filter that's sent to an aeration tank.

The surface water discharge at Outfall 001 is wastewater from the salmon depuration system. No fish or plant production or processing wastewater is discharged to surface water. The actual average discharge to surface water from Outfall 001 in 2022 was 0.039 million gallons per day (MGD). The surface water discharge at Outfall 014 is from the Red Barn and consists of wastewater from the partial recirculating aquaculture system (PRAS). The actual average discharge to surface water from Outfall 014 in January – October 2023 was 0.012 million gallons per day (MGD). The department approved the Water Quality Trading Plan (WQT-2024-0001) submitted by the permittee as a way to demonstrate compliance with water quality based effluent limits (WQBELs) for total phosphorus. Superior Fresh generates WQT credits via streambank stabilization and waterway restoration within the watershed.

Solids generated from the wastewater treatment system are sent to the sludge drying beds. There are three land application outfalls (003, 012 and 013) for tracking compliance of the land application of 1) sludge from the sand bed used for wastewater treatment (Outfall 003), 2) compost of fish offal, fish mortality carcasses and plant waste and carbon bulking agents (Outfall 012), and uncomposted plant waste (Outfall 013).

See specific sections in this fact sheet for details on significant monitoring and/or limit changes in this permit term.

Reason for permit modification/typo correction #1, April 2025: Sample point designation was clarified at land application outfall 003 to better explain that the sludge shall be monitored for PFOA + PFOS annually, and the other parameters shall be monitored quarterly in those quarters when landspreading occurs.

Reason for permit modification #2, September 2026: Temperature limits, and the associated compliance schedule, have been removed at Outfall 001. Two new spray irrigation outfalls (016 and 017) have been added to the land treatment section. The Land Treatment Management Plan schedule has been updated. Areas of this fact sheet affected in this modification are highlighted in grey.

Substantial Compliance Determination

A compliance email was sent August 30, 2022 requesting information on some missed temperature reporting in 2022. The facility responded that they had a lapse in operators that caused both issues and have since been in compliance. The facility was missing annual report #3 and #4 for WQT in our system but have since submitted a large all-encompassing report to provide all information regarding WQT that was missed previously.

After a desk top review of all discharge monitoring reports, Land application reports, and compliance schedule items, and an inspection on 11/10/2022, Superior Fresh, LLC has been found to be in substantial compliance with their current permit.

Compliance determination entered by Jenna Monahan on 01/31/2023.

Sample Point Designation		
Sample Point Number	**Discharge Flow, Units, and Averaging Period**	**Sample Point Location, WasteType/sample Contents and Treatment Description (as applicable)**
001	Surface Water – 0.039 MGD (2022)	FINISHING WATER: Representative effluent samples shall be collected prior to discharge to the unnamed tributary to Pigeon Creek. The flow rate will be measured as the difference between purge inlet flow and flow to the fish system. Discharge is limited to finishing water from the original phase 1 depuration system.
014	Surface Water – 0.012 MGD (Jan – Oct 2023)	RED BARN: Representative effluent samples shall be collected from inside the Red Barn in the floor sump prior to discharge to the unnamed tributary to May Coulee Creek which flows to Pigeon Creek. The flow rate shall be measured as the inlet flow rate to the system. Discharge is limited to overflow wastewater from the partial recirculating

Sample Point Designation		
Sample Point Number	**Discharge Flow, Units, and Averaging Period**	**Sample Point Location, WasteType/sample Contents and Treatment Description (as applicable)**
		aquaculture system (PRAS).
015	Data collection for WQT compliance determination	"THEORETICAL" OUTFALL: This is a theoretical outfall used to report annual compliance with water quality trading conditions.
101	Inplant sample point prior to all spray irrigation	INPLANT: A representative sample of process wastewater will be taken upon discharge from spray irrigation nozzles. Discharge is limited to wastewater generated in the aquaponics system.
002	Land treatment/spray irrigation: 86,137 gpd (2022)	SPRAY IRRIGATION: Process wastewater directed to spray field #1 20.6 acres located in SE¼-SE¼ Section 27 and NE¼-NE¼ Sec 23; T23N-R6W, Town of Northfield, Jackson County. Discharge is limited to wastewater from the storage ponds that were generated in the aquaponics system.
004	Land treatment/spray irrigation: 15,258 gpd (2022)	SPRAY IRRIGATION: Process wastewater directed to spray field #4 6.9 acres located in SE¼-SW¼ Sec 22; T23N-R6W, Town of Northfield, Jackson County. Discharge is limited to wastewater from the storage ponds that were generated in the aquaponics system.
005	Land treatment/spray irrigation: 11,471 gpd (2022)	SPRAY IRRIGATION: Process wastewater directed to spray field #5 4.1 acres located in SWE¼-SW¼ Sec 22; T23N-R6W, Town of Northfield, Jackson County. Discharge is limited to wastewater from the storage ponds that were generated in the aquaponics system.
006	Land treatment/spray irrigation: 33,188 gpd (2022)	SPRAY IRRIGATION: Process wastewater directed to spray field #6 12 acres located in SW¼-SW¼ Sec 22; T23N-R6W, Town of Northfield, Jackson County. Discharge is limited to wastewater from the storage ponds that were generated in the aquaponics system.
007	Land treatment/spray irrigation: 0 gpd (2022)	SPRAY IRRIGATION: Process wastewater directed to spray field #7 7.0 acres located in SW¼-NE¼ and NW¼-SE¼ Sec 23; T23N-R6W, Town of Northfield, Jackson County. Discharge is limited to wastewater from the storage ponds that were generated in the aquaponics system.
009	Land treatment/spray irrigation: 27,135 gpd (2022)	SPRAY IRRIGATION: Process wastewater directed to spray field #2 8.2 acres located in NW¼-NE¼ and NE¼-NE¼ Sec 27; T23N-R6W, Town of Northfield, Jackson County. Discharge is limited to wastewater from the storage ponds that were generated in the aquaponics system.
010	Land treatment/spray irrigation: 14,343 gpd (2022)	SPRAY IRRIGATION: Process wastewater directed to spray field #3 4.1 acres located in NW¼-NE¼ Sec 27; T23N-R6W, Town of Northfield, Jackson County. Discharge is limited to wastewater from the storage ponds that were generated in the aquaponics system.
016	Land treatment/spray irrigation: New in 2026 permit modification	SPRAY IRRIGATION: Process wastewater directed to spray field #8 (map 12) 4.1 acres located in SW¼-NW¼ Sec 27; T23-R6W, Town of Northfield, Jackson County. Discharge is limited to wastewater from the storage ponds that were generated in the aquaponics system.

Sample Point Designation		
Sample Point Number	**Discharge Flow, Units, and Averaging Period**	**Sample Point Location, WasteType/sample Contents and Treatment Description (as applicable)**
017	Land treatment/spray irrigation: New in 2026 permit modification	SPRAY IRRIGATION: Process wastewater directed to spray field #9 (map 12) 6.03 acres located in SE¼-NW¼ Sec 27; T23-R6W, Town of Northfield, Jackson County. Discharge is limited to wastewater from the storage ponds that were generated in the aquaponics system. Permittee shall notify the Department 30 days before use of this outfall so that appropriate forms can be provided.
011	Land treatment/absorption pond: 6,570 gpd (2022)	ABSORPTION POND: Representative samples shall be taken before discharge to the absorption pond. Discharge is limited to backwash water from the green sand filter that's sent to an aeration tank.
003	FILTER BED (Cake Sludge):	FILTER BED: Representative composite samples shall be collected of the sand filter bed contents. Monitoring for parameters other than PFOA + PFOS is only required during quarters sludge is land applied. Monitoring for the PFOA + PFOS parameters is required annually. Discharge is limited to sludge created during the treatment of process wastewater containing fish feces and fish feed used in the salmon production.
012	COMPOST (Byproduct Solids):	LAND APPLICATION: Representative composite samples of compost shall be taken prior to land application. Monitoring only required during quarters compost is land applied. Discharge is limited to composted byproduct solids (fish offal, fish eggs, fish mortality carcasses, fish feces and plant waste) and a carbon bulking agent.
013	PLANT WASTE (Byproduct Solids):	LAND APPLICATION: Representative composite samples of plant-based waste shall be taken prior to land application. Monitoring only required during years compost is land applied. Discharge is limited to plant waste material (byproduct solids).

1 Inplant - Monitoring and Limitations

Sample Point Number: 101- Wastewater to Spray Irrigation

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Chloride		mg/L	2/Month	Composite	
Nitrogen, Total Kjeldahl		mg/L	2/Month	Composite	
Nitrogen, Max Applied On Any Zone	Annual Total	200 lbs/ac/yr	Annual	Total Annual	Report the highest cumulative nitrogen loading to a spray field (zone) over each calendar year on the December eDMR.

Changes from Previous Permit:

No changes

Explanation of Limits and Monitoring Requirements

Requirements for land treatment of industrial wastewater are determined in accordance with ch. NR 214, Wis. Adm. Code. All wastewater discharged to the spray irrigation fields (outfalls 002, 004, 005, 006, 007, 009, 010) originate from the same sources. Therefore, the effluent is monitored at this sample point as it represents the wastewater discharged at all spray irrigation outfalls. Flow monitoring is required at each spray field sample point.

Nitrogen Max Applied On Any Zone – The maximum nitrogen loading limit of 200 pounds/acre/year is based on a cover crop of alfalfa. A zone is equal to any approved spray field identified by a sampling point. The cumulative nitrogen annual loading (total) for all spray fields will be reported in the Annual Report. The annual total for the spray field(s) (zone) with the highest annual loading shall be reported on the annual eDMR short form.

2 Surface Water - Monitoring and Limitations

Sample Point Number: 001- Finishing Water

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Daily	Total Daily	
BOD5, Total		mg/L	Monthly	Grab	
Suspended Solids, Total		mg/L	Monthly	Grab	
pH Field	Daily Max	9.0 su	Daily	Grab	
pH Field	Daily Min	6.0 su	Daily	Grab	
Nitrogen, Ammonia (NH3-N) Total		mg/L	Monthly	Grab	
Temperature Maximum		deg F	Daily	Continuous	See Temp section below
Phosphorus, Total	Rolling 12 Month Avg	1.0 mg/L	3/Week	Grab	Limit effective throughout the permit term, as it represents a minimum control level. See Water Quality Trading (WQT) sections for more information.
Phosphorus, Total		lbs/day	3/Week	Calculated	Report daily mass discharged using Equation 1a. in the Water Quality Trading (WQT) section of the permit.

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
WQT Credits Used (TP)		lbs/month	Monthly	Calculated	Report WQT TP Credits used per month using Equation 2c. in the Water Quality Trading (WQT) section below Sample Point/"Outfall" 015. Available TP Credits are specified in Table 2 and in the approved WQT Plan. See Sample Point 015 for details on the 416.5 lbs/yr of TP credits available annually as approved Water Quality Trading Plan.
WQT Computed Compliance (TP)	6-Month Avg	0.06 mg/L	Monthly	Calculated	Value should be entered on the eDMR on the last day of the month. Value entered at the end of the six-month period (June 30 and December 31). Compliance with the 6 month average limit is evaluated at the end of the six month period on June 30 and Dec 31.
WQT Computed Compliance (TP)	Monthly Avg	0.18 mg/L	Monthly	Calculated	Report the WQT TP Computed Compliance value using Equation 3a. in the Water Quality Trading (WQT) section of the permit. Value should be entered on the eDMR on the last day of the month.
WQT Computed Compliance (TP)	6-Month Avg	0.14 lbs/day	Monthly	Calculated	Report the WQT TP Computed Compliance value using Equation 3b. in the Water Quality Trading (WQT) section. Value should be entered on the eDMR at the end of the six-month period (June 30 and December 31). Compliance with the 6-month average limit is evaluated at the end of the six month period on

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
					June 30 and Dec 31.
Chronic WET		TUc	See Listed Qtr(s)	Grab	See WET testing section for info.

Changes from Previous Permit

1) addition of chronic WET testing twice during the permit term, 2) removal of the hydrogen peroxide limit & monitoring because the wastestream with the hydrogen peroxide additive is no longer discharged to surface water, 3) reduction in the 6-month average phosphorus mass limit from 0.2 lbs/day to 0.14 lbs/day, and 4) the pH monitoring frequency changed from monthly to daily.

Explanation of Limits and Monitoring Requirements

Industrial Effluent Limits –In accordance with the federal regulation 40 CFR 122.45(d), limits in this permit are to be expressed as daily maximum and monthly average limits whenever practicable. Limits were determined for Superior Fresh, LCC's existing discharge using chs. NR 102, 104, 105, 106, 207, 210, 212 and 217 of the Wisconsin Administrative Code (where applicable). For more information see the following September 19, 2023 memo from Benjamin Hartenbower to Holly Heldstab: "Water Quality-Based Effluent Limitations for Superior Fresh, LLC WPDES Permit No. WI-0065200".

The effluent monitoring frequency for all parameters was considered. Monitoring frequencies are based on the size and type of the facility and are established to best characterize effluent quality and variability, to detect events of noncompliance, and to ensure fairness and consistency in permits issued across the state. Requirements in administrative code (NR 108, 205, 210 and 214 Wis. Adm. Code) and Section 283.55, Wis. Stats. were considered, where applicable, when determining the appropriate monitoring frequencies for pollutants that have final effluent limits in effect during this permit term. For more information see the March 22, 2021 version of the Bureau of Water Quality Program Guidance Document "Monitoring Frequencies for Individual Wastewater Permits". After consideration of the above factors, the department determined the pH monitoring frequency will be increased from monthly to daily and the temperature monitoring frequency will change from daily to continuous.

BOD_5 and Total Suspended Solids: Effluent monitoring is required to monitor effectiveness of the best management practices. See the sections in the permit pertaining to the Best Management Plan (BMP) Section for more information.

pH: Monitoring & limits are included in the permit to protect water quality of the receiving water body per ch. NR 102.04(4)(c) Wis. Adm. Code and for monitoring of the effectiveness of the BMP practices chosen.

Ammonia: Using current acute and chronic ammonia toxicity criteria for the protection of aquatic life and limit calculating procedures found in NR 105 Wis. Adm. Code (effective March 1, 2004) and 106, Wis. Adm. Code (update effective September 1, 2016), ammonia limitations were calculated for the facility. Monitoring shows there is no reasonable potential for the discharge to exceed the calculated ammonia nitrogen limits, therefore, a limit is not required. Monthly monitoring continues this permit term to monitor the effectiveness of the best management practices and ensure ammonia effluent concentration remain at or below current levels.

Thermal: Temperature monitoring is required, but the temperature limits that were set to become effective 01/01/2028 have been removed. See the December 15, 2025 addendum to the WQBEL memo referenced above.

Phosphorus: Phosphorus Rules took effect 12/1/2010 and detailed in NR 102, Water Quality Standards for Wisconsin Surface Waters and NR 217, Effluent Standards and Limitations for Phosphorus. For the reasons explained in the April 30, 2012 paper entitled 'Justification for Use of Monthly, Growing Season and Annual Average Periods for Expression of WPDES Permit Limits for Phosphorus Discharges in Wisconsin', WDNR has determined that it is impracticable to express the phosphorus WQBEL for the permittee as a maximum daily, weekly or monthly values.

The applicable phosphorus standard for the unnamed tributary to Pigeon Creek, which is classified as a warmwater forage fish aquatic life system, is 0.075 mg/L. Since Pigeon Creek is exceeding its applicable phosphorus criteria, the discharge is subject to s. NR 217.13 (8), Wis. Adm. Code. The final effluent limits for phosphorus are 0.06 mg/L and 0.2 lbs/day, expressed as a six-month average, and 0.18 mg/L expressed as a monthly average. The six month averaging periods will be January – June and July - December. These phosphorus water quality-based effluent limits appear as 'WQT TP Computed Compliance", because Superior Fresh has opted to comply with these limits through water quality trading (WQT-2024-0001 approved January 4, 2024). By installing streambank restoration practices, Superior Fresh is generating 416.5 lbs/year of phosphorus credits. Compliance with these available credits is determined at sample point 015 and is the sum of credits used at Outfalls 001 and 014. The permittee is also required to report "WQT TP Credits" as shown above. The permittee is also required to comply with a monthly average phosphorus limit of 1.0 mg/L as the 'Minimum Control Level". This "Minimum Control Level" is required as described in the water quality trading guidance (DNR Guidance 3800-2013-04). Additional WQT subsections in the permit provide information on annual reporting and re-opening of the permit.

The 6 month average phosphorus mass limit has decreased from 0.2 lbs/day to 0.14 lbs/day. The updated mass limit is based on actual flow in accordance with s. NR 217.13(2)(c)2, Wis. Adm. Code.

PFOS and PFO: NR 106 Subchapter VIII – Permit Requirements for PFOS and PFOA Dischargers became effective on August 1, 2022. Pursuant to s. NR 106.98(3)(b), Wis. Adm. Code, the department evaluated the need for PFOS and PFOA monitoring. Based on information available at the time the permit was drafted, the department has determined the permittee does not need to sample for PFOS or PFOA as part of this permit reissuance. The department may re-evaluate the need for sampling at the next permit reissuance if new information becomes available that suggests PFOS or PFOA may be present in the discharge.

Whole Effluent Toxicity Whole effluent toxicity (WET) testing requirements and limits (if applicable) are determined in accordance with ss. NR 106.08 and NR 106.09 Wis. Adm. Code, as revised August 2016. (See the current version of the Whole Effluent Toxicity Program Guidance Document and checklist and WET information, guidance and test methods at 0). Chronic WET testing at outfall 001 shall be in the following quarters:

- 3rd quarter (July – Sept) 2024
- 1st quarter (Jan – March) 2026
- 2nd quarter (April – June) 2028

Sample Point Number: 014- Red Barn Effluent

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Daily	Total Daily	
BOD5, Total		mg/L	Monthly	Grab	
Suspended Solids, Total		mg/L	Monthly	Grab	
pH Field	Daily Max	9.0 su	Daily	Grab	
pH Field	Daily Min	6.0 su	Daily	Grab	
Nitrogen, Ammonia (NH3-N) Total		mg/L	Monthly	Grab	

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Temperature Maximum		deg F	Daily	Continuous	See section on Temp below
Phosphorus, Total	Rolling 12 Month Avg	1.0 mg/L	3/Week	Grab	Limit effective throughout the permit term, as it represents a minimum control level. See Water Quality Trading (WQT) sections for more information.
Phosphorus, Total		lbs/day	3/Week	Calculated	Report daily mass discharged using Equation 1a. in the Water Quality Trading (WQT) section of the permit.
WQT Credits Used (TP)		lbs/month	Monthly	Calculated	Report WQT TP Credits used per month using Equation 2c. in the Water Quality Trading (WQT) section below Sample Point/"Outfall" 015. Available TP Credits are specified in Table 2 and in the approved WQT Plan. See Sample Point 015 for details on the 416.5 lbs/yr of TP credits available annually as approved Water Quality Trading Plan.
WQT Computed Compliance (TP)	6-Month Avg	0.06 mg/L	Monthly	Calculated	Value should be entered on the eDMR on the last day of the month. Value should be entered on the eDMR at the end of the six-month period (June 30 and December 31). Compliance with the 6 month average limit is evaluated at the end of the six month period on June 30 and Dec 31.
WQT Computed Compliance (TP)	Monthly Avg	0.18 mg/L	Monthly	Calculated	Report the WQT TP Computed Compliance value using Equation 3a. in the Water Quality Trading (WQT) section of the

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
					permit. Value should be entered on the eDMR on the last day of the month.
WQT Computed Compliance (TP)	6-Month Avg	0.011 lbs/day	Monthly	Calculated	Report the WQT TP Computed Compliance value using Equation 3b. in the Water Quality Trading (WQT) section. Value should be entered on the eDMR at the end of the six-month period (June 30 and December 31). Compliance with the 6-month average limit is evaluated at the end of the six month period on June 30 and Dec 31.
Chronic WET		mg/L	See Listed Qtr(s)	Grab	See WET testing section for info.

Changes from Previous Permit

1) The pH monitoring frequency has been increased from monthly to daily, and 2) the 6 month average phosphorus mass limit has decreased from 0.013 lbs/day to 0.011 lbs/day.

Industrial Effluent Limits –In accordance with the federal regulation 40 CFR 122.45(d), limits in this permit are to be expressed as daily maximum and monthly average limits whenever practicable. Limits were determined for Superior Fresh, LCC's existing discharge using chs. NR 102, 104, 105, 106, 207, 210, 212 and 217 of the Wisconsin Administrative Code (where applicable). For more information see the following September 19, 2023 memos from Benjamin Hartenbower to Holly Heldstab: 1) "Water Quality-Based Effluent Limitations for Superior Fresh, LLC WPDES Permit No. WI-0065200".

The effluent monitoring frequency for all parameters was considered. Monitoring frequencies are based on the size and type of the facility and are established to best characterize effluent quality and variability, to detect events of noncompliance, and to ensure fairness and consistency in permits issued across the state. Requirements in administrative code (NR 108, 205, 210 and 214 Wis. Adm. Code) and Section 283.55, Wis. Stats. were considered, where applicable, when determining the appropriate monitoring frequencies for pollutants that have final effluent limits in effect during this permit term. For more information see the March 22, 2021 version of the Bureau of Water Quality Program Guidance Document "Monitoring Frequencies for Individual Wastewater Permits". After consideration of the above factors, the department determined the pH monitoring frequency will be increased from monthly to daily.

BOD_5 and Total Suspended Solids: Effluent monitoring is required to monitor effectiveness of the best management practices. See the sections in the permit pertaining to the Best Management Plan (BMP) Section for more information.

pH: Monitoring & limits are included in the permit to protect water quality of the receiving water body and for monitoring of the effectiveness of the BMP practices chosen. The permittee uses hydrogen peroxide to clean the system creating a temporary pH of 5-6 s.u. The permittee may also use sodium hydroxide or calcium oxide on a quarterly to semi-annual basis to create a pH of 12 s.u. to clean the system. The use of these additives is best regulated through the use of an effluent pH limit.

Ammonia: Using current acute and chronic ammonia toxicity criteria for the protection of aquatic life and limit calculating procedures found in NR 105 Wis. Adm. Code (effective March 1, 2004) and 106, Wis. Adm. Code (update effective September 1, 2016), ammonia limitations were calculated for the facility. Monitoring shows there is no reasonable potential for the discharge to exceed the calculated ammonia nitrogen limits, therefore, a limit is not required. Monthly monitoring continues this permit term to monitor the effectiveness of the best management practices and ensure ammonia effluent concentration remain at or below current levels.

Thermal: Using the administrative rules for thermal discharges detailed in NR 102 Subchapter II Water Quality Standards for Temperature and NR 106 Subchapter V Effluent Limitations for Temperature, effluent thermal limits were calculated. Comparing the representative highest effluent to the calculated limits determines reasonable potential of exceeding limits. Calculations of available effluent temperature data indicates weekly average temperature maximum limits are not required at Outfall 014, however monitoring is required throughout the permit term.

Phosphorus: Phosphorus Rules took effect 12/1/2010 and detailed in NR 102, Water Quality Standards for Wisconsin Surface Waters and NR 217, Effluent Standards and Limitations for Phosphorus. For the reasons explained in the April 30, 2012 paper entitled 'Justification for Use of Monthly, Growing Season and Annual Average Periods for Expression of WPDES Permit Limits for Phosphorus Discharges in Wisconsin', WDNR has determined that it is impracticable to express the phosphorus WQBEL for the permittee as a maximum daily, weekly or monthly values.

The applicable phosphorus standard for the unnamed tributary to Pigeon Creek, which is classified as a warmwater forage fish aquatic life system, is 0.075 mg/L. Since Pigeon Creek is exceeding its applicable phosphorus criteria, the discharge is subject to s. NR 217.13 (8), Wis. Adm. Code. The final effluent limits for phosphorus are 0.06 mg/L and 0.013 lbs/day, expressed as a six-month average, and 0.18 mg/L expressed as a monthly average. The six month averaging periods will be January – June and July - December. These phosphorus water quality-based effluent limits appear as 'WQT TP Computed Compliance", because Superior Fresh has opted to comply with these limits through water quality trading (WQT-2024-0001 approved January 1, 2024). By installing streambank restoration practices, Superior Fresh is generating 416.5 lbs/year of phosphorus credits. Compliance with these available credits is determined at sample point 015 and is the sum of credits used at Outfalls 001 and 014. The permittee is also required to report "WQT TP Credits" as shown above. The permittee is also required to comply with a monthly average phosphorus limit of 1.0 mg/L as the 'Minimum Control Level". This "Minimum Control Level" is required as described in the water quality trading guidance (DNR Guidance 3800-2013-04). Additional WQT subsections in the permit provide information on annual reporting and re-opening of the permit.

The 6 month average phosphorus mass limit has decreased from 0.013 lbs/day to 0.011 lbs/day. The updated mass limit are based on actual flow in accordance with s. NR 217.13(2)(c)2, Wis. Adm. Code.

PFOS and PFOA: NR 106 Subchapter VIII – Permit Requirements for PFOS and PFOA Dischargers became effective on August 1, 2022. Pursuant to s. NR 106.98(3)(b), Wis. Adm. Code, the department evaluated the need for PFOS and PFOA monitoring. Based on information available at the time the permit was drafted, the department has determined the permittee does not need to sample for PFOS or PFOA as part of this permit reissuance. The department may re-evaluate the need for sampling at the next permit reissuance if new information becomes available that suggests PFOS or PFOA may be present in the discharge.

Whole Effluent Toxicity Whole effluent toxicity (WET) testing requirements and limits (if applicable) are determined in accordance with ss. NR 106.08 and NR 106.09 Wis. Adm. Code, as revised August 2016. (See the current version of the Whole Effluent Toxicity Program Guidance Document and checklist and WET information, guidance and test methods at http://dnr.wi.gov/topic/wastewater/wet.html). Chronic WET testing at outfall 001 shall be in the following quarters:

- 1st quarter (Jan – March) 2026
- 2nd quarter (April – June) 2028

Sample Point Number: 015- 001+014 Combined

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
WQT Credits Used (TP)	Annual Total	416.5 lbs/yr	Annual	Calculated	The sum of total monthly credits used from Outfall 001 & Outfall 014 may not exceed Table 2 values listed below.

Changes from Previous Permit

No changes.

Explanation of Limits and Monitoring Requirements

This sample point is for data collection to determine compliance with the approved water quality trading (WQT) plan by reporting annual compliance with WQT conditions.

Table 2. Available Phosphorus Credits per WQT-2024-0001

Year	Available TP Credits (lbs/yr)
2024	416.5
2025	416.5
2026	416.5
2027	416.5
2028*	416.5

*In the event that this permit is not reissued prior to the expiration date, 416.5 lbs/yr of credits will be available in subsequent year(s).

3 Best Management Plan Requirements

Effluent Limitations Guidelines – Concentrated Aquatic Animal Production

On June 30, 2004, the U.S. Environmental Protection Agency (USEPA) completed regulations under the Clean Water Act establishing effluent limitations guidelines (ELGs), and new source performance standards for the concentrated aquatic animal production (CAAP) point source category. The ELGs require management practices and record-keeping activities, rather than numerical discharge limitations. The ELGs were promulgated on August 23, 2004 in 40 CFR 451.

The requirements in 40 CFR 451.11 can be found in the USEPA Compliance Guide for the Concentrated Aquatic Animal Production Point Source Category. *http://water.epa.gov/scitech/wastetech/guide/aquaculture/guidance_index.cfm*

2017 Wisconsin Act 21 was enacted on June 23, 2017. Section 24 of 2017 Wisconsin Act 21 modified 283.31 (5m) Wis. Stats. to read:

283.31 (5m) The department shall include the requirements of 40 CFR 451.11 in permits issued under this section for concentrated aquatic animal production facilities described in 40 CFR 451.10. The department may not include additional conditions in a permit for a fish farm except as necessary for the farm to meet the applicable limitations, standards, and other provisions described in sub. (3) (a) to (f). Any conditions included in a permit issued under this section for a fish farm, shall be limited to site-specific best management practices to the greatest extent allowed under federal law. *http://docs.legis.wisconsin.gov/statutes/statutes/283*

40 CFR 451.10 applies to the discharge of pollutants from a CAAP facility that produces 20,000 pounds or more per year of aquatic animals in a flow-through or recirculating system. Superior Fresh discharges exceed the production threshold (1.2 million pounds of salmon in 2023). The permit includes the requirements in 40 CFR 451.1

3.1 Best Management Practices Requirements

A Best Management Practices (BMP) Plan is a description of the standard operating procedures and actions required to maintain or improve effluent quality, control solids, store materials, maintain the aquatic animal containment structures, perform recordkeeping, train employees, closely monitoring feeding, collect and dispose of waste, address the transport or harvest discharge of aquatic animals, and remove dead aquatic animals.

- A BMP Plan shall be developed and submitted to the Department for approval by January 31, 2024 (See the Schedules section herein); and
- Annual reports documenting the implementation of BMPs and any additional BMPs that will be implemented in the following year shall be submitted to the Department by January 31st of each year.
- The concentrated aquatic animal production (CAAP) effluent limitations guidelines (ELGs) and associated BMP plan (Compliance Guide for the Concentrated Aquatic Animal Production Point Source Category - 2006 (epa.gov)) will maintain performance levels retaining effluent quality.

4 Land Treatment – Monitoring and Limitations

Sample Point Number: 002- Spray Field #1; 004- Spray Field #4; 005- Spray Field #5; 006- Spray Field #6; 007- Spray Field #7; 009- Spray Field #2; 010- Spray Field #3; 016 – Spray Field #8; 017 – Spray Field #9

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		gpd	Daily	Total Daily	
Hydraulic Application Rate	Monthly Avg	10,000 gal/ac/day	Monthly	Calculated	Limit effective March through November. Limit is reduced to 0 gal/ac/day if fields are snow or ice-covered
Hydraulic Application Rate	Monthly Avg	0 gal/ac/day	Monthly	Calculated	Limit effective December through February

Changes from Previous Permit:

No changes

Changes in 2026 permit modification: Outfall 016 and Outfall 017 were added to the permit to track compliance with spray irrigation on Fields #8 and #9.

Explanation of Limits and Monitoring Requirements

Requirements for land treatment of industrial wastewater are determined in accordance with ch. NR 214 Wis. Adm. Code.

Sample Point Number: 011- Absorption Pond

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		gpd	Daily	Continuous	
Iron, Total Recoverable		mg/L	Monthly	Grab	
Manganese, Total Recoverable		mg/L	Monthly	Grab	

Changes from Previous Permit:

No changes

Explanation of Limits and Monitoring Requirements

Requirements for land treatment of industrial wastewater are determined in accordance with ch. NR 214 Wis. Adm. Code.

5 Land Application - Sludge

Sample Point Number: 003- SAND BED SLUDGE

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Solids, Total		% Comp	Quarterly	Grab	
Nitrogen, Ammonium (NH4-N) Total		Percent	Quarterly	Grab	
Chloride		Percent	Quarterly	Grab	
Nitrogen, Total Kjeldahl		Percent	Quarterly	Grab	
Phosphorus, Total		Percent	Quarterly	Grab	
Phosphorus, Water Extractable		% of Tot P	Quarterly	Calculated	
Potassium, Total Recoverable		mg/L	Quarterly	Grab	
PFOA + PFOS		ug/kg	Annual	Calculated	Report the sum of PFOA and PFOS. See PFAS

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
					Permit Sections for more information.
PFAS Dry Wt			Annual	Grab	Perfluoroalkyl and Polyfluoroalkyl Substances based on updated DNR PFAS List. See PFAS Permit Sections for more information.

Changes from Previous Permit:

1) The flow rate reporting has been removed, 2) monitoring for ammonium, water extractable phosphorus and total potassium has been added, and 3) annual PFAS monitoring is included in the permit pursuant to s. NR 214.18(5)(b), Wis. Adm. Code.

Explanation of Limits and Monitoring Requirements

Requirements for land application of industrial sludge are determined in accordance with ch. NR 214 Wis. Adm. Code.

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 potential risks associated with land applying residuals which contain PFOA and/or PFOS. The DNR is evaluating this information and may alter the current approach based on this review. In the interim, the department has developed the "Interim Strategy for Land Application of Biosolids and Industrial Sludges Containing PFAS."

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 this WPDES permit pursuant to ss. NR 214.18(5)(b) and NR 204.06(2)(b)9., Wis. Adm. Code.

Sample Point Number: 012- COMPOST

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Solids, Total		% Comp	Quarterly	Grab	
Nitrogen, Total Kjeldahl		Percent	Quarterly	Grab	
Phosphorus, Total		Percent	Quarterly	Grab	
Phosphorus, Water Extractable		% of Tot P	Quarterly	Grab	
Potassium, Total Recoverable		Percent	Quarterly	Grab	

Changes from Previous Permit:

No changes

Explanation of Limits and Monitoring Requirements

Requirements for land application of industrial sludge are determined in accordance with ch. NR 214 Wis. Adm. Code.

Sample Point Number: 013- PLANT WASTE

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Solids, Total		% Comp	Annual	Grab	
Nitrogen, Total Kjeldahl		Percent	Annual	Grab	
Phosphorus, Total		Percent	Annual	Grab	
Phosphorus, Water Extractable		% of Tot P	Annual	Grab	
Potassium, Total Recoverable		Percent	Annual	Grab	

Changes from Previous Permit:

Because the compost waste is considered byproduct solids, the reporting units have changed from mg/L to percent for TKN, total phosphorus and total potassium.

Explanation of Limits and Monitoring Requirements

Requirements for land application of industrial sludge are determined in accordance with ch. NR 214 Wis. Adm. Code.

6 Schedules

~~Temperature Limits~~

~~This compliance schedule requires the permittee to achieve compliance by the specified date.~~

~~Required Action~~	~~Due Date~~
~~**Report on Effluent Discharges:** Submit a report on effluent temperature with conclusions regarding compliance. If the Department determines that because of data variability, 24 months of monitoring data is required to determine the need for temperature limits, the Department will so notify the permittee in writing and all dates in the permit schedule will be extended by 12 months. Informational Note - Refer to the Surface Water subsection regarding 'Determination of Need for Effluent Limits' for information concerning a Department determination on the need for limits and pursuing re-evaluation of limits per NR 106 Subchapters V & VI or NR 102.26, Wis. Adm. Code.~~	~~03/31/2025~~
~~**Action Plan:** Submit an action plan for complying with all effluent temperature limits that remain following the Department's review for necessity.~~	~~09/30/2025~~
~~**Construction Plans:** Submit construction plans (if construction is required for complying with effluent temperature limits) and include plans and specifications with the submittal.~~	~~03/31/2026~~

~~**Initiate Actions:** Initiate actions identified in the plan.~~	~~03/31/2027~~
~~**Complete Actions:** Complete actions necessary to achieve compliance with effluent temperature limits. Limitations become effective 01/01/2028.~~	~~12/31/2027~~

~~**Explanation of Schedule**: Calculations of available effluent temperature data indicates weekly average temperature limits are needed November through April at Outfall 001. This schedule gives the permittee almost four years to achieve compliance with the new temperature limits, or to complete the "Determination of Need for Effluent Limits" as described in the surface water section.~~

6.1 Annual Water Quality Trading (WQT) Report

Required Action	Due Date
Annual WQT Report: Submit an annual WQT report that shall cover the first year of the permit term. The WQT Report shall include: The number of pollutant reduction credits (lbs/month) used each month of the previous year to demonstrate compliance; The source of each month's pollutant reduction credits by identifying the approved water quality trading plan that details the source; A summary of the annual inspection of each nonpoint source management practice that generated any of the pollutant reduction credits used during the previous year; and Identification of noncompliance or failure to implement any terms or conditions of this permit with respect to water quality trading that have not been reported in discharge monitoring reports.	01/31/2025
Annual WQT Report #2: Submit an annual WQT report that shall cover the previous year.	01/31/2026
Annual WQT Report #3: Submit an annual WQT report that shall cover the previous year.	01/31/2027
Annual WQT Report #4: Submit the 4th annual WQT report. If the permittee wishes to continue to comply with phosphorus limits through WQT in subsequent permit terms, the permittee shall submit a revised WQT plan including a demonstration of credit need, compliance record of the existing WQT, and any additional practices needed to maintain compliance over time.	01/31/2028
Annual WQT Report Required After Permit Expiration: In the event that this permit is not reissued by the expiration date, the permittee shall continue to submit annual WQT reports by January 31 each year covering the total number of pollutant credits used, the source of the pollution reduction credits, a summary of annual inspection reports performed, and identification of noncompliance or failure to implement any terms or conditions of the approved water quality trading plan for the previous calendar year.	

Explanation of Schedule: The permittee shall submit annual WQT reports by January 31 each year covering the total number of pollutant credits used, the source of the pollution reduction credits, a summary of annual inspection reports performed, and identification of noncompliance or failure to implement any terms or conditions of the approved water quality trading plan for the previous calendar year.

6.2 Best Management Practices (BMP) Plan

Required Action	Due Date
Submit Updated Plan: Submit an updated BMP plan describing the standard operating procedures and actions required to maintain or improve effluent quality, control solids, store materials, maintain the aquatic animal containment structures, perform recordkeeping, train employees, closely monitoring feeding, collect and dispose of waste, address the transport or harvest discharge of aquatic animals, and remove dead aquatic animals.	01/31/2025
Annual Update: Document the implementation of BMPs and any additional BMPs that will be implemented in the following year.	01/31/2026
Annual Update: Document the implementation of BMPs and any additional BMPs that will be implemented in the following year.	01/31/2027
Annual Update: Document the implementation of BMPs and any additional BMPs that will be implemented in the following year.	01/31/2028
Annual Update: Document the implementation of BMPs and any additional BMPs that will be implemented in the following year. In the event that this permit is not reissued by the date the permit expires, the permittee shall continue to submit annual updates by January 31st.	

Explanation of Schedule: A plan describing the standard operating procedures and actions outlined in the EPA CAAP compliance guide (https://www.epa.gov/eg/concentrated-aquatic-animal-production-compliance-guide-and-reporting-forms) is required to be submitted.

6.3 Land Application Management Plan

A management plan is required for the land application system.

Required Action	Due Date
Land Application Management Plan: Submit an update to the management plan to optimize the land application system performance and demonstrate compliance with Wisconsin Administrative Code NR 214.	06/30/2024

Explanation of Schedule: An up-to-date Land Application Management plan is a standard requirement in reissued industrial permits per s. NR 214.17(6)(c) Wis. Adm. Code.

6.4 Land Treatment Management Plan

Required Action	Due Date
Land Treatment Management Plan: If any changes are made to the land treatment system, including planning to commence use of Outfall 017 (spray irrigation Field 9), the permittee shall submit an update to the management plan to optimize the land treatment system performance and demonstrate compliance with Wisconsin Administrative Code NR 214.	

Explanation of Schedule: An up-to-date Land Treatment Management plan is a standard requirement in reissued industrial permits per s. NR 214.13(5)(e) Wis. Adm. Code.

Special Reporting Requirements

N/A

Other Comments:

Publishing Newspaper: Banner Journal, 409 E Main St., Black River Falls, WI 54615-1460

Attachments:

- Water Quality Based Effluent Limits: September 19, 2023 memo from Benjamin Hartenbower to Holly Heldstab: "Water Quality-Based Effluent Limitations for Superior Fresh, LLC WPDES Permit No. WI-0065200".
- NR 140 Groundwater Evaluation Report: May 11, 2023 memo to file from Woody Myers titled "Superior Fresh LLC. – Groundwater Evaluation Report, WPDES Permit # WI-0065200".
- Water Quality Trading Plan, WQT-2024-0001
- Water Quality Trading Conditional Plan Approval letter dated January 4, 2023 from Jenna Monahan to Brandon Gottsacker
- Addendum to the September 19, 2023 Water Quality Based Effluent Limits: "Water Quality-Based Effluent Limitations for Temperature for Superior Fresh, LLC WPDES Permit No. WI-0065200" dated December 15, 2025

Expiration Date:

December 31, 2028

Justification Of Any Waivers From Permit Application Requirements

N/A

Prepared By: Holly Heldstab, Wastewater Specialist **Date:** February 23, 2024

Mod/Typo Corrected By: Holly Heldstab, Wastewater Specialist **Date**: April 28, 2025

Modified By: Holly Heldstab, Wastewater Specialist **Date**: June 19, 2025

CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: December 15, 2025

TO: Holly Heldstab– WCR/Eau Claire

FROM: Benjamin Hartenbower – WCR/Eau Claire

SUBJECT: Water Quality-Based Effluent Limitations for Temperature for Superior Fresh, LLC
WPDES Permit No. WI-0065200

This is in response to a request from Superior Fresh for an evaluation of the need for water quality-based effluent limitations (WQBELs) for temperature using chapters NR 102 and 106 of the Wisconsin Administrative Code, for the discharge from Superior Fresh, LLC in Jackson County. This industrial discharge is to a tributary of Pigeon Creek, located in the Pigeon Creek Watershed in the Buffalo - Trempealeau River Basin. After review of submitted data, the limits may be removed before taking effect in the permit, but monitoring should continue. The evaluation of the permit recommendations is discussed in more detail in the attached report.

Attachments (4) – Narrative, Thermal Tables, & Map

PREPARED BY: _____ Date: 12/15/2025

Benjamin Hartenbower, PE,
Water Resources Engineer

E-cc:

Jenna Monahan, Wastewater Engineer – WCR/Eau Claire
Geisa Bittencourt, Regional Wastewater Supervisor – WCR/Eau Claire

Attachment #1

WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR THERMAL

Surface water quality standards for temperature took effect on October 1, 2010. These regulations are detailed in chs. NR 102 (Subchapter II – Water Quality Standards for Temperature) and NR 106 (Subchapter V – Effluent Limitations for Temperature) of the Wisconsin Administrative Code. Daily maximum and weekly average temperature criteria are available for the 12 different months of the year depending on the receiving water classification.

In accordance with s. NR 106.53(2)(b), Wis. Adm. Code, the highest daily maximum flow rate for a calendar month is used to determine the acute (daily maximum) effluent limitation. In accordance with s. NR 106.53(2)(c), Wis. Adm. Code, the highest 7-day rolling average flow rate for a calendar month is used to determine the sub-lethal (weekly average) effluent limitation. These values were based off actual flow reported from March 2024 to September 2025.

The tables below summarize the maximum temperatures reported from March 2024 to September 2025.

Monthly Temperature Effluent Data & Limits (Outfall 001)
(March 2024 to September 2025)

Month	Representative Highest Monthly Effluent Temperature		Calculated Effluent Limit	
	Weekly Maximum (°F)	Daily Maximum (°F)	Weekly Average Effluent Limitation (°F)	Daily Maximum Effluent Limitation (°F)
JAN	53	53	63	112
FEB	50	50	63	109
MAR	51	51	58	84
APR	52	54	60	100
MAY	53	53	70	98
JUN	54	55	82	95
JUL	54	54	89	95
AUG	54	55	90	95
SEP	54	54	81	96
OCT	52	53	68	100
NOV	53	53	55	103
DEC	53	53	61	111

Attachment #1

Monthly Temperature Effluent Data & Limits (Outfall 014)
(March 2024 to September 2025)

Month	Representative Highest Monthly Effluent Temperature		Calculated Effluent Limit	
	Weekly Maximum (°F)	Daily Maximum (°F)	Weekly Average Effluent Limitation (°F)	Daily Maximum Effluent Limitation (°F)
JAN	55	56	74	120
FEB	54	55	75	120
MAR	57	58	73	120
APR	57	58	66	120
MAY	57	58	76	118
JUN	56	57	91	111
JUL	58	58	99	109
AUG	58	58	102	110
SEP	58	59	93	115
OCT	58	58	78	120
NOV	58	58	63	120
DEC	61	62	71	120

Reasonable Potential
Permit limits for temperature are recommended based on the procedures in s. NR 106.56, Wis. Adm. Code.

- An acute limit for temperature is recommended for each month in which the representative daily maximum effluent temperature for that month exceeds the acute WQBEL. The representative daily maximum effluent temperature is the greater of the following:
  (a) The highest recorded representative daily maximum effluent temperature
  (b) The projected 99th percentile of all representative daily maximum effluent temperatures
- A sub−lethal limitation for temperature is recommended for each month in which the representative weekly average effluent temperature for that month exceeds the weekly average WQBEL. The representative weekly average effluent temperature is the greater of the following:
  (a) The highest weekly average effluent temperature for the month.
  (b) The projected 99th percentile of all representative weekly average effluent temperatures for the month

Comparing the representative highest effluent temperature to the calculated effluent limits determines the reasonable potential of exceeding the effluent limits. Based on this analysis, **temperature maximum limits are not required for Outfalls 001 and 014**. The complete thermal tables used for the limit calculations are attached. **Daily temperature monitoring should remain in the permit.**

Attachment #2

Temperature limits for receiving waters with unidirectional flow

(calculation using default ambient temperature data)

						Temp Dates	Flow Dates
Facility:	Superior Fresh, LLC		**7-Q_{10}:**	0.20	cfs		
Outfall(s):	001		**Dilution:**	25%		**Start:**	03/01/24	03/01/24
Date Prepared:	11/12/2025		**f:**	0		**End:**	09/30/25	09/30/25
Design Flow (Qe):	0.045	MGD	**Stream type:**	Small warm water sport or forage fish community			
Storm Sewer Dist.	0	ft	**Qs:Qe ratio:**	0.7	:1		
			Calculation Needed?	YES			

Month	Water Quality Criteria			Receiving Water Flow Rate (Qs)	Representative Highest Effluent Flow Rate (Qe)		f	Representative Highest Monthly Effluent Temperature		Calculated Effluent Limit	
	Ta (default)	Sub-Lethal WQC	Acute WQC		7-day Rolling Average (Qesl)	Daily Maximum Flow Rate (Qea)		Weekly Average	Daily Maximum	Weekly Average Effluent Limitation	Daily Maximum Effluent Limitation
	(°F)	(°F)	(°F)	(cfs)	(MGD)	(MGD)		(°F)	(°F)	(°F)	(°F)
JAN	33	49	76	0.05	0.038	0.038	0	53	53	63	112
FEB	34	50	76	0.05	0.040	0.041	0	50	50	63	109
MAR	38	52	77	0.05	0.072	0.172	0	51	51	58	84
APR	48	55	79	0.05	0.047	0.048	0	52	54	60	100
MAY	58	65	82	0.05	0.047	0.048	0	53	53	70	98
JUN	66	76	84	0.05	0.051	0.052	0	54	55	82	95
JUL	69	81	85	0.05	0.050	0.051	0	54	54	89	95
AUG	67	81	84	0.05	0.049	0.050	0	54	55	90	95
SEP	60	73	82	0.05	0.050	0.051	0	54	54	81	96
OCT	50	61	80	0.05	0.048	0.048	0	52	53	68	100
NOV	40	49	77	0.05	0.045	0.046	0	53	53	55	103
DEC	35	49	76	0.05	0.037	0.038	0	53	53	61	111

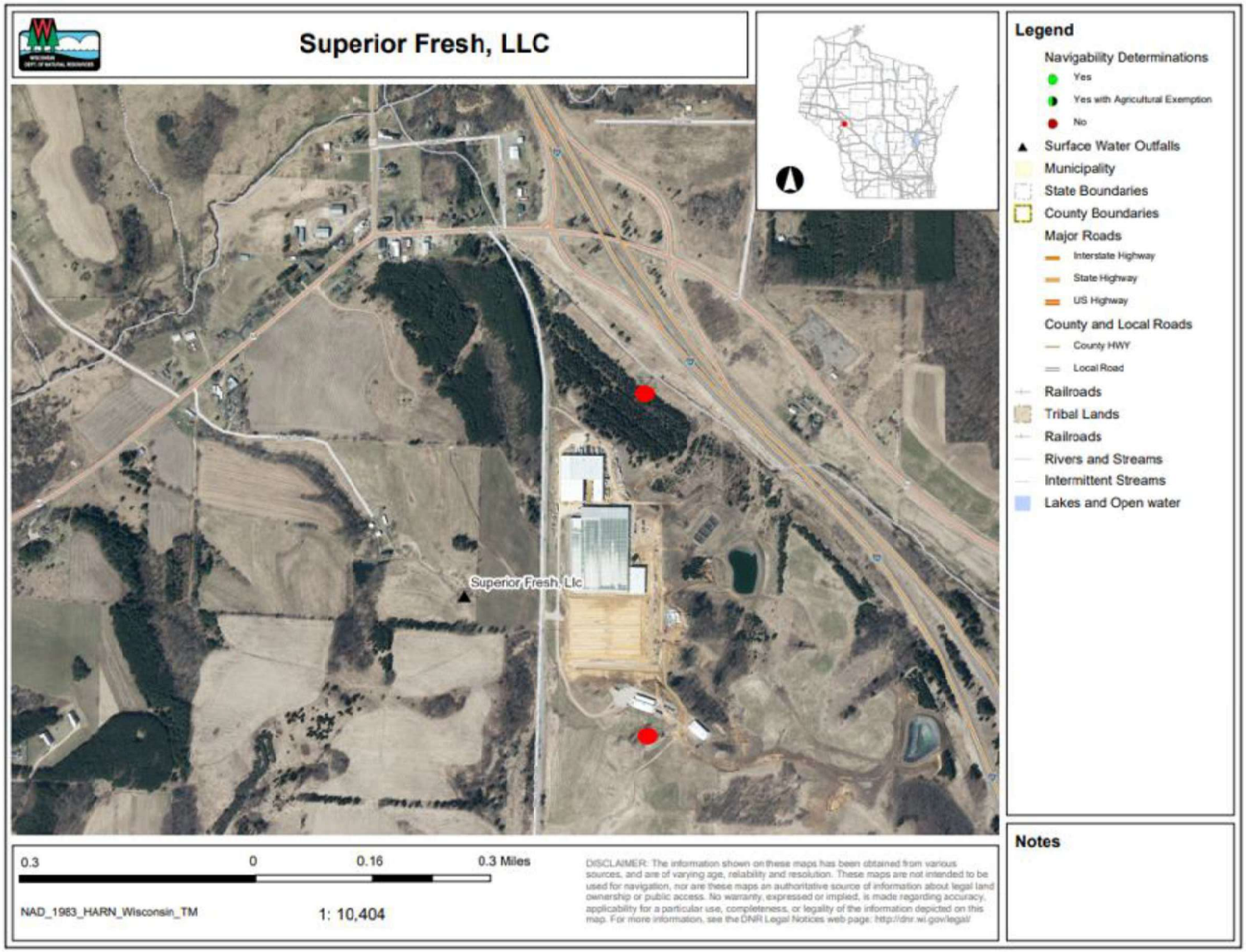
Attachment #3

Temperature limits for receiving waters with unidirectional flow

(calculation using default ambient temperature data)

						Temp Dates	Flow Dates
Facility:	Superior Fresh, LLC		**7-Q_{10}:**	0.20 cfs			
Outfall(s):	014		**Dilution:**	25%	**Start:**	03/01/24	03/01/24
Date Prepared:	11/12/2025		**f:**	0	**End:**	09/30/25	09/30/25
Design Flow (Qe):	0.021	MGD	**Stream type:**	Small warm water sport or forage fish community			
Storm Sewer Dist.	0	ft	**Qs:Qe ratio:**	1.5 :1			
			Calculation Needed?	YES			

Month	Water Quality Criteria			Receiving Water Flow Rate (Qs)	Representative Highest Effluent Flow Rate (Qe)		f	Representative Highest Monthly Effluent Temperature		Calculated Effluent Limit	
	Ta (default)	Sub-Lethal WQC	Acute WQC		7-day Rolling Average (Qesl)	Daily Maximum Flow Rate (Qea)		Weekly Average	Daily Maximum	Weekly Average Effluent Limitation	Daily Maximum Effluent Limitation
	(°F)	(°F)	(°F)	(cfs)	(MGD)	(MGD)		(°F)	(°F)	(°F)	(°F)
JAN	33	49	76	0.05	0.021	0.021	0	55	56	74	120
FEB	34	50	76	0.05	0.021	0.021	0	54	55	75	120
MAR	38	52	77	0.05	0.021	0.021	0	57	58	73	120
APR	48	55	79	0.05	0.021	0.021	0	57	58	66	120
MAY	58	65	82	0.05	0.021	0.021	0	57	58	76	118
JUN	66	76	84	0.05	0.021	0.021	0	56	57	91	111
JUL	69	81	85	0.05	0.021	0.021	0	58	58	99	109
AUG	67	81	84	0.05	0.021	0.021	0	58	58	102	110
SEP	60	73	82	0.05	0.021	0.021	0	58	59	93	115
OCT	50	61	80	0.05	0.021	0.021	0	58	58	78	120
NOV	40	49	77	0.05	0.021	0.021	0	58	58	63	120
DEC	35	49	76	0.05	0.021	0.021	0	61	62	71	120


Superior Fresh, LLC
Superior Fresh, Llc
Legend
Navigability Determinations
Yes
Yes with Agricultural Exemption
No
Surface Water Outfalls
Municipality
State Boundaries
County Boundaries
Major Roads
Interstate Highway
State Highway
US Highway
County and Local Roads
County HWY
Local Road
Railroads
Tribal Lands
Railroads
Rivers and Streams
Intermittent Streams
Lakes and Open water
Notes
0.3
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0.16
0.3 Miles
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1: 10,404
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CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: September 19, 2023

TO: Holly Heldstab– WCR/Eau Claire

FROM: Benjamin Hartenbower – WCR/Eau Claire

SUBJECT: Water Quality-Based Effluent Limitations for Superior Fresh, LLC
WPDES Permit No. WI-0065200

This is in response to your request for an evaluation of the need for water quality-based effluent limitations (WQBELs) using chapters NR 102, 104, 105, 106, 207, 210, 212, and 217 of the Wisconsin Administrative Code (where applicable), for the discharge from Superior Fresh, LLC in Jackson County. This industrial discharge is to an unnamed tributary of Pigeon Creek, located in the Pigeon Creek Watershed in the Buffalo - Trempealeau River Basin. The evaluation of the permit recommendations is discussed in more detail in the attached report.

Based on our review, the following recommendations are made on a chemical-specific basis for the following Outfalls:

Outfall 001:

Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Six-Month Average	Footnotes
Flow Rate						1,2
BOD_5						1,2
TSS						1,2
pH	9.0 s.u.	6.0 s.u.				1
Ammonia Nitrogen						1,2
Temperature November December – February March April			 51 deg F 53 deg F 55 deg F 56 deg F			
Phosphorus MCL WQT Computed (TP)				 1.0 mg/L 0.18 mg/L	 0.06 mg/L, 0.14 lbs/day	2
Chronic WET						3,4

Footnotes:

1. No changes from the current permit.
2. Monitoring only.
3. Three chronic WET tests are recommended in the reissued permit. Sampling WET concurrently with any chemical-specific toxic substances is recommended. Tests should be done in rotating quarters, to collect seasonal information about this discharge and should continue after the permit expiration date (until the permit is reissued).

4. The Instream Waste Concentration (IWC) to assess chronic test results is 78%. According to the *State of Wisconsin Aquatic Life Toxicity Testing Methods Manual* (s. NR 219.04, Table A, Wis. Adm. Code), chronic testing shall be performed using a dilution series of 100%, 75%, 50%, 25% & 12.5% the dilution water used in WET tests conducted on Outfall 001 shall be a grab sample collected from the unnamed tributary of Pigeon Creek in an area outside the influence of the discharge from the outfall.

Outfall 014:

Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Six-Month Average	Footnotes
Flow Rate						1,2
BOD_5						1,2
TSS						1,2
pH	9.0 s.u.	6.0 s.u.				1
Ammonia Nitrogen						2
Temperature						2
Phosphorus MCL WQT Computed (TP)				1.0 mg/L 0.18 mg/L	0.06 mg/L, 0.011 lbs/day	2
Chronic WET						3,4

Footnotes:

1. No changes from the current permit.
2. Monitoring only.
3. Two Chronic WET tests are recommended in the reissued permit. Sampling WET concurrently with any chemical-specific toxic substances is recommended. Tests should be done in rotating quarters, to collect seasonal information about this discharge and should continue after the permit expiration date (until the permit is reissued).
4. The Instream Waste Concentration (IWC) to assess chronic test results is 40%. According to the *State of Wisconsin Aquatic Life Toxicity Testing Methods Manual* (s. NR 219.04, Table A, Wis. Adm. Code), chronic testing shall be performed using a dilution series of 100%, 75%, 50%, 25% & 12.5% the dilution water used in WET tests conducted on Outfall 001 shall be a grab sample collected from the unnamed tributary of Pigeon Creek in an area outside the influence of the discharge from the outfall.

Please consult the attached report for details regarding the above recommendations. If there are any questions or comments, please contact Benjamin Hartenbower at (715) 225-4705 or Benjamin.Hartenbower@wisconsin.gov or Diane Figiel at Diane.Figiel@wisconsin.gov.

Attachments (4) – Narrative, Thermal Tables, & Map

PREPARED BY: _____ Date: 09/19/2023

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Attachment #1

Water Quality-Based Effluent Limitations for
Superior Fresh, LLC

WPDES Permit No. WI-0065200

Prepared by: Benjamin P. Hartenbower

PART 1 – BACKGROUND INFORMATION

Facility Description:
Superior Fresh LLC is an aquaponics facility raising Atlantic salmon and rainbow trout. Production system waters from the aquaculture system are reused in a hydroponics system with eventual discharge to groundwater via land treatment/disposal. The surface water discharge from the 001 outfall facility consists of wastewater from the original phase 1 depuration system consisting of approximately 40 gpm. The 001 outfall is located on the north side of the Fish House, at the north end of the property. It is located at the bottom of the hill approximately 100 yards from the tributary The surface water discharge from the Red Barn (Outfall 014) consists of wastewater from a newly installed Partial Recirculating Aquaculture System (PRAS). Solids generated from this system are sent to the sludge drying beds. Outfall 014 is located on a hillside 200 ft from the building and 2500 ft away from Outfall 001 eventually entering the same tributary of Pigeon Creek.

Attachment #4 is a map of the area showing the approximate locations of Outfalls 001 and 014.

Existing Permit Limitations: The current permit, which expired on March 30, 2023, includes the following effluent limitations and monitoring requirements.

Outfall 001:

Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Six-Month Average	Footnotes
Flow Rate						1,2
BOD_5						1,2,3
TSS						1,2,3
pH	9.0 s.u.	6.0 s.u.				1
Ammonia Nitrogen						2
Hydrogen Peroxide	0.3 mg/L 0.16 lbs/day					4
Temperature						2
Phosphorus MCL WQT Computed (TP)				1.0 mg/L 0.18 mg/L	0.06 mg/L, 0.2 lbs/day	

Outfall 014:

Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Six-Month Average	Footnotes
Flow Rate						1,2
BOD_5						1,2,3
TSS						1,2,3
pH	9.0 s.u.	6.0 s.u.				1
Ammonia Nitrogen						2
Temperature						2
Phosphorus MCL WQT Computed (TP)				1.0 mg/L 0.18 mg/L	0.06 mg/L, 0.013 lbs/day	2

Footnotes:

1. These limitations are not being evaluated as part of this review. Because the water quality criteria (WQC), reference effluent flow rates, and receiving water characteristics have not changed, limitations for these water quality characteristics do not need to be re-evaluated at this time.
2. Monitoring only
3. A BMP plan pursuant to 40 CFR 451.11 and ss. 283.13(2) and 283.31(3)(d)2, Wis. Stats, is implemented in the current permit to minimize the discharge of solids and other pollutants.
4. Use restrictions for this additive are based on the Secondary Acute Value of 0.295 mg/L.

Receiving Water Information

- Name: an unnamed tributary of Pigeon Creek
- Waterbody Identification Code (WBIC): N/A (1792500 for Pigeon Creek)
- Classification used in accordance with chs. NR 102 and 104, Wis. Adm. Code: Warm Water Sport Fish (WWSF) community, non-public water supply.
  Low flows used in accordance with chs. NR 106 and 217, Wis. Adm. Code: The 7-Q_{10}, 7-Q_2, and Harmonic Mean are estimated using basin characteristics.
  7-Q_{10} = 0.20 cfs (cubic feet per second)
  7-Q_2 = 0.64 cfs
  Harmonic Mean Flow = 0.49 cfs using a drainage area of 1.2 mi^2.

The Harmonic Mean has been estimated based on average flow and the 7-Q_{10} using an equation from U.S. EPA's Technical Support Document for Water Quality-Based Toxics Control (March 1991, EPA/505/2-90-001, pgs. 88-89).

- Hardness = 69 mg/L as $CaCO_3$. This value represents the geometric mean of 19 samples collected in the Trempealeau River at Whitehall from 10/04/1988 to 05/18/2006.
- % of low flow used to calculate limits in accordance with s. NR 106.06(4)(c)5., Wis. Adm. Code: 25%

- Source of background concentration data: Metals data from Pigeon Creek at York is used for this evaluation because there is no data available for an unnamed tributary of Pigeon Creek and Pigeon Creek is within the same ecological landscape so ambient water quality characteristics are expected to be similar. The numerical values are shown in the tables below. If no data is available, the background concentration is assumed to be negligible and a value of zero is used in the computations. Background data for calculating effluent limitations for ammonia nitrogen are described later.
- Multiple dischargers: None
- Impaired water status: Pigeon Creek is listed as impaired for Total Phosphorus.

Effluent Information:

- Flow Rates(s):
  Maximum Annual Average (001) = 0.116 MGD (Million Gallons per Day)
  Maximum 30-day Average (001) = 0.278 MGD
  Maximum Annual Average (014) = 0.022 MGD
  Maximum 30-day Average (014) = 0.022 MGD
- Hardness = 48 mg/L as $CaCO_3$. This value represents the geometric mean of 4 effluent samples collected from 02/06/2023 to 02/16/2023.
- Acute dilution factor used in accordance with s. NR 106.06 (3) (c), Wis. Adm. Code: Not applicable – this facility does not have an approved Zone of Initial Dilution (ZID).
- Water Source: Process wastewater from aquaculture and hydroponics.
- Additives: None
- Effluent characterization: This facility is categorized as a secondary industry, so the permit application required effluent sample analyses for a limited number of common pollutants, as specified in s. NR 200.065, Table 1, Wis. Adm. Code, primarily metal substances plus Chloride and hardness. The permit-required monitoring for Ammonia and Phosphorus from April 2018 to May 2023 is used in this evaluation.

  Effluent data for substances for which a single sample was analyzed is shown in the tables in Part 2 below, in the column titled “MEAN EFFL. CONC.”.

The following table presents the average concentrations and loadings at Outfalls 001 and 014 from April 2018 to May 2023 for all parameters with limits in the current permit to meet the requirements of s. NR 201.03(6):

Parameter Averages with Limits (001)

	Average Measurement	Average Mass Discharged
pH	6.68 s.u.	
Additive - Hydrogen Peroxide	2.52×10^6 mg/L*	0.0715 lbs/day
Phosphorus	0.591 mg/L	0.2472 lbs/day

*Results below the level of detection (LOD) were included as zeroes in calculation of average.

Parameter Averages with Limits (014)

	Average Measurement	Average Mass Discharged
pH	6.72 s.u.	
Phosphorus	0.577 mg/L	0.117 lbs/day

PART 2 – WATER QUALITY-BASED Effluent Limitations for Toxic Substances – EXCEPT AMMONIA NITROGEN

Permit limits for toxic substances are required whenever any of the following occur:

1. The maximum effluent concentration exceeds the calculated limit (s. NR 106.05(3), Wis. Adm. Code)
2. If 11 or more detected results are available in the effluent, the upper 99th percentile (or P_{99}) value exceeds the comparable calculated limit (s. NR 106.05(4), Wis. Adm. Code)
3. If fewer than 11 detected results are available, the mean effluent concentration exceeds 1/5 of the calculated limit (s. NR 106.05(6), Wis. Adm. Code)

Acute Limits based on 1-Q_{10}

Daily maximum effluent limitations for toxic substances are based on the acute toxicity criteria (ATC), listed in ch. NR 105, Wis. Adm. Code. Previously daily maximum limits for toxic substances were calculated as two times the ATC. However, changes to ch. NR 106, Wis. Code, (September 1, 2016) require the Department to calculate acute limitations using the same mass balance equation as used for other limits along with the 1-Q_{10} receiving water low flow to determine if more restrictive effluent limitations are needed to protect the receiving stream from discharges which may cause or contribute to an exceedance of the acute water quality standards. The mass balance equation is provided below.

$$\text{Limitation} = \frac{(WQC)\,(Qs + (1-f)\,Qe) - (Qs - f\,Qe)\,(Cs)}{Qe}$$

Where:

WQC =Acute toxicity criterion or secondary acute value according to ch. NR 105, Wis. Adm. Code.

Qs = average minimum 1-day flow which occurs once in 10 years (1-day Q_{10}) if the 1-day Q_{10} flow data is not available = 80% of the average minimum 7-day flow which occurs once in 10 years (7-day Q_{10}).

Qe = Effluent flow (in units of volume per unit time) as specified in s. NR 106.06(4)(d), Wis. Adm. Code.

f = Fraction of the effluent flow that is withdrawn from the receiving water, and

Cs = Background concentration of the substance (in units of mass per unit volume) as specified in s. NR 106.06(4)(e), Wis. Adm. Code.

If the receiving water is effluent dominated under low stream flow conditions, the 1-Q_{10} method of limit calculation produces the most stringent daily maximum limitations and should be used while making reasonable potential determinations. This is the case for Superior Fresh, LLC.

The following tables list the calculated WQBELs for this discharge along with the results of effluent sampling. All concentrations are expressed in terms of micrograms per Liter (µg/L), except for hardness and chloride (mg/L).

Daily Maximum Limits based on Acute Toxicity Criteria (ATC)

(Outfall 001)

RECEIVING WATER FLOW = 0.16 cfs, (1-Q_{10} (estimated as 80% of 7-Q_{10})), as specified in s. NR 106.06 (3) (bm), Wis. Adm. Code.

SUBSTANCE	REF. HARD. mg/L	ATC	MEAN BACK-GRD.	MAX. EFFL. LIMIT**	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.	1-day P_{99}	1-day MAX. CONC.
Arsenic		339.8		370	74	<1.1		
Cadmium	48	4.49	0.038	5	1.0	<0.19		
Chromium (+3)	48	996.8	0.678	1076	215	<1.1		
Copper	48	7.84	1.130	8	1.7	<1.9		
Lead	48	53.14	0.526	57	11	<4.3		
Nickel	48	254.36		275	55	1.8		
Zinc	48	63.93	19.789	67	13	7.5		
Chloride		757		824	165	9		

* * Per the changes to s. NR 106.07(3), Wis. Adm. Code, effective 09/01/2016 consideration of ambient concentrations and 1-Q_{10} flow rates yields a more restrictive limit than the 2 × ATC method of limit calculation.

(Outfall 014)

RECEIVING WATER FLOW = 0.16 cfs, (1-Q_{10} (estimated as 80% of 7-Q_{10})), as specified in s. NR 106.06 (3) (bm), Wis. Adm. Code.

SUBSTANCE	REF. HARD. mg/L	ATC	MEAN BACK-GRD.	MAX. EFFL. LIMIT**	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.	1-day P_{99}	1-day MAX. CONC.
Arsenic		339.8		501.8	100.4	<1.1		
Cadmium	47	4.33	0.038	6.4	1.3	<0.19		
Chromium (+3)	47	971.4	0.678	1434.2	286.8	<1.1		
Copper	47	7.61	1.130	10.7	2.1	<1.9		
Lead	47	51.55	0.526	75.9	15.2	<4.3		
Nickel	47	247.7		365.8	73.2	2.4		
Zinc	47	62.19	19.789	82.4	16.5	11		
Chloride		757		1118	224	9		

* * Per the changes to s. NR 106.07(3), Wis. Adm. Code, effective 09/01/2016 consideration of ambient concentrations and 1-Q_{10} flow rates yields a more restrictive limit than the 2 × ATC method of limit calculation.

Weekly Average Limits based on Chronic Toxicity Criteria (CTC)

(Outfall 001)
RECEIVING WATER FLOW = 0.05 cfs (¼ of the 7-Q_{10}), as specified in s. NR 106.06 (4) (c), Wis. Adm. Code

SUBSTANCE	REF. HARD. mg/L	CTC	MEAN BACK-GRD.	WEEKLY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.	4-day P_{99}
Arsenic		152.2		194.4	38.9	<1.1	
Cadmium	69	1.84	0.038	2.3	0.5	<0.19	
Chromium (+3)	69	97.43	0.678	124.3	24.9	<1.1	
Copper	69	7.53	1.130	9.3	1.9	<1.9	
Lead	69	19.55	0.526	24.8	5.0	<4.3	
Nickel	69	38.11		48.7	9.7	1.8	
Zinc	69	86.96	19.789	105.6	21.1	7.5	
Chloride		395		505	101	9	

(Outfall 014)
RECEIVING WATER FLOW = 0.05 cfs (¼ of the 7-Q_{10}), as specified in s. NR 106.06 (4) (c), Wis. Adm. Code

SUBSTANCE	REF. HARD. mg/L	CTC	MEAN BACK-GRD.	WEEKLY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.	4-day P_{99}
Arsenic		152.2		378.9	75.8	<1.1	
Cadmium	69	1.84	0.038	4.5	0.9	<0.19	
Chromium (+3)	69	97.43	0.678	241.6	48.3	<1.1	
Copper	69	7.53	1.130	17.1	3.4	<1.9	
Lead	69	19.55	0.526	47.9	9.6	<4.3	
Nickel	69	38.11		94.9	19	2.4	
Zinc	69	86.96	19.789	187	37.4	11	
Chloride		395		983	197	9	

Monthly Average Limits based on Wildlife Criteria (WC)
The effluent characterization did not include any effluent sampling results for substances for which Wildlife Criteria exist.

Monthly Average Limits based on Human Threshold Criteria (HTC)

(Outfall 001)

RECEIVING WATER FLOW = 0.12 cfs (¼ of Harmonic Mean), as specified in s. NR 106.06 (4), Wis. Adm. Code.

SUBSTANCE	HTC	MEAN BACK-GRD.	MO'LY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.
Cadmium	370	0.038	623	125	<0.19
Chromium (+3)	3818000	0.678	6424442	1284888	<1.1
Lead	140	0.526	235.2	47	<4.3
Nickel	43000		72355	14471	1.8

(Outfall 014)

RECEIVING WATER FLOW = 0.12 cfs (¼ of Harmonic Mean), as specified in s. NR 106.06 (4), Wis. Adm. Code.

SUBSTANCE	HTC	MEAN BACK-GRD.	MO'LY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.
Cadmium	370	0.038	1725	345	<0.19
Chromium (+3)	3818000	0.678	17805728	3561146	<1.1
Lead	140	0.526	651	130.2	<4.3
Nickel	43000		200536	40107	2

Monthly Average Limits based on Human Cancer Criteria (HCC)

(Outfall 001)

RECEIVING WATER FLOW = 0.12 cfs (¼ of Harmonic Mean), as specified in s. NR 106.06 (4), Wis. Adm. Code.

SUBSTANCE	HCC	MEAN BACK-GRD.	MO'LY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.
Arsenic	13.3		22.4	4.5	<1.1

(Outfall 014)

RECEIVING WATER FLOW = 0.12 cfs (¼ of Harmonic Mean), as specified in s. NR 106.06 (4), Wis. Adm. Code.

SUBSTANCE	HCC	MEAN BACK-GRD.	MO'LY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.
Arsenic	13.3		62	12.4	<1.1

In addition to evaluating the need for limits for each individual substance for which HCC exist, s. NR 106.06(8), Wis. Adm. Code, requires the evaluation of the cumulative cancer risk. Because only one limit is needed based on HCC, determination of the cumulative cancer risk is not needed per s. NR 106.06(8), Wis. Adm. Code.

Conclusions and Recommendations: Based on a comparison of the effluent data and calculated effluent limitations, limits are not required for toxic substances.

PFOS and PFOA

The need for PFOS and PFOA monitoring is evaluated in accordance with s. NR 106.98, Wis. Adm. Code. Based on the type of discharge, it is unlikely that the effluent will contain PFOS or PFOA. **Therefore, monitoring is not recommended**. If information becomes available that indicates PFOS or PFOA may be present in the effluent or source water, the monitoring requirements may change.

PART 3 – WATER QUALITY-BASED Effluent Limitations for AMMONIA NITROGEN

The State of Wisconsin promulgated revised water quality standards for ammonia nitrogen in ch. NR 105, Wis. Adm. Code, effective March 1, 2004 which includes criteria based on both acute and chronic toxicity to aquatic life. Given the fact that Superior Fresh, LLC does not currently have ammonia nitrogen limits, the need for limits is evaluated at this time.

Daily Maximum Limits based on Acute Toxicity Criteria (ATC):

Daily maximum limitations are based on acute toxicity criteria in ch. NR 105, Wis. Adm. Code, which are a function of the effluent pH and the receiving water classification. The acute toxicity criterion (ATC) for ammonia is calculated using the following equation.

$$\text{ATC in mg/L} = [A \div (1 + 10^{(7.204 - pH)})] + [B \div (1 + 10^{(pH - 7.204)})]$$

Where:

A = 0.411 and B = 58.4 for a Warm Water Forage fishery, and
pH (s.u.) = that characteristic of the effluent.

Daily Maximum Ammonia Nitrogen Effluent Limitations Calculation Method

In accordance with s. NR 106.32(2), Wis. Adm. Code daily maximum ammonia limitations are calculated using the the 1-Q_{10} receiving water low flow if it is determined that the previous method of acute ammonia limit calculation (2×ATC) is not sufficiently protective of the fish and aquatic life. The more restrictive calculated limits shall apply.

The effluent pH data was examined as part of this evaluation. For Outfall 001, a total of 61 sample results were reported from April 2018 to May 2023. The maximum reported value was 7.60 s.u. (Standard pH Units). The 1-day P99, calculated in accordance with s. NR 106.05(5), Wis. Adm. Code, is 7.28 s.u. The mean plus the standard deviation multiplied by a factor of 2.33, an estimate of the upper ninety ninth percentile for a normally distributed dataset, is 7.26 s.u. Therefore, a value of 7.60 s.u. is believed to represent the maximum reasonably expected pH, and therefore most appropriate for determining daily maximum limitations for ammonia nitrogen. Substituting a value of 7.60 s.u. into the equation above yields an ATC = 17.03 mg/L. The same procedure was used to select a pH value of 7.32 for Outfall 014, resulting in a calculated ATC of 25.56 mg/L.

Daily Maximum Ammonia Nitrogen Effluent Limitations Calculation Method
In accordance with s. NR 106.32(2), Wis. Adm. Code daily maximum ammonia limitations are calculated using the the 1-Q_{10} receiving water low flow if it is determined that the previous method of acute ammonia limit calculation (2×ATC) is not sufficiently protective of the fish and aquatic life. The more restrictive calculated limits shall apply.

The calculated daily maximum ammonia nitrogen effluent limits using the mass balance approach with the 1-Q_{10} (estimated as 80 % of 7-Q_{10}) and the 2×ATC approach are shown below.

Daily Maximum Ammonia Nitrogen Determination

	Ammonia Nitrogen Limit (001)	Ammonia Nitrogen Limit (014)
2×ATC	34 mg/L	51 mg/L
1-Q_{10}	32 mg/L	147 mg/L

For Superior Fresh, LLC the 1-Q_{10} method yields the most stringent limits for Outfall 001 and the 2×ATC method yields the most stringent limits for Outfall 014.

Presented below is a table of daily maximum limitations corresponding to various effluent pH values. Use of this table is not necessarily recommended in the permit, but it is presented herein for informational purposes.

Daily Maximum Ammonia Nitrogen Limits – WWFF

Effluent pH s.u.	Limit mg/L	Effluent pH s.u.	Limit mg/L	Effluent pH s.u.	Limit mg/L
6.0 ≤ pH ≤ 6.1	102	7.0 < pH ≤ 7.1	68	8.0 < pH ≤ 8.1	16
6.1 < pH ≤ 6.2	100	7.1 < pH ≤ 7.2	62	8.1 < pH ≤ 8.2	13
6.2 < pH ≤ 6.3	98	7.2 < pH ≤ 7.3	56	8.2 < pH ≤ 8.3	11
6.3 < pH ≤ 6.4	95	7.3 < pH ≤ 7.4	49	8.3 < pH ≤ 8.4	8.9
6.4 < pH ≤ 6.5	92	7.4 < pH ≤ 7.5	43	8.4 < pH ≤ 8.5	7.3
6.5 < pH ≤ 6.6	88	7.5 < pH ≤ 7.6	38	8.5 < pH ≤ 8.6	6.0
6.6 < pH ≤ 6.7	84	7.6 < pH ≤ 7.7	32	8.6 < pH ≤ 8.7	5.0
6.7 < pH ≤ 6.8	79	7.7 < pH ≤ 7.8	27	8.7 < pH ≤ 8.8	4.1
6.8 < pH ≤ 6.9	74	7.8 < pH ≤ 7.9	23	8.8 < pH ≤ 8.9	3.4
6.9 < pH ≤ 7.0	102	7.9 < pH ≤ 8.0	19	8.9 < pH ≤ 9.0	2.9

Weekly and Monthly Average Limits based on Chronic Toxicity Criteria (CTC)
The ammonia limit calculation also warrants evaluation of weekly and monthly average limits based on chronic toxicity criteria for ammonia, since those limits relate to the assimilative capacity of the receiving water.

Weekly average and monthly average limits for ammonia nitrogen are based on chronic toxicity criteria in ch. NR 105, Wis. Adm. Code.

The 30-day chronic toxicity criterion (CTC) for ammonia in waters classified as a Warm Water Sport Fish Community is calculated by the following equation, according to subchapter IV of NR 106, Wis. Adm. Code.

$$CTC = E \times \{[0.0676 \div (1 + 10^{(7.688 - pH)})] + [2.912 \div (1 + 10^{(pH - 7.688)})]\} \times C$$

Where:

pH = the pH (s.u.) of the receiving water,
E = 0.854,
C = the minimum of 2.85 or $1.45 \times 10^{(0.028 \times (25 - T))}$ – (Early Life Stages Present), or
C = $1.45 \times 10^{(0.028 \times (25 - T))}$ – (Early Life Stages Absent), and
T = the temperature (ºC) of the receiving water – (Early Life Stages Present), or
T = the maximum of the actual temperature (ºC) and 7 - (Early Life Stages Absent)

The 4-day criterion is equal to the 30-day criterion multiplied by 2.5. The 4-day criteria are used in a mass-balance equation with the 7-Q_{10} (4-Q_3, if available) to derive weekly average limitations. The 30-day criteria are used with the 30-Q_5 (estimated as 85% of the 7-Q_2 if the 30-Q_5 is not available) to derive monthly average limitations. The stream flow value is further adjusted to temperature; 100% of the flow is used if the Temperature ≥ 16 ºC, 25% of the flow is used if the Temperature < 11 ºC, and 50% of the flow is used if the Temperature ≥ 11 ºC but < 16 ºC.

The "default" basin assumed values are used for Temperature, pH and background ammonia concentrations, because minimum ambient data is available. These values are shown in the table below, with the resulting criteria and effluent limitations.

Weekly and Monthly Ammonia Nitrogen Limits – WWFF

		May-October (001)	November-April (001)	May-October (014)	November-April (014)
Effluent Flow	Qe (MGD)	0.116	0.116	0.022	0.022
Background Information	7-Q_{10} (cfs)	0.20	0.20	0.20	0.20
	7-Q_2 (cfs)	0.64	0.64	0.64	0.64
	Ammonia (mg/L)	0.05	0.12	0.05	0.12
	Temperature (°C)	25	3	25	3
	pH (s.u.)	7.87	7.51	7.87	7.51
	% of Flow used	100	25	100	25
	Reference Weekly Flow (cfs)	0.20	0.05	0.20	0.05
	Reference Monthly Flow (cfs)	0.54	0.14	0.54	0.14
Criteria mg/L	4-day Chronic				
	Early Life Stages Present	3.70	10.81	3.70	10.81
	Early Life Stages Absent	3.70	17.56	3.70	17.56
	30-day Chronic				
	Early Life Stages Present	1.48	4.33	1.48	4.33
	Early Life Stages Absent	1.48	7.02	1.48	7.02

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		May-October (001)	November-April (001)	May-October (014)	November-April (014)
Effluent Limitations mg/L	Weekly Average				
	Early Life Stages Present	7.76	13.78	25.47	26.75
	Early Life Stages Absent		22.40		43.54
	Monthly Average				
	Early Life Stages Present	5.80	7.50	24.68	21.37
	Early Life Stages Absent		12.24		35.00

Effluent Data
The following table evaluates the statistics based upon ammonia data reported from April 2018 to May 2023, with those results being compared to the calculated limits to determine the need to include ammonia limits in the Superior Fresh, LLC permit for the respective month ranges.

Ammonia Nitrogen Effluent Data

	Outfall 001 May - Sept.	Outfall 001 Nov. - April	Outfall 014
1-day P_{99}	4.722	2.608	N/A
4-day P_{99}	2.558	1.451	N/A
30-day P_{99}	1.358	0.829	N/A
Mean*	0.861	0.565	0.530
Std	0.976	0.532	N/A
Sample size	31	29	4
Range	0.13 - 5.081	<0.17 - 2.763	0.447 - 0.669

*Values lower than the level of detection were substituted with a zero

Based on this comparison, there is no reasonable potential for either discharge to exceed any of the calculated ammonia nitrogen limits. **The current monitoring should continue.**

PART 4 – PHOSPHORUS

Water Quality-Based Effluent Limits (WQBEL)
Revisions to administrative rules regulating phosphorus took effect on December 1, 2010. These rule revisions include additions to s. NR 102.06, Wis. Adm. Code, which establish phosphorus standards for surface waters. Subchapter III of NR 217, Wis. Adm. Code, establishes procedures for determining WQBELs for phosphorus, based on the applicable standards in ch. NR 102, Wis. Adm. Code.

Section NR 102.06(3)(a), Wis. Adm. Code, specifically names river segments for which a phosphorus criterion of 0.100 mg/L applies. For other stream segments that are not specified in s. NR 102.06(3)(a), Wis. Adm. Code, s. NR 102.06(3)(b), Wis. Adm. Code, specifies a phosphorus criterion of 0.075 mg/L. The phosphorus criterion of 0.075 mg/L applies to the unnamed tributary of Pigeon Creek.

Downstream from the proposed outfall relocation, Pigeon Creek is listed as impaired on Wisconsin's approved 303(d) list for phosphorus related impairments. Section NR 217.13(8)(b) states that if a new discharger is proposing a discharge of phosphorus to a receiving or downstream water that is a phosphorus impaired water, the new discharger may not discharge phosphorus unless it can demonstrate the new discharge of phosphorus will improve water quality in the phosphorus impaired segment. The policy of established effluent limitations well below the applicable phosphorus criteria for new dischargers is supported in EPA's approval letter of NR 217 (dated 7/25/2012). At the time of the proposed new discharge in 2017, the phosphorus limit was set equal to the upper 95% confidence limit of the reference condition for wadeable streams in the North Central Hardwood Forest Ecoregion (60 µg/L).

Limit Expression
Because the calculated WQBEL is less than or equal to 0.3 mg/L, the effluent limit of 0.060 mg/L may be expressed as a six-month average. If a concentration limitation expressed as a six-month average is included in the permit, a monthly average concentration limitation of 0.180, equal to three times the WQBEL calculated under s. NR 217.13 shall also be included in the permit. The six-month average should be averaged during the months of May – October and November – April.

Mass Limits
Because the discharge is to a surface water that is to or upstream of a phosphorus impaired water, a mass limit is also required, pursuant to s. NR 217.14(1)(a), Wis. Adm. Code. In accordance with s. NR 217.13(2)(c)2b, Wis. Adm. Code, effluent flows for the phosphorus mass limit calculations have been based on the peak 30-day roling averages. **The mass limit for Outfall 001 is 0.060 mg/L × 8.34 × 0.278 MGD = 0.14 lbs/day expressed as a six-month average. The mass limit for Outfall 014 is 0.011 lbs/day, using a peak 30-day average of 0.022 MGD.**

WQT Minimum Control Level (MCL).
A water quality trading plan is in effect as an alternative compliance option to offset any Total Phosphorus discharged from Outfall 001 that exceeds the WQBELs. The phosphorus WQBELs may be expressed as computed compliance limits, but a Minimum Control Level (MCL) must be set as a limit not to be exceeded at either outfall location. **The existing MCL limit of 1.0 mg/L is recommended to continue.**

PART 5 – WATER QUALITY-BASED Effluent Limitations for THERMAL

Surface water quality standards for temperature took effect on October 1, 2010. These regulations are detailed in chs. NR 102 (Subchapter II – Water Quality Standards for Temperature) and NR 106 (Subchapter V – Effluent Limitations for Temperature) of the Wisconsin Administrative Code. Daily maximum and weekly average temperature criteria are available for the 12 different months of the year depending on the receiving water classification.

In accordance with s. NR 106.53(2)(b), Wis. Adm. Code, the highest daily maximum flow rate for a calendar month is used to determine the acute (daily maximum) effluent limitation. In accordance with s. NR 106.53(2)(c), Wis. Adm. Code, the highest 7-day rolling average flow rate for a calendar month is used to determine the sub-lethal (weekly average) effluent limitation. These values were based off actual flow reported from April 2018 to May 2023.

The tables below summarize the maximum temperatures reported during the current permit term.

Monthly Temperature Effluent Data & Limits (Outfall 001)
(April 2018 to May 2023)

Month	Representative Highest Monthly Effluent Temperature		Calculated Effluent Limit	
	Weekly Maximum (°F)	Daily Maximum (°F)	Weekly Average Effluent Limitation (°F)	Daily Maximum Effluent Limitation (°F)
JAN	61	63	**53**	84
FEB	59	61	**53**	83
MAR	60	62	**55**	83
APR	61	62	**56**	81
MAY	63	63	67	85
JUN	64	64	79	88
JUL	63	66	83	87
AUG	63	64	86	86
SEP	63	64	80	91
OCT	62	63	65	85
NOV	59	59	**51**	85
DEC	56	59	**53**	85

Monthly Temperature Effluent Data & Limits (Outfall 014)
(October 2022 to February 2023)

Month	Representative Highest Monthly Effluent Temperature		Calculated Effluent Limit	
	Weekly Maximum (°F)	Daily Maximum (°F)	Weekly Average Effluent Limitation (°F)	Daily Maximum Effluent Limitation (°F)
JAN	59	63	88	120
FEB	55	55	90	120
MAR			73	120
APR			65	120
MAY			75	118
JUN			91	111
JUL			99	109
AUG			102	109
SEP			92	115
OCT	54	55	72	87
NOV	55	55	69	120
DEC	55	55	85	120

Reasonable Potential
Permit limits for temperature are recommended based on the procedures in s. NR 106.56, Wis. Adm. Code.

- An acute limit for temperature is recommended for each month in which the representative daily maximum effluent temperature for that month exceeds the acute WQBEL. The representative daily maximum effluent temperature is the greater of the following:
  (a) The highest recorded representative daily maximum effluent temperature
  (b) The projected 99th percentile of all representative daily maximum effluent temperatures
- A sub−lethal limitation for temperature is recommended for each month in which the representative weekly average effluent temperature for that month exceeds the weekly average WQBEL. The representative weekly average effluent temperature is the greater of the following:
  (a) The highest weekly average effluent temperature for the month.
  (b) The projected 99th percentile of all representative weekly average effluent temperatures for the month

Comparing the representative highest effluent temperature to the calculated effluent limits determines the reasonable potential of exceeding the effluent limits. The months in which limitations are recommended are shown in bold. Based on this analysis, **weekly average temperature maximum limits are necessary for November through April at Outfall 001**. The complete thermal table used for the limit calculation is attached. **The current monitoring requirements at Outfalls 001 and 014 should continue.**

The following general options are available for a facility to explore potential relief from the temperature limits:

- Effluent monitoring data: Verification or additional effluent monitoring (flow and/or temperature) may be appropriate if there were questions on the representativeness of the current effluent data.
- Monthly low receiving water flows: Contract with USGS to generate monthly low flow estimates for the receiving water to be used in place of the annual low flow.
- Mixing zone studies: A demonstration of rapid and complete mixing may allow for the use of a mixing zone other than the default 25%.
- Collection of site-specific ambient temperature: default background temperatures for streams in Wisconsin, so actual data from the direct receiving water may provide for relaxed thermal limits but only if the site-specific temperatures are lower than the small stream defaults used in the above tables
- A variance to the water quality standard: This is typically considered to be the least preferable and most complex option as it requires the evaluation of the other alternatives.

These options are explained in additional detail in the August 15, 2013 Department *Guidance for Implementation of Wisconsin's Thermal Water Quality Standards*
http://dnr.wi.gov/topic/surfacewater/documents/ThermalGuidance2edition8152013.pdf

PART 6 – WHOLE EFFLUENT TOXICITY (WET)

WET testing is used to measure, predict, and control the discharge of toxic materials that may be harmful to aquatic life. In WET tests, organisms are exposed to a series of effluent concentrations for a given time and effects are recorded. Decisions below related to the selection of representative data and the need for WET limits were made according to ss. NR 106.08 and 106.09, Wis. Adm. Code. WET monitoring frequency and toxicity reduction evaluation (TRE) recommendations were made using the best professional judgment of staff familiar with the discharge after consideration of the guidance in the *Whole Effluent Toxicity (WET) Program Guidance Document (2022).*

- Acute tests predict the concentration that causes lethality of aquatic organisms during a 48 to 96-hour exposure. To assure that a discharge is not acutely toxic to organisms in the receiving water, WET tests must produce a statistically valid LC_{50} (Lethal Concentration to 50% of the test organisms) greater than 100% effluent, according to s. NR 106.09(2)(b), Wis. Adm Code.

- Chronic tests predict the concentration that interferes with the growth or reproduction of test organisms during a seven-day exposure. To assure that a discharge is not chronically toxic to organisms in the receiving water, WET tests must produce a statistically valid IC_{25} (Inhibition Concentration) greater than the instream waste concentration (IWC), according to s. NR 106.09(3)(b), Wis. Adm Code. The IWC is an estimate of the proportion of effluent to total volume of water (receiving water + effluent). The IWCs of **78% at Outfall 001 and 40% at Outfall 014** are shown in the WET Checklist summary below ande were calculated according to the following equation, as specified in s. NR 106.03(6), Wis. Adm Code:

$$\text{IWC (as \%)} = Q_e \div \{(1 - f)\, Q_e + Q_s\} \times 100$$

Where:

Q_e (001) = Max annual average flow = 0.116 MGD = 0.180 cfs
Q_e (014) = Max annual average flow = 0.022 MGD = 0.034 cfs
f = fraction of the Q_e withdrawn from the receiving water = 0
Q_s = ¼ of the 7-Q_{10} = 0.20 cfs ÷ 4 = 0.05 cfs

- According to the *State of Wisconsin Aquatic Life Toxicity Testing Methods Manual* (s. NR 219.04, Table A, Wis. Adm. Code), a synthetic (standard) laboratory water may be used as the dilution water and primary control in acute WET tests, unless the use of different dilution water is approved by the Department prior to use. The primary control water must be specified in the WPDES permit.

- According to the *State of Wisconsin Aquatic Life Toxicity Testing Methods Manual* (s. NR 219.04, Table A, Wis. Adm. Code), receiving water must be used as the dilution water and primary control in chronic WET tests, unless the use of different dilution water is approved by the Department prior to use. The dilution water used in WET tests conducted on Outfalls 001 and 014 shall be a grab sample collected from the receiving water location, upstream and out of the influence of the mixing zone and any other known discharge.The specific receiving water location must be specified in the WPDES permit.

The WET checklist was developed to help DNR staff make recommendations regarding WET limits, monitoring, and other related permit conditions. The checklist indicates whether acute and chronic WET limits are needed, based on requirements specified in s. NR 106.08, Wis. Adm. Code. The checklist steps the user through a series of questions, assesses points based on the potential for effluent toxicity, and suggests monitoring frequencies based on points accumulated during the checklist analysis. As toxicity potential increases, more points accumulate, and more monitoring is recommended to ensure that toxicity is not occurring. A summary of the WET checklist analysis completed for this permittee is shown in the table below. Staff recommendations based on best professional judgment are provided below the summary table. For guidance related to reasonable potential and the WET checklist, see Chapter 1.3 of the WET Guidance Document: https://dnr.wisconsin.gov/topic/Wastewater/WET.html.

WET Checklist Summary (Outfall 001)

	Acute	Chronic
AMZ/IWC	Not Applicable. **0 Points**	IWC = 78%. **15 Points**
Historical Data	No data available **5 Points**	No data available **5 Points**
Effluent Variability	Little variability, no violations or upsets, consistent WWTF operations. **0 Points**	Same as Acute. **0 Points**
Receiving Water Classification	WWFF (5 pts) **5 Points**	Same as Acute. **5 Points**
Chemical-Specific Data	No reasonable potential for limits based on ATC; Ammonia, Chloride, Nickel, and Zinc detected. (3 pts) Additional Compounds of Concern: None **3 Points**	No reasonable potential for limits based on CTC; Ammonia, Chloride, Nickel, and Zinc detected. (3 pts) Additional Compounds of Concern: None **3 Points**
Additives	No Additives in use. **0 Points**	No Additives in use. **0 Points**
Discharge Category	Aquaculture **0 Points**	Same as Acute. **0 Points**
Wastewater Treatment	Secondary or Better. **0 Points**	Same as Acute. **0 Points**
Downstream Impacts	No impacts known **0 Points**	Same as Acute. **0 Points**
Total Checklist Points:	**13 Points**	**26 Points**
Recommended Monitoring Frequency (from Checklist):	No acute tests recommended	3 tests during permit term
Limit Required?	No	No
TRE Recommended? (from Checklist)	No	No

Attachment #1

WET Checklist Summary (Outfall 014)

	Acute	Chronic
AMZ/IWC	Not Applicable. **0 Points**	IWC = 40%. **10 Points**
Historical Data	No data available **5 Points**	No data available **5 Points**
Effluent Variability	Little variability, no violations or upsets, consistent WWTF operations. **0 Points**	Same as Acute. **0 Points**
Receiving Water Classification	WWFF (5 pts) **5 Points**	Same as Acute. **5 Points**
Chemical-Specific Data	No reasonable potential for limits based on ATC; Ammonia, Chloride, Nickel, and Zinc detected. (3 pts) Additional Compounds of Concern: None **3 Points**	No reasonable potential for limits based on CTC; Ammonia, Chloride, Nickel, and Zinc detected. (3 pts) Additional Compounds of Concern: None **3 Points**
Additives	No Additives in use. **0 Points**	No Additives in use. **0 Points**
Discharge Category	Aquaculture **0 Points**	Same as Acute. **0 Points**
Wastewater Treatment	Secondary or Better **0 Points**	Same as Acute. **0 Points**
Downstream Impacts	No impacts known (0 pts) **0 Points**	Same as Acute. **0 Points**
Total Checklist Points:	**13 Points**	**23 Points**
Recommended Monitoring Frequency (from Checklist):	No acute tests recommended.	2 tests during permit term
Limit Required?	No	No
TRE Recommended? (from Checklist)	No	No

- After consideration of the guidance provided in the Department's WET Program Guidance Document (2022) and other information described above **three chronic WET tests are recommended for Outfall 001 and two chronic WET tests are recommended for Outfall 014 in the reissued permit.** Tests should be done in rotating quarters to collect seasonal information about this discharge. WET testing should continue after the permit expiration date (until the permit is reissued).

PART 7 – ADDITIVE REVIEW

Unlike the metals and toxic substances evaluated in Part 2, most additives have not undergone the amount of toxicity testing needed to calculate water quality criteria. Instead, in cases where the minimum data requirements necessary to calculate a WQC are not met, a secondary value can be used to regulate the substance, according to s. NR 105.05, Wis. Adm. Code. Whenever an additive is discharged directly into a surface water without receiving treatment or an additive is used in the treatment process and is not expected to be removed before discharge, a review of the additive is needed. Secondary values should be derived according to s. NR 105.05, Wis. Adm. Code. Guidance related to conducting an additive review can be found in *Water Quality Review Procedures for Additives* (2019) (http://dnr.wi.gov/topic/wastewater/Guidance.html).

Additive Parameters

Additive Name	Purpose of Additive	Frequency of Use	Maximum Reported Use	Potential Use Restriction	Authorized in Current Permit?
Hydrogen Peroxide	Tank Cleaning	Intermittent (weekly)	0.16 lbs/day	0.3 mg/L 0.16 lbs/day	Yes
Sodium Hydroxide	Tank Cleaning	Quarterly	Not in use		
Calcium Oxide	Tank Cleaning	Quarterly	Not in use		

Additive use at this facility has changed since the limits were included in the current permit. Hydrogen peroxide is only used in the internal "Purge 2" tank and is not expected to be present at either discharge location. Based on the modified additive use, the hydrogen peroxide limits and monitoring may be removed.

Attachment #2

Temperature limits for receiving waters with unidirectional flow

(calculation using default ambient temperature data)

						Temp Dates	Flow Dates
Facility:	Superior Fresh, LLC		**7-Q_{10}:**	0.20	cfs		
Outfall(s):	001		**Dilution:**	25%		**Start:**	04/16/18	04/17/18
Date Prepared:	07/10/2023		**f:**	0		**End:**	05/31/23	05/31/23
Design Flow (Qe):	0.116	MGD	**Stream type:**	Small warm water sport or forage fish community			
Storm Sewer Dist.	0	ft	**Qs:Qe ratio:**	0.3	:1		
			Calculation Needed?	YES			

Month	Water Quality Criteria			Receiving Water Flow Rate (Qs)	Representative Highest Effluent Flow Rate (Qe)		f	Representative Highest Monthly Effluent Temperature		Calculated Effluent Limit	
	Ta (default)	Sub-Lethal WQC	Acute WQC		7-day Rolling Average (Qesl)	Daily Maximum Flow Rate (Qea)		Weekly Average	Daily Maximum	Weekly Average Effluent Limitation	Daily Maximum Effluent Limitation
	(°F)	(°F)	(°F)	(cfs)	(MGD)	(MGD)		(°F)	(°F)	(°F)	(°F)
JAN	33	49	76	0.05	0.131	0.177	0	61	63	**53**	84
FEB	34	50	76	0.05	0.169	0.196	0	59	61	**53**	83
MAR	38	52	77	0.05	0.171	0.213	0	60	62	**55**	83
APR	48	55	79	0.05	0.366	0.475	0	61	62	**56**	81
MAY	58	65	82	0.05	0.114	0.297	0	63	63	67	85
JUN	66	76	84	0.05	0.125	0.165	0	64	64	79	88
JUL	69	81	85	0.05	0.157	0.209	0	63	66	83	87
AUG	67	81	84	0.05	0.093	0.296	0	63	64	86	86
SEP	60	73	82	0.05	0.060	0.076	0	63	64	80	91
OCT	50	61	80	0.05	0.085	0.194	0	62	63	65	85
NOV	40	49	77	0.05	0.142	0.153	0	59	59	**51**	85
DEC	35	49	76	0.05	0.129	0.140	0	56	59	**53**	85

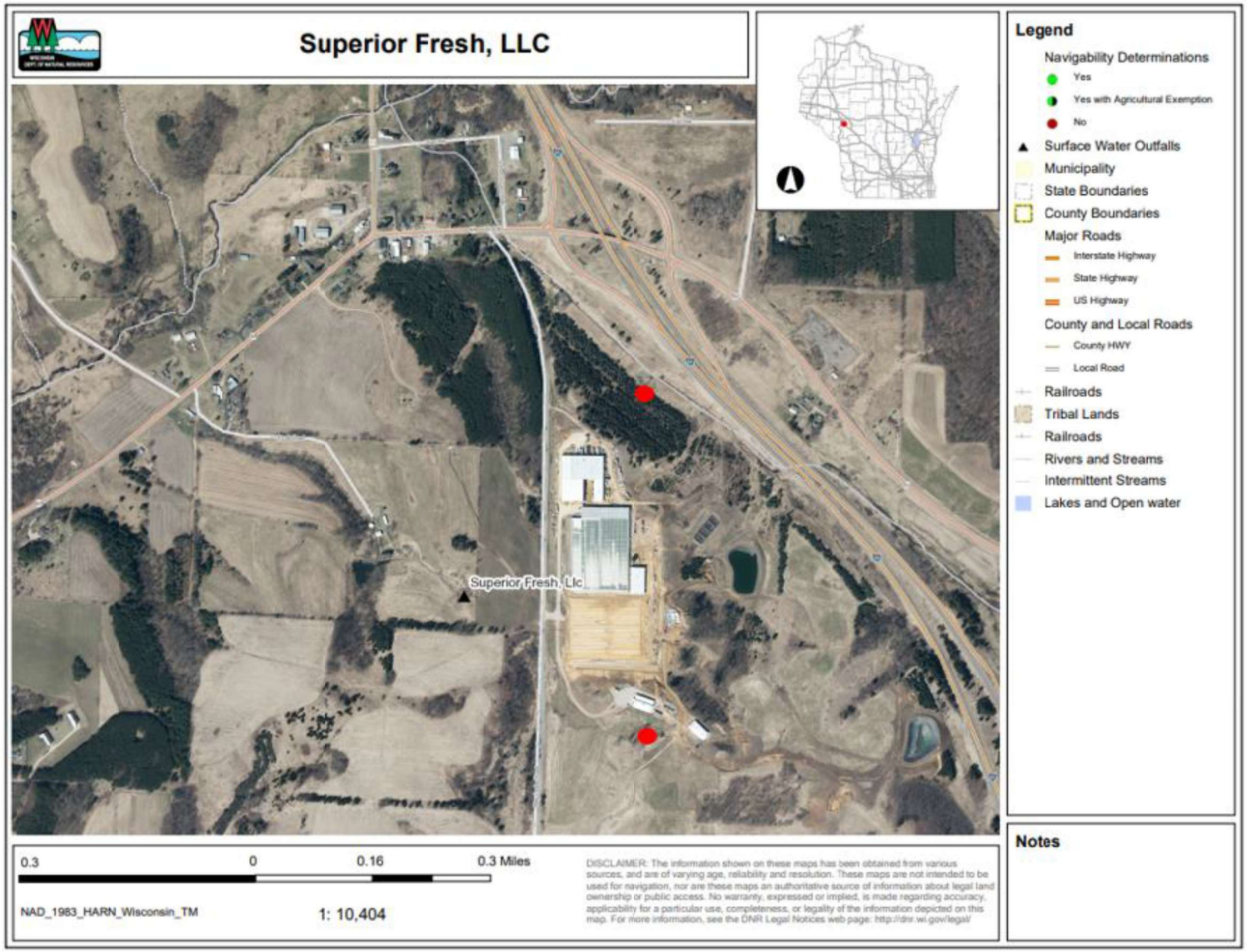
Attachment #3

Temperature limits for receiving waters with unidirectional flow

(calculation using default ambient temperature data)

						Temp Dates	Flow Dates
Facility:	Superior Fresh, LLC		**7-Q_{10}:**	0.20	cfs		
Outfall(s):	014		**Dilution:**	25%		**Start:**	10/11/22	10/01/22
Date Prepared:	07/10/2023		**f:**	0		**End:**	02/28/23	02/28/23
Design Flow (Qe):	0.022	MGD	**Stream type:**	Small warm water sport or forage fish community			
Storm Sewer Dist.	0	ft	**Qs:Qe ratio:**	0.3	:1		
			Calculation Needed?	YES			

Month	Water Quality Criteria			Receiving Water Flow Rate (Qs)	Representative Highest Effluent Flow Rate (Qe)		f	Representative Highest Monthly Effluent Temperature		Calculated Effluent Limit	
	Ta (default)	Sub-Lethal WQC	Acute WQC		7-day Rolling Average (Qesl)	Daily Maximum Flow Rate (Qea)		Weekly Average	Daily Maximum	Weekly Average Effluent Limitation	Daily Maximum Effluent Limitation
	(°F)	(°F)	(°F)	(cfs)	(MGD)	(MGD)		(°F)	(°F)	(°F)	(°F)
JAN	33	49	76	0.05	0.013	0.017	0	59	63	88	120
FEB	34	50	76	0.05	0.013	0.013	0	55	55	90	120
MAR	38	52	77	0.05	0.022	0.022	0			73	120
APR	48	55	79	0.05	0.022	0.022	0			65	120
MAY	58	65	82	0.05	0.022	0.022	0			75	118
JUN	66	76	84	0.05	0.022	0.022	0			91	111
JUL	69	81	85	0.05	0.022	0.022	0			99	109
AUG	67	81	84	0.05	0.022	0.022	0			102	109
SEP	60	73	82	0.05	0.022	0.022	0			92	115
OCT	50	61	80	0.05	0.032	0.137	0	54	55	72	87
NOV	40	49	77	0.05	0.015	0.015	0	55	55	69	120
DEC	35	49	76	0.05	0.013	0.013	0	55	55	85	120


Superior Fresh, LLC
Superior Fresh, Llc
Legend
Navigability Determinations
Yes
Yes with Agricultural Exemption
No
Surface Water Outfalls
Municipality
State Boundaries
County Boundaries
Major Roads
Interstate Highway
State Highway
US Highway
County and Local Roads
County HWY
Local Road
Railroads
Tribal Lands
Railroads
Rivers and Streams
Intermittent Streams
Lakes and Open water
Notes
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CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: May 11, 2023 FILE REF: 48469

TO: File

FROM: Woody Myers - WCR

SUBJECT: Superior Fresh LLC. - Groundwater Evaluation Report, WPDES Permit # WI-0065200

Site Information

The Superior Fresh facility is located at W15506 Superior Fresh Drive, Hixton, Jackson County. Superior Fresh is regulated as an industrial facility. Wastewater is generated by combined aquiculture and hydroponics processes and is discharged to both surface water and groundwater via infiltration by way of spray irrigation fields and an absorption pond.

Table 1 Land Treatment Outfalls
Area and Locations

Outfall	Field	Area (acres)	Location
002	1	20.6	SE ¼ of the SE ¼ Sec 22 and NE ¼ of the NE ¼ Sec 27, T23N R06W Town of Northfield
004	4	6.9	SE ¼ of the SW ¼ Sec 22, T23N R06W Town of Northfield
005	5	4.1	SW ¼ of the SW ¼ Sec 22, T23N R06W Town of Northfield
006	6	12.0	SW ¼ of the SW ¼ Sec 22, T23N R06W Town of Northfield
007	7	7.0	NE ¼ of the NW ¼ Sec 23, T23N R06W Town of Northfield
009	2	8.2	NW ¼ of the NE ¼ Sec 27, T23N R06W Town of Northfield
010	3	4.1	NW ¼ of the NE ¼ Sec 27, T23N R06W Town of Northfield
011	N/A	Absorption pond	SW ¼ of the SE ¼ Sec 22, T23N R06W Town of Northfield

Land Disposal Effluent & Groundwater Evaluation Summary

Table 2 Land Treatment Effluent Parameters and Limits
In-Plant 101 Spray Irrigation

	Current Permit WI-0065200-01-2		Proposed Permit WI-0065200-02	
Parameter	Limits and Units	Limit Type	Limits and Units	Limit Type
Chloride	- mg/l		- mg/l	
Nitrogen, Total Kjeldahl	- mg/l		- mg/l	
Nitrogen, Max Applied to Any Zone	200 lbs/ac/yr	Annual Total	200 lbs/ac/yr	Annual Total

No proposed permit changes

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Table 3 Land Treatment Effluent Parameters and Limits
Outfalls 002, 004, 005, 006, 007, 009 and 010 Spray Irrigation

	Current Permit WI-0065200-01-2		Proposed Permit WI-0065200-02	
Parameter	Limits and Units	Limit Type	Limits and Units	Limit Type
Flow Rate	- gpd		- gpd	
Hydraulic Application Rate (Mar-Nov)	10,000 gal/ac/day	Monthly Avg	10,000 gal/ac/day	Monthly Avg
Hydraulic Application Rate (Dec-Feb)	0 gal/ac/day	Monthly Avg	0 gal/ac/day	Monthly Avg

No proposed permit changes

Table 4 Land Treatment Effluent Parameters and Limits
Outfall 011 Absorption Pond

	Current Permit WI-0065200-01-2		Proposed Permit WI-0065200-02	
Parameter	Limits and Units	Limit Type	Limits and Units	Limit Type
Flow Rate	- gpd		- gpd	
Iron, Total Recoverable	- mg/l		- mg/l	
Manganese, Total Recoverable	- mg/l		- mg/l	

No proposed permit changes

Geology

This facility is in close proximity to the boundary of the Eau Claire Formation and the Wonewoc Formation. The Eau Claire Formation is comprised of a subangular poorly sorted fine-grained sandstone. Glauconite deposits are common with flaggy beds separated by green shale. The Wonewoc Formation is comprised of the Ironton and Galesville members. Both the Ironton and Galesville members are sandstone (*Bedrock Geology of Wisconsin, Regional Map Series West-Central Sheet*, Wisconsin Geological and Natural History Survey (WGNHS), 1988). Bedrock is anticipated to be less than 50 feet below ground surface (bgs) (*Depth to Bedrock in Wisconsin,* WGNHS, 1973). The regolith consists of material ranging from silty sand to sand. Surface soil primarily consists of the Elevasil and Bilson sandy loam and the Council sand (USDA NRCS Web Soil Survey).

Hydrogeology

Regional groundwater flows predominately to the northwest in this area of Jackson County (*Water Table Elevation*, Map WGNHS, 1981). The site is adjacent to an unnamed tributary of the Pigeon Creek. A review of known wells was performed as a part of this evaluation. These wells include municipal, other than municipal, private and high-capacity wells. There are nine wells within a 1,500-foot range of this facility's groundwater discharge.

Land Treatment Loading Rates

The following tables show the average flow (hydraulic loading), total Kjeldahl nitrogen and chloride loading summations for the land treatment systems. Complete data, provided, is available only for the 2021 and 2022 calendar years. The permit was modified in 2020 in response to a facility upgrade. This modified permit expanded the required measuring of flow data for additional spray irrigation fields.

Table 5 Flow Rates
Spray Irrigation Outfalls

Year	Outfall (flow in gpd)						
	002	004	005	006	007	009	010
2022	86,137	15,258	11,471	33.188	0	27,185	14,343
2021	49,950	7,207	10,539	19,447	0	17,833	11,083
2020	60,878	Not Required					
2019	40,209						
2018	45,272						

Table 6 Effluent Parameters
In-Plant (all spray Irrigation Fields)

Year	Averages		
	Total Kjeldahl Nitrogen (mg/l)	Total Nitrogen (lbs/ac/yr)	Chloride (mg/l)
2022	1.5	18.2	50
2021	31.3	195.9	76

Table 7 Loading Data
Outfall 011 (Absorption Pond)

Year	Averages		
	Flow (gpd)	Manganese (mg/l)	Iron (mg/l)
2022	6570	9.4	35.3
2021	6570	0.8	34.9

Effluent Quality

The effluent discharged at the spray irrigation fields is relatively low for all of the sampled parameters with the exception of the nitrogen in the 2021 calendar year. The concentration of total Kjeldahl nitrogen in 2021 was significantly higher than previous and post year samples. As a result, the nitrogen mass loading for this year was higher. The facility offered a rational for the change. During the 2021 year the facility's holding lagoon contained a low volume of wastewater, this resulted in the pick-up syphon collecting a large mass of lagoon sludge which in turn enriched the wastewater in nitrogen. The sludge laden wastewater went through filtration prior to being applied to the spray fields, so the sample results were not representative to the wastewater being applied to these fields. The facility has changed the location where the in-plant sample is collected. Outside of this one occurrence, the effluent quality is very high.

Proposed Groundwater Monitoring Requirements

Groundwater Monitoring systems are required for industrial wastewater discharges if the daily volume is equal to or greater to 15,000 gallons per day. The facility exceeded 15,000 gallons per day. Superior Fresh has requested a s. NR 214.06 Wis. Adm. Code (alternative requirement) to waive the groundwater monitoring system requirement based on the high quality of the in-plant and effluent sample results.

The absorption pond land treatment system did not achieve or exceed the 15,000-gallon per day volume threshold.

Conclusions

The department has in the past and again approves an exemption from the s. NR214.21 Wis. Adm. Code requirement for a groundwater monitoring system based on the lack of nutrients in the wastewater applied at the spray irrigation system. This exemption will be reevaluated during the next permit issuance cycle.

The absorption pond system does not produce the 15,000-gallon per day volume that would trigger the requirement for a groundwater monitoring system.

Compliance Schedule Recommendations

The ss. NR 214.12 (5)(b) and NR 214.14 (5)(d) Wis. Adm. Code requires a land treatment management plan for facilities with land treatment systems. The facility should review their plan within 90 days of permit reissuance and any revisions should be submitted to the department for approval.

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
101 S. Webster Street
Box 7921
Madison WI 53707-7921

Tony Evers, Governor
Karen Hyun, Ph.D., Secretary
Telephone (608) 266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711

October 16, 2025

Project No.: S-2025-0689

Tom Gappa
Superior Fresh
W15506 Superior Fresh Drive
Hixton, WI, 54635

Subject: Industrial Plan Approval of New Spray Irrigation Systems at Superior Fresh in Hixton, WI

Dear Tom Gappa:

The Wisconsin Department of Natural Resources (hereafter department) is approving plans and specifications for one pivot and seven sprinkler irrigation systems at Superior Fresh in Hixton, Wisconsin. Project was submitted under the seal of Colin Meisel, Professional Engineer at Ruekert and Mielke, and received for approval August 18, 2025.

The project proposes to expand the existing waste transfer system to get to new spray irrigation fields. The proposed irrigation fields can only irrigate in areas with slopes of less than 20%. However, note that most of the irrigation area will have slopes less than 12%. There will be one new pivot irrigation system and seven sprinklers that have the ability to adjust flows and the areas they irrigate. There are five existing lagoons currently storing production and processing wastewater coming from ten acres of hydroponic greenhouses and two aquaculture fish houses. These lagoons are used to store wastewater through months and conditions when irrigation is not allowed.

The plans and specifications are hereby approved in accordance with s. 281.41, Wis. Stats., under Project Number S-2025-0689, subject to the following conditions:

1. That a preconstruction conference be held to familiarize the construction contractor(s) and resident inspector(s) with the erosion control and dewatering requirements and all other provisions and conditions of the approved plans and specifications.
2. That a resident inspector be provided by the system owner or its consultant during the course of construction.
3. That the proposed treatment system is operated effectively and efficiently when the system is placed in operation.
4. That erosion control methods be used to prevent siltation to lands and waterways adjoining the construction area. These methods shall include but not be limited to the following:
    a. Siltation fences,
    b. Trench stabilization, and
    c. Immediate mulching and seeding.
5. That this department is notified when construction commences and again when the approved facilities are placed in operation. Please notify Jenna Monahan, compliance staff, at jenna.monahan@wisconsin.gov .
6. That an acceptable operation and maintenance manual, or a manual revision or addendum, be prepared for the approved project.

7. That the existing treatment facility be operated effectively during construction to ensure, at a minimum, that the preconstruction treatment levels are maintained and all provisions of the Wisconsin Pollutant Discharge Elimination System permit are met.
8. That all necessary permits for dewatering activities associated with the proposed construction be obtained prior to start of construction. In instances of encountered contaminated groundwater, these permits may require treatment and monitoring of the dewatering discharge for various organic and other chemicals.
9. That the continuous flow recording device be calibrated pursuant to s. NR 218.06, Wis. Adm. Code and the calibration rechecked at least annually using one of the methods specified in s. NR 218.06(1), Wis. Ad. Code.
10. That if modifications in the approved plans or specifications are necessary, revised plans or specifications shall be submitted to the department for its approval prior to commencement of construction of the project modifications. Revised plans or specifications do not need to be submitted in the event the modifications in the approved plans or specifications will not affect the public health, the capacity, flow or operation of the proposed facilities, or devices to determine permit compliance.
11. That if construction has not commenced within two years from the date of this approval letter, the approval shall become void. If approval lapses by passage of time, a new department approval of plans, submitted in accordance with the requirements of s. NR 108.04(2), Wis. Adm. Code, must be received before construction can commence.
12. That the project be constructed in accordance with the approved plans and specifications, and the above conditions, or subsequent approved modifications.

This conditional approval of plans and specifications is not to be construed as a department determination on the issuance of a WPDES permit, an opinion as to the ability of the proposed system to comply with effluent limitations in such permit, an approval of the environmental analysis that may be prepared for this project or an approval for any activities requiring a permit under ch. 30, 31, or 281, Wis. Stats. Also, this letter is not to be construed as an approval for activities requiring approval under other Wisconsin administrative codes or statutes or by other federal, state or local agencies.

Additional information regarding the department's legal authority in this matter and your rights of appeal are shown below. Please contact Laura Rodriguez Alvarez by email at laura.rodriguezalvarez@wisconsin.gov if you have any questions regarding this letter.

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
FOR THE SECRETARY

Nate Willis, P.E.
Wastewater Section Manager
Bureau of Water Quality

Laura R.
Laura Rodriguez Alvarez
Wastewater Engineer
Bureau of Water Quality

cc: Colin Meisel – Ruekert and Mielke
Jenna Monahan – DNR
Woody Myers - DNR

Legal Authority and Appeal Rights

The department has authority to examine and take action to approve, conditionally approve, or reject the final plans and specifications of any reviewable project within 90 days of receipt of complete plans and specifications to the department pursuant to s. 281.41, Wis. Stats. and ch. NR 108, Wis. Adm. Code. The department reserves the right to modify this approval and order changes or additions to the approved plans upon due notice should conditions arise making this necessary.

If you believe you have a right to challenge this decision, the Wisconsin statutes and administrative codes establish time periods which requests to review department decisions must be filed. For judicial review of a decision pursuant to ss. 227.52 and 227.53, Wis. Stats., you have 30 days after the decision is mailed, or otherwise served by the department, to file your petition with the appropriate circuit court and serve the petition on the department. Such a petition for judicial review must name the Department of Natural Resources as the respondent.

To request a contested case hearing pursuant to s. 227.42, Wis. Stats., you have 30 days after the decision is mailed, or otherwise served by the department, to serve a petition for hearing on the Secretary of the Department of Natural Resources. All requests for contested case hearings must be made in accordance with s. NR 2.05(5), Wis. Adm. Code, and served on the Secretary in accordance with s. NR 2.03, Wis. Adm. Code. The filing of a request for a contested case hearing does not extend the 30-day period for filing a petition for judicial review. The filing of a request for a contested case hearing is not prerequisite for judicial review.

2023 Water Quality

Trading Plan

For

Superior Fresh LLC
W15506 Superior Fresh Drive
Hixton, WI 54635

WPDES Permit WI-0065200-02

January 2023

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Attachment G – New Well Water Report
Attachment H – Operation and Management Plan/Monthly Streambank Inspection Report
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Attachment K – Water Quality Trading Checklist
Attachment L – Greensand Filter Schematic
Attachment M – Purge Technology Advancement Summary
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Cumulative Summary for All Superior Fresh Water Quality Trading Projects

Phase 1 WQT Project Summary:
Total Discharge: 18.4 MGY (35gpm)
Total Credits Required: 90.54
Total Credits Generated: 168

Proposed Phase 2 WQT Project Summary:
Total Discharge: 144.0144 MGY (274gpm)
Total Credits Required: 708.64
Total Credits Generated: 248.48

Cumulative WQT credits used both Phases in 2020:
Total Discharge: 24.2 MGY
Total Credits Required: 160.60
Total Credits Generated: 168

Cumulative WQT credits used both Phases in 2021:
Total Discharge: 27.6 MGY
Total Credits Required: 85.90
Total Credits Generated: 416.5

Cumulative WQT credits used both Phases in 2022 (Phase 1, Phase 2, and PRAS):

Total Discharge:	15.644 MGY
Total Credits Required:	54.86
Total Credit Generated:	416.5

1. Executive Summary for Phase 1, Phase 2, and PRAS

Superior Fresh LLC (Superior Fresh) has completed the Phase 2 expansion and small Partial Recirculating Aquaculture System (PRAS) system to its aquaponics facility that will discharge an approximately 75 GPM (39,420,000 GPY) to an unnamed tributary of the Pigeon Creek in HUC-12 watershed 070400050101. The discharge has an average concentration 0.53 mg/L of phosphorus with the addition of a greensand filtration, which exceeds the allowable threshold for phosphorus concentration of 0.060 mg/L. All Greensand Filter backwash is set to a WIDNR permitted absorption field outfall 011. All phases and PRAS have an estimated flow rate of 39.42 million gallons of wastewater per year, resulting in 172.1 lbs/yr of total phosphorus being discharged. The required amount to offset equals the amount discharged minus the phosphorus limit resulting in 152.6 lb/yr (calculation shown in section 4.2).

Superior Fresh has chosen to pursue water quality trading to generate phosphorus credits in order to discharge wastewater to the unnamed tributary upstream of Pigeon Creek. Superior Fresh elected to perform waterway restoration preventing soil erosion in the same HUC-12 watershed on a waterway that drains into Timber Creek. According to DNR written approval, Superior Fresh was able to receive a trade ratio of 2:1. Thus, for every 2 lbs of Phosphorus stabilized in the waterway draining into Timber Creek, Superior Fresh will receive one credit.

Jackson County has assisted Superior Fresh with the development of the waterway restoration plans. Soil samples resulted in a phosphorus content of 1.6 lbs/ton of soil, requiring a total of 885.8 tons/yr of soil that needs to be prevented from entering Timber Creek. Superior Fresh has implemented equipment that has be able to capture and reduce some of the Total Phosphorus from the discharge and equipment reduce the water volume requirements for the process requiring discharge, thus they have decided to prevent 310.6 tons/yr of soil erosion. This allowed Superior Fresh to discharge at the beginning of 2021 and give them time to generate additional credits in 2021 if necessary. The 310.6 tons/yr of soil contained equates to 248.48 phosphorus credits generated that Superior Fresh will use to remain compliant with its WPDES permit to discharge wastewater to the unnamed tributary upstream of Pigeon Creek.

2. Background

2.1 Justification for Trading

Superior Fresh is an aquaponics facility located Jackson County, town of Northfield, WI. Superior Fresh will have a discharge from the purging system that will discharge to a nearby unnamed tributary, prior to entering into Pigeon Creek. The discharge is estimated to have a original phosphorus concentration of 0.65 mg/l, but realized 0.53 mg/l after filtration (calculations shown in section 4.2), that needs to be offset by water quality trading in order to comply with *NR 217-Effluent Standards and Limitations for Phosphorus.* **Attachment A** is a copy of the signed Notice of Intent to Conduct Water Quality Trading

2.2 Location of Superior Fresh's Outfall

The discharge is located in the HUC-12 watershed 070400050101 and is approximately 300 feet to the north of the fish house. A second discharge, outfall 014 location was installed approximately 200 feet south of the Office, and 2,500 ft south of outfall 001. These outfall

are to be combined as outfall 015 for reporting. These discharges enter unnamed tributaries, which flows into Pigeon Creek, and eventually the Trempealeau River. A map of the Superior Fresh's discharge location is shown in **Attachment B,** along with the location of the credit generator's streambank and waterway restoration site.

3. Location of Restoration Site

3.1 Location, Existing Land Uses, and History of the Site

Superior Fresh has completed restoration and protection on a highly eroded waterway that drains directly into Timber Creek to generate phosphorus credits. The restoration site is located downstream of Superior Fresh's discharge on a portion of the Timber Creek, approximately 1 mile north of the town of York. **Attachment C** illustrates the location of the waterway restoration site. The property surrounding the restoration site is owned by Kinning Circle K LLC, and has been used for agricultural purposes in years prior.

3.2 Soil Sampling Analysis and Soil Loss Calculations

Below is a map of the approximate sample locations along Timber Creek. There was a total of 16 samples taken (eight on each side of the stream bank). All 17 samples were taken using a soil knife and mixed into one bucket as a composite sample. This composite sample was sent to Dairyland Laboratories for soil sampling. The sample locations were taken along the waterway evenly throughout the length of the proposed work area.

Soil sampling results can be found in **Attachment D.** A soil content estimation of 0.08% phosphorus was used based on the soil sampling results from Dairyland Laboratories. This results in the reduction of 1.6 lbs of total phosphorus from entering Timber Creek per ton of soil that would have been eroded prior to the waterway restoration.

Soil loss calculations were completed by Jackson County Department of Land Conservation using the NRCS Gully Erosion Estimator spreadsheet. The soil loss calculations are found in **Attachment E**. The current total amount of soil loss is estimated to be 468.6 tons of soil per year.

3.3 Streambank Restoration Management Practices

Specifications and details regarding the streambank restoration management practices are described in **Attachment F**. NRCS Standard 412 for grassed waterway conservation is being used as a guide for installation and maintenance. As long as the management practices are properly maintained, the waterway restoration and protection shall remain effective perpetually.

4. Trade Ratio Determination and Credit Quantification

4.1 Trade Ratio Determination

The trade ratio for soil erosion prevention from a grassed waterway wasn't specifically defined in the Water Quality Trading guidance document provided by the WIDNR. This issue was brought up to the WIDNR, and after discussion a trade ratio of 2:1 was determined to be applicable to this waterway restoration project.

4.2 Credits Required

The amount of phosphorus credits required to offset the phosphorus load in the discharge is 708.64 lbs per year in 2021 prior to new processes and equipment installation.

Below is the calculation for 2021:
*Flow rate = 274gpm*525,600min/yr=144.0144 MGY*
*Concentration of phosphorus in well water = 0.59mg/l (**Attachment G-New Well Water Report)***
Additional phosphorus from purging = 0.06mg/l (average total phosphorus concentration in the purge effluent based on data from existing aquaponics facility at the Freshwater Institute in Shepardstown, WV and also confirmed at Superior Fresh during Phase 1 operations.)
Total Phosphorus Concentration in the discharge = 0.65mg/l
Allowable Phosphorus Limit=0.060mg/l
Total Credits Required to offset=Flow(MGY)(Concentration(mg/l)-Allowable Limit(mg/L))*8.34=144.0144*(0.65-0.060)*8.34=**708.64lbs/yr***

Below is the calculation for 2023:
*Flow rate = 75gpm*525,600min/yr= 39.420 MGY*
Concentration of phosphorus in new well's water = 0.59mg/l
Approx Concertation of Phosphorous post Greensand filtration = 0.50 mg/l
During 2022 an actualized concentration of Phosphorous approximately of
Total Phosphorus Concentration in the discharge = 0.53mg/l
Allowable Phosphorus Limit=0.060mg/l
Total Credits Required to offset=Flow(MGY)(Concentration(mg/l)-Allowable Limit(mg/L))*8.34=39.420*(0.65-0.060)*8.34=**152.6 lbs/yr***

4.3 Credit Generation

The credits are quantified by determining the phosphorus load entering the stream prior to any waterway restoration. The total amount of potentially tradable phosphorus is calculated by using the total soil loss estimation from Jackson County using the NRCS Gully Erosion

Estimator spreadsheet and the phosphorus levels from the soil sampling analysis.

The total phosphorus credits generated from the waterway restoration project will be lbs/year.

Calculation is shown below:
Soil has a 0.08% Total Phosphorus content as described in section 3.2
Soil loss is estimated to be 310.6 tons of soil per year as described in section 3.2
0.0008(310.6tons of soil)*2000lb/ton=496.96 lbs/yr phosphorus reductions*
Total Credits Generated=Total reductions/Trade ratio

*Total Credits Generated = (496.96 lb/yr)/2=**248.48 Phosphorus Credits per year***

5 Project Timeline

5.1 Streambank Restoration Construction Plans and Schedule

Specifications and details regarding the waterway restoration plans are described in **Attachment F**. The waterway restoration was completed on August 31st, 2020. It still is in the process of fully vegetating. Once fully vegetated, the management practice will be registered using DNR form 3400-207 and a copy of that registration will be added to this plan as **Attachment I**.

5.2 Operation Schedule for Superior Fresh's Initial Discharge

Superior Fresh is planning on beginning its Phase 2 discharge January, 2020.

6 Reporting, Recordkeeping, and Monitoring

6.1 Inspection Criteria and Schedule

Each month the permittee shall certify that the nonpoint source management practices installed to generate pollutant reduction credits are operated and maintained in a manner consistent with what is stated in this plan. The permittee is responsible for completing these monthly inspections. The following certification will be made on the monthly inspection report:

> **"***I certify that management practices identified in the approved water quality trading plan as the source of pollutant reduction credits are installed, established and properly maintained."*

Inspections will also be completed following any severe natural events that occur, as soon as it can be completed safely. The monthly inspection checklist/report is included in **Attachment H**, which also contains the operation and maintenance plan.

6.2 Operation and Maintenance of Management practices

Operation and Maintenance of Timber Creek is critical to ensure the waterway restoration continues to be effective for the duration of the project and following years. The Operation and Maintenance Plan follows NRCS Standard 412 for Grassed Waterways and is included in **Attachment H.** The WQT Management Practice Registration is included in **Attachment I.**

6.3 Procedure for Failure of Management Practices

The WIDNR's West Central regional office will be notified by Superior Fresh via telephone within 24 hours of becoming aware that pollutant reduction credits used or intended for use by the permittee are not being implemented or generated. Remedial actions will be taken once an agreement between both Superior Fresh and DNR has been made to rectify the problem. Also, a written notice of the noncompliance will be submitted by Superior Fresh within 5 days to the WIDNR West Central regional office. The written notice will include reasons for the noncompliance, along with remedial actions that were already completed

since the initial notification. Also, included will be any suggested future remedial actions that still need to be completed and a timeline to begin restoring the current location or begin constructing at a new location. The written notice will also include any preventative measures to reduce the likelihood of another occurrence.

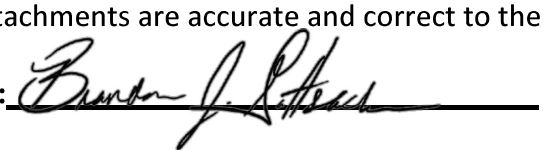
6.4 Annual Water Quality Trading Report

By January 31st each year, Superior Fresh will complete an annual WQT Report that includes:

- The number of phosphorus reduction credits (lbs/month) used each month of the previous year to demonstrate compliance
- The source of each month's pollutant reduction credits by identifying the approved water quality trading plan that details the source
- A summary of the annual inspection of each nonpoint source management practice that generated any of the pollutant reduction credits used during the previous year
- Identification of noncompliance or failure to implement any terms or conditions of WPDES permit WI-0065200-01 with respect to water quality trading that have not been reported in discharge monitoring reports.
- Identification of any modifications to the trade agreement during the previous year.

7 Superior Fresh WQT Plan Certification

Superior Fresh certifies that the information contained in this Water Quality Trading Report and its attachments are accurate and correct to the best of their knowledge.

Signature:  **Date:** January 20, 2023

Brandon Gottsacker
President
W15506 Superior Fresh Drive
Hixton, WI 54635
715.891.2842

Attachment A – Signed Notice of Intent to Conduct Water Quality Trading

State of WisconsinDepartment of Natural Resources101 South Webster Street
Madison WI 53707-7921dnr.wi.gov

Notice of Intent to Conduct Water Quality Trading
Form 3400-206 (1/14) Page 0 of 2

Notice: Pursuant to s. 283.84, Wis. Stats., and ch. NR 217 Wis. Adm. Code, this form must be completed by any WPDES permittee that is using water quality trading as a method of complying with a permit limitation. Failure to complete this form would not result in penalties. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records Law (ss. 19.31 - 19.39, Wis. Stats.).

Applicant Information

Permittee Name	Permit Number	Facility Site Number
Superior Fresh	WI- WI-0065200-01	48469

Facility Address	City	State	ZIP Code
W15506 Superior Fresh Drive	Hixton	WI	54635

Project Contact Name (if applicable)	Address	City	State	ZIP Code
Brandon Gottsacker	W15506 Superior Fresh Drive	Hixton	WI	54635

Project Name
Superior Fresh Water Quality Trading-Phase 2

Receiving Water Name	Parameter(s) being traded	HUC 12(s)
Pigeon Creek	Phosphorus	070400050101

Is the permittee in a point or nonpoint source dominated watershed? (See PRESTO results - http://dnr.wi.gov/topic/surfacewater/presto.html)
- ○ Point source dominated
- ◉ Nonpoint source dominated

Credit Generator Information

Credit generator type (select all that apply):
- ☐ Permitted Discharge (non-MS4/CAFO)
- ☐ Permitted MS4
- ☐ Permitted CAFO
- ☐ Urban nonpoint source discharge
- ☑ Agricultural nonpoint source discharge
- ☐ Other - Specify: _____

Are any of the credit generators in a different HUC 12 than the applicant?
- ○ Yes; HUC 12: _____
- ◉ No
- ○ Unsure

Are any of the credit generators downstream of the applicant?
- ◉ Yes
- ○ No
- ○ Unsure

Will a broker/exchange be used to facilitate trade?
- ○ Yes; Name: _____
- ◉ No
- ○ Unsure

Point to Point Trades (Traditional Municipal / Industrial Discharge, MS4, CAFO)

Discharge Type	Permit Number	Name	Contact Address	Is the point source credit generator currently in compliance with their permit requirements?
○ Traditional ○ MS4 ○ CAFO				○ Yes ○ No ○ Unsure
○ Traditional ○ MS4 ○ CAFO				○ Yes ○ No ○ Unsure
○ Traditional ○ MS4 ○ CAFO				○ Yes ○ No ○ Unsure
○ Traditional ○ MS4 ○ CAFO				○ Yes ○ No ○ Unsure
○ Traditional ○ MS4 ○ CAFO				○ Yes ○ No ○ Unsure

Notice of Intent to Conduct Water Quality Trading
Form 3400-206 (1/14) Page 0 of 2

Point to Nonpoint Trades (Non-permitted Agricultural, Non-Permitted Urban, etc.)

List the practices that will be used to generate credits:
Waterway restoration and Erosion control

Method for quantifying credits generated:
- ☐ Monitoring
- ☑ Modeling, Names: NRCS Erosion Estimator
- ☐ Other: _____

Projected date credits will be available: 10/01/2020

The preparer certifies all of the following:

- I am familiar with the specifications submitted for this application, and I believe all applicable items in this checklist have been addressed.
- I have completed this document to the best of my knowledge and have not excluded pertinent information.

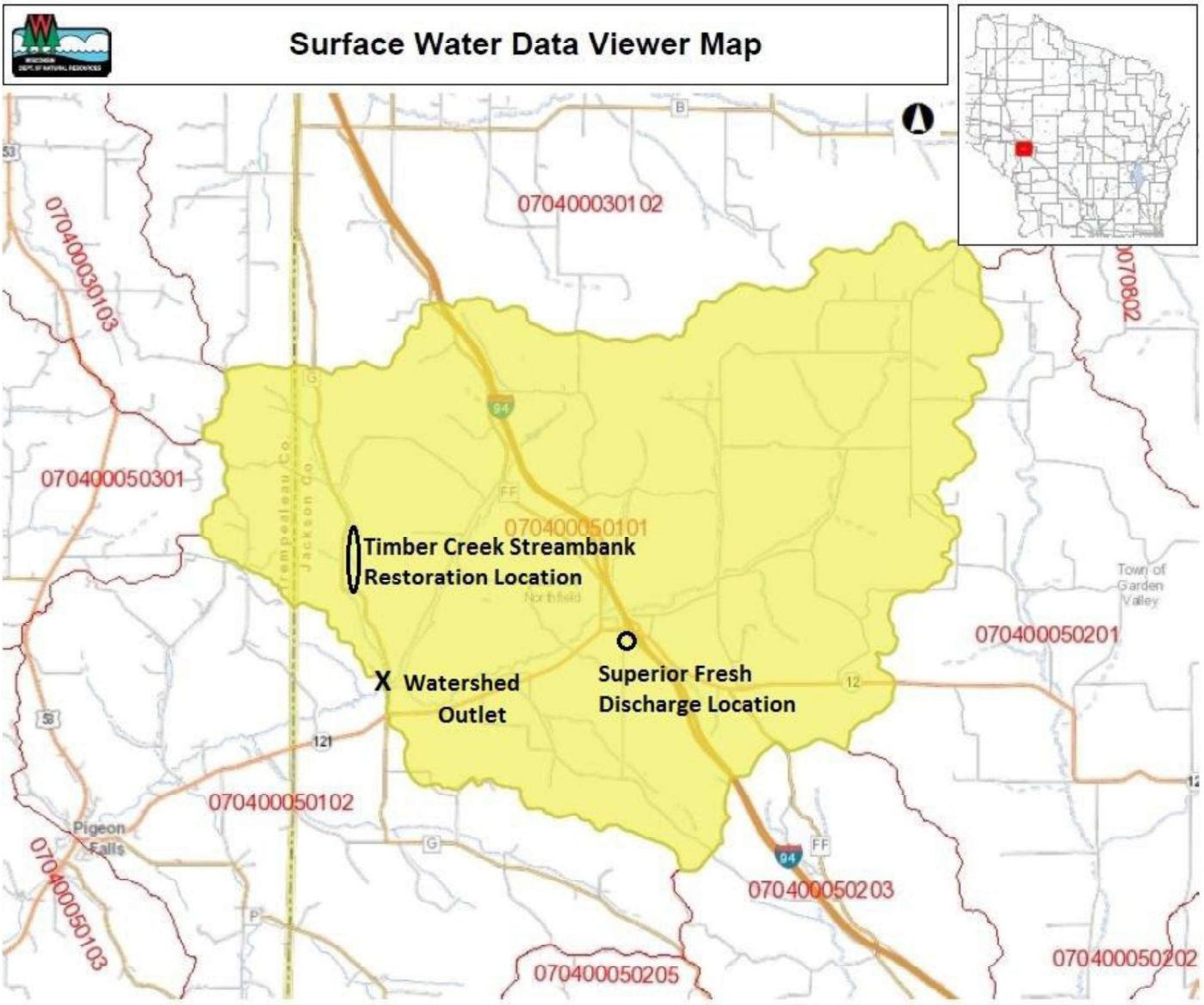
Signature of Preparer	Date Signed
Andy Meier	8/20/20

Authorized Representative Signature

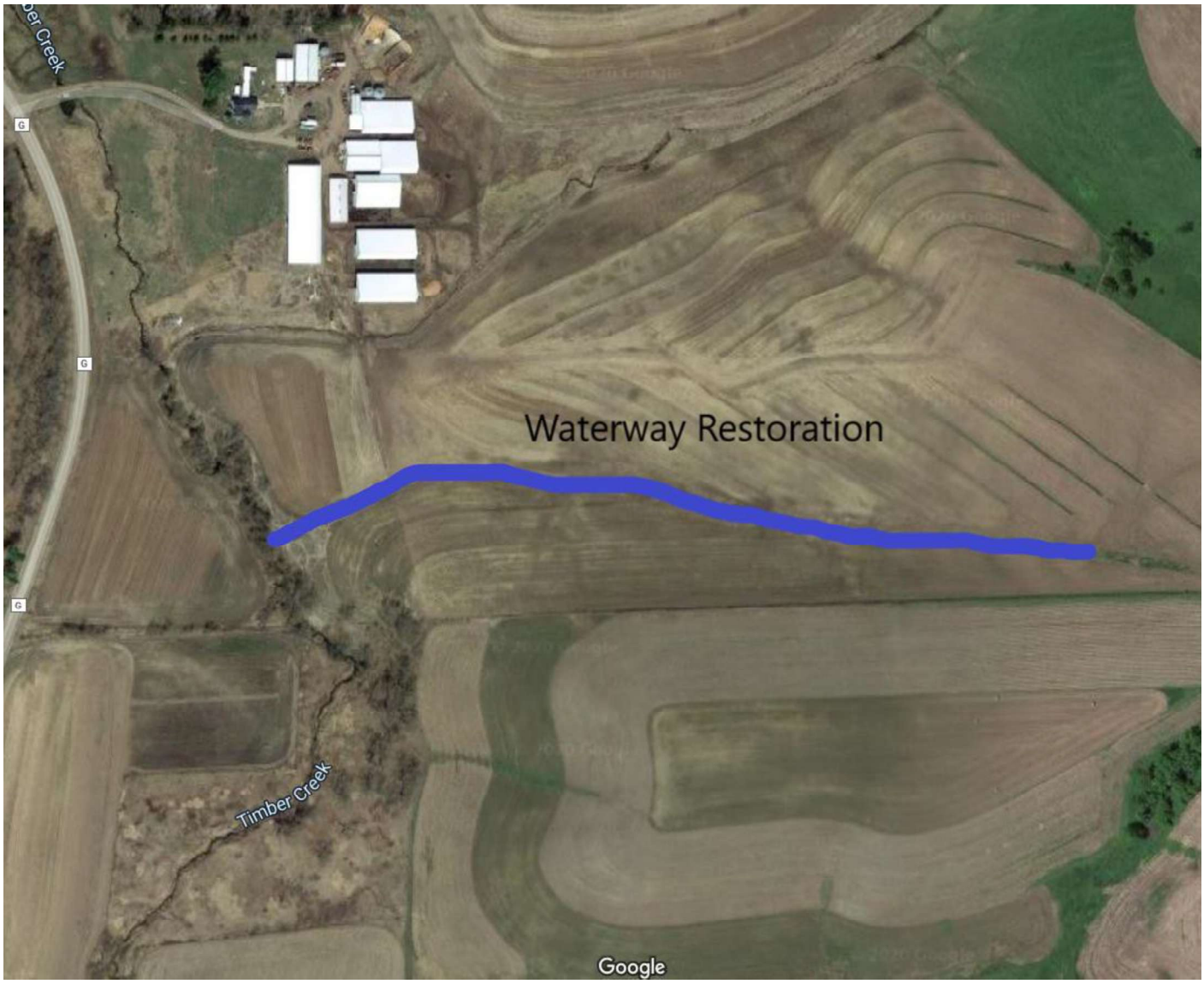
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision. Based on my inquiry of those persons directly responsible for gathering and entering the information, the information is, to the best of my knowledge and belief, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Authorized Representative	Date Signed
Brandon J. Gotham	8/20/2020

Attachment B – Map of the HUC-12 with restoration location and discharge location



Attachment C – Map of the Streambank Restoration Site



Attachment D – Soil Sampling Results

CORPORATE OFFICE:
217 E. Main
Arcadia, WI 54612
PHONE: (608) 323-2123
FAX: (608) 323-2184
www.dairylandlabs.com

DAIRYLAND
Laboratories, Inc.
Arcadia, WI • Stratford, WI • De Pere, WI
St. Cloud, MN • Battle Creek, MI

Analyst of:
Feed - Forage - Soil
Water - Mold - Mycotoxins

5/23/2019

Sampled By: Superior Fresh

Sample ID	%Phosphorus
#1	0.08
#2	0.08
#3	0.08

A Finance Charge of 1.5% (18% APR) will be added on all accounts past 30 days.

Attachment E – Soil Loss Calculation Spreadsheet and Field Notes

NRCS Classic Gully Erosion Estimator Clear Form

Farmer / Cooperator Name: Superior Fresh LLC
Tract Number: Grassed Waterways and Gullies
Evaluated By: Mike Goehring, Andy Meinerz
Evaluation Date: May 16, 2019

Field Number	Gully	Total Active Gully Length (Feet) *	Gully Average Top Width (Feet)	Gully Average Bottom Width (Feet)	Gully Average Depth (Feet)	Estimated Total Volume (FT^3) Eroded	Gully Formation: Estimated Number of Years	Soil Texture	Approximate Pounds of Soil per FT^3	Estimated Total Gully Soil Loss (Tons)	Estimated Gully Soil Loss Per Year (Tons/yr)
	1	1,755.0	2.8	1.4	1.4	5,159.7	1.0	Silt Loam	95	245.1	245.1
	2	92.0	18.0	6.0	5	5,520.0	4.0	Silt Loam	95	262.2	65.6
	3										
				Total Estimated Annual Gully Soil Loss (Tons/yr):							310.6

Attachment F – Waterway Restoration and Protection Plans

USDA United States Department of Agriculture
Natural Resources Conservation Service

WISCONSIN STANDARD
DRAWING NO. WI-001 03/16

CONSTRUCTION PLAN

PRACTICES Lined Waterway or Outlet(468) Grassed Waterway(412) Stream Crossing(578) Underground Outlet(620) Subsurface Drain(606) Critical Area Planting (342) Mulching (484)

CLIENTS Superior Fresh LLC

ADDRESSES SITE: N11192 Co. Rd. G Osseo, WI 54758

PHONE NO. Kurt Wagaman 715-984-2598 COUNTY Jackson

SITE LOCATION TOWNSHIP Northfield T 23 N. R 06 W. Sec. 18

COUNTY OFFICE Black River Falls TELEPHONE NO. 715-284-0256

DIGGERS HOTLINE

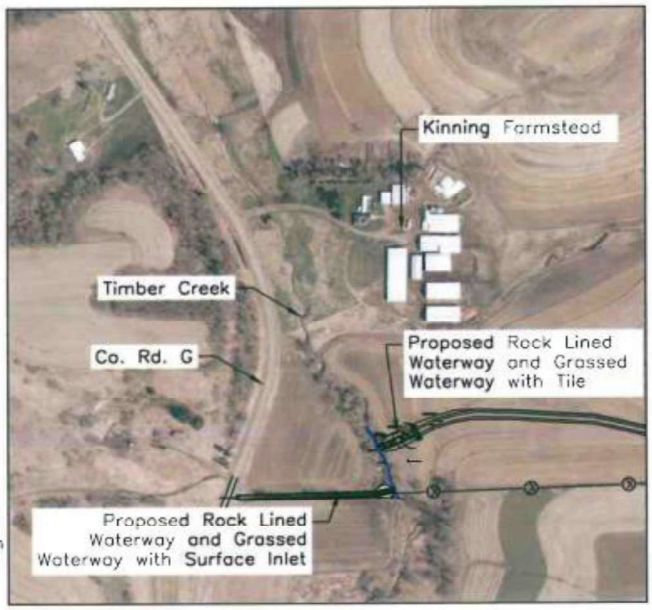
Call 3 Work Days Before You Dig!

Nationwide 811

Toll Free 1-800-242-8511

TDD 1-800-542-2289

Website www.diggershotline.com



N

Not to Scale

LOCATION MAP

NOTICE TO LANDOWNERS AND EXCAVATORS

Any representation made by the USDA, Natural Resources Conservation Service, or the Jackson County LCD, as to the approximate location or nonexistence of above or under ground hazards does not relieve the owner of the property or the excavator that is hired to complete construction, from notifying Diggers Hotline of the pending construction. You will be liable for damages resulting from construction activities. (Call Diggers Hotline) Ticket # _____

Designed by: Michael A. Coehring Date: 3-2020

Checked by: PETE WURZER Date: 03/2020

Approved by: Michael A. Coehring Date: 03/2020

The installed practices comply with applicable NRCS technical standards and specifications. The "redlined" construction plans (as-built drawings) reflect changes made during construction.

Construction Approved by: _____ Date: _____

Job Approval Class III

Sheet 1 of 13

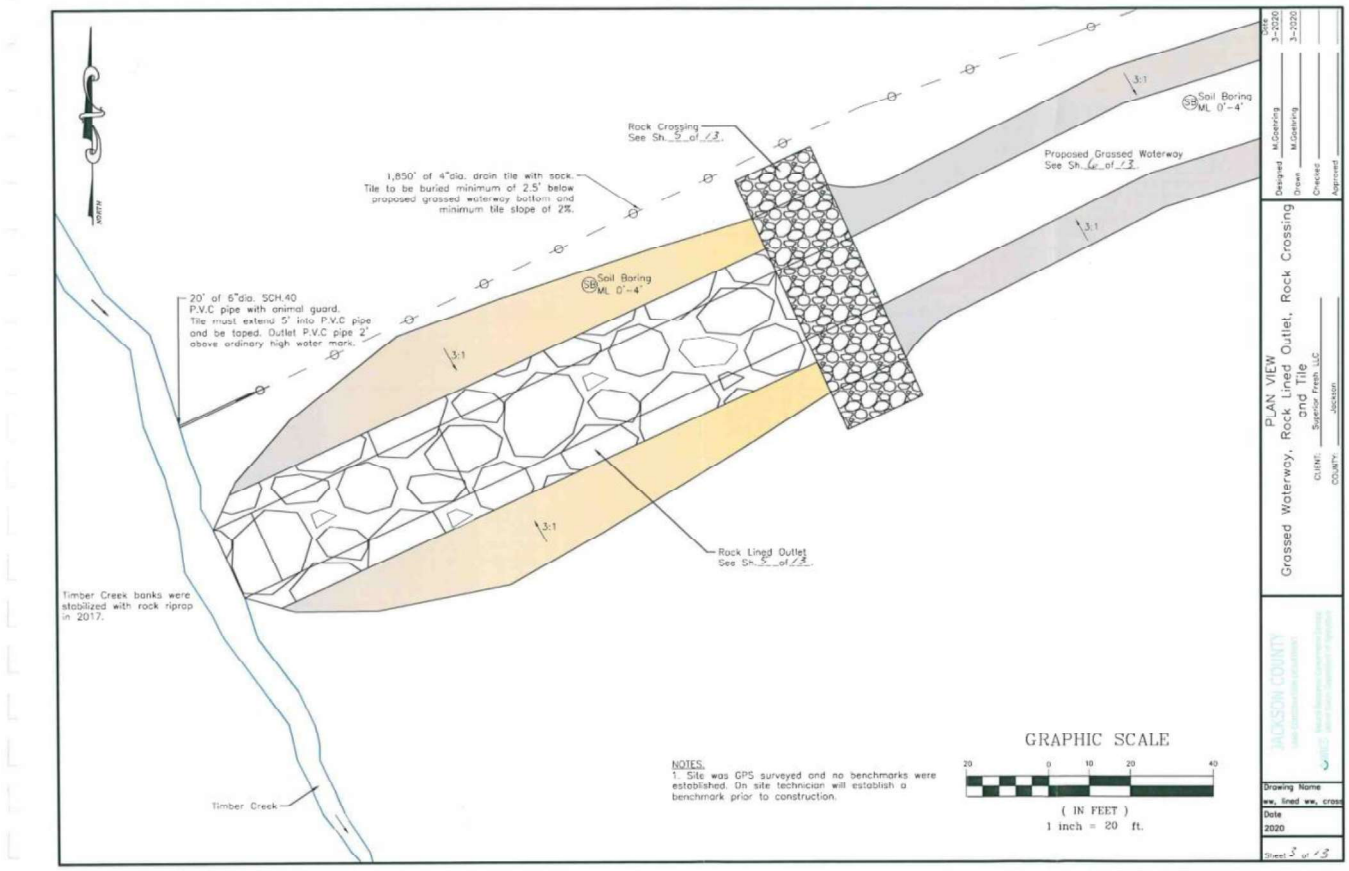
Jackson County Land Conservation
307 Main Street, Courthouse, Black River Falls WI 54615 715-284-0256

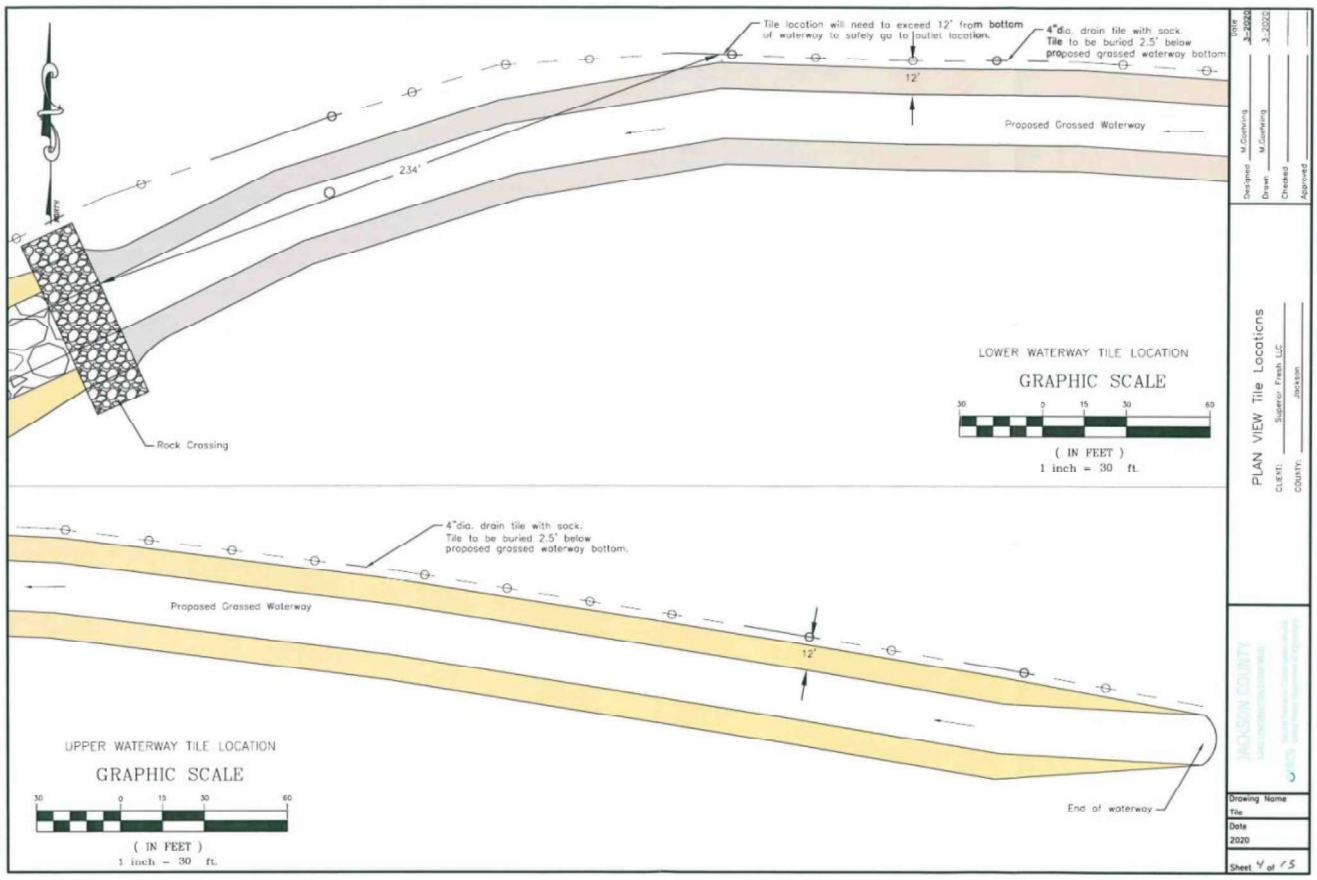
Estimated Quantities
Grassed Waterways, Rock Lined Outlets, Stream Crossing and Tiles

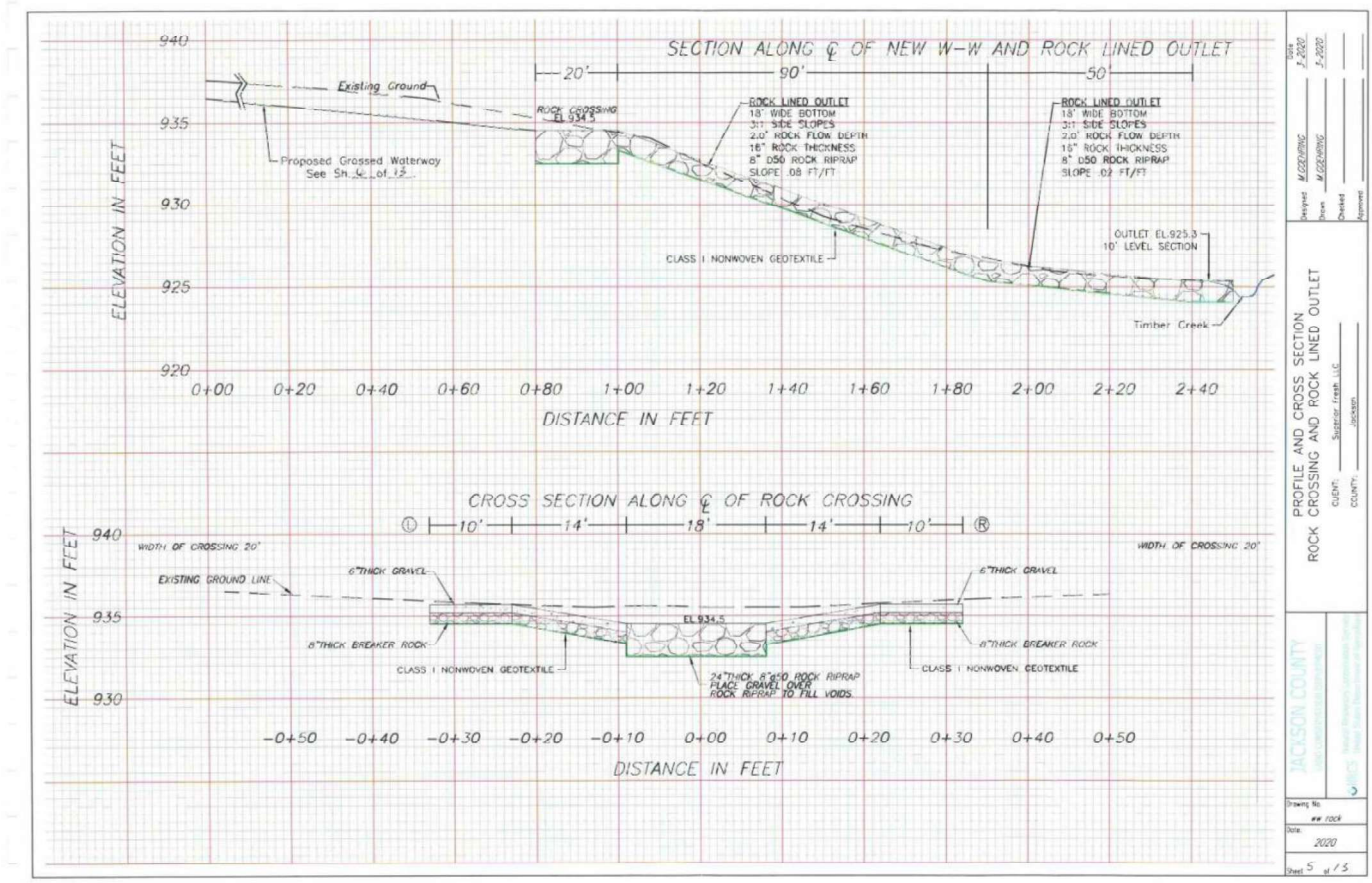
Item	Unit	Quantity	Sheet Number	WI. Construction Spec or Job Sheet Number
EAST PROJECT				
SITE PREPARATION	Job	1	3	-------
GRASSED WATERWAY CONST.	Lin. Ft.	1,700	3,4,5,6,7	WI - 2
SHAPE ROCK LINED OUTLET AREA	Job	1	3,5	WI – 2
8"D50 ROCK RIPRAP	Cu. Yd.	320	3,5	WI - 9
NONWOVEN GEOTEXTILE	Sq. Yd.	830	5	WI - 13
ROCK CROSSING EXCAVATION	Cu. Yd.	78	4,5	WI - 2
GRAVEL	Cu. Yd.	32	4,5	WI - 11
BREAKER ROCK	Cu. Yd.	32	4,5	-------
NONWOVEN GEOTEXTILE	Sq. Yd.	220	4,5	WI - 13
4"DIA. DRAIN TILE WITH SOCK	Lin. Ft.	1,850	3,4,6	WI - 44
6"DIA. SCH.40 P.V.C PIPE	Lin. Ft.	20	3	WI - 15
6"DIA. ANIMAL GUARD	Ea.	1	3,12	-------
SEEDING	Ac.	2.50	13	WI - 710
MULCHING (MIN. 80 Bales per Acre)	Ac.	2.50	13	WI - 710
WEST PROJECT CO. RD. G				
SITE PREPARATION	Job	1	8	-------
TREE REMOVAL	Job	1	8	WI - 1
GRASSED WATERWAY CONST.	Lin. Ft.	540	7,8,9,10	WI - 2
SHAPE ROCK LINED OUTLET AREA	Job	1	8,9	WI - 2
8"D50 ROCK RIPRAP	Cu. Yd.	128	8,9	WI - 9
NONWOVEN GEOTEXTILE	Sq. Yd.	306	8,9	WI - 13
SURFACE INLET EXCAVATION	Job	1	11	WI - 2
SURFACE INLET MATERIALS	Job	1	11	WI - 15
6"DIA. SCH.40 P.V.C PIPE	Lin. Ft.	20	8	WI - 15
8"DIA. SCH.40 P.V.C PIPE	Lin. Ft.	20	8	WI - 15
8"DIA. ANIMAL GUARD	Ea.	1	8,12	-------
6"DIA. DRAIN TILE NONPERFORATED	Lin. Ft.	610	8,11	WI - 44
SEEDING	Ac.	.50	13	WI - 710
MULCHING (MIN. 80 Bales per Acre)	Ac.	.50	13	WI - 710

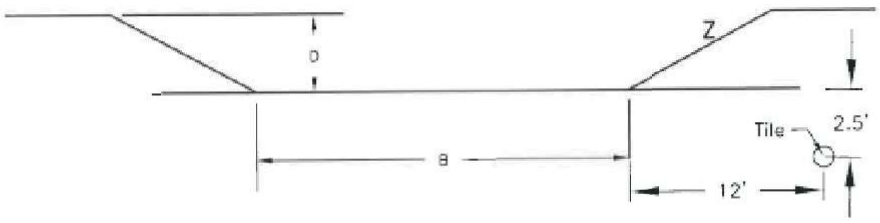
Estimated Quantities

Superior Fresh LLC	
Jackson County Land Conservation Department	
Designed: MG	Checked:
Sheet 2 of 13	


Rock Crossing
See Sh. 5 of 13
1,650' of 4"dia. drain tile with sock. Tile to be buried minimum of 2.5' below proposed grassed waterway bottom and minimum tile slope of 2%.
Soil Boring
ML 0'-4'
Proposed Grassed Waterway
See Sh. 6 of 13
3:1
20' of 6"dia. SCH.40 P.V.C pipe with animal guard. Tile must extend 5' into P.V.C pipe and be taped. Outlet P.V.C pipe 2' above ordinary high water mark.
Rock Lined Outlet
See Sh. 5 of 13
Timber Creek banks were stabilized with rock riprap in 2017.
Timber Creek
NOTES:
1. Site was GPS surveyed and no benchmarks were established. On site technician will establish a benchmark prior to construction.
GRAPHIC SCALE
20 0 10 20 40
(IN FEET)
1 inch = 20 ft.
PLAN VIEW
Grassed Waterway, Rock Lined Outlet, Rock Crossing and Tile
CLIENT: Superior Fresh, LLC
COUNTY: Jackson
JACKSON COUNTY
Drawing Name
ww, lined ww, cross
Date
2020


Tile location will need to exceed 12" from bottom of waterway to safely go to outlet location.
4"dia. drain tile with sock. Tile to be buried 2.5' below proposed grassed waterway bottom
12"
Proposed Grossed Waterway
234'
Rock Crossing
LOWER WATERWAY TILE LOCATION
GRAPHIC SCALE
30 0 15 30 60
(IN FEET)
1 inch = 30 ft.
4"dia. drain tile with sock. Tile to be buried 2.5' below proposed grassed waterway bottom.
Proposed Grassed Waterway
12"
End of waterway
UPPER WATERWAY TILE LOCATION
GRAPHIC SCALE
30 0 15 30 60
(IN FEET)
1 inch = 30 ft.
PLAN VIEW Tile Locations
CLIENT: Superior Fresh, LLC
COUNTY: Jackson
Drawing Name
Tile
Date
2020
Sheet 4 of 15


SECTION ALONG ℄ OF NEW W-W AND ROCK LINED OUTLET
Existing Ground
Proposed Grassed Waterway
See Sh 4 of 13
ROCK CROSSING
EL 934.5
20'
90'
50
ROCK LINED OUTLET
18' WIDE BOTTOM
3:1 SIDE SLOPES
2.0' ROCK FLOW DEPTH
18" ROCK THICKNESS
8" D50 ROCK RIPRAP
SLOPE .08 FT/FT
ROCK LINED OUTLET
18' WIDE BOTTOM
3:1 SIDE SLOPES
2.0' ROCK FLOW DEPTH
18" ROCK THICKNESS
8" D50 ROCK RIPRAP
SLOPE .02 FT/FT
OUTLET EL.925.3
10' LEVEL SECTION
CLASS I NONWOVEN GEOTEXTILE
Timber Creek
ELEVATION IN FEET
940
935
930
925
920
0+00 0+20 0+40 0+60 0+80 1+00 1+20 1+40 1+60 1+80 2+00 2+20 2+40
DISTANCE IN FEET
CROSS SECTION ALONG ℄ OF ROCK CROSSING
L
10' 14' 18' 14' 10'
R
WIDTH OF CROSSING 20'
WIDTH OF CROSSING 20'
EXISTING GROUND LINE
6"THICK GRAVEL
6"THICK GRAVEL
EL 934.5
8"THICK BREAKER ROCK
8"THICK BREAKER ROCK
CLASS I NONWOVEN GEOTEXTILE
CLASS I NONWOVEN GEOTEXTILE
24"THICK 6"SED ROCK RIPRAP
PLACE GRAVEL OVER
ROCK RIPRAP TO FILL VOIDS
ELEVATION IN FEET
940
935
930
-0+50 -0+40 -0+30 -0+20 -0+10 0+00 0+10 0+20 0+30 0+40 0+50
DISTANCE IN FEET
PROFILE AND CROSS SECTION
ROCK CROSSING AND ROCK LINED OUTLET
JACKSON COUNTY
Drawing No.
rock
Date
2020
Sheet 5 of 15



TRAPEZOIDAL CROSS SECTION

CONSTRUCTION DETAILS

WATERWAY NUMBER	REACH		CHANNEL SLOPE(%)	BOTTOM WIDTH(B) FEET	DEPTH(D) FEET	SIDE SLOPE(Z)	LENGTH FEET
	FROM	TO					
1	end of rock 1+70	18+70	2-3.5	18	1.5	6:1	1,700

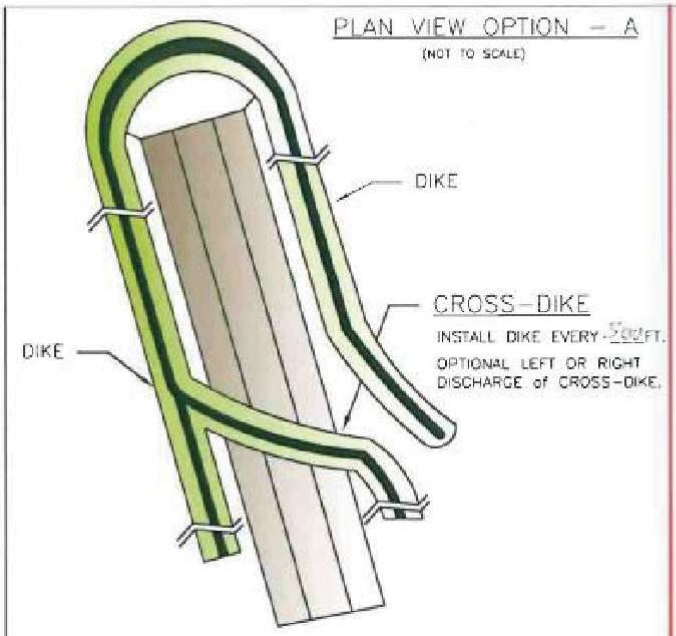
NOTES AND SPECIFICATIONS:

1. TOPSOIL SHALL BE STOCKPILED AND RESPREAD ON THE WATERWAY WHEN NEEDED TO FACILITATE REVEGETATION.
2. PLACE SPOIL WHERE IT WILL NOT INTERFERE WITH SURFACE WATER FLOW INTO THE WATERWAY.
3. MAINTENANCE ITEMS - REPAIR AREAS OF DAMAGED VEGETATION. DO NOT USE THE WATERWAY FOR A TRAVEL LANE. DO NOT PLOW INTO THE WATERWAY SIDES.
4. WATERWAY WILL BE DIKED OUT.

WI-402A Page 1 of 2

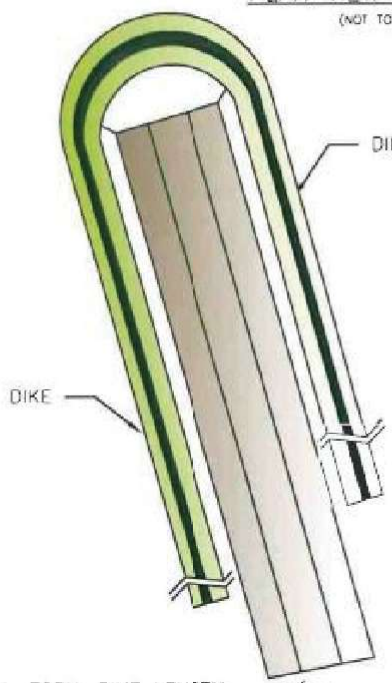
USDA United States Department of Agriculture Natural Resources Conservation Service	TRAPEZOIDAL GRASSED WATERWAY WITH TILE CLIENT: Superior Fresh LLC COUNTY: Jackson	Designed M.Coehring 3-2020 Drawn M.Coehring 3-2020 Checked Approved	File Name WI-402A Date of drawing 07/14 Sheet 6 of 13

PLAN VIEW OPTION – A
(NOT TO SCALE)



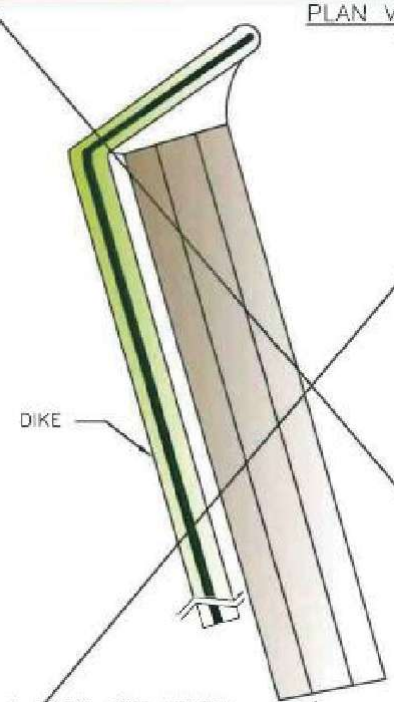
1. TOTAL DIKE LENGTH 1,800+/–
2. TOTAL NUMBER CROSS–DIKES 1.
3. SEE SHEET 3 OF 3 FOR GRASSED WATERWAY DETAILS.

PLAN VIEW OPTION – B
(NOT TO SCALE)



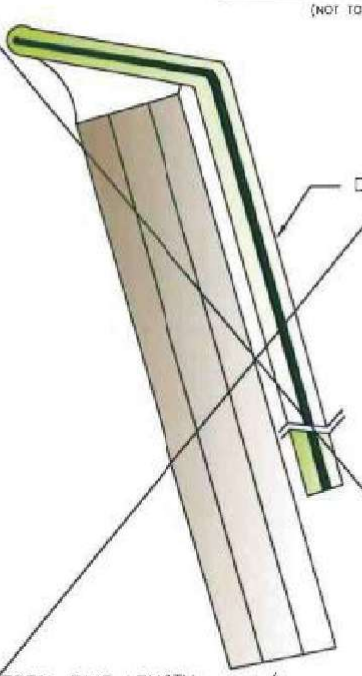
1. TOTAL DIKE LENGTH ___+/–
2. SEE SHEET 3 OF 3 FOR GRASSED WATERWAY DETAILS.

PLAN VIEW OPTION – C
(NOT TO SCALE)



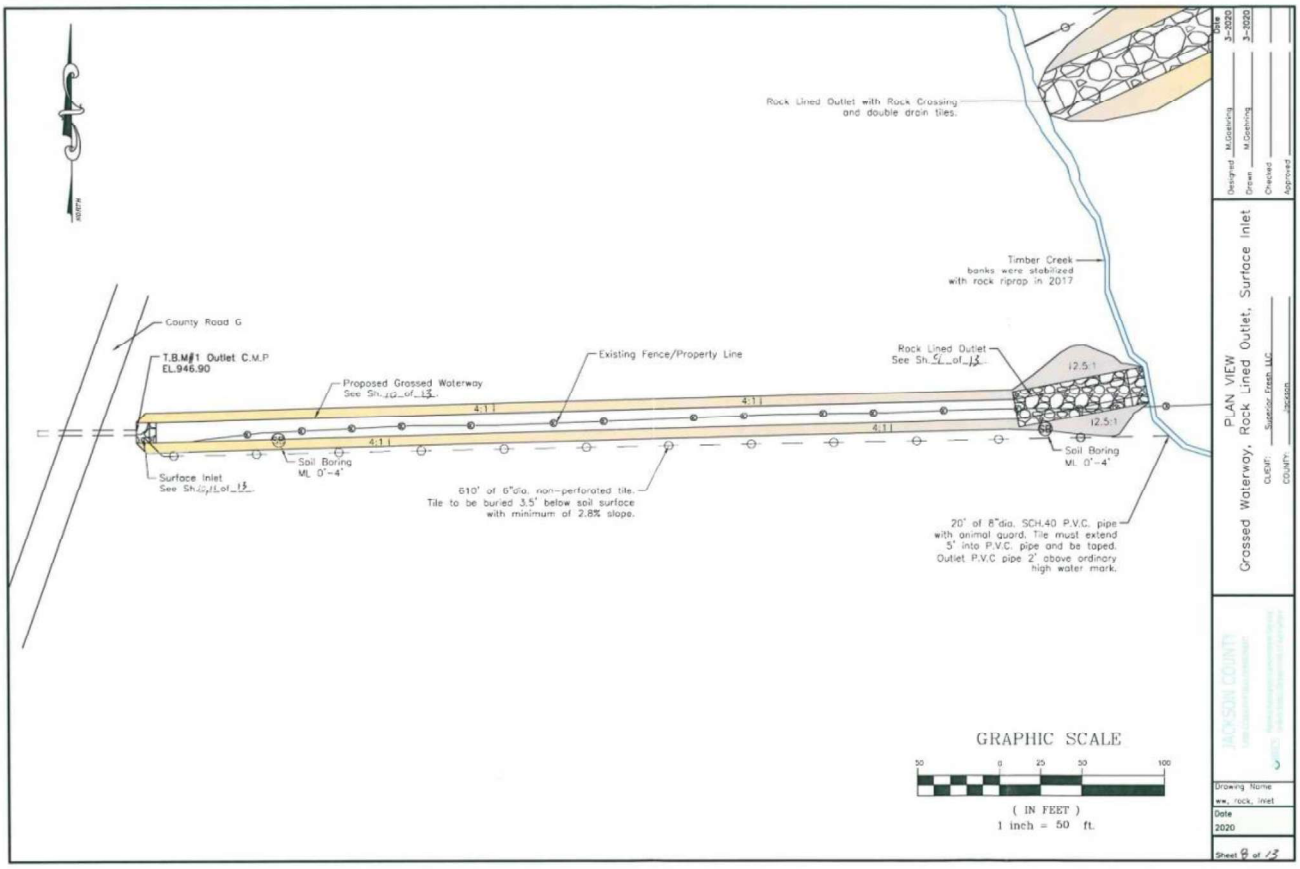
1. TOTAL DIKE LENGTH ___+/–
2. SEE SHEET__ OF__ FOR GRASSED WATERWAY DETAILS.

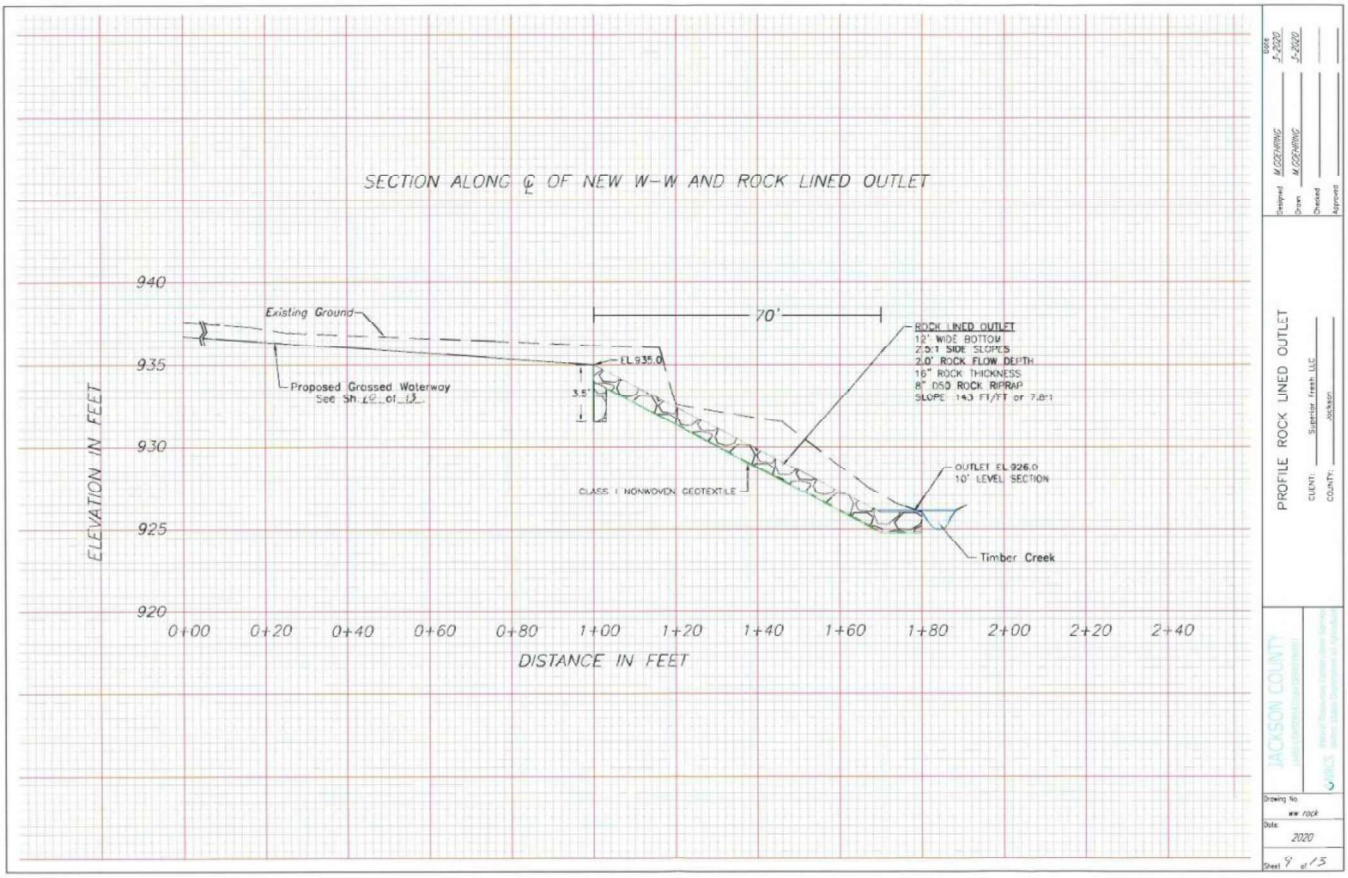
PLAN VIEW OPTION – D
(NOT TO SCALE)

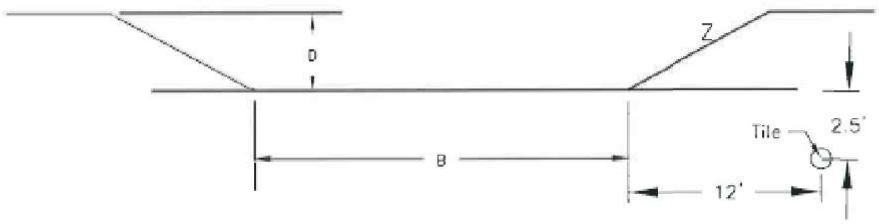


1. TOTAL DIKE LENGTH ___+/–
2. SEE SHEET__ OF__ FOR GRASSED WATERWAY DETAILS.

Drawing No.	JACKSON COUNTY	GRASSED WATERWAY DIKE OPTIONS	Designed M.Goehring 3–2020
Date 2020		CLIENT: Superior Fresh LLC	Drawn M.Goehring 3–2020
Sheet 1 of 3		COUNTY: Jackson	Checked / Approved


Rock Lined Outlet with Rock Crossing and double drain tiles.
Timber Creek banks were stabilized with rock riprap in 2017
County Road G
T.B.M#1 Outlet C.M.P EL.946.90
Proposed Grassed Waterway See Sh. 10 of 13.
Existing Fence/Property Line
Rock Lined Outlet See Sh. 9 of 13.
12.5:1
4:1
Soil Boring ML 0'-4'
Surface Inlet See Sh. 11 of 13
610' of 6"dia. non-perforated tile. Tile to be buried 3.5' below soil surface with minimum of 2.8% slope.
20' of 8"dia. SCH.40 P.V.C. pipe with animal guard. Tile must extend 5' into P.V.C. pipe and be taped. Outlet P.V.C pipe 2' above ordinary high water mark.
GRAPHIC SCALE
50 0 25 50 100
(IN FEET)
1 inch = 50 ft.
PLAN VIEW
Grassed Waterway, Rock Lined Outlet, Surface Inlet
Designed M.Gladwing
Drawn M.Gladwing
Checked
Approved
Date 3-2020
CLIENT: Superior Fresh, LLC
COUNTY: Jackson
JACKSON COUNTY
Drawing Name ww_rock_inlet
Date 2020
Sheet 9 of 13


SECTION ALONG ℄ OF NEW W-W AND ROCK LINED OUTLET
ELEVATION IN FEET
940
935
930
925
920
Existing Ground
Proposed Grassed Waterway
See Sh 10 of 13
70'
EL 935.0
3.5'
ROCK LINED OUTLET
12' WIDE BOTTOM
2.0' ROCK FLOW DEPTH
18" ROCK THICKNESS
8" D50 ROCK RIPRAP
CLASS I NONWOVEN GEOTEXTILE
OUTLET EL 926.0
10' LEVEL SECTION
Timber Creek
0+00
0+20
0+40
0+60
0+80
1+00
1+20
1+40
1+60
1+80
2+00
2+20
2+40
DISTANCE IN FEET
PROFILE ROCK LINED OUTLET
JACKSON COUNTY
Drawing No.
ww rock
Date
2020
Sheet 9 of 13



TRAPEZOIDAL CROSS SECTION

CONSTRUCTION DETAILS

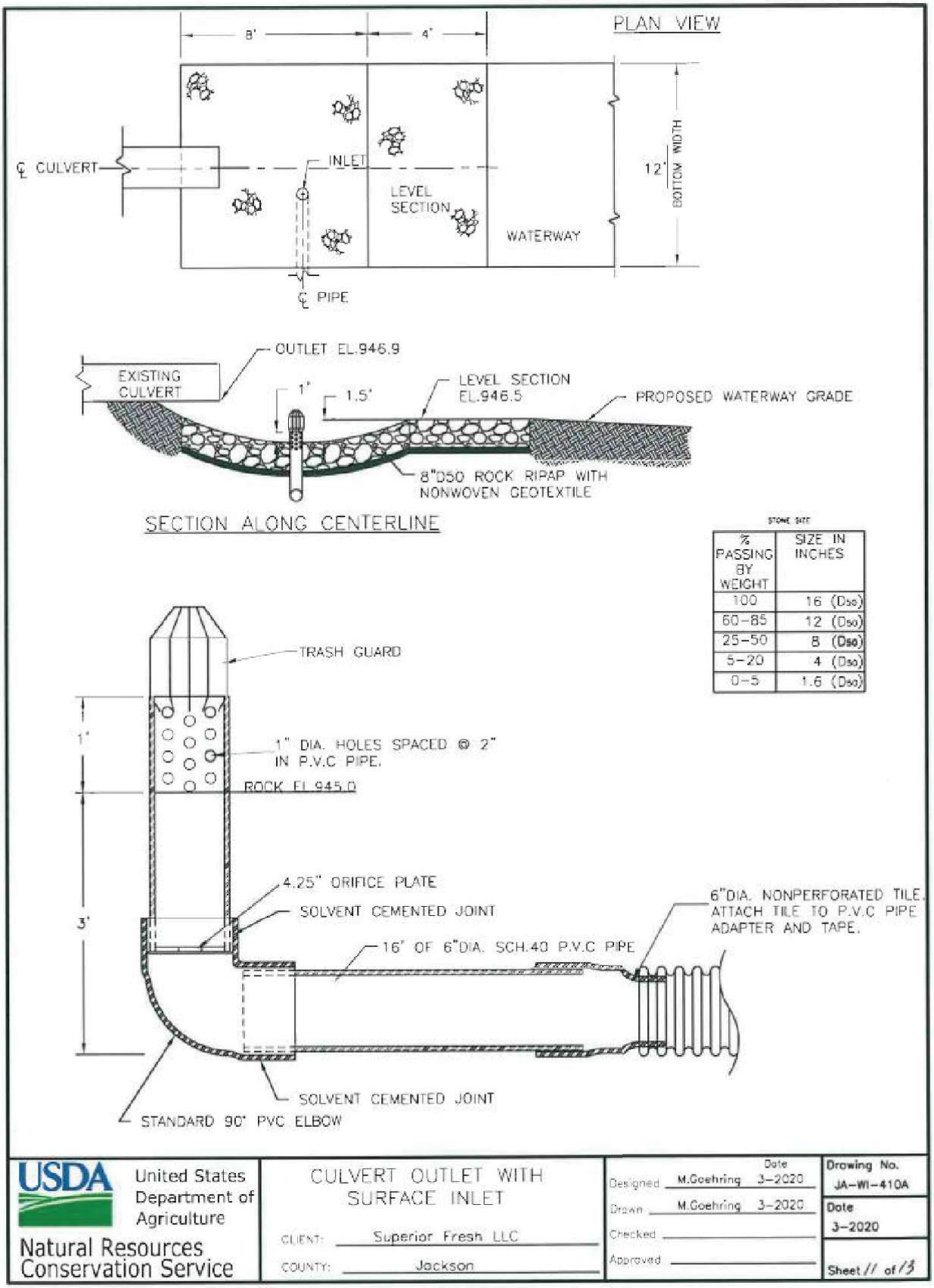
WATERWAY NUMBER	REACH		CHANNEL SLOPE(%)	BOTTOM WIDTH(B) FEET	DEPTH(D) FEET	SIDE SLOPE(Z)	LENGTH FEET
	FROM	TO					
Co. Rd. G west ww	0+00	5+40	1.5–2.5	12	1.5	4:1	540

NOTES AND SPECIFICATIONS:

1. TOPSOIL SHALL BE STOCKPILED AND RESPREAD ON THE WATERWAY WHEN NEEDED TO FACILITATE REVEGETATION.
2. PLACE SPOIL WHERE IT WILL NOT INTERFERE WITH SURFACE WATER FLOW INTO THE WATERWAY.
3. MAINTENANCE ITEMS – REPAIR AREAS OF DAMAGED VEGETATION. DO NOT USE THE WATERWAY FOR A TRAVEL LANE. DO NOT PLOW INTO THE WATERWAY SIDES.
4. WATERWAY WILL BE DIKED OUT.

WI–402A Page 1 of 2

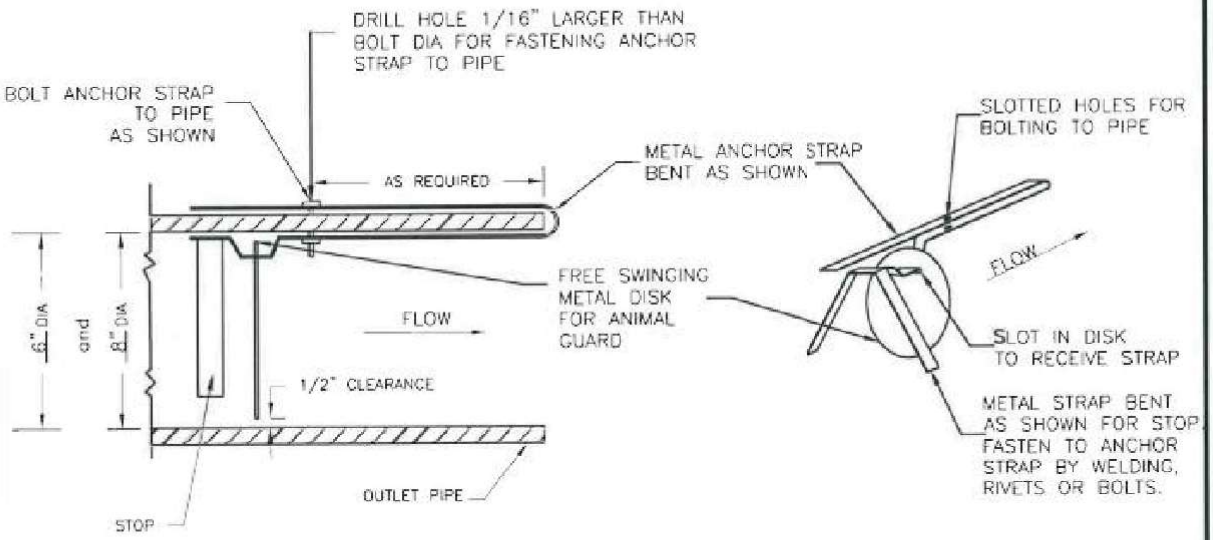
USDA United States Department of Agriculture Natural Resources Conservation Service	TRAPEZOIDAL GRASSED WATERWAY West W–W Co. Rd. G CLIENT: Superior Fresh LLC COUNTY: Jackson	Designed M.Goehring 3–17–20 Drawn M.Goehring 3–17–20 Checked Approved	File Name WI–402A Date 07/14 Sheet 1 of 3



STONE SIZE

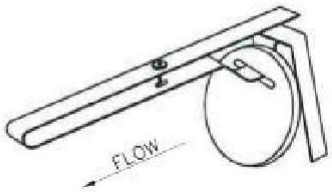
% PASSING BY WEIGHT	SIZE IN INCHES
100	16 (Dso)
60-85	12 (Dso)
25-50	8 (Dso)
5-20	4 (Dso)
0-5	1.6 (Dso)

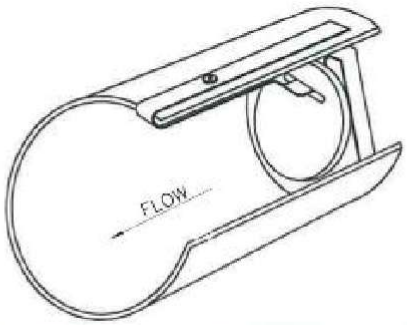
NOTE: ANIMAL GUARD SHALL BE FABRICATED OF MATERIAL THAT RESISTS CORROSION AND IS COMPATIBLE WITH THE OUTLET PIPE.



SECTION

PERSPECTIVE VIEW FROM BACK





PERSPECTIVE VIEWS FROM OUTLET END OF PIPE

SEE REVERSE SIDE FOR ADDITIONAL INFORMATION

WI-602 PAGE 1 OF 2

USDA United States Department of Agriculture Natural Resources Conservation Service	ANIMAL GUARDS FOR 6" & 8" TILE OUTLETS CLIENT: Superior Fresh LLC COUNTY: Jackson	Designed M.Goehring 3-2020 Drawn M.Goehring 3-2020 Checked Approved	File Name WI-602 Date 07/14 Sheet 2 of 3

SEEDING DATES

TIME PERIOD	DATES			TYPE OF SEEDING
Spring	4 - 15	through	6 - 1	Permanent
Summer	6 - 2	through	7 - 31	Temporary *
Late Summer	8 - 1	through	8 - 21	Permanent
Fall	8 - 22	through	10 - 15	Temporary *
Late Fall	11 - 1	through	snow cover	Dormant
Winter	snow cover	through	Spring Seeding	Frost Seed Not Allowed

MATERIALS

If no soil test is available, apply a minimum of 150 pounds of 20-10-10 fertilizer per acre. This is equivalent to 30 pounds nitrogen (N), 15 pounds phosphate (P205), and 15 pounds potash (K20) per acre. Apply two tons/ac of 80-89 lime or equivalent. (see page 2 for equivalent)

* Seed a temporary cover crop of Oats at a rate of --- pounds/acre. (2 Bushels/acre)
A permanent seeding shall be completed during the next acceptable time period following a temporary seeding.

MINIMUM PURE LIVE SEED (PLS)[1] RATE PER ACRE AND TOTAL POUNDS OF SEED NEEDED

SEEDING MIX	LOCATION ACRES East Site 2.5		SEEDING MIX	LOCATION ACRES West Site .50	
SPECIES	RATE	POUNDS	SPECIES	RATE	POUNDS
Perennial Ryegrass	5.0lbs/Ac.	12.5	Perennial Ryegrass	5.0lbs/Ac.	2.5
Creeping Red Fescue	6.0lbs/Ac.	15	Creeping Red Fescue	6.0lbs/Ac.	3
Annual (Italian) Ryegrass	6.0lbs/Ac.	15	Annual (Italian) Ryegrass	6.0lbs/Ac.	3
Timothy	2.0lbs/Ac.	5	Timothy	2.0lbs/Ac.	1
Switchgrass	1.0lbs/Ac.	2.5	Switchgrass	1.0lbs/Ac.	.5
Red Clover	4.0lbs/Ac.	10	Red Clover	4.0lbs/Ac.	2
**					

1. PLS = (% Germination X % Purity)
** Companion Crop

Seed mixture shall meet all requirements of the WI weed laws.
Species identified as restricted or prohibited by law shall not be planted.
Certified seed shall be used, and the seeding rates will be based on pure live seed.
For dormant seedings, increase the seeds per square foot by 15%.

SEEDBED PREPARATION

Seedbed preparation shall immediately follow construction activities.
Prepare a fine, firm seedbed to a minimum depth of three inches. A seedbed is considered firm when a footprint penetrates 1/4 to 1/2 inch deep.

SEEDING

Inoculate legumes with the specific inoculum for the species in accordance with the manufacturer's recommendations. When using a hydroseeder, five times the recommended rate of inoculant shall be added to the hydroseeder. Inoculant shall not be mixed with liquid fertilizer.

Seed may be broadcast or drilled as appropriate to the site.
Seed, fertilize, and lime as soon as possible after construction.
Seeding perpendicular to direction of flow is required to limit erosion.
Seed grasses and legumes no more than 1/4 inch deep.

Consider seeding at a lower rate and making 2 passes to ensure more uniform distribution.

WI-710 Page 1 of 2

USDA United States Department of Agriculture Natural Resources Conservation Service	INTRODUCED SPECIES SEEDING ESTABLISHMENT CLIENTS: Superior Fresh LLC COUNTY: Jackson	Designed M.Goehring 3-2020 Drawn M.Goehring 3-2020 Checked Approved	File Name WI-710 Date of drawing 02/15 Sheet 13 of 13

Attachment G – New Well Water Report

Water Analysis

Submitted By: **MFS00110**
Superior Fresh
W15506 Superior Fresh Dr
Hixton, WI 54635

AgSource LABORATORIES

Laboratory Sample #
BV89899 - BV89907
4597-15 - 4597-23

Date Received: **07/03/2020**

Date Processed: **07/20/2020**

Information Sheet # **WW070320-08**

WDNR Lab Certification Number **737109450**
WDATCP Lab Certification Number **55-424**

Test Name	Method	Results	Units	LOD/LOQ	Dilution Factor	Prep Date	Test Date	Analyst
Sample #: BV89899 4597-15 **Type:** New Well - Total	**Collector:**			**Date/Time Collected:**	07/02/2020 10:30 AM	**Sample Date:**		
Total Iron	SM3030F 3b SM3111 B	0.57	mg/L	0.07/0.24	1	7/9/2020	7/14/2020	JB
Total Manganese	SM3030F 3b SM3111 B	[0.10]	mg/L	0.05/0.2	1	7/9/2020	7/20/2020	NK
Total Phosphorus as P	SM4500 PB.5 & E	0.64	mg/L	0.04/0.15	1	7/7/2020	7/7/2020	JB
Sample #: BV89900 4597-16 **Type:** New Well-Diss	**Collector:**			**Date/Time Collected:**	07/02/2020 10:30 AM	**Sample Date:**		
Total Iron	SM3030F 3b SM3111 B	0.31	mg/L	0.07/0.24	1	7/9/2020	7/14/2020	JB
Total Manganese	SM3030F 3b SM3111 B	[0.10]	mg/L	0.05/0.2	1	7/9/2020	7/20/2020	NK
Total Phosphorus as P	SM4500 PB.5 & E	0.56	mg/L	0.04/0.15	1	7/7/2020	7/7/2020	JB
Sample #: BV89901 4597-17 **Type:** Well+GS-tot	**Collector:**			**Date/Time Collected:**	07/02/2020 10:30 AM	**Sample Date:**		
Total Iron	SM3030F 3b SM3111 B	[0.95]	mg/L	0.70/2.40	10	7/9/2020	7/14/2020	JB
Total Manganese	SM3030F 3b SM3111 B	16	mg/L	1.00/4.0	20	7/9/2020	7/20/2020	NK
Total Phosphorus as P	SM4500 PB.5 & E	0.52	mg/L	0.04/0.15	1	7/8/2020	7/8/2020	JB

[Bracketed results] specify values greater than or equal to the LOD but less than or equal to the LOQ and are within a range of less-certain quantitation. Results greater than the LOQ are considered to be in the range of certain quantitation. LOD/LOQ units are the same as Result units.

LOD = Limit of Detection
LOQ = Limit of Quantitation

All LODs and LOQs are adjusted to reflect dilution

RL = Reporting Limit
NA = Not Applicable

3700 Downwind Drive • Marshfield, WI 54449 • P: 715.898.1402 • marshfield@agsource.com

Attachment H – Operation and Maintenance Plan Monthly Streambank Inspection Report

OPERATION AND MAINTENANCE PLAN
For
GRASSED WATERWAY PROTECTION - NRCS CODE 412

Landowner: Sonja Kinring, Kinning Circle K LLC

Operator: Superior Fresh LLC

Location: Timber Creek

Prepared by: Brandon Gottsacker

Date: 9/9/20

Operation and Maintenance Activities

Operation and Maintenance (O&M) is necessary for conserving grassed waterways, as stated in NRCS Code 412. The items listed below will be completed by Superior Fresh, LLC. in efforts to maintain the streambanks and quality of Timber Creek.

Superior Fresh, LLC. perpetually agrees to complete the following O&M activities for as long as Superior Fresh, LLC. receives phosphorus credits for the streambank restoration project:

1. Maintain water capacity, vegetative cover, and outlet stability. Any damage should be repaired promptly.
2. Minimize damage to vegetation by excluding livestock whenever possible. Grazing is allowed only when a controlled grazing system is implemented.
3. Complete monthly waterway inspections and inspections after heavy rain events. Remove sediment deposits to maintain capacity of the grassed waterway.
4. Avoid use of herbicides that would be harmful to the vegetation of pollinating insects in the and adjacent to waterway.
5. Avoid using waterways as turn-rows during tillage and cultivation operations.
6. Mow or periodically graze vegetation to maintain capacity and reduce sediment deposition.
7. Apply supplemental nutrients as needed to maintain desired species and control noxious weeds
8. Do not use waterways as a field road and avoid crossing with heavy equipment when wet.

Operator's Signature Brandon J. Gottsacker Date: 9/10/2020

Conservationist's Signature Michael A. Doehring Date: 9-9-2020

Jackson Co LCO

Monthly Streambank and Waterway Inspection Checklist For Timber Creek Restoration Site

	Yes	No
1. Do the riprap, plantings, and/or log deflectors show any signs of displacement or damage?	☐	☐
2. Are there any logs, trees, driftwood, or other debris lodged in or near the riprap?	☐	☐
3. Is there any sloughing, erosion, or damage to vegetative cover?	☐	☐
4. If fences are installed, are there any damaged areas allowing access from livestock?	☐	☐
5. Are there any signs of livestock damage or burrowing rodents along the banks?	☐	☐
6. Are there any other areas of concern?	☐	☐

ATTENTION: If inspector checks **"YES"** to any of the conditions above then he/she must take corrective action measures to address the area of concern.

Corrective Action Description:

_____
_____
_____
_____
_____

Certification statement: I certify that management practices identified in the approved water quality trading plan as the source of pollutant reduction credits are installed, established, and properly maintained.

INSPECTOR NAME_____

SIGNATURE_____

DATE_____

Attachment I – Management Practice Registration Documentation

State of Wisconsin
Department of Natural Resources
101 South Webster Street
Madison WI 53707-7921
dnr.wi.gov

Water Quality Trading Management Practice Registration
Form 3400-207 (R 1/14)

Notice: Pursuant to s. 283.84, Wis. Stats., this form must be completed by any WPDES permittee that is using water quality trading as a method of complying with a permit limitation. Failure to complete this form would not result in penalties. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records Law (ss. 19.31 - 19.39, Wis. Stats.).

Applicant Information

Permittee Name	Permit Number	Facility Site Number
Superior Fresh LLC	WI- 0065200-01-0	48469

Facility Address	City	State	ZIP Code
W15506 Superior Fresh Drive	Hixton	WI	54635

Project Contact Name (if applicable)	Address	City	State	ZIP Code
Brandon Gottsacker	W15506 Superior Fresh Drive	Hixton	WI	54635

Project Name
Superior Fresh Water Quality Trading - Phase 2

Broker/Exchange Information (if applicable)

Was a broker/exchange be used to facilitate trade? ○ Yes ◉ No

Broker/Exchange Organization Name	Contact Name	
Address	Phone Number	Email

Trade Registration Information (Use a separate form for each trade agreement)

Type	Trade Agreement Number	Practices Used to Generate Credits	Anticipated Load Reduction	Trade Ratio	Method of Quantification
○ Urban NPS ○ Agricultural NPS ◉ Other	Phase 2 Trade Agreement	Waterway Restoration	374.88	2	NRCS Gully Erosion Calculator

County	Closest Receiving Water Name	Land Parcel ID(s)	Parameter(s) being traded
Jackson	Timber Creek	04002750000	Phosphorus

The preparer certifies all of the following:

- I have completed this document to the best of my knowledge and have not excluded pertinent information.
- I certify that the information in this document is true to the best of my knowledge.

Signature of Preparer	Date Signed
Andy Meinerz	9/14/2020

Authorized Representative Signature

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision. Based on my inquiry of those persons directly responsible for gathering and entering the information, the information is, to the best of my knowledge and belief, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Authorized Representative	Date Signed
Paul Stoffel	9/10/2020

Leave Blank – For Department Use Only

Date Received		Trade Docket Number
Entered in Tracking System ☐ Yes	Date Entered	Name of Department Reviewer

Attachment J – WQT Trade Agreement No. 2 with Landowner

ACCESS AND DRAINAGE DITCH IMPROVEMENT AGREEMENT

This Access and Drainage Ditch Improvement Agreement (hereinafter this "Agreement") is entered into as of the 10th day of August, 2020, by and between Kinning Circle K, LLC, a Wisconsin limited liability company (hereinafter called "Kinning"), and Superior Fresh LLC, a Wisconsin limited liability company (hereinafter called "Superior Fresh").

RECITALS

Kinning owns certain property in the Town of Northfield, Jackson County, Wisconsin, that includes Timber Creek. The groundwater on the property owned by Superior Fresh has naturally occurring high concentrations of phosphorous in it so that high levels of phosphorous have been detected in Timber Creek. Superior Fresh has requested and Kinning has agreed to provide an access easement for Superior Fresh to access Kinning's property to improve a drainage ditch that discharges storm water into Timber Creek. Kinning and Superior Fresh enter into this Agreement for the purpose of memorializing their respective rights and obligations with regard to this Agreement and the access easement granted hereunder.

TERMS & CONDITIONS

NOW, THEREFORE, in consideration of the mutual promises and agreements contained herein, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties agree as follows:

1. Grant of Access Easement. Kinning hereby grants to Superior Fresh and its owners, employees, agents, contractors, and subcontractors, a perpetual, non-exclusive access easement across the property described in Exhibit A (hereinafter called the "Property"), which is attached hereto and incorporated herein by this reference, for Superior Fresh to access Timber Creek and a drainage ditch to be improved (hereinafter called the "Drainage Ditch"). This right of access shall include the right, but not the obligation, of Superior Fresh and its owners, employees, and agents to restore the stream bank along Timber Creek and the Drainage Ditch, including but not limited to depositing rip rap, soil and other materials along the stream bank to reduce, minimize or prevent soil erosion; to take reasonable actions intended to reduce the amount of phosphorous entering Timber Creek; and to inspect, repair, maintain, and replace as needed the soil, rip rap, and other materials along the stream bank and the Drainage Ditch. For this purpose, Superior Fresh shall also have the right of ingress and egress across adjoining property of Kinning to access other portions of Timber Creek to pursue the rights of Superior Fresh set forth hereinabove. The grant and other provisions of this easement shall constitute a covenant running with the land for the benefit of Superior Fresh.

2. Grant of Temporary Construction Easement. Kinning hereby grants to Superior Fresh and its owners, employees, agents, contractors, and subcontractors, a temporary construction easement with the right to excavate soil and to erect, construct, install and lay riprap and plant grass seed, in, on, under, across and through the Property. The uses permitted by the temporary construction easement shall include but not be limited to the right to use, transport and store construction equipment upon, and to use the above-described property as a staging area during the

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period of constructing improvements along Timber Creek and the Drainage Ditch and within the Property, to excavate and slope the banks of Timber Creek and the Drainage Ditch within the Property, to place, apply, use, maintain, repair, and replace rip rap and other materials to contain the waters of Timber Creek and the Drainage Ditch, and the right to remove improvements and plants therefrom. This temporary construction easement shall expire and be of no further force or effect as of 11:59 p.m. on December 31, 2021.

3. Indemnification of Superior Fresh. Kinning hereby covenants and agrees to indemnify and hold Superior Fresh harmless from any personal injury or property damage sustained by Superior Fresh while on the Property but only if such personal injury or property damage results directly from Kinning's presence on the Property at the time of such injury or property damage. In addition, Kinning agrees to be solely responsible for repairing rip rap and other stream bank improvements made by Superior Fresh along Timber Creek, including but not limited to the cost thereof, in the event the need for such repair arises from Kinning or its employees or agents being on the Property.

4. Expenses; Phosphorous Credits. Subject to the indemnification obligation hereinabove set forth, Superior Fresh shall be solely responsible for all expenses incurred by Superior Fresh in pursuing the rights granted under Section 1 of this Agreement and Superior Fresh shall be the sole owner of all phosphorous reduction or trading credits, and environmental mitigation credits resulting from Superior Fresh's exercise of the rights granted under Section 1 of this Agreement.

5. Recording. Kinning hereby consents to Superior Fresh recording this Agreement, or a memorandum of this Agreement, in the office of the register of deeds in and for Jackson County, Wisconsin.

6. Setbacks. Kinning covenants and agrees that Kinning shall not, within five (5) feet of the top of the slope of the Drainage Ditch: (i) allow cattle or other animals to graze, or otherwise feed such animals; (ii) plant, grow or harvest crops; (iii) spread manure or apply other fertilizers; or (iv) make improvements to the Property. In the event Kinning breaches the covenant described hereinabove, Kinning shall pay and be solely responsible for the cost of repairing any damage resulting therefrom, and shall pay and be solely responsible for any penalties imposed by any governmental or regulatory authority as a result of such breach.

7. Miscellaneous.

a. Entire Agreement. This Agreement entered into between the parties hereto constitutes the entire agreement between the parties hereto in respect to the subject matter hereof. Any prior negotiations, agreements or understandings between the parties hereto in respect to the subject matter hereof are merged into and superseded by this Agreement. No provision of this Agreement may be amended or added to except by an instrument in writing of equal formality signed by all of the parties hereto.

b. Paragraph and Other Headings. Headings in this Agreement are for convenience only and shall not be used to interpret or construe any of its provisions.

c. Time of Essence. Time shall be considered of the essence in construing the provisions of this Agreement.

d. Notices. All notices and reports required hereunder shall be in writing and shall be deemed given when mailed by certified or registered mail, addressed as respectively indicated or to such other addresses as shall be indicated by a notice hereunder:

TO: Kinning Circle K, LLC
Attn: Sonja Kinning
N11192 County Road G
Osseo, WI 54758

TO: Superior Fresh LLC
Attn: Brandon Gottsacker
N10512 May Coulee Rd.
Hixton, WI 54635

The parties may, by notice as provided above, designate another or different address to which notice shall be given and all notices shall thereafter be sent to such party at the address so established. If notice is given by mail, the date of mailing shall be considered the date such notice is delivered.

e. Non-Waiver. No failure on the part of either party to exercise and no delay in exercising any right or remedy hereunder shall operate as a waiver thereof; nor shall any single or partial exercise by a party of any right or remedy hereunder preclude any other or further exercise thereof or the exercise of any other right.

f. Authority. The undersigned each warrant that they have been duly authorized to execute this Agreement.

g. Recitals as Part of Agreement. The Recitals are hereby incorporated in this Agreement, constitute a part of this Agreement, and are made a part of this Agreement as fully and completely as if set out herein in their entireties.

h. Governing Law. This Agreement shall be construed exclusively in accordance with and governed exclusively by the laws of the State of Wisconsin.

i. Counterparts. This Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall be one and the same instrument.

j. Binding Effect. The provisions of this Agreement shall be binding upon and inure to the benefit of each of the parties and their respective successors and assigns.

k. Construction Against Drafter. It is acknowledged that each of the parties have had substantial input individually, and by their attorneys, into the drafting of this Agreement. It is, therefore, agreed that this Agreement shall not be construed for or against either of the parties based upon the drafter of the ultimate Agreement.

IN WITNESS WHEREOF, this Agreement shall take effect as of the date first set forth hereinabove.

KINNING CIRCLE K, LLC

By: Sonja K. Kinning
Sonja K. Kinning, Member

SUPERIOR FRESH LLC

By: _____
Brandon J. Gottsacker, President

STATE OF WISCONSIN)
) SS
JACKSON COUNTY)

Personally came before me this 10th day of August, 2020, the above-named ~~Ivan E. Kinning and~~ Sonja K. Kinning, to me known to be the people who executed the foregoing Instrument and acknowledged the same. KG

Kylie Gappa
Kylie Gappa, Notary Public
Jackson County, Wisconsin
My Commission is permanent. (If not, state expiration date: 3/2/2021)

NOTARY PUBLIC KYLIE GAPPA STATE OF WISCONSIN

STATE OF WISCONSIN)
) SS
JACKSON COUNTY)

Personally came before me this 10th day of August, 2020, the above-named Brandon J. Gottsacker, to me known to be the person who executed the foregoing Instrument and acknowledged the same. KG

Kylie Gappa
Kylie Gappa, Notary Public
Jackson County, Wisconsin

NOTARY PUBLIC KYLIE GAPPA STATE OF WISCONSIN

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My Commission is permanent. (If not, state expiration date: 3/2/2021)

THIS INSTRUMENT WAS DRAFTED BY:
Attorney Evan Holder

EXHIBIT A

Legal Description

The Southwest quarter of the Northeast quarter and the Southeast quarter of the Northeast quarter, except that portion lying West of County Highway G, all lying within Section 18, Township 23 North Range 6 West, Town of Northfield, Jackson County, Wisconsin.

Attachment K – Water Quality Trading Checklist

State of Wisconsin
Department of Natural Resources
101 South Webster Street
Madison WI 53707-7921
dnr.wi.gov

Water Quality Trading Checklist
Form 3400-208 (1/14) Page 1 of 3

Notice: Pursuant to s. 283.84, Wis. Stats., this form must be completed by any WPDES permittee that intends to pursue pollutant trading as a method of complying with a permit limitation. Failure to complete this form would not result in penalties. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records Law (ss. 19.31 - 19.39, Wis. Stats.).

Applicant Information

Permittee Name	Permit Number	Facility Site Number
Superior Fresh LLC	WI- 0065200-01	48469

Facility Address	City	State	ZIP Code
W15506 Superior Fresh Drive	Hixton	WI	54635

Project Contact Name (if applicable)	Address	City	State	ZIP Code
Brandon Gottsacker	W15506 Superior Fresh Drive	Hixton	WI	54635

Project Name
Superior Fresh Water Quality Trading - Phase 2

Receiving Water Name	Parameter(s) being traded	HUC 12(s)
Pigeon Creek	Phosphorus	070400050101

Credit Generator Information

Credit generator type (select all that apply):
- ☐ Permitted Discharge (non-MS4CAFO)
- ☐ Permitted MS4
- ☐ Permitted CAFO
- ☐ Urban nonpoint source discharge
- ☒ Agricultural nonpoint source discharge
- ☐ Other - Specify: _____

Are any of the credit generators in a different HUC 12 than the applicant?
- ○ Yes; HUC 12: _____
- ◉ No

Are any of the credit generators downstream of the applicant?
- ◉ Yes
- ○ No

Will a broker/exchange be used to facilitate trade?
- ○ Yes *(include description and contact information in WQT plan)*
- ◉ No

Point to Point Trades (Traditional Municipal / Industrial, MS4, CAFO)

Are each of the point source credit generators identified in this section in compliance with their WDPES permit requirements?
- ○ Yes
- ○ No

Discharge Type	Permit Number	Name	Contact Information	Trade Agreement Number
○ Traditional ○ MS4 ○ CAFO				
○ Traditional ○ MS4 ○ CAFO				
○ Traditional ○ MS4 ○ CAFO				
○ Traditional ○ MS4 ○ CAFO				
○ Traditional ○ MS4 ○ CAFO				

Water Quality Trading Checklist
Form 3400-208 (1/14) Page 2 of 3

Point to Point Trades (Traditional Municipal / Industrial, MS4, CAFO) *cont.*			
Does plan have a narrative that describes:			Plan Section
a. Summary of discharge and existing treatment including optimization	◯ Yes	◯ No	
b. Amount of credit being generated	◯ Yes	◯ No	
c. Timeline for credits and agreements	◯ Yes	◯ No	
d. Method for quantifying credits	◯ Yes	◯ No	
e. Tracking and verification procedures	◯ Yes	◯ No	
f. Location of credit generator in proximity to receiving water and credit user	◯ Yes	◯ No	
g. Other: ______	◯ Yes	◯ No	

Point to Nonpoint Trades (Non-Permitted Urban, Agricultural, Other)

Discharge Type	Practices Used to Generate Credits	Method of Quantification	Trade Agreement Number	Have the practice(s) been formally registered?
◯ Urban NPS ◉ Agricultural NPS ◯ Other	Waterway Restoration and Protection	NRCS Soil Erosion Estimator, Soil Samples	Agreement Number 2.	◯ Yes ◉ No ◯ Only in part
◯ Urban NPS ◯ Agricultural NPS ◯ Other			Agreement with landowner-Kinning Circle K LLC	◯ Yes ◯ No ◯ Only in part
◯ Urban NPS ◯ Agricultural NPS ◯ Other				◯ Yes ◯ No ◯ Only in part
◯ Urban NPS ◯ Agricultural NPS ◯ Other				◯ Yes ◯ No ◯ Only in part
◯ Urban NPS ◯ Agricultural NPS ◯ Other				◯ Yes ◯ No ◯ Only in part
◯ Urban NPS ◯ Agricultural NPS ◯ Other				◯ Yes ◯ No ◯ Only in part
◯ Urban NPS ◯ Agricultural NPS ◯ Other				◯ Yes ◯ No ◯ Only in part
◯ Urban NPS ◯ Agricultural NPS ◯ Other				◯ Yes ◯ No ◯ Only in part

Does plan have a narrative that describes:			Plan Section
a. Description of existing land uses	◉ Yes	◯ No	3.1
b. Management practices used to generate credits	◉ Yes	◯ No	3.3
c. Amount of credit being generated	◉ Yes	◯ No	4.3
d. Description of applicable trade ratio per agreement/management practice	◉ Yes	◯ No	4.1
e. Location where credits will be generated	◉ Yes	◯ No	3.1
f. Timeline for credits and agreements	◉ Yes	◯ No	5.1
g. Method for quantifying credits	◉ Yes	◯ No	4.3

Water Quality Trading Checklist

Form 3400-208 (1/14) Page 3 of 3

Does plan have a narrative that describes:			Plan Section
h. Tracking procedures	◉ Yes	○ No	6
i. Conditions under which the management practices may be inspected	◉ Yes	○ No	6.1
j. Reporting requirements should the management practice fail	◉ Yes	○ No	6.3
k. Operation and maintenance plan for each management practice	◉ Yes	○ No	6.2
l. Location of credit generator in proximity to receiving water and credit user	◉ Yes	○ No	2.2
m. Practice registration documents, if available	◉ Yes	○ No	Attachment I
n. History of project site(s)	◉ Yes	○ No	3.1
o. Other: _____	○ Yes	○ No	N/A

The preparer certifies all of the following:

- I am familiar with the specifications submitted for this application, and I believe all applicable items in this checklist have been addressed.
- I have completed this document to the best of my knowledge and have not excluded pertinent information.
- I certify that the information in this document is true to the best of my knowledge.

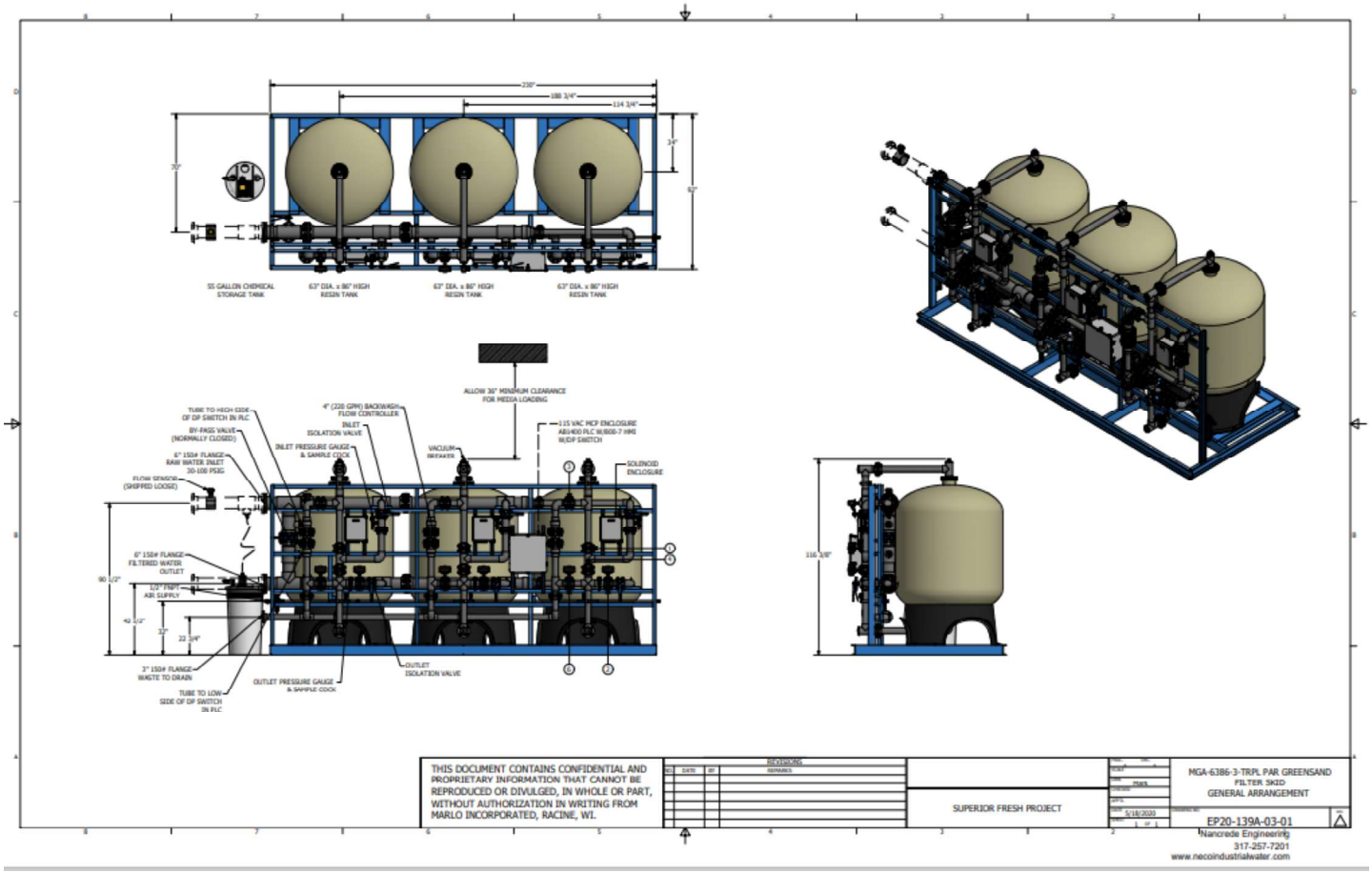
Signature of Preparer	Date Signed
Andy Meinerz	9/14/2020

Authorized Representative Signature

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision. Based on my inquiry of those persons directly responsible for gathering and entering the information, the information is, to the best of my knowledge and belief, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Authorized Representative	Date Signed
	9/10/2020

Attachment K – Greensand Filter Schematic



Attachment K – Purge Technology Advancement Summary

December 12, 2022

SUPERIOR FRESH

Superior Fresh, LLC
Phone: (715) 984-2598
info@superiorfresh.com

W15506 Superior Fresh Drive,
Hixton, Wisconsin 54635
www.superiorfresh.com

State of Wisconsin
Department of Natural Resources

Re: Technology advancements for salmon purge systems at Superior Fresh

To Whom it May Concern:

Superior Fresh has learned over several years of operation that its Atlantic Salmon require a depuration period of approximately 10 days with a defined flush rate to biomass ratio that ensure its fish are without off flavor. Since our expansion in 2021, and consequential increase in production, our well water requirements have increased and would continue without process modifications. This also then requires increased surface water discharge, and corresponding Water Quality Trading projects based on phosphorous discharge concentrations. We've recognized this increased requirement early in the production ramp up, and understood the cost of these WQT projects. Over a period of approximately one year, the Superior Fresh team has invested in finding, testing, and implementing technologies that reduce both the water requirements for the depuration process and shorten the time required to get our Atlantic Slamon "on flavor". This new technology, Advanced Oxidative Process, allows us to run with 20% of the originally assumed flow and shorten depuration times by 40% or more. Additionally, this decreased water consumption, has allowed us to absorb this diminished depuration flow to our production systems of the expansion, and eliminated the original surface water discharge requirement from the expansion's depuration process.

We now discharge only from our original "phase 1" depuration systems and the newly installed Partial Recirculating Aquaculture System (PRAS) with less flow than required under our WPDES Permit WI-0065200-01.

Please feel welcome to contact me if you have any questions. Thanks again for your past support!

SUPERIOR Fresh

REGENERATIVE AGRICULTURE REIMAGINED™
www.superiorfresh.com | info@superiorfresh.com

Best regards,

Kyle Woolever

Kyle Woolever
Aquaculture Manager

CC: Brandon Gottsacker, President, Superior Fresh
Steven Summerfelt, PhD, PE, Chief Science Officer

Attachment K – Example Effluent Water Report 2022

Water Analysis

Submitted By: **MFS00110**
Superior Fresh
W15506 Superior Fresh Dr
Hixton, WI 54635

AgSource LABORATORIES

Laboratory Sample #
CM92127 - CM92133
5061-17 - 5061-23

Date Received:
12/23/2022

Date Processed:
12/28/2022

Information Sheet #
WW122322-08

WDNR Lab Certification Number **737109450**
WDATCP Lab Certification Number **55-424**

Test Name	Method	Results	Units	LOD/LOQ	Dilution Factor	Prep Date	Test Date	Analyst
Sample #: CM92127 5061-17 **Type:** Salmon purge	**Collector:**			**Date/Time Collected:** 12/19/2022 04:00 PM		**Sample Date:**		
Ammonia as N	EPA 350.1 Rev 2	[0.252]	mg/L	0.127/0.424	1	NA	12/27/2022	BP
Total Phosphorus	SM4500 PB.5 & E	0.480	mg/L	0.011/0.037	1	12/26/2022	12/26/2022	JJ
Sample #: CM92128 5061-18 **Type:** Salmon purge	**Collector:**			**Date/Time Collected:** 12/20/2022 04:30 PM		**Sample Date:**		
Total Phosphorus	SM4500 PB.5 & E	0.480	mg/L	0.011/0.037	1	12/26/2022	12/26/2022	JJ
Sample #: CM92129 5061-19 **Type:** Salmon purge	**Collector:**			**Date/Time Collected:** 12/21/2022 02:30 PM		**Sample Date:**		
Total Phosphorus	SM4500 PB.5 & E	0.560	mg/L	0.011/0.037	1	12/26/2022	12/26/2022	JJ
Sample #: CM92130 5061-20 **Type:** PRAS/Red Barn	**Collector:**			**Date/Time Collected:** 12/16/2022 01:00 PM		**Sample Date:**		
Total Phosphorus	SM4500 PB.5 & E	0.490	mg/L	0.011/0.037	1	12/26/2022	12/26/2022	JJ
Sample #: CM92131 5061-21 **Type:** PRAS-Red Barn	**Collector:**			**Date/Time Collected:** 12/19/2022 04:00 PM		**Sample Date:**		
Ammonia as N	EPA 350.1 Rev 2	0.528	mg/L	0.127/0.424	1	NA	12/27/2022	BP
Total Phosphorus	SM4500 PB.5 & E	0.510	mg/L	0.011/0.037	1	12/26/2022	12/26/2022	JJ
Sample #: CM92132 5061-22 **Type:** PRAS/Red Barn	**Collector:**			**Date/Time Collected:** 12/20/2022 05:00 PM		**Sample Date:**		
Total Phosphorus	SM4500 PB.5 & E	0.520	mg/L	0.011/0.037	1	12/26/2022	12/26/2022	JJ
Sample #: CM92133 5061-23 **Type:** PRAS/Red Barn	**Collector:**			**Date/Time Collected:** 12/21/2022 03:30 PM		**Sample Date:**		
Total Phosphorus	SM4500 PB.5 & E	0.560	mg/L	0.011/0.037	1	12/26/2022	12/26/2022	JJ

Report Authorized by: Tina Kreeb Date: 12/28/2022

[Bracketed results] specify values greater than or equal to the LOD but less than or equal to the LOQ and are within a range of less-certain quantitation. Results greater than the LOQ are considered to be in the range of certain quantitation. LOD/LOQ units are the same as Result units.

LOD = Limit of Detection
LOQ = Limit of Quantitation

All LODs and LOQs are adjusted to reflect dilution

RL = Reporting Limit
NA = Not Applicable

3700 Downwind Drive • Marshfield, WI 54449 • P: 715.898.1402 • marshfield@agsource.com