BUREAU OF WATER QUALITY
PROGRAM GUIDANCE

Guidance for Implementing Water Quality Trading in WPDES Permits

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Wisconsin Department of Natural Resources

08/21/2013

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Abbreviations and Acronyms

This list contains the most common abbreviations used in this document.

AM	adaptive management
AWQMP	areawide water quality management plan
APLE	Annual Phosphorus Loss Estimator
BOD_5	5-day biochemical oxygen demand
CAFO	concentrated animal feeding operation
DMR	discharge monitoring report
HUC	hydrologic unit code
LA	load allocation
mg/L	milligrams per liter
MS4	municipal separate storm sewer system
NMP	nutrient management plan
NPS	nonpoint source
NRCS	Natural Resources Conservation Service
P	phosphorus
P8	Program for Predicting Polluting Particle Passage thru Pits, Puddles, & Ponds
PI	phosphorus index
PRESTO	Pollutant Load Ratio Estimation Tool
PS	point source
RUSLE2	Revised Universal Soil Loss Equation, Version 2
SLAMM	Source Loading and Management Model
SNAP-Plus	Soil Nutrient Application Planner-Plus
SPARROW	Spatially Referenced Regressions on Watershed
TBEL	technology-based effluent limitation
TMDL	total maximum daily load
TP	total phosphorus
TRM	targeted runoff management
TSS	total suspended solids
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
WDNR	Wisconsin Department of Natural Resources
WLA	wasteload allocation
WPDES	Wisconsin Pollutant Discharge Elimination System
WQBEL	water quality-based effluent limitation
WQT	water quality trading
WWTF	wastewater treatment facility

1. Introduction

The purpose of this document is to inform Wisconsin Department of Natural Resources (WDNR) staff and others about water quality trading (WQT or Trading), with an emphasis on trading protocols and implementing trading in Wisconsin Pollutant Discharge Elimination System (WPDES) permits. This document builds on the trading protocols presented in *A Water Quality Trading Framework for Wisconsin* (WDNR 2011), and is a companion to *A Water Quality Trading How-To Manual* (WDNR 2013), at http://dnr.wi.gov/topic/SurfaceWater/waterqualitytrading.html, which provides a condensed version of water quality trading protocols and guidance for externals.

Trading may be used by municipal and industrial WPDES permit holders to demonstrate compliance with water quality-based effluent limitations (WQBELs). Trading is not a governmentally mandated program or regulatory requirement, but rather a market-based tool that enables some industrial and municipal facilities to meet regulatory requirements more cost-effectively. Generally, Trading involves a permit holder facing relatively high pollutant reduction costs compensating another party to achieve less costly pollutant reduction with a greater water quality benefit.

This guidance document is applicable to a variety of pollutants; however, more detail is provided for phosphorus (P) and total suspended solids (TSS) since recently promulgated water quality criteria for total phosphorus (TP) and recently approved total maximum daily loads (TMDLs) for TP and TSS will cause added interest in the trading of these pollutants.

Adaptive Management (AM) pursuant to s. NR 217.18, Wis. Adm. Code, and trading are two different compliance options for P. Partnerships between point sources and nonpoint sources to reduce P loading as part of AM are not considered trades and, therefore, are not subject to this guidance. Additionally, trading is not subject to the AM eligibility requirements specified in s. NR 217.18, Wis. Adm. Code. Guidance on AM can be found at http://dnr.wi.gov/topic/SurfaceWater/AdaptiveManagement.html.

It is important for WDNR staff to be as consistent as possible when implementing permit requirements and this guidance was created to help insure this. However, it is also important to recognize that there will be situations when decisions inconsistent with this document may be necessary because the assumptions upon which this guidance is based are not applicable. This guidance document will be updated as experience is gained in developing and implementing trading strategies. If you wish to suggest changes to this guidance or suggest additional issues that may need to be addressed, contact the Statewide Water Quality Trading Coordinator (trading coordinator). Appendix 10, p. 88 lists contact information for statewide and regional trading coordinators.

2. Water Quality Trading Protocols

To ensure consistency with the Clean Water Act, United States Environmental Protection Agency (USEPA) guidance (USEPA 2003, 2004 and 2007) and s. 283.84, Wis. Stats., this section of the guidance presents the protocols for trading in Wisconsin, as summarized in Table 1. The hyperlinks in Table 1 take you directly to the section of interest.

Table 1. Hyperlinks to explore protocols for WQT.

Section of Interest	*Hyperlink to direct you*
WPDES Permit Requirements	**WPDES Permit Requirements**
General Conditions for Trading	**General Conditions for Trading**
Acceptable Pollutants	**Pollutant Parameters Acceptable Trading**
Applicability	**Water Quality Trading Applicability**
Partners	**Appropriate Trading Partners**
Optimization Requirements	**Optimization of Existing Treatment Systems**
Credit Threshold	**Pollutant Reduction Credit Threshold**
Pollutant Reduction Credits	**Interim and Final Reduction Credits**
Technical Standards	**Technical Standards for Management Practices**
Location and Geographic Extent	**Location and Geographic Extent of Trades**
Trade Ratios	**Trade Ratios**
Timing for Credit Generators	**Timing of Pollutant Reduction Credit Generation**
Timing for Credit Users	**Timing of Pollutant Reduction Credit Use**
Quantifying Reductions	**Quantifying Pollutant Reduction Credits**
Trade Duration	**Trade Duration**
Wisconsin-Specific Requirements	**Section 283.84, Wisconsin Statutes**

To improve reader understanding, a few terms used throughout this document are explained here. A ***pollutant reduction credit*** (credit) is the amount of the traded pollutant that is made available to the ***credit user***. The credit user demonstrates compliance with their WQBELs by using credits to offset part of their discharge. Credits are made available by the ***credit generator***, which may be either a point source (PS) or nonpoint source (NPS), by providing a ***pollutant load reduction*** (load reduction) in excess of that required of the credit generator[1]. Together, the credit generator and credit user are identified as trading partners.

Trades may involve more than credit generators and credit users. A ***credit broker*** (broker) is a third party that facilitates the trade by bringing potential trading partners together. A broker performs the research necessary to match credit users and credit generators based on location, pollutant type, amount, and timing. The broker does not purchase and resell credits. The broker may be a state agency, conservation district, private entity, or other organization or person.

[1] Note that a pound per year of load reduction provided by the credit generator does not necessarily equal a pound per year of credit for the credit user, as explained in Section 2.11, p. 14.

Pursuant to s. 283.84 (1)(c), Wis. Stats., WDNR and local governmental units may play a somewhat modified role as brokers by using money received from credit users to reduce pollutant loads or provide cost−sharing, for the purposes of s. 281.16 (3)(e) or (4), Wis. Stats. (See Appendix 1, p. 58.)

This guidance document does not address credit banks and credit exchanges. Credit banks purchase load reductions and sell them as credits. A credit exchange is a WQT market, characterized by an open information structure, fluid transactions between trading partners, and a market-clearing price (USEPA 2005).

At times, a trade may be described as a "point-to-point" trade or a "point-to-nonpoint" trade. In this guidance, the classification of the credit user is stated first. For example, when the credit user is a PS and the credit generator is a NPS, the trade will be described as a ***point-to-nonpoint*** trade.

What are "Nonpoint Sources"?
Nonpoint sources are indirect, non-permitted sources of pollutants such as P to Wisconsin's waters. Nonpoint sources can include agricultural runoff from barnyards, cropland, and feedlots. Runoff from non-permitted storm sewers and construction sites are examples of urban nonpoint sources.

When describing trading as "upstream" or "downstream," this guidance document uses the location of the credit user as the point of reference. That is, the credit generator is located upstream of the credit user in ***upstream trades***, and the credit generator is located downstream of the credit user in ***downstream trades***.

See the Abbreviations and Glossary, pp. vi and 54 for terms used throughout the guidance document.

2.1. WPDES Permit Requirements

Pursuant to s. 283.84 (1), Wis. Stats., a binding, written agreement (trade agreement) is required between trading partners. Pursuant to ss. 283.84 (3r) and (4), Wis. Stats., the credit user's WPDES discharge permit and, if one is required, the credit generator's WPDES discharge permit must be issued, reissued or modified to enable trade agreements to be implemented. The permit must include terms and conditions related to the trade agreement before trading of credits may occur (see Appendix 1, p. 58).

2.2. General Conditions for WQT

Trading should not create localized exceedances of water quality and must not result in the exceedance of WQBELs for acute toxicity as derived pursuant to ch. NR 106, Wis. Adm. Code. This includes limits for acute whole effluent toxicity and limits based on acute criteria for temperature. Further, pursuant to s. 283.84 (1m)(a), Wis. Stats., trading credits must result in improved water quality (see Section 2.16, p. 27). Trading achieves improvements in water quality by requiring a greater load reduction than would otherwise be achieved absent trading. For example, a PS needing to offset 100 pounds of discharge

would need to acquire at least 110 pounds of credits through trading. See Section 2.11.6, p. 24 for more details.

2.3. Pollutant Parameters Acceptable for WQT

Excluding bioaccumulative chemicals of concern as identified in ch. NR 105, Wis. Adm. Code, WDNR will consider any pollutant parameter for trading. At this time, however, WDNR anticipates that TP and TSS will be the most commonly traded pollutants.

Cross-pollutant trading is the use of credits for one pollutant parameter to demonstrate compliance with WQBELs for a second pollutant parameter. Cross-pollutant trading is acceptable when there is adequate information to establish and correlate impacts between the two pollutant parameters. An example would be trading credits for P to allow a discharger to demonstrate compliance with WQBELs for 5-day biochemical oxygen demand (BOD_5) when the limits are based on preventing oxygen depletion in the receiving water.

2.4. WQT Applicability

Trading may be used by holders of WPDES permits to demonstrate compliance with WQBELs. Credits may be used to offset part of the permittee's discharge with the difference between the permittee's discharge and available credits being compared to WQBELs to demonstrate compliance, as depicted in Figure 1.

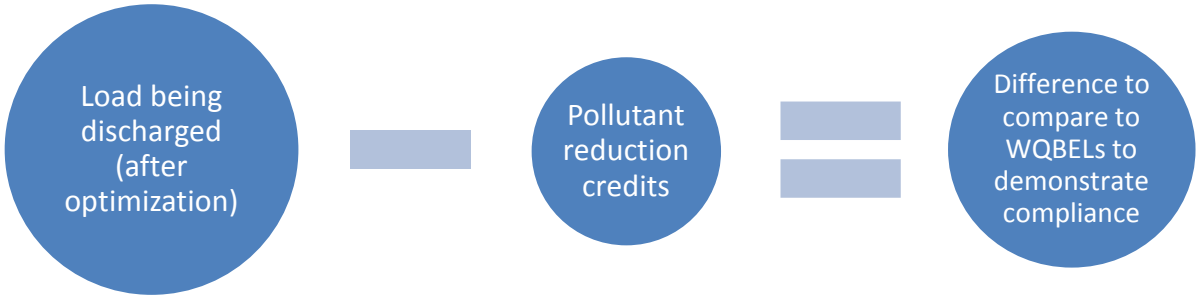


Figure 1. Simple equation for determining compliance with a WQBEL using pollutant reduction credits.

Trading may also be used to offset an increase in pollutant load from an existing discharger or the entire load of a new discharger. For example, a finding that water quality is not being lowered, as addressed by s. NR 207.04 (1)(c), Wis. Adm. Code, may be supported by trading to offset an increasing pollutant load or a new discharge. Further, s. NR 217.13 (8), Wis. Adm. Code, identifies trading as one of three options that can be used to allow a new discharger to discharge P to phosphorus-impaired surface waters.

2.4.1. Trading and Technology-based Effluent Limitations

Trading can only be used to demonstrate compliance with WQBELs. The use of trading to demonstrate compliance with technology-based effluent limitations (TBELs) established pursuant to ss. 283.13 (1)

through (4), Wis. Stats., is not allowed unless authorized by the administrative rule that establishes the TBEL. Trading cannot be used to demonstrate compliance with a TP TBEL derived pursuant to Subchapter II of ch. NR 217, Wis. Adm. Code.

2.4.2. Trading and Statewide Performance Standards

NPSs and permitted municipal separate storm sewer systems (permitted MS4s) are not allowed to be credit users to meet the runoff pollution performance standards contained in ch. NR 151, Wis. Adm. Code, except for agreements between adjacent municipalities under a long-term stormwater management plan pursuant to ss. NR 151.13 (2)(b)3 and NR 216.07 (6), Wis. Adm. Code. Trading may be used to meet requirements promulgated under s. NR 151.004, Wis. Adm. Code.

Trading may not be used by concentrated animal feeding operations (CAFOs) to meet P delivery minimization requirements of s. NR 243.14 (5), Wis. Adm. Code.

> *NOTE: At this time WDNR does not anticipate that CAFOs and NPSs will be credit users, only credit generators.*

2.5. Appropriate Trading Partners

In order to meet water quality goals, the parties to a water quality trade must discharge, either directly or indirectly, to the same water body as discussed in Section 2.10, p. 11. For example, a discharge to the East River, a tributary of the Fox River in Green Bay, would be considered an indirect discharge to the Fox River.

Pursuant to s. 283.84, Wis. Stats., trading may occur between two or more PSs and between PSs and NPSs. If one permittee holds more than one WPDES permit, such as a municipality with a permit for its wastewater treatment system discharge and a permit for municipal stormwater discharge, trading may occur between the PSs identified in the two permits. A permittee may generate credits for its own use by constructing a project or implementing a plan that reduces the amount of a pollutant discharged from sources other than those covered by the permittee's permit.

Trading may occur between a PS and WDNR or a local governmental unit pursuant to s. 283.84 (1)(c), Wis. Stats. Additional information on other trading structures is available in the "Water Quality Trading How-To Manual" at http://dnr.wi.gov/topic/SurfaceWater/waterqualitytrading.html. Additional guidance will be developed as needed and posted to WDNR's website.

2.6. Optimization of Existing Wastewater Treatment Systems

Prior to using credits to demonstrate compliance with WQBELs, the permittee should optimize existing wastewater treatment for the pollutant addressed by the trade. Treatment optimization utilizes minor operational changes or modifications to capture and remove as much of the traded pollutant as possible. For example, if a wastewater treatment system currently utilizes chemical addition, adding more chemicals or adding chemicals more frequently to recover more of the pollutant of concern may

constitute treatment optimization. Removal of collected solids from a lagoon represents another example of treatment optimization.

2.7. Pollutant Reduction Credit Threshold

"Credit threshold" denotes the pollutant loading from a PS or NPS, below which reductions are made to generate credits. The credit threshold establishes the amount of pollutant reduction that is necessary before credits may be generated. With the exception of interim credits (see Section 2.8, p. 10), Figure 2 illustrates the basic concept behind credit thresholds.

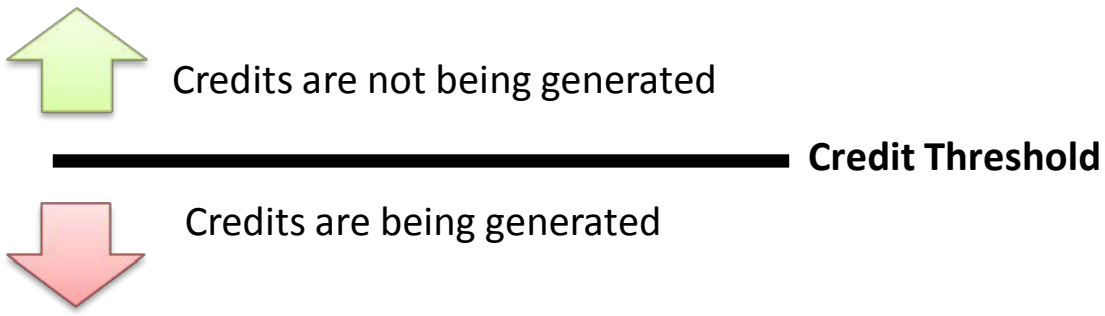


Figure 2. Conceptual diagram of credit thresholds.

The credit threshold varies based on the presence or absence of an approved TMDL and the type of credit generator as explained in the following sections:

2.7.1. PS Pollutant Reduction Credit Threshold

For trades with a PS credit generator, the credit threshold is set equal to the more restrictive of the PS's TBEL or WQBEL for the traded pollutant. For example, when a WPDES permit imposes a TBEL for TP but not a WQBEL, the credit threshold equals the TBEL. If the WPDES permit contains both a TBEL and a WQBEL for the same pollutant and the WQBEL is more restrictive, the credit threshold equals the WQBEL.

> *NOTE: Section 283.84 (1m)(a), Wis. Stats., requires trades to result in water quality improvement. This guidance defines water quality improvement to be a greater load reduction than would otherwise be achieved absent trading. A PS credit generator's pollutant load must be reduced below its current level of discharge to insure water quality improvement.*

To generate credits, the PS credit generator must accept a lower permit effluent limit than the more restrictive TBEL or WQBEL. The difference between the revised, more restrictive effluent limit and the previously applicable effluent limit (TBEL or WQBEL) is the amount of credit that is generated.

> Example: A PS discharge has a TP WQBEL of 0.5 mg/L, expressed as a monthly average. At current effluent flows, the WQBEL represents a mass of 6 lbs/day. Through minor wastewater treatment improvements, the PS is able to achieve an average monthly TP

effluent concentration of 0.3 mg/L. To serve as a credit generator, the PS accepts revised effluent limits of 0.3 mg/L and 3.6 lbs/day as monthly averages in their WPDES permit, which makes 2.4 lbs/day as a monthly average of TP available to trade.

Interim effluent limits in effect during a compliance schedule for TP pursuant to s. NR 217.17 (3)(c), Wis. Adm. Code, should not be used as the credit threshold. Only the final TP WQBEL may be used as a credit threshold.

If the WPDES permit does not contain an effluent limit for the pollutant being traded, the credit threshold should be set equal to the credit generator's current level of discharge. Statistical methods presented by USEPA in its *Technical Support Document for Water Quality-based Toxics Control* (USEPA 1991) may be used to develop effluent limitations from current discharge data to represent the credit threshold. To generate credits, the PS credit generator must accept a permit effluent limit that reflects a discharge less than the current discharge.

2.7.2. Permitted Urban Stormwater Pollutant Reduction Credit Threshold

For municipal separate storm sewer systems with a WPDES permit (permitted MS4s), the credit threshold will depend on the presence or absence of an approved TMDL. In the absence of an approved TMDL, permitted MS4s shall have a credit threshold corresponding to the 20% TSS reduction in accordance with Stage 1 requirements contained in s. NR 151 (2)(b)1.b, Wis. Adm. Code, and applicable WDNR guidance, http://dnr.wi.gov/topic/stormwater/standards/ms4_modeling.html . For pollutants other than TSS, the credit threshold shall be set at the pollutant level corresponding to the 20% TSS reduction. The trading of TSS shall follow the requirements outlined in ss. NR 216.07 and NR 151.13 (2)(b)3, Wis. Adm. Code.

The credit threshold for permitted MS4s covered by an approved TMDL is equal to the more restrictive of the WLA or the 20% TSS reduction. This can be expressed either on a mass basis (lbs/yr) or on a percent reduction basis as measured from the baseline condition represented in the TMDL calculations.

> Example: A permitted MS4 is required to get 20% TSS reduction through modeling of proposed stormwater practices pursuant to ch. NR 151.13 (2)(b)1.b, Wis. Adm. Code. Through modeling, the MS4 determines that they are complying with the 20% TSS requirement and have accomplished a 23% reduction. As part of a trade agreement with a wastewater treatment plant the MS4 installs additional management practices that further increases their TSS reduction to 30%. Credits would be generated between the credit threshold of 20% and the proposed reduction of 30%.

To generate credits, the MS4 must accept permit conditions more restrictive than the WLA or 20% TSS reduction. If the MS4 is covered by a general permit, a site-specific permit may be issued with the more restrictive permit conditions.

2.7.3. NPS Pollutant Reduction Credit Threshold

The credit threshold for a NPS, which includes both agricultural sources and non-permitted urban sources, is set to reflect the load allocation (LA) from an approved TMDL. If the NPS is located in a watershed without an approved TMDL, the credit threshold equals the current pollutant load.

To generate credits, the current pollutant load must be reduced through urban or agricultural management measures and practices. For NPSs the term "current pollutant load" refers to the pollutant load existing at the time that the trade agreement is reached pursuant to s. 283.84, Wis. Stats. Modeling will likely be used to quantify the current pollutant load as well as the reductions made from agricultural and urban management practices.

Examples of credit thresholds for NPSs are provided below:

Agricultural NPSs: The credit threshold for an agricultural area that is not addressed by an approved TMDL is set at the current pollutant load even when the current pollutant load is less than the state-wide performance standard in ch. NR 151, Wis. Adm. Code. The current pollutant load represents historical operations prior to the change made to generate credits. The current load for most NPSs such as barnyard loads, streambank erosion, and wetland restoration can be quantified through modeling for a given calendar year by a method approved by WDNR. For field based management practices the current load will be established through modeling the previous full crop rotation, with a minimum of three years, and current soil nutrient levels.

For agricultural areas addressed by an approved TMDL, the credit threshold is set to reflect the TMDL LA. The LA may be expressed either as a mass over a specific period (day, month, or year), a modification of statewide performance standards in ch. NR 151, Wis. Adm. Code, or as a percent reduction from an assumed baseline condition. The baseline condition is defined in the TMDL and generally reflects compliance with existing regulatory requirements such as the Phosphorus Index (PI) contained in ch. NR 151, Wis. Adm. Code, but in some cases may reflect current pollutant loading conditions. Please consult the TMDL to determine the appropriate baseline condition used.

For example, if the TMDL expresses the LA in relationship to a statewide performance standard such as the PI, the LA will serve as the credit threshold. If the TMDL does not express allocations in terms of the statewide performance standards, the credit threshold may be set equal to the LA or expressed using the percent reduction stipulated in the TMDL.

What is the "Phosphorus Index" or "PI"?
The Wisconsin PI is a planning and assessment tool for managing runoff P losses from cropland. The PI is calculated by estimating average runoff P delivery (in lbs/acre) from each field to the nearest surface water in a year, given the field's soil and crop conditions and long-term weather patterns. This value is reported as a whole number – the higher the number, the greater the likelihood that the field is contributing P to local water bodies.

If the TMDL LA is expressed as a mass, a percent reduction can be calculated between the mass in the baseline loading condition and the allocated mass. In most cases, this step will already have been performed during the development of the TMDL. If so, the credit threshold may be derived using the calculated percent reductions contained in the TMDL. For example, if the TMDL used existing regulatory requirements as the baseline condition (i.e., PI = 6) and has a 50% reduction stipulated for NPSs as the LA, the credit threshold is a PI = 3 (i.e., 50% reduction of PI = 6 results in a credit threshold of PI = 3).

The TMDL may also express the LA directly as a modification of a statewide performance standard. For example, the LA may be expressed directly as a PI = 3 for all fields in a specific watershed, instead of the statewide performance standard of a PI = 6. The credit threshold would then equal a PI = 3.

If the current pollutant load for an agricultural NPS is less than the TMDL LA, the credit threshold does not change, but the current pollutant load must be reduced before credits may be generated. For example, if the LA for an agricultural field is a PI = 4 but the field is already at a PI = 2, additional management practices are necessary to lower the current PI before credits may be generated. Credits would be based on the load reduction represented by the difference between the credit threshold, a PI = 4, and the PI that results from installation of the additional management practices. The NPS credit generator's pollutant load must be reduced below its current level to insure water quality improvement and, therefore, to generate credits pursuant to s. 283.84 (1m)(a), Wis. Stats.

Unless specifically assigned an allocation or reduction, barnyard runoff, stream bank erosion, wetland restoration and other NPSs will have a credit threshold based on the percent reduction stipulated for NPSs in the TMDL.

Concentrate Animal Feeding Operations (CAFOS): Agricultural operations with 1,000 animal units or more are required to obtain a WPDES permit and identified as a CAFO. PS discharges associated with production areas of permitted CAFOs are not allowed, with the exception of discharges from a properly designed and managed storage facility that occur due to a storm equal to or greater than a 25-year, 24-hour event (provided the permittee has complied with all other permit terms and conditions). Due to the episodic nature of storm events and the fact that it is unlikely an authorized discharge would ever occur from the production area, the wasteload allocation (WLA) for a CAFO is set equal to zero in TMDLs. Consequently, trades with CAFOs associated with the production area are not available.

Land applications of manure and process wastewater associated with a CAFO are considered NPS discharges when the operation is in compliance with its nutrient management plan and WPDES permit. These discharges are considered agricultural stormwater and, therefore, are covered under a TMDL's LA for NPSs. Trading may be available with permitted CAFOs associated with land application sites.

The credit threshold for CAFO land application areas is the current pollutant load when the area is not addressed by an approved TMDL or the LA when the area is addressed by an approved TMDL, as discussed on the previous page for agricultural NPSs. Note that CAFOs must comply with s. NR 243.14 (5), Wis. Adm. Code.

Urban Nonpoint (Stormwater) Sources Lacking a WPDES Permit: For urban areas not required to hold a WPDES permit (non-permitted MS4s) pursuant to ch. NR 216, Wis. Adm. Code, the current pollutant load represents existing urban controls calculated by a method approved by WDNR. WDNR urban stormwater guidance is available at: http://dnr.wi.gov/topic/stormwater/standards/ms4_modeling.html. In the absence of a TMDL, the credit threshold equals the current load at the time of the trading agreement.

If covered by an approved TMDL, non-permitted MS4s will have a credit threshold set equal to the LA, or to the percent reduction identified in the TMDL.

Other NPSs: If sources other than agricultural and non-permitted MS4s, such as septic field discharges, are assigned reductions in an approved TMDL, the credit threshold would be set at the LA or specified percent reduction in the TMDL.

2.8. Interim and Long-term Pollutant Reduction Credits for NPSs Located in a TMDL Watershed

NPS credit generators, including non-permitted MS4s (not permitted MS4s), that are located in a watershed with an approved TMDL may generate two types of credits; interim credits and long-term credits. Interim credits are generated by load reductions that achieve the credit threshold and, therefore, can be generated only when the current pollutant load exceeds the applicable LA. Long-term credits are generated by load reductions obtained below the LA credit threshold.

> *NOTE: This section of the guidance only applies to trades with a NPS credit generator. It does not apply to PS credit generators such as municipal and industrial facilities, permitted MS4s and any PS discharge from a CAFO. Neither does it apply to NPSs in the absence of an approved TMDL.*

The duration of interim credits equals the lifespan of the management practice employed to reduce pollutant loads, or 5 years, whichever is shorter. Once interim credits have expired, the credit user may replace them with new interim credits or long-term credits. If the credit user wants to avoid having to replace interim credits over time, they should collect enough long-term credits in the very first trade to meet their WQBELs.

The duration of interim credits will be stated in the credit user's WPDES permit as discussed in Section 3.2.3, p. 40. If a TMDL is approved during the term of a WPDES permit that already allows trading, interim credits and their duration will be specified in the permit when it is reissued or modified.

The duration of long-term credits is defined in Section 2.15, p. 27.

> **Example : Interim and Long-term Credits**
> A PS credit user decides to trade with a NPS credit generator as a means to comply with WQBELs derived from an approved TMDL. In the TMDL, farm fields for the NPS have a LA equivalent to a PI = 4. The farm fields selected to generate credits have a current PI = 10. The PS pays for the installation of management practices that bring the fields to a PI = 1. The lifespan of the management practice is 10 years. Given the information above, the following credits are available:
>
> **Interim Credits Available (available for first 5 yrs.):** 9 lbs/acre/year (i.e., 10 - 1 = 9)
>
> **Long-term Credits Available (available after first 5 yrs.):** 3 lbs/acre/year (i.e., 4 - 1 = 3)

For the first 5 years, the PS gets the full credit of 9 lbs/acre/year (i.e., a PI = 10 minus a PI = 1). With the credit threshold set equal to the TMDL LA, 3 lbs/acre/year are long-term credits (i.e., a PI = 4 minus a PI = 1).

After the first 5 years, the PS may claim 3 lbs/acre/year as long-term credits for the remaining useful life of the management practice. Lost interim credits need to be replaced with either new interim or long-term credits from a second trade.

After the first 10 years, the PS may decide to renew its agreement with the farm. If the PS chooses to renew the trade, management practices will need to be reestablished and the credits generated below the credit threshold, in order to qualify for use in achieving compliance with a WQBEL.

2.9. Technical Standards for Management Practices

To generate credits, urban and agricultural management practices must be constructed and maintained in accordance with applicable technical standards from the United States Department of Agriculture's Natural Resources Conservation Service (NRCS) or WDNR's technical standards. NRCS standards may be found at: http://efotg.sc.egov.usda.gov/toc.aspx?CatID=16855 and WDNR technical standards can be found at: http://dnr.wi.gov/topic/stormwater/.

2.10. Location and Geographic Extent of Water Quality Trades

This section of the guidance describes the location and geographic requirements for trading. Two categories define the geographic extent of trades. The first addresses trading to meet WQBELs derived from an approved TMDL (i.e., TMDL WQBELs). The second addresses trading to meet WQBELs that are not based on TMDLs (i.e., non-TMDL WQBELs).

NOTE: The following guidance provides a general discussion of location and geographic requirements for trading. The location of the credit user with respect to the credit generator and the possible presence of impoundments, lakes or other features between the trading partners also impact the delivery of credits. See Section 2.11, p. 14 for more details.

2.10.1. Trading to Meet TMDL WQBELs

Approved TMDLs assign WLAs to PSs and LAs to NPSs so that the impaired water (or impaired segment) will meet water quality standards. These allocations are assigned to pollutant sources that drain to or contribute to the impaired segment. This contributory area is referred to as the drainage area in this section.

In most cases, a credit generator will be able to trade with other dischargers within the drainage area of the impaired segment that resulted in the allocation being assigned to it. Trades may occur both upstream and downstream of the generator's discharge point provided that the potential for localized

water quality standard exceedances is adequately addressed. The ultimate extent of the area available for trading is limited to the drainage area contributing to the impaired segment.

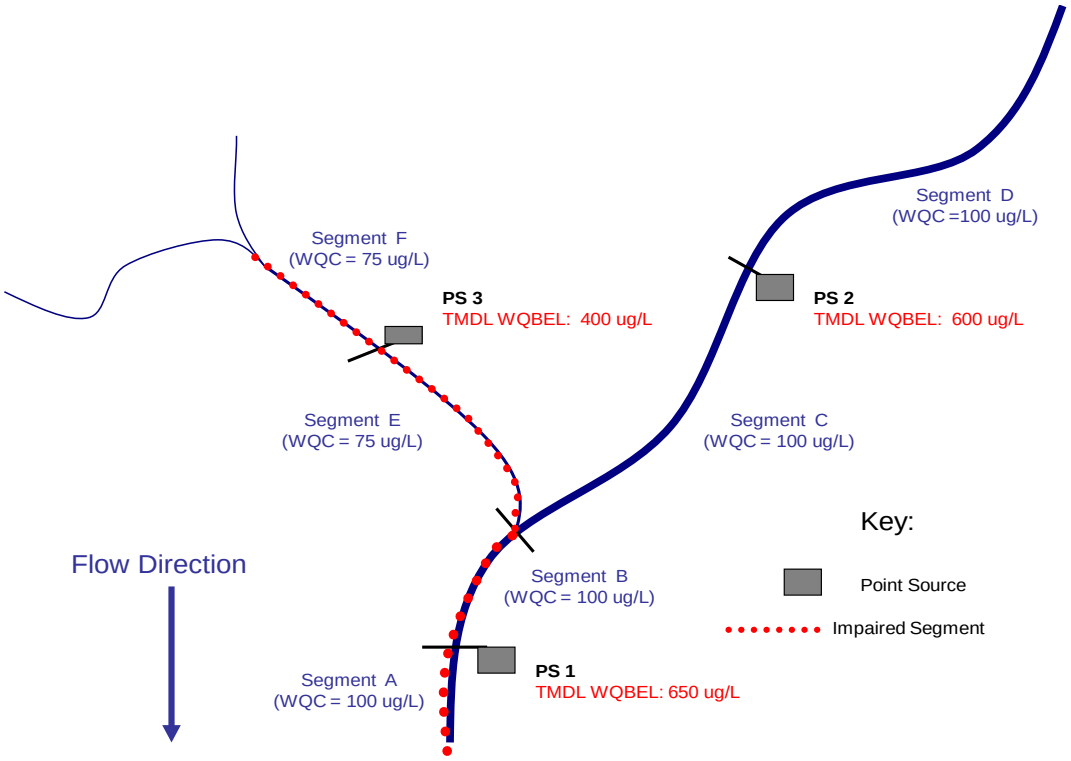


Figure 3. Location for impaired waters with an approved TMDL.

Figure 3 provides an illustration of the proposed location for a trade under an approved TMDL. The figure shows impaired segments of a river and a tributary to the river with TMDLs for Segments A, B, E and F. Segment boundaries are depicted by lines drawn across the river and tributary. Trading may occur as follows:

- Point Source 1 (PS 1), located at the top of Segment A, received a TMDL allocation based on meeting water quality standards in Segment A and seeks credits. PS 1 may trade for credits generated by sources in the contributory drainage area for Segment A, which includes Segments A, B, C, D, E and F.
- Point Source 2 (PS 2) received a TMDL allocation based on meeting water quality standards for Segment B. PS 2 may trade with the contributory drainage area to Segment B, which includes Segments B, C, D, E and F to demonstrate compliance with TMDL WQBELs provided the discharge from PS 2 does not result in a violation of water quality standards in Segment C. PS 2 may receive a non-TMDL WQBEL in addition to the TMDL WQBEL to prevent a violation of water quality standards in Segment C. Use of trading to demonstrate compliance with non-TMDL WQBELs is discussed in the next section of this guidance.
- Assuming in this example that the WLA for Point Source 3 (PS 3) is based on protecting Segment E, PS 3 may trade within the drainage area for Segment E, which includes Segments E and F.

2.10.2. Trading to Meet Non-TMDL WQBELs

If a facility wants to trade to meet a non-TMDL WQBEL, in most cases, the trade will need to occur upstream of the credit user's discharge point to prevent local violations of water quality standards. However, when a discharger is a small percentage of the relative load at the point of discharge, or if the point of standards application is downstream of the credit user, the PS may have the ability to trade with downstream sources within the reach without exceeding water quality standards. This requires evaluation on a case-by-case basis.

> *NOTE: This guidance document proposes an approach in calculating trade ratios that will minimize the risk of localized impairments with a downstream trade. For more information see Section 2.11.2, p. 16.*

In non-TMDL scenarios, the point of standards application is typically the credit user's point of discharge. When the direct receiving water is classified as a limited aquatic life system, however, the point of standards application for a TP WQBEL may be downstream of the credit user's discharge point (see Section 2.11.2, p. 16).

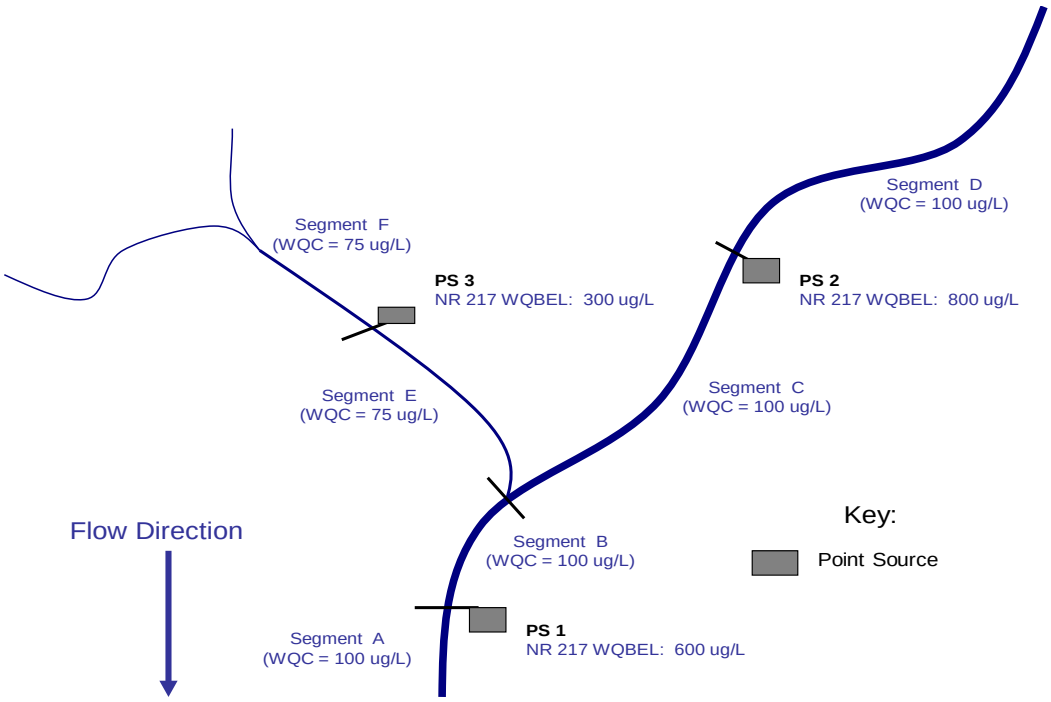


Figure 4. Location for a non-TMDL Trade.

Figure 4 shows non-TMDL WQBELs based on water quality criteria for TP (according to s. NR 217.13, Wis. Adm. Code). Trades may occur as follows:

- Point Source 1 (PS 1) may trade with sources generating credits in Segments B, C, D, E and F.

- Assuming that Point Source 2 (PS 2) is an insignificant source of the pollutant load to Segment C (calculated through a quantification of P loads), PS 2 may trade with sources in Segment D and could likely trade with downstream sources in Segment C. See Section 2.11.2, p. 16 for more information.
- Assuming that Point Source 3 (PS 3) is a significant source of the pollutant load for Segment E, PS 3 may trade with sources draining to Segment F, but not sources located downstream of its discharge point.

2.11. Trade Ratios

This guidance utilizes trade ratios to ensure that the load reduction provided by the credit generator results in a net water quality improvement at the point of standards application (see Section 2.10.2, p. 13) when compared to the load reduction required of the credit user in the absence of a trade. For example, a ratio of 2:1 means two pounds of load reduction is equivalent to one pound of credit.

The trade ratio equals the sum of separate factors including delivery, equivalency and uncertainty. Downstream trading and habitat improvement may also be considered when deriving the trade ratio. As discussed below, factors are derived independently and combined into a trade ratio using the following equation:

Trade Ratio = (Delivery + Downstream + Equivalency + Uncertainty - Habitat Adjustment):1

WDNR recommends that permittees seek more credits than necessary to meet permit limits in order to ensure ongoing compliance in the event that load reduction practices fail to generate anticipated credits.

2.11.1. Delivery Factor

The delivery factor[2] accounts for the distance between trading partners and the impact that this distance has on the fate and transport of the traded pollutant in surface waters. In most cases, a delivery factor will not be necessary when the credit generator and credit user are both located in the same 12-digit hydrological unit (HUC-12) because of the negligible impacts of fate and transport at this scale. A delivery factor within a HUC-12 subwatershed may be necessary, however, to account for lakes or impoundments between the credit user and credit generator or if the models used to calculate load reductions do not account for a delivery component. For example, the SNAP-Plus model already accounts for delivery of P to local water bodies but does not consider delivery through lakes or between HUC-12 subwatersheds. Methods for analyzing delivery should account for the movement of sediment-bound and soluble forms of the pollutant through the system.

> *NOTE: HUC-12 subwatersheds are approximately 10,000 to 40,000 acres (16 to 60 square miles) in size. There are approximately 160,000 HUC-12 subwatersheds in Wisconsin. See the*

[2] In this section of the guidance, delivery factor refers to the in-stream transport of the pollutant between credit user and credit generator, not delivery from edge of field to the receiving water.

"Water Quality Trading How-To Manual" at
http://dnr.wi.gov/topic/SurfaceWater/waterqualitytrading.html.

To account for delivery when trading partners are located in different HUC-12 subwatersheds, two approaches are recommended depending on the type of effluent limit assigned to the credit user for the traded pollutant, non-TMDL WQBEL or TMDL WQBEL as explained below:

TMDL WQBEL Delivery Factors: In a TMDL, allocations are assigned to pollutant sources to ensure impaired receiving waters meet water quality standards. The TMDL report outlines the methods used to calculate the allocations including those accounting for delivery and transport of pollutants (TMDL reports can be found at: http://dnr.wi.gov/topic/tmdls/tmdlreports.html). When trading to meet a TMDL WQBEL, any delivery factors used in the TMDL also must be used to calculate the delivery factor of the trade. If the TMDL assumes no delivery factors or does not simulate fate and transport, the trade does not have to account for delivery because the delivery factor is implicit in the allocations and, therefore, reflected in the credit threshold (i.e., the delivery factor equals zero).

When TMDLs do not include fate and transport, pollutant loads are assumed to move through the system in a conservative fashion with no losses due to settling of other processes. This results in downstream allocations being lower with an implicit margin of safety because there are no pollutant loses assumed to have occurred in the system.

Non-TMDL WQBEL Delivery Factors: In the absence of an approved TMDL, the SPARROW model's downstream tracking feature (Decision Support System tab at (http://water.usgs.gov/nawqa/sparrow/) may be used to derive delivery fractions for P, nitrogen and sediment when fate and transport need to be addressed. The SPARROW model was developed by the United States Geological Survey (USGS) and relies on regression equations from monitoring data to create a delivery fraction between two points in a watershed.

The SPARROW model produces a delivery fraction (0 to 1) which represents the fraction of the load leaving a reach that arrives at the end of a selected downstream target reach or outfall after accounting for the mass of the constituent of interest that is removed by natural attenuation processes. The delivery factor that should be used in the trade ratio equation equals:

Delivery Factor = (1/SPARROW delivery fraction) - 1.

For example, using a delivery fraction of 0.44 from the SPARROW output shown in Figure 5, the delivery factor equals 1.3 (i.e., (1/0.44 – 1)). Note that using the Identify (*i) button shown in Figure 5 will give the actual delivery fraction for the selected watershed instead of the ranges shown in the explanation box.

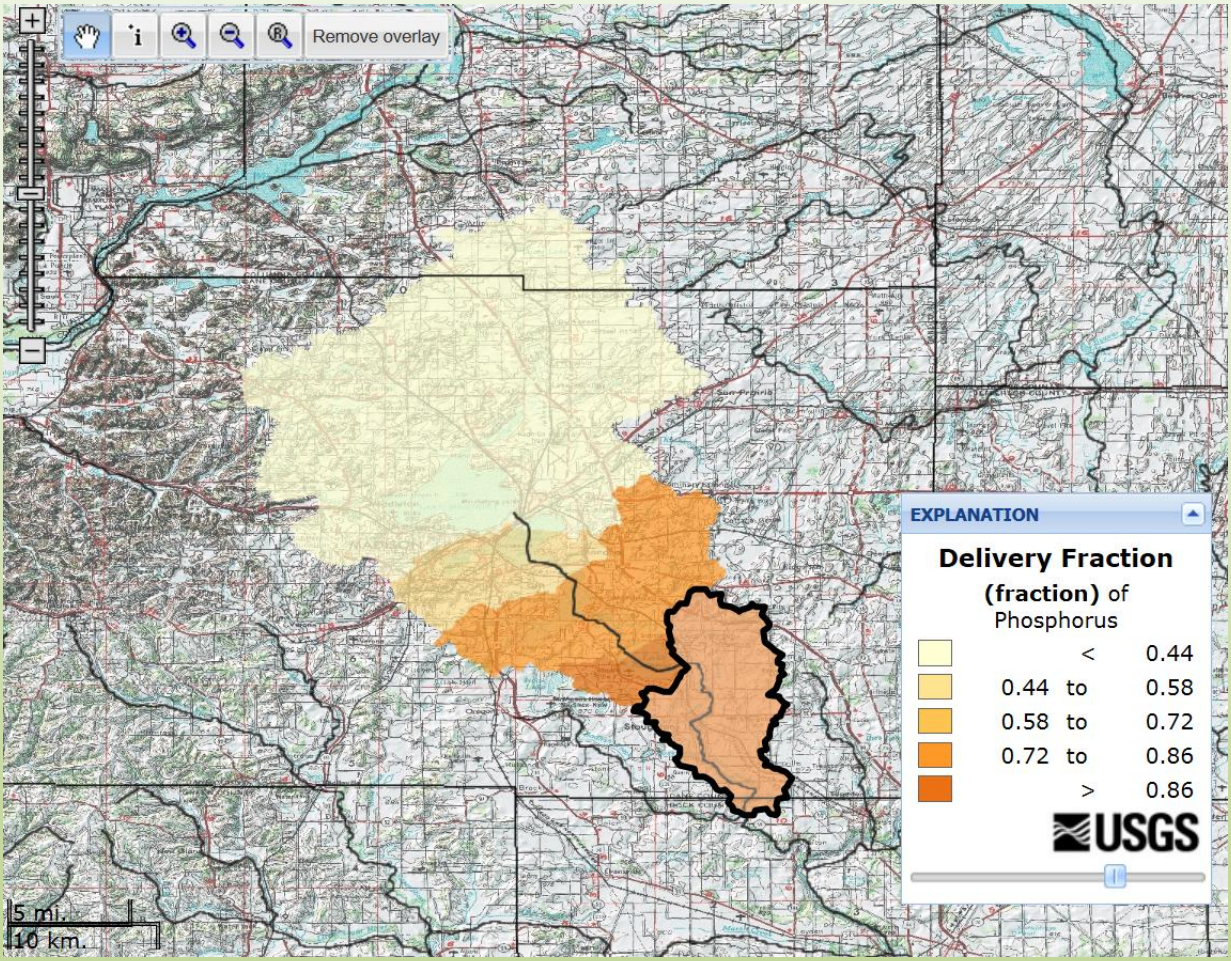


Figure 5. SPARROW Output for Total Phosphorus Delivery Fraction to the Confluence of Yahara River and Badfish Creek.

Multiple Delivery Factors: It is possible for a PS to receive both TMDL WQBELs and non-TMDL WQBELs for the same pollutant. For example, a PS that discharges to a tributary of an impaired surface water for which a TMDL has been developed could receive both TMDL and non-TMDL WQBELs when the tributary itself is not impaired and not given an allocation. In this example, a separate delivery factor may be derived for trades to meet each WQBEL.

2.11.2. Downstream Trading Factor

A downstream trading factor is needed when the credit generator is located downstream from the credit user's point of standards application. The downstream trading factor is used to help prevent a violation of water quality criteria in the receiving water between the credit user and generator.

The point of standards application is typically the point of discharge in non-TMDL scenarios, or the bottom of the reach that generated the credit user's WLA in TMDL scenarios. For some pollutants (such as TP), however, the point of standards application in the absence of a TMDL may be downstream of the credit user's discharge point when the direct receiving water is classified as a limited aquatic life system.

A downstream trading factor is not needed for trades that occur when the credit generator is upstream of the point of standards application (i.e., downstream trading factor equals zero).

Downstream trading should be limited to trading partners within the same HUC-12 subwatershed. Within the same HUC-12 subwatershed, the downstream trading factor, as provided in Table 2, is a function of the difference between the average annual load discharged by the credit user to the overall total load at the credit user's point of standards application. For P and TSS this difference can be calculated using WDNR's pollutant load ratio estimation tool (PRESTO) at http://dnr.wi.gov/topic/surfacewater/presto.html.

Table 2. Downstream Trading Factor.

Percent Difference Between Credit User's Load and Total Load at the Point of the Credit User's Point of Standards Application	Downstream Trading Factor
<25%	0.1
<50%	0.2
<75%	0.4
≥75%	0.8

2.11.3. Equivalency Factor

The equivalency factor accounts for trading partners discharging different forms of the traded pollutant. An equivalency factor is appropriate when water quality criteria are established for different forms of a pollutant or a TMDL differentiates between various forms of a pollutant. Equivalency factors are provided in Table 3, p. 18. As such, equivalency factors will vary based on the pollutant, as discussed below:

Total Phosphorus (TP): An equivalency factor is not necessary (i.e., equals zero) for trading of TP credits. Chapters NR 102 and NR 217, Wis. Adm. Code, establish water quality criteria and WQBELs only for TP. While soluble and sediment-bound P have different transport capacities, these differences are accounted for in the calculation of the delivery factor.

Total Suspended Solids (TSS): An equivalency factor is not necessary (i.e., equals zero) for trading TSS credits at this time. To date, approved TMDLs for sediment or solids have addressed only TSS. Since water quality criteria have not been established for TSS, TMDL WQBELs will likely be the only source of WQBELs for TSS.

Nitrogen: If numeric water quality criteria are developed for nitrogen, equivalency factors may be warranted, especially given the speciation of nitrogen.

Table 3. Default equivalency factors.

Pollutant Parameter	Equivalency Factor
Total Phosphorus (TP)	0
Total Suspended Solids (TSS)	0
Total Nitrogen	Currently Not Available
Thermal	Not Applicable

Contact local or statewide trading coordinators for help when determining the equivalency factor for other pollutants (see Appendix 10, p. 88).

2.11.4. Uncertainty Factor

The uncertainty factor compensates for the multiple sources of uncertainty that normally occur in the generation of credits by NPSs. Uncertainties originate from climatic variability, potential inaccuracies in field testing or modeling of the amount of pollutant controlled by a management practice, inability to always synchronize credit generation and use, and the reliability of the management practice to perform under different hydrologic conditions.

PS Credit Generator Uncertainty Factor: When a PS generates credits, such as in a trade between two wastewater treatment facilities, the uncertainty factor for the trade is set equal to 1 when the credit generator performs effluent monitoring in accordance with the terms of its WPDES discharge permit.

Due to the nature of stormwater discharges, NPS uncertainty factors are more appropriate for a permitted MS4.

NPS Credit Generator Uncertainty Factor: This uncertainty factor addresses trades where credits are generated by a NPS. For the purpose of this uncertainty factor, MS4s and other permitted stormwater sources are considered nonpoint because the pollutant source is diffuse and dependent on climatic factors.

Generally, the NPS uncertainty factor will be calculated based on the effectiveness of management practices over various flow or precipitation regimes, the general effectiveness of the practice, and the ease of verification that the management practice is in place and operating effectively. Individual practices that are effective over a wider range of flow regimes and are easy to verify have lower uncertainty factors. As concluded by the Wisconsin Buffer Initiative (http://www.nelson.wisc.edu/people/nowak/wbi/), multiple management practices deployed in a system addressing application of nutrients, detachment of sediment and nutrients, and transport of sediment and nutrients affords the best reduction in the delivery to receiving waters. This system-based approach is reflected in the trade ratios.

Table 4, p. 20 provides a list of NPS management practices with default uncertainty factors that may be used to reduce pollutant loads and, therefore, generate credits for trading. However, credit generators

are not restricted to the management practices listed and may request site-specific uncertainty factors when the factors are derived using the process outlined in ch. NR 151, Subchapter V, Wis. Adm. Code.

Requests to use uncertainty factors other than the default values or to use practices currently not listed in Table 4 should be made in writing to local or state trading coordinators. Requestors should explain why alternative uncertainty factors or new practices are warranted and why the proposed ratios provide adequate levels of protection. WDNR will determine the adequacy of the trade ratios and if new practices are applicable and update guidance materials as appropriate.

Table 4. Management practices with recommended credit generation and use information.

Management Practice	Uncertainty Factor[1]	Applicable Technical Standard	Method for Calculating Pollutant Load Reductions	Notes
Agricultural Practices				
Whole Field Management: Requires an approved nutrient management plan, filter strips/buffer strips, grassed waterways, conservation or no till, and cover crops. Additional practices as deemed by NRCS or County Conservationist may be required to protect against mobilization and delivery of pollutants.	1	NRCS 590, 393, 332, 412, 345 329, 340 and 330	SNAP-Plus or equivalent model results compared to baseline	Requires an approved NRCS 590 nutrient management plan (NMP) that meets both the soil test-P and PI requirements. Requires a draw down strategy for nutrient concentrations that are above University of Wisconsin-Extension soil fertility recommendations. No application of manure, biosolids, or industrial wastes on snow covered or frozen ground or on fields with high groundwater or tile drainage. A crop or livestock producer engaged in a trade agreement must have all fields under an approved NMP, not just fields engaged in the trade.
Companion Crops (perennial vegetation)	1	NRCS 340	SNAP-Plus or equivalent model results compared to baseline Model as perennial cover	Companion crops must be established to provide continuous protection to soil surface and placed in support of Nutrient Management and supporting practices outlined below.
Conservation Easement	1	NRCS 327	SNAP-Plus or equivalent model results compared to baseline	Land in perennial vegetation.

Table 4. Management practices with recommended credit generation and use information.

Management Practice	Uncertainty Factor[1]	Applicable Technical Standard	Method for Calculating Pollutant Load Reductions	Notes
Nutrient Management and supporting practices:	2 (3)	NRCS 590	SNAP-Plus or equivalent model results compared to baseline	An approved NMP is required with any of the listed supporting practices. All supporting practices receive the same uncertainty factor as the NMP. An uncertainty factor of 2, instead of (3), may be used when documentation can be provided through historic cropping records or soil testing that nutrient levels are stable or dropping, an indication of adherence to the NMP. An uncertainty factor of (3) is required if fields are not brought into compliance with NR 151.02 and NR 151.04, Wis. Adm. Code. No application of manure, biosolids or industrial wastes allowed on snow-covered or frozen ground or on fields with high groundwater or tile drainage. A crop or livestock producer engaged in a trade agreement must have all fields under an approved NMP, not just fields engaged in the trade. Use of **grassed waterways** on fields in support of nutrient management and other supporting practices lowers the uncertainty factor to 1.5.
Tillage Options				
Mulch Till	2 (3)	NRCS 345		
No Till	2 (3)	NRCS 329		
Riparian Filter Strip (edge of field)	2 (3)	NRCS 393		
Grassed Waterway	See Notes	NRCS 412		
Cover Crop	2 (3)	NRCS 340		
Other practices simulated in SNAP-Plus	2 (3)			
Production Area Practices			University of Wisconsin Barnyard Tool APLE or equivalent modeling method	
Diversion	2	NRCS 362		
Roof Runoff Structure	2	NRCS 558		
Vegetated Treatment System	4	NRCS 635		
Constructed Wetland	4	NRCS 656		
Sediment Control Basin	2	NRCS 350	RUSLE2	For agricultural runoff control.
Streambank Stabilization and Shoreline Protection			Contact WDNR to discuss project and develop a method to quantify impact of stabilization. Appropriate methods include NRCS regression calculation.	For livestock producers, streambank stabilization must be accompanied by riparian fencing or other controls to prevent destruction of streambanks.
Without aquatic habitat restoration	3	NRCS 580 NRCS 382		
With aquatic habitat restoration	2	NRCS 580 NRCS 395		

Table 4. Management practices with recommended credit generation and use information.

Management Practice	Uncertainty Factor[1]	Applicable Technical Standard	Method for Calculating Pollutant Load Reductions	Notes
Dredging, Lake Treatment and Wetland Restoration				
<u>Lakes and Reservoirs</u> Dredging and removal of in-situ sediment and nutrients or treatment (i.e., alum)	3	NRCS 395	Load reductions calculated by determining seasonal flux rate of pollutant entering water column	Dredging must remove sediment to the original or native layer. Seasonal flux rate should be calculated based on a calibrated model or monitoring data. Annual load reductions are generated based on the calculated seasonal flux rate. Load reductions are generated on a prorated annual basis until the flux rate returns back to pre-dredging flux rate conditions.
Dredging and removal of in-situ sediment and nutrients or treatment accompanied by aquatic habitat restoration.	2			
<u>Rivers or Streams</u> Dredging with stable stream banks, installation of appropriately wide buffer strips and supporting upland practices addressing pollutants of concern	1	NRCS 580		
Dredging without stabilized stream banks or without supporting upland practices	3			
Wetland Restoration	1	NRCS 657 NRCS 658	SNAP-Plus or equivalent model results compared to baseline	Load Reductions are generated for land placed out of production such as the conversion of agricultural land back to wetland. Credits may not generated by using wetlands to treat runoff.

Table 4. Management practices with recommended credit generation and use information.

Management Practice	Uncertainty Factor[1]	Applicable Technical Standard	Method for Calculating Pollutant Load Reductions	Notes
Urban Practices				
Bioretention for Infiltration	2	DNR 1004	SLAMM, P8, or Recarga	Urban practices are not to be installed in wetlands, as they will be ineffective in hydric soils with a high water table.
Infiltration Basin	2	DNR 1003	SLAMM, P8, or Recarga	
Infiltration Trench	2	DNR 1007	SLAMM, P8, or Recarga	
Proprietary Storm Water Sedimentation Devices	2	DNR 1006	SLAMM	
Vegetated Infiltration Swales	2	DNR 1005	SLAMM or P8	
Wet Detention Pond	2	DNR 1001	SLAMM or P8	

[1] Uncertainty factors provided in this table are applicable to TP and TSS only.

[2] When using SNAP-Plus or an equivalent model to calculate load reductions, use the same soil type and field slope when calculating pollutant loads prior to and after installation of the management practice.

2.11.5. Aquatic Habitat Adjustment Factor

Many of Wisconsin's listed surface waters are impaired due to a combination of chemical, biological, and aquatic habitat impairments. In many cases, habitat restoration may be necessary for the listed surface water to achieve its full designated use. Therefore, activities that generate credits and include an aquatic habitat restoration element may qualify for an aquatic habitat adjustment to the trade ratio. To qualify, the surface water must be listed by WDNR as impaired for the traded pollutant and the management measure or practice must address both the traded pollutant and specific habitat impairments. Habitat restoration efforts must meet applicable WDNR and NRCS standards as listed in Table 5. Suggested adjustments to the trade ratio are provided in Table 4, p. 20. Additional guidance will be developed as more experience is gained.

Table 5. Applicable NRCS Technical Standards.

Number	Description
395	Stream Habitat, Improvement and Management
658	Wetland Creation
657	Wetland Restoration

2.11.6. Minimum Trade Ratio

Section 283.84 (1m)(a), Wis. Stats., requires that a trade result in water quality improvement. This guidance defines water quality improvement to be a greater load reduction than would otherwise be achieved absent trading. To accomplish this, the final trade ratio for trades involving credits generated by a NPS shall never be less than 1.2:1 (1.2 pounds of load reduction generated for every pound of credit made available). The trade ratio for trades involving credits generated by a PS shall not be less than 1.1:1. Once a trade ratio is calculated using methods specified in Section 2.11, it should be compared to the minimum trade ratio specified above, and the greater of the two should be used as the applicable trade ratio for the trade. Minimum trade ratio examples are provided below:

The trade ratio equation is:

Trade Ratio = (Delivery + Downstream + Equivalency + Uncertainty - Habitat Adjustment):1

PS Example: A credit user is working with an upstream WPDES permit holder within the same HUC-12 subwatershed to trade TP. Both the credit user and credit generator are subject to non-TMDL WQBELs derived from s. NR 217.13, Wis. Adm. Code. Given this, the trade ratio equation simplifies to:

Trade Ratio= (Uncertainty):1

With an uncertainty factor of 1 for point-to-point trades (see Section 2.11.4, p. 18), the calculated trade ratio

PS Example: Why does the trade ratio simplify?

- Delivery Factor equals 0 because trade is within same HUC-12.
- Downstream Trading Factor equals 0 because trades are upstream of the point of discharge.
- Equivalency Factor equals 0 because the trade is for TP.
- Habitat Adjustment equals 0 because no habitat restoration project is proposed in the example.

equals 1:1, which is less than the minimum trade ratio of 1.1:1. Therefore, the applicable trade ratio for the example trade is set equal to the minimum trade ratio.

NPS Example: A credit user is working with an upstream NPS credit generator to trade for TSS. No delivery factors were used in the TMDL upon which the TSS WQBELs are based. The credit generator is using a no-till management practice to generate credits. Given this information, the trade ratio equation simplifies to:

Trade Ratio = (Uncertainty):1

With an uncertainty factor equal to 2 (see Table 4, p. 20), the calculated trade ratio equals 2:1. Since it is greater than the minimum trade ratio of 1.2:1, the calculated trade ratio is applicable for this example trade.

NPS Example: Why does the trade ratio simplify?

- Delivery Factor equals 0 because delivery factors were not used in the TMDL.
- Downstream Trading Factor equals 0 because trades are upstream of the point of discharge.
- Equivalency Factor equals 0 because the trade is for TSS.
- Habitat Adjustment equals 0 because no habitat restoration project is proposed in the example.

2.12. Timing of Pollutant Reduction Credit Generation

For PSs, credits are not available for use before they are generated. Wastewater treatment, production process modifications or other controls necessary to generate the credits must be in place, and reductions in pollutant loads must be measurable before credits are available for trading. That is, the PS credit generator must first comply with the more restrictive WPDES limits that it accepts as part of the water quality trade (see Section 2.7.1, p. 6).

For NPSs, the management measure or practice must be in place and effective before credits become available for trading. Since the reduction of pollutant load may not occur immediately after implementation of a management practice, credits may not be immediately available. All structural measures must be installed and functioning prior to generating credits. Practices that produce load reductions through the conversion of land (i.e., wetland restoration) or involve the establishment of vegetation (i.e., riparian buffer strips) must be installed and established prior to credits being generated. Cropping practices (e.g., tillage, cover crops, etc.) must occur in the same year that the credits are used.

When credits are generated by a PS, both the credit user and credit generator must have permit language for trading specified in their WDPES permit. Credits are not available to the credit user prior to the credit generator's permit being modified or reissued and the more restrictive effluent limit accepted by the credit generator as part of the trade becoming effective.

2.12.1. Past Management Practices

When credits are generated by a NPS, only load reductions that occur after the trade agreement is reached are available to generate credits pursuant to s. 283.84 (1)(b), Wis. Stats. Credit users and

generators should be aware of this to ensure that trade agreements are in place prior to practice establishment.

Further, if a NPS previously installed management practices through cost-share agreements funded by state cost-share dollars, for example the Targeted Runoff Management (TRM) or Notice of Discharge grant programs, credits generated through those practices shall not be used for trading purposes pursuant to s. NR 153.15 (2)(f), Wis. Adm. Code. Trading partners should review the conditions of other cost-share grants to determine if credits may be used from practices installed using those funds.

2.13. Timing of Pollutant Reduction Credit Use

When credits are available, the timing of credit use will depend on the source of the credits. When a PS other than a permitted MS4 generates credits, only those credits generated during the compliance period of the credit user's WQBELs may be used. For example, the demonstration of compliance with a monthly average WQBEL for a specific month and year may take into consideration only those credits that are generated during that month and year. Credits generated during a given month may not be carried forward to the next month.

When a NPS generates credits, it is much more difficult to establish the timing of credit generation since many of the management practices employed produce credits only during periods of runoff. Further, management practice modeling is limited in its ability to predict the periods when credit generation occurs and normally provides load reductions in annual time periods (e.g., pounds of TP per acre per year). This is because many models rely on average annual data sets rather than actual recorded daily values. Therefore, the credit user may bank the credits generated by a NPS management practice for the calendar year and use a portion of the banked credits to demonstrate compliance with WQBELs expressed in averaging periods less than one year, at any time during that calendar year. Exceptions to the banking concept may have to be made on a case-by-case basis for seasonal discharges which would require prorating the use of credits over the entire year.

2.14. Quantifying Pollutant Load Reductions

As explained below, load reductions are quantified through either monitoring or modeling, depending on the type of water quality trade.

2.14.1. PS Credit Generator

The quantification of credits for point-to-point trades requires the use of effluent monitoring. The credit generator verifies the generation of credits through effluent monitoring reported to WDNR on monthly discharge monitoring reports (DMRs). Since credits are generated and used during the same compliance period, as previously discussed, credit generation and credit use will be reported for the same month on the discharger's monthly DMR.

For the purpose of quantifying load reductions, MS4s and other permitted stormwater sources are considered NPSs because the pollutant source is diffuse and dependent on precipitation and climatic factors.

2.14.2. NPS Credit Generator

Field scale modeling should be used to quantify credits. Currently, models are available to quantify credits for the two most likely traded pollutants, P and sediment.

> *NOTE: For the purpose of quantifying load reductions, permitted stormwater sources are considered NPS credit generators.*

Urban Sediment and P: To quantify load reductions for sediment and P resulting from the implementation of urban management practices, the most current version of SLAMM (http://www.winslamm.com/), P8 (http://www.wwwalker.net/p8/), or an equivalent methodology approved by WDNR should be used. For implementation of practices that are not simulated by the models, the process outlined in ch. NR 151, Subchapter V, Wis. Adm. Code, should be used.

Agricultural Sediment and P: For trades involving agricultural sources, load reductions should be determined using RUSLE2 (http://fargo.nserl.purdue.edu/rusle2_dataweb/RUSLE2_Index.htm) for sediment and SNAP-Plus (http://www.snapplus.net/) for P. SNAP-Plus may also be used for sediment predictions; however, the RUSLE2 model may provide more options. For implementation of practices that are not simulated by the models, the process outlined in ch. NR 151, Subchapter V, Wis. Adm. Code, should be used.

2.15. Trade Duration

Pollutant reduction credits, with the exception of NPS interim credits (see Section 2.8, p. 10), remain available for trading as long as the generator and user agree to continue trading and the measure or management practice that generates the credits remains effective. For NPSs that generate credits, credits remain available for trading through the design life of the management practice as long as the practice remains in place and is properly maintained[3]. For PSs that generate credits, credits remain available as long as the credit generator complies with the more restrictive effluent limit that it accepted as part of the trade agreement.

The duration or term of a trade is limited by either trading partner ending the agreement, by the conclusion of the design life of the pollutant reduction measure or practice that generates the credits, or by WDNR's withdrawal of its approval of the trade, whichever results in the shorter duration. Expiration of interim NPS credits may occur during the term of a trade agreement without ending the entire agreement.

Should a PS cease discharge, any credits generated by that PS are no longer available for trading.

2.16. WQT Agreement

Section 283.84, Wis. Stats., requires a binding, written agreement between the credit user and credit generator, WDNR or a local governmental unit before trading may be employed. A copy of s. 283.84,

[3] The amount of credit generated may change over time as additional site-specific information or new modeling tools become available. This guidance will be updated and/or permit conditions may change as experience is gained. These changes will be made upon permit reissuance or modification as appropriate.

Wis. Stats., is provided in Appendix 1, p. 58 and the five different trade agreements identified by the statute are discussed below:

Trading Between Two WPDES Permittees: Pursuant to s. 283.84 (1)(a), Wis. Stats., a trade agreement is required between two permittees who wish to trade credits. One of the permittees, the credit generator, agrees to reduce their discharge of the traded pollutant below levels otherwise authorized by their WPDES discharge permit to allow the second permittee, the credit user, to increase their discharge of the traded pollutant above levels otherwise authorized by their WPDES discharge permit.

Trading Between a WPDES Permittee and a Second Party: Pursuant to s. 283.84 (1)(b), Wis. Stats., a trade agreement is required between a permittee who wishes to use credits to demonstrate compliance with their permit effluent limitations and a person who wishes to generate load reductions but is not required to obtain a WPDES discharge permit for the discharge of the traded pollutant. An example of a credit generator without a WPDES discharge permit is a NPS, such as a field of row crops, where the owner/operator installs a management practice to reduce the loss of P.

Section 283.84 (1)(b), Wis. Stats., also states that only load reductions generated after the trade agreement is completed are available for trading as credits.

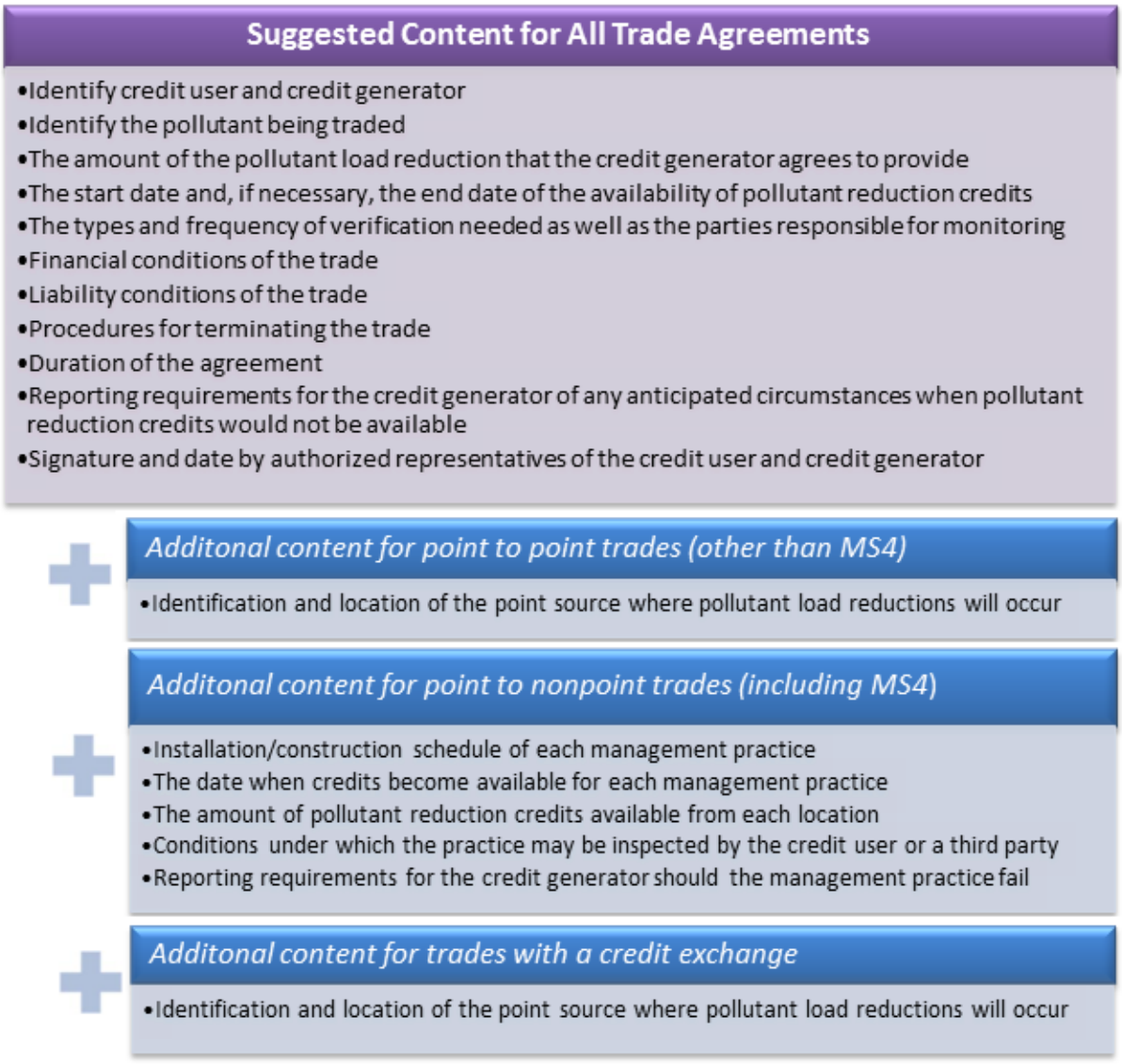
Trades Brokered by WDNR or a Local Governmental Unit: When WDNR or a local governmental unit acts as a broker, a trade agreement is required between the credit user and WDNR or a local governmental unit pursuant to s. 283.84 (1)(c), Wis. Stats. Acting as a broker, WDNR or a local governmental unit uses money paid by the credit user to reduce loadings of the traded pollutant or to provide cost-sharing for purposes of s. 281.16 (3)(e) or (4), Wis. Stats.

Trading Between WPDES Permits Held by the Same Permittee: Pursuant to s. 283.84 (1)(d), Wis. Stats., a trade agreement is required between the permittee and WDNR when the permittee holds two WPDES discharge permits and through the use of credits wishes to reduce their discharge of the traded pollutant below levels otherwise authorized in one permit and increase their discharge of the traded pollutant above levels otherwise authorized in the second permit.

Pollutant Load Reductions Implemented by the Credit User: Pursuant to s. 283.84 (1)(e), a trade agreement is required between the credit user and WDNR when the credit user constructs a project or implements a plan that results in load reductions from sources other than that covered by the credit user's WPDES permit.

Suggested trade agreement content is provided in Figure 6, p. 29. For more information and examples of water quality trade agreements, see the "Water Quality Trading How-To Manual" at http://dnr.wi.gov/topic/SurfaceWater/waterqualitytrading.html.

Figure 6. Suggested content of agreements between entities other than WDNR, as required by s. 283.84, Wis. Stats.



3. Implementing WQT in WPDES Permitting

This section of the guidance document addresses the roles and responsibilities of WDNR staff with respect to implementing trading. Generally, the permittee who wishes to use credits is responsible for:

- Evaluating trading as a compliance option;
- Submitting a trading plan;
- Finding trading partners and completing one or more trade agreements pursuant to s. 283.84, Wis. Stats.;
- Applying for permit reissuance or modification to allow trading; and
- Complying with WQBELs for the traded pollutant.

WDNR is responsible for:

- Providing the permittee with WQBELs;
- Aiding the permittee in evaluating trading as a compliance option;
- Reviewing the trading plan;
- Issuing, reissuing or modifying the WPDES permit to allow trading;
- Evaluating compliance with WQBELs;
- Tracking the use of credits;
- Addressing noncompliance; and
- On occasion, inspecting sites that generate credits and audit third parties - such as counties - that serve as site inspectors.

Section 3 divides WDNR responsibilities into three stages: initial development and implementation of trading (Section 3.1, p. 31), WPDES permit drafting to allow trading (Section 3.2, p. 39), and trading implementation throughout the permit's term (Section 3.3, p. 48). The following hyperlinks take you directly to any section of interest.

Table 6. Hyperlinks to explore implementation of WQT in WPDES permit.

Hyperlink to desired section
Providing WQBELs to the Permittee
Aid Permittee in Evaluating WQT
Notice of Intent to Conduct WQT
Section 283.84, Wis. Stats., Trade Agreement
WQT Plan and Checklist
Management Practice Registration
WPDES Permit for the Credit User in a Point-to-Point Trade
WPDES Permit for the Credit Generator in a Point-to-Point Trade
WPDES Permit for the Credit User in a Point-to-Nonpoint Trade
Selecting a Minimum Control Level
WPDES Compliance Schedules
Fact Sheet

The guidance in this section is intended to apply in most situations, but there may be circumstances where deviation from the guidance may be necessary. Decisions inconsistent with the guidance should be discussed with local and statewide trading coordinators. Contact information for statewide and local trading coordinators is available in Appendix 10, p. 88. This section of the guidance will be updated as WDNR gains experience in trading implementation and permit drafting.

3.1. Initial Development and Implementation

"Initial development and implementation" refers to the period beginning with the permittee considering trading as a compliance option and ending just prior to WPDES permit reissuance or modification to allow trading. Two or more years may be needed for the permittee to evaluate the trading option and develop a trading strategy. Figure 7, p. 32 provides an example timeline and process flow diagram for the permittee as the credit user and for WDNR staff.

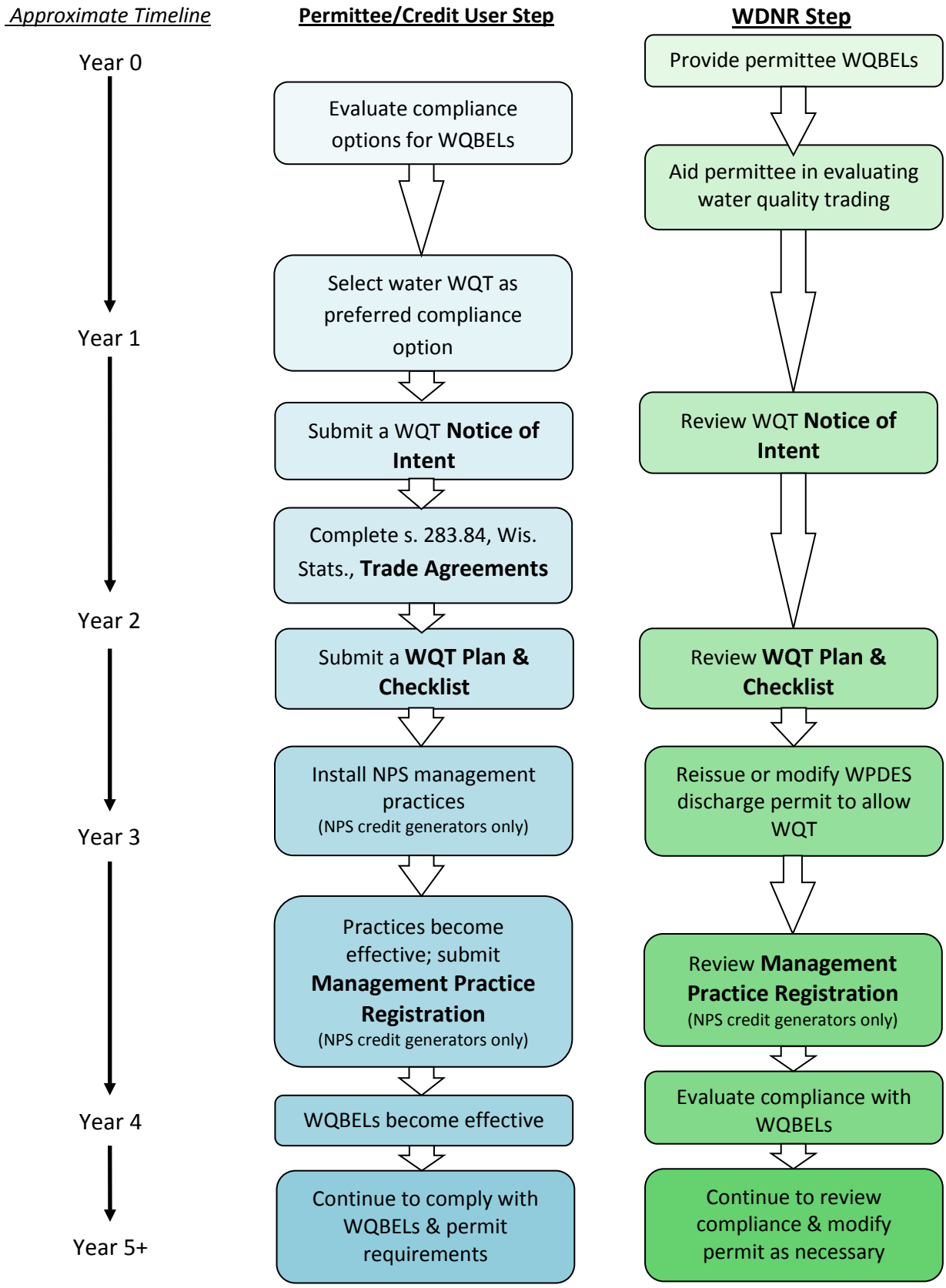
There are several documents that the permittee should prepare and, in most cases, submit to WDNR before beginning trading: "Notice of Intent to Conduct Water Quality Trading" (Notice of Intent), trade agreement, trading plan and "Water Quality Trading Checklist" (trading checklist), and "Water Quality Trading Management Practice Registration." Table 7, p. 33 briefly describes the purposes of these trading forms. These forms will be made available on the WDNR's website.

3.1.1. Providing WQBELs to the Permittee

To allow a permittee adequate time to evaluate trading as a method for complying with WQBELs and to locate sources of credits, WDNR staff should provide the permittee with WQBELs well in advance of the limits becoming effective. For permittees that have not yet submitted applications for permit reissuance, the WQBELs may be included in the cover letter for the application or by a separate letter that predates the application cover letter. **If the permittee wishes to receive limits prior to permit application or reissuance, permittees are advised to request them from their local wastewater engineer/specialist.**

If a compliance schedule for WQBELs is not made available in the reissued permit, the WQBELs should be provided to the permittee three or more years prior to permit expiration, if possible. During the period prior to the expiration of the permit, WDNR staff should occasionally contact the permittee to encourage the permittee to address the WQBELs and to respond to any questions they may have.

Figure 7. Timeline and process to begin using WQT to demonstrate compliance with WQBELs.



The approximate timeline described above assumes management practices will take about one year to become effective. Bolded items refer to specific forms described throughout Section 3.

Table 7. Description of WQT forms to develop a WQT strategy.

Trading Document	Purpose	Parties Involved	Additional Guidance (click to follow)
Notice of Intent	• Permittee/credit user submits to WDNR • Allows permittee to confirm trading eligibility prior to plan development • Typically submitted no later than the preliminary facility plan step of a compliance schedule for TP WQBELs or at least 12 months prior to permit expiration.*	• Permittee/credit user • WDNR local wastewater engineer/local trading coordinator	Notice of Intent
Trade Agreement	• Document required of permittee/credit user by s. 283.84, Wis. Stats. to formalize the trade • Typically completed prior to submittal of the WQT plan or at least 9 months prior to permit expiration.*	• Permittee/credit user • Credit generator • WDNR or local governmental unit (if applicable)	Trade Agreement
WQT Plan &Checklist	• Permittee/credit user submits to WDNR • Documents will be public noticed • Outlines the content of the WQT strategy • Typically submitted with the final facility plan step of the compliance schedule for TP WQBELs or with the permit application for reissuance at least 6 months prior to permit expiration.*	• Permittee/credit user • WDNR wastewater engineer/local trading coordinator • Statewide trading coordinator, if necessary	WQT Plan & Checklist
Management Practice Registration (only with NPS credit generators)	• Permittee/credit user submits to WDNR to confirm the management practice has been properly installed in accordance with the WQT plan • WDNR reviews and tracks registration using docket numbering system • Information can be reviewed later for trade verification and auditing	• Permittee/credit user • WDNR wastewater engineer/local trading coordinator • Statewide trading coordinator	Registration

*Assumes that the permit contains a compliance schedule that is consistent with the P implementation guidance and is longer than five years.

For the most up-to-date version of these forms visit http://dnr.wi.gov/topic/SurfaceWater/waterqualitytrading.html.

Suggested Roles and Responsibilities for WDNR Staff

Limits calculators are responsible for calculating WQBELs. Permit drafters are responsible for including WQBELs with the permit reissuance application cover letter and occasionally contacting the permittee. When the permittee requests WQBELs, the local wastewater engineer/specialist is responsible for requesting WQBELs from the limits calculator.

3.1.2. Aiding Permittee in Evaluating WQT

At the time this guidance was written, most permittees have not had experience dealing with trading. As such, permittees and their consultants will likely have a variety of questions associated with trading. WDNR staff are not responsible for seeking out credits, establishing practices, or verifying practices. However, WDNR staff should be available to help answer technical trading questions as they arise, and provide feedback and information on potential trading areas as well as input on trade ratios.

WDNR staff should recommend the "Water Quality Trading How-To Manual" as a useful document to aid permittees in evaluating and implementing trading. The How-to Manual is available at http://dnr.wi.gov/topic/SurfaceWater/waterqualitytrading.html.

Suggested Roles and Responsibilities for WDNR Staff

Overall, permittee questions on trading should be addressed by the local wastewater engineer/specialist or local trading coordinator. These staff are primarily responsible for answering general trading questions. If the trading scenario or question is complex, or local staff are unsure about the appropriate answer to a given question, they should contact the statewide trading coordinator. The statewide coordinator is responsible for ensuring statewide consistency and for providing additional trading guidance as necessary. Local and statewide trading coordinators are listed in Appendix 10, p. 88. The list will be updated when names change.

3.1.3. Notice of Intent to Conduct WQT

WDNR recommends that the permittee submit a "Notification of Intent to Conduct Water Quality Trading" form (Notice of Intent) to their wastewater engineer/specialist before the permittee enters into a trade agreement pursuant to s. 283.84, Wis. Stats. Such a submittal will serve as a conversation starter between the permittee and WDNR staff and allow WDNR to confirm trading eligibility, to suggest possible sources of credits, and to provide preliminary feedback to help improve the final trading plan submittal. To maximize the effective use of this document, the Notice of Intent should be submitted prior to trading plan development. If the permittee holds a permit with a compliance schedule greater than five years for TP WQBELs, as outlined in the P implementation guidance, the Notice of Intent should be submitted no later than the due date for Final Compliance Alternative Plan, 30 months prior to WQBELs becoming effective.

3.1.3.1. Content of the Notice of Intent to Conduct WQT

WDNR recommends that the permittee/credit user include the following information in the Notice of Intent:

- An indication whether trading will be used exclusively or in conjunction with other methods to comply with WQBELs for the traded pollutant;

- PRESTO (http://dnr.wi.gov/topic/surfacewater/presto.html) results verifying NPS loading to the receiving water when trading with NPS credit generators is contemplated;
- A general identification of area(s) where load reductions may be implemented to generate credits;
- Likely management practice(s) to be used to generate credits; and
- The identification of any broker(s), or other third parties likely to be involved in establishing the trade.

The "Notice of Intent to Conduct Water Quality" form, as provided in Appendix 2, p. 60, is available for download at http://dnr.wi.gov/topic/SurfaceWater/waterqualitytrading.html.

Suggested Roles and Responsibilities for WDNR Staff

The local wastewater engineer/specialist should provide the permittee with the Notice of Intent form upon request. The permit drafter should include the Notice of Intent form with the WQBELs in the cover letter for the permit reissuance application.

The local wastewater engineer/specialist will receive the permittee's Notice of Intent submittal. Upon receipt, the wastewater engineer should review the submittal for completeness, copy the completed form to SWAMP, update Event Tracker in SWAMP when the submittal is made in response to a compliance schedule in the permittee's permit and notify the statewide and local trading coordinator, limits calculator and permit drafter.

The local trading coordinator should review the Notice of Intent and determine whether or not the outlined trading strategy meets the regulatory requirements and protocols established for trading. The local trading coordinator should work with the permittee, statewide trading coordinator, and wastewater engineer/specialist to address any concerns they have with the Notice of Intent. Once a decision has been made, the local trading coordinator should document the decision in writing to the permittee, copy the decision in SWAMP, and notify the wastewater engineer, statewide trading coordinator, limits calculator and permit drafter.

The statewide trading coordinator should be consulted as necessary, particularly when downstream trading or alternative management practices not specifically addressed in Table 4, p.20 are being discussed. The statewide trading coordinator will track all Notices of Intent.

3.1.4. Section 283.84, Wis. Stats., Trade Agreement

Before a permittee may use trading to help demonstrate compliance with WQBELs, s. 283.84 (1), Wis. Stats., requires the permittee to enter into a written trade agreement with the credit generator, WDNR or a local governmental unit, depending on the source of credits (see Section 2.16 and Appendix 1, pp. 27 and 58). This guidance document identifies the written agreement as the trade agreement.

The permittee does not have to submit a trade agreement unless WDNR is a partner of the agreement. WDNR may be a partner to a trade agreement if it uses money paid by the permittee to reduce pollutant loads or provide cost-sharing, or the permittee is serving as both the credit user and generator.

When WDNR is not a partner in the agreement, the permittee/credit user may either submit the entire trade agreement, submit part of the agreement (e.g., financial terms excluded), or certify that a trade

agreement has been reached. Should permittees not wish to submit trade agreements to WDNR, the trading plan must have sufficient information to make permitting decisions including determining compliance. The trading plan will be available for public comment and review.

Consequently, WDNR staff will not review individual trade agreements in most cases, but will review all trading plans. Trading plans should contain sufficient information to ensure that trade agreements have been completed, and that trade agreements conform to the regulatory requirements and this guidance for trading. Review of the trading plan and checklist is discussed in Section 3.1.5.

Suggested content of trade agreements is provided in Figure 6, p. 29. Additional guidance and examples are available in the "Water Quality Trading How-To Manual" at http://dnr.wi.gov/topic/SurfaceWater/waterqualitytrading.html.

Suggested Roles and Responsibilities for WDNR Staff

If the permittee submits a trade agreement, the wastewater engineer/specialist should copy the agreement to SWAMP and inform the local trading coordinator. The local trading coordinator is responsible to review these documents to ensure that they meet the legal requirements and protocols for trading and to coordinate communication with the statewide trading coordinator, as necessary.

3.1.5. WQT Plan and Checklist

Before WDNR can modify or reissue a WPDES permit that allows trading, the permittee must submit a trading plan and checklist for review and approval. The information in the trading plan will serve as the basis for permitting decisions. The plan must contain sufficient detail to allow WDNR to conclude that proposed trading will comply with s. 283.84, Wis. Stats., that credits are generated in an acceptable manner and correctly calculated, and that the permittee will comply with their WQBELs. The trading checklist provides an outline for the plan's content to guide the permittee, and streamlines WDNR's review.

Suggested content for the trading plan is provided in Table 8, p.37. The trading checklist is provided in Appendix 3, p. 62. As part of the trading plan, the permittee must either submit the trade agreement (all or parts of it) as required by s. 283.84 (1), Wis. Stats., or certify that such an agreement has been reached, as discussed in Section 2.16, p. 27.

Table 8. Content of WQT plan.

Credit Source (a)	(b)	(c)	(d)	(e)	Content of WQT Plan
✓	✓	✓	✓	✓	Permittee's/credit user's WPDES permit number
✓	✓	✓	✓	✓	Permittee's/credit user's contact information
✓	✓	✓	✓	✓	Pollutant(s) for which credits will be generated
✓	✓	✓	✓	✓	Amount of credits available from each location/management practice/local governmental unit when acting as a broker
✓	✓	✓	✓	✓	Certification that the content of the trading application is accurate and correct
✓	✓	✓	✓	✓	Signature and date of signature of permittee's/credit user's authorized representative
✓	✓		✓	✓	Location(s) where credits will be generated (e.g., map of field or site where management practice will be applied including major drainage way(s) from the project)
✓	✓		✓	✓	Identification of method(s) including management practice(s) that will be used to generate credits at each location
✓	✓		✓	✓	Duration of agreement (e.g., the design life of the management practice) with each credit generator
	✓		✓	✓	Schedule for installation/construction of each management practice
	✓		✓	✓	Operation and maintenance plan for each management practice used to generate credits
✓	✓	✓			Verification either by certification or submittal that a trade agreement has been completed
	✓		✓	✓	Date when credits become available for each management practice (i.e., when practice is established and effective)
	✓		✓	✓	Model(s) used to derive the amount of credits
	✓			✓	The applicable trade ratio for each management practice including supporting technical basis (see Table 4, p. 20)
✓					Identification of credit generator(s)
✓					Signature and date of signature of credit generator's authorized representative
		✓			Identification of the local governmental unit when acting as the a broker
		✓			Signature and date of signature of an authorized representative for the local governmental unit when acting as a broker

(a) Credits are generated by a WPDES permittee other than the credit user or a permitted MS4.
(b) Credits are generated by a person who isn't required to obtain a WPDES permit and isn't an urban NPS.
(c) Credits are obtained from either the Wisconsin DNR or a local governmental unit acting as a broker.
(d) Credits are obtained from a second PS with a WPDES permit, other than a permitted MS4, that is held by the credit user.
(e) Credits are obtained from a constructed project or implementation of a plan undertaken by the credit user for sources other than that covered by the credit user's WPDES permit.

Suggested Roles and Responsibilities for WDNR Staff

The wastewater engineer/specialist will receive the trading plan submittal. Upon receipt, the wastewater engineer/specialist should review the submittal for completeness, copy the trading plan and checklist to SWAMP, update Event Tracker in SWAMP when the submittal is made in response to a compliance schedule and notify the local trading coordinator, limits calculator and permit drafter.

In most cases, the local trading coordinator will be the primary reviewer of trading plans. Additional staff may be asked to review the plans including the local NPS coordinator, wastewater engineer/specialist, limits calculator or statewide trading coordinator. The reviewer(s) is responsible for verifying that the appropriate information is present in the trading plan regarding the type and amount of trades that will be available including the type of credits being generated (interim vs. long-term). When adjustments to WQBELs are being considered as a result of a trading plan, trading coordinators and wastewater engineers should work with limits calculators to ensure the adjusted WQBELs will be protective of local water quality. The reviewer(s) should also determine whether the following have been adequately addressed in the application:

1. Trade agreements, if included, meet the regulatory requirements in s. 283.84, Wis. Stats., and protocols for trading;
2. Credits will be available when WQBELs become effective;
3. Only credits for reductions generated after the trade agreement is signed, for NPS credit generators, are used to demonstrate compliance with WQBELs;
4. Correct trade ratios are used; and
5. Amount of credit that will be generated.

The local trading coordinator is also responsible for assigning the trading plan a number (e.g., WQT-2013-00001), preparing the WDNR response to the plan submittal, providing the response to the permittee, copying the response to SWAMP and notifying the wastewater engineer/specialist, state trading coordinator, limits calculator and permit drafter. If a trading plan deviates from this guidance, the local trading coordinator is responsible for documenting the divergence.

The limits calculator should include any effluent limits necessary for the implementation of trading in the WQBELs recommendation memo with an explanation of how they were derived.

The permit drafter should reissue or modify the permittee's permit to allow trading as discussed in Section 3.2, p. 39.

The statewide trading coordinator should be consulted as necessary and appropriate to help in the decision-making process. The statewide trading coordinator should be consulted when downstream trading is proposed or alternative management practices not specifically addressed in Table 4, p. 20 are being discussed. The statewide trading coordinator should track final trading decisions.

3.1.6. Management Practice Registration

The purpose of the "Water Quality Trading Management Practice Registration" form (registration form) is to report to WDNR that a management practice identified in the trading plan has been properly

installed and is established and effective. This information will be used to track implementation progress, verify compliance and perform audits, as necessary. A registration form should be submitted for every management practice that has been identified in the trading plan. This documentation is only required for point-to-nonpoint trades; point-to-point trades will be demonstrated via effluent monitoring and have documentation and effective date requirements specified in WPDES permits.

If practices are established prior to trading plan submittal, registration forms may be submitted with the trading plan. Otherwise, registration forms should be submitted during the permit term as practices become effective or with the annual report.

A blank registration form, as shown in Appendix 4, p. 65, is available for download at http://dnr.wi.gov/topic/SurfaceWater/waterqualitytrading.html.

Suggested Roles and Responsibilities for WDNR Staff

The local trading coordinator should provide the permittee with blank registration forms when providing the WDNR response to the trading plan submittal.

The wastewater engineer/specialist will receive completed registration forms. Upon receipt, the wastewater engineer should ensure that the registration form is complete, copy the registration form to SWAMP and notify the local trading coordinator. The local WQT coordinator should review the registration form and track it in order to monitor implementation progress. The statewide trading coordinator should be consulted as necessary and appropriate.

3.2. Drafting WPDES Permits

Sections 283.84 (3r) and (4), Wis. Stats., require terms and conditions related to the trade agreement to be included in a WPDES permit. Therefore, the credit user's WPDES discharge permit and, in point-to-point trades, the credit generator's WPDES discharge permit, must be issued, reissued or modified to include trading terms and conditions before the credit user may use credits to demonstrate compliance with their WQBELs. This section of the guidance provides example permit conditions, public notice language and fact sheet content to address trading.

Subsequent revisions to the trading plan require a public notice of WDNR's decision but not a permit modification unless a permit term or condition is changed. For example, an increase or decrease in the number of credits listed in the permit (e.g., TP credits are reduced from 1,200 lbs/yr to 1,000 lbs/yr and TSS credits are increased from 30,000 lbs/yr to 35,000 lbs/yr) requires a permit modification.

Suggested Roles and Responsibilities for WDNR Staff

The permit drafter is responsible for issuing, reissuing or modifying the WPDES permit to incorporate appropriate trading conditions in the permit. Permit drafters may need to work with a number of staff, including the local wastewater engineer/specialist, local trading coordinator, limits calculator and statewide trading coordinator, when developing site-specific permit conditions that address trading.

3.2.1. WPDES Permit Conditions for the Credit User in a Point-to-Point Trade

Conditions for the credit user's WPDES permit when the credit generator is a PS include:

- A requirement that the credit user optimize its treatment system to control the traded pollutant (see Section 2.6, p. 5);
- WQBELs for which trading will be used to demonstrate compliance;
- Identification of the approved trading plan;
- A summary of credits;
- Adjusted WQBELs set equal to the credit user's WQBELs plus the credits being traded;
- A condition specifying that the permittee must comply with these WQBELs whether trading occurs or not;
- Effluent monitoring and reporting requirements for the parameter addressed by the WQBELs;
- A requirement that credits used to demonstrate compliance with WQBELs must be generated under an approved trading plan;
- A statement that WDNR may modify or revoke and reissue the permit to terminate the trading plan and require the credit user to comply with WQBELs without the use of credits (see Section 3.2.10, p. 48);
- A requirement that the permittee notify WDNR when becoming aware that credits become unavailable or the trade agreement must be modified or concluded;
- A schedule of compliance for steps to achieve compliance with WQBELs; and
- Other terms determined to be appropriate may be included in the permit as WDNR gains experience with trading or additional conditions are necessary on a case-by-case basis.

Example permit language for the credit user and credit generator in a point-to-point trade are provided in Appendix 6, p.69.

3.2.2. WPDES Permit Conditions for the Credit Generator in a Point-to-Point Trade

When a point-to-point trade is being made, conditions for the credit generator's permit should include:

- Identification of the approved trading plan;
- Adjusted WQBELs equal to the credit generator's original WQBELs minus the credits being traded;
- Effluent monitoring and reporting requirements for the pollutant being traded;
- A requirement that the permittee notify WDNR when becoming aware that credits are unavailable or that the trading agreement must be amended, modified or concluded; and
- Other terms determined to be appropriate may be included in the permit as WDNR gains experience with trading or additional conditions are necessary on a case-by-case basis.

Example permit language for the credit generator's permit is provided in Appendix 6, p. 69.

3.2.3. WPDES Permit Conditions for the Credit User in a Point-to-Nonpoint Trade

Conditions for the credit user's permit when the credit generator is a NPS should include:

- A requirement that the credit user optimize its treatment system to control the traded pollutant (see Section 2.6, p. 5);
- WQBELs for which trading will be used to demonstrate compliance;
- A condition specifying that the permittee must comply with these WQBELs whether trading occurs or not;
- An effluent limit, perhaps a TBEL if already present in the permit, for the pollutant being traded to prevent a lowering of effluent quality (see Section 3.2.4, p. 42);
- Identification of the approved trading plan;
- The number of credits available including the expiration date of any interim credits;
- A statement that failure to implement any of the terms of the approved trading plan is a violation of the permit;
- Language that allows the use of credits, identifies the WQBELs for which credits may be applied, and establishes how credits are used to demonstrate compliance;
- Effluent monitoring and reporting requirements for the pollutant addressed by the WQBELs;
- Reporting requirements for the amount and source of credits used to demonstrate compliance with WQBELs;
- A requirement that credits used to demonstrate compliance with WQBELs must be generated under an approved trading plan;
- A requirement that the permittee certify that management practices are appropriately installed and adequately maintained;
- A requirement that the permittee or the permittee's agent inspects on at least an annual frequency the location of the management practice to confirm the installation or implementation of the management practice and its appropriate operation and adequate maintenance (more frequent inspections may be necessary and may be specified in the permit depending on aspects such as weather events and type of management practice);
- A requirement that the permittee notify WDNR when becoming aware that credits become unavailable or the trade agreement must be modified or concluded;
- A compliance schedule for interim steps necessary for the generation of credits (see Section 3.2.5, p. 42)
- A statement that WDNR may modify or revoke and reissue the permit to terminate the trading plan and require the credit user to comply with WQBELs without the use of credits (see Section 3.2.10, p. 48);
- A requirement that the permittee submit an annual trading report (see Section 3.3.5, p. 51); and
- Other terms determined to be appropriate may be included in the permit as WDNR gains experience with trading or additional conditions are necessary on a case-by-case basis.

Example permit language for the credit user when the credit generator is a NPS is provided in Appendix 7 and Appendix 8, pp. 74 and 81.

3.2.4. Selecting a Minimum Control Level

When trading is to be used to demonstrate compliance with a WQBEL, the permit will need to include a limit that prevents backsliding and maintains a level of effluent quality that is at least as good as that which has been achieved historically.

If already present in the permit, an effluent limitation for the pollutant being traded should be retained once trading is allowed, in order to prevent a lowering of effluent quality. The effluent limitation could be a TBEL, a limit based on current or anticipated effluent quality, or set equal to an interim limit required by s. NR 217.17 (3)(c), Wis. Adm. Code, when a compliance schedule for TP WQBELs is included in a permit.

If an effluent limit is not already present in the permit, the permit should specify the maximum amount of pollutant discharge that may be offset by the trade. When specifying the maximum offset, recall that a permittee should optimize existing wastewater treatment for the traded pollutant prior to using credits (see Section 2.6, p. 5).

Suggested Roles and Responsibilities for WDNR Staff

The limits calculator is responsible for selecting the minimum control level in collaboration with the wastewater engineer/specialist and including the minimum control level in the WQBELs recommendation.

3.2.5. WPDES Compliance Schedules

This section provides guidance on accommodating trading in a compliance schedule for TP WQBELs since it is likely that most trades, especially in the near future, will be for this pollutant. Similar steps may be appropriate for compliance schedules for other pollutants as well. This guidance supplements but does not replace earlier guidance on compliance schedules for TP WQBELs. All compliance schedules must be developed on a case-by-case basis and result in compliance with the WQBELs as soon as practicable (40 CFR § 122.47).

Current guidance on compliance schedules for stringent TP WQBELs addresses trading in the Preliminary Compliance Alternatives Plan and Final Compliance Alternative Plan submittal requirements (http://dnr.wi.gov/topic/SurfaceWater/documents/Phosphorus_Guidance_Signed.pdf). A simple statement by the permittee that trading will be pursued as a compliance option is adequate for the Preliminary Compliance Alternatives Plan submittal. WDNR staff should encourage the permittee to include the Notice of Intent as part of the Final Compliance Alternative Plan submittal.

The permittee should complete all trade agreements and submit a trading plan and checklist at least six months prior to permit expiration. The permittee's submittal allows WDNR to adjust that part of the compliance schedule that extends beyond the permit's term during permit reissuance. For permits issued without a compliance schedule for stringent TP WQBELs, the trading checklist and plan submittal requirement will have to be made part of the permit reissuance application.

Upon approval of the trading plan, WDNR staff should adjust the compliance schedule as part of the proposed permit reissuance to allow adequate time for NPS management practices, when applicable, to

be installed and become established and effective. For example, the compliance schedule could allow one growing season for the installation of practices and a second growing season for the practices to become effective before WQBELs take effect. Figure 7, p. 32 illustrates such a timeline.

While the effective date of TP WQBELs may be adjusted in the proposed permit reissuance, the effective date cannot be extended beyond the maximum period specified in s. NR 217.17 (2), Wis. Adm. Code. If trading is used exclusively or in conjunction with a treatment system upgrade that does not include filtration or a similar process, the entire compliance schedule cannot exceed seven years from the date the permit was first modified or reissued to include TP WQBELs. A compliance schedule up to nine years is allowed only when trading is used in conjunction with a treatment system upgrade that includes filtration or a similar process.

Unless the permittee completes all trade agreements and submits a trading plan and checklist at least six months prior to permit reissuance, permits should continue to be drafted with compliance schedules consistent with the P implementation guidance. If, however, the permittee completes all trade agreements and makes a timely and complete submittal for trading, the compliance schedule in the reissued permit should be developed on a case-by-case basis. It is unlikely, however, that a compliance schedule longer than three years will be necessary when trading will be used exclusively to comply with WQBELs. If the trade is point-to-nonpoint and management practices are installed and effective, a very brief or no compliance schedule is warranted. If the trade is point-to-point, a compliance schedule to accommodate the modification of the credit generator's permit may be necessary.

Suggested Roles and Responsibilities for WDNR Staff

Permit drafters and wastewater engineers/specialists are responsible for establishing compliance schedules in reissued and modified permits. Compliance schedule interim and final dates can be discussed with the statewide trading coordinator, if needed.

3.2.6. Fact Sheet

Permit drafters and wastewater engineers/specialists are responsible for explaining trading details in the fact sheet. Suggested fact sheet content includes:

- A statement that the permit authorizes the use of trading as a tool to demonstrate compliance with WQBELs;
- Identification of the WQBELs for which trading may be used to demonstrate compliance;
- Identification of all approved trading plans;
- The total credits available, after application of trade ratios, from the approved trading plan;
- Identification of interim and long-term credits with expiration dates for interim credits; and
- For the credit user's permit, the minimum control level and its basis (see Section 3.2.4, p. 42).

If any of the fact sheet content listed above is provided in the WQBELs recommendation memo, it need not be repeated in the fact sheet.

3.2.7. USEPA Review

USEPA Region 5 requests that WDNR provide for review pre-public notice WPDES permits that include conditions for trading. In addition to the draft permit, permit drafters should submit the Notice of Intent, the trade agreement required by s. 283.84, Wis. Stats., if available, and the trading plan to USEPA Region 5.

3.2.8. Public Notice of WQT Plans

The initial implementation of trading in a WPDES permit should be part of a permit reissuance or modification to allow public participation and input. WDNR will state in the public notice that it will finalize its review of the trading plan upon consideration of comments received during the 30-day public comment period.

Once a WPDES permit implementing trading is issued, changes to the trading plan require public notice of WDNR's decision. Permit modification will be necessary if proposed changes affect permit terms or conditions such as a change in the number of credits.

Permit drafters are responsible for preparing the public notice for permits that include conditions allowing trading, for permits including reduced limits for a PS credit generator, and for changes to the trading plan.

Appendix 9, p. 87 provides example trading language for a public notice.

3.2.9. Continuation of WQT through Multiple Permit Terms

Due to a potential mix of interim and long-term credits when the credit generator is a NPS covered by an approved TMDL, the availability of credits may change during the term of a permit. For example, since interim credits are available for only five years, the credits could expire during the permit term if the credits became available during the term of the previous permit. Also, long-term credits could expire at the end of the design life of the management practices that were installed to generate the credits.

For example, Figure 8, p. 46 provides a timeline that depicts the use of trading over three terms of a hypothetical WPDES discharge permit. Assumptions used to construct the timeline include:

- The first permit term depicted in the figure contains a two-year compliance schedule for TP WQBELs. The compliance schedule represents, with some modifications, the last two years of the seven-year compliance schedule that was included in the previous permit. Modifications were made to the compliance schedule during the permit reissuance process to accommodate the use of NPS management practices to generate credits.
- The first permit term depicted in the timeline contains a TP WQBEL with an effective date two years after issuance of the permit. The TP WQBEL remains unchanged over the three terms of the permit depicted in the timeline.
- The permittee will undertake a treatment system upgrade in addition to implementing trading to comply with the TP WQBELs.
- The first permit term depicted contains terms and conditions for trading since the permittee submitted a trading plan and checklist prior to issuance of the permit. The public notice for the

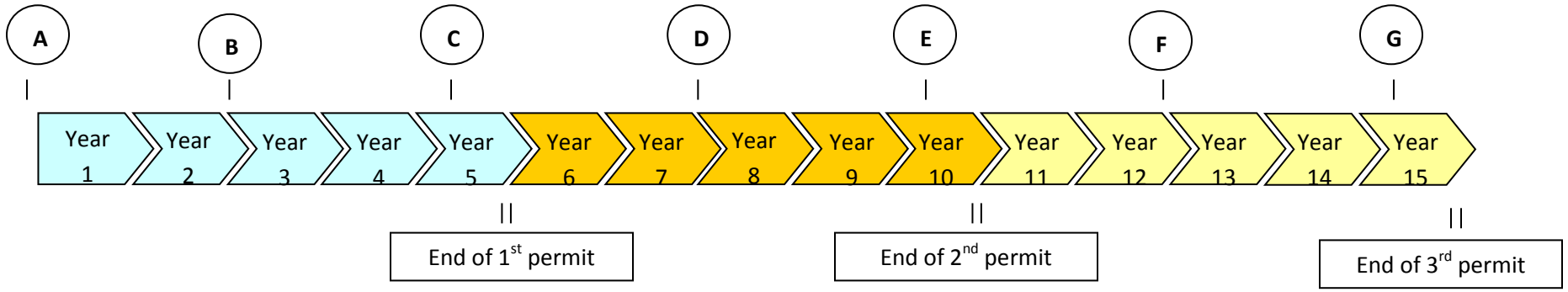
permit indicates that the permittee will use trading to help meet the TP WQBEL and that WDNR will consider public comments prior to approving the trading plan.

- The first trading plan and checklist, as submitted by the permittee prior to permit issuance, identifies management practices to generate phosphorus load reductions that have design lives of ten years.

NOTE: The examples depicted by Figure 7 and Figure 8, pp. 32 and 46 are different. Figure 8 is not a continuation of Figure 7.

From Figure 8, it can be seen that new sources of credits will be needed each permit term to replace interim and, eventually, long-term credits.

Figure 8. WPDES permit timeline.



Key:

Prior to Issuance of First Permit:

A In anticipation of TP WQBELs becoming effective, the permittee submits a trading plan and checklist. The public notice for the first permit term depicted in the figure includes a statement that WDNR will consider public comments prior to approving the trading plan.

First Permit Term (Years 1 through 5):

B When the schedule of compliance ends, the TP WQBELs become effective. The permittee may use credits including interim credits as addressed by the initial trading plan to demonstrate compliance with the WQBELs. Since credits are being generated by a NPS, management practices must be in place and effective before traded credits may be used to demonstrate compliance with WQBELs. A management practice registration form should be submitted to register management practices with WDNR.

C Approximately six months prior to permit expiration, the permittee submits a permit reissuance application. The permittee must include a new trading plan and checklist to replace any interim credits from the previous trading plan that expire during the term of the second permit. Expiration of interim credits from the first trading plan occurs five years after WQBELs become effective or the credits are first

used. The second trading plan and checklist may also include new interim credits. The public notice for permit reissuance includes a statement that WDNR will consider public comments prior to approving the second trading plan.

Second Permit Term (Years 6 through 10):

D Interim credits from the first trading plan expire five years following the effective date of WQBELs. The expired credits are replaced with those from the second trading plan.

E Approximately six months prior to permit expiration, the permittee submits a permit reissuance application. The permittee must include a new trading plan and checklist, the third plan, for replacement of interim credits from the second trading plan for interim credits that expire during the permit term (i.e., ten years after the WQBEL becomes effective) and for long-term credits from the first trading plan that are no longer available after the management practice's ten-year design life. The third trading plan may also include new interim credits. The public notice for permit reissuance includes a statement that WDNR will consider public comments prior to approving the third trading plan.

Third Permit Term (Years 11 through 15):

F Interim credits from the second trading plan expire. The expired credits are replaced with those from the third trading plan.

G Approximately six months prior to permit expiration, the permittee submits a permit reissuance application. The permittee must include a new trading plan and checklist, the fourth plan, for replacement of interim credits from the third trading plan that expire during the permit term and long-term credits from the second trading plan that are no longer available after management practice's ten-year design life. The fourth trading plan may also include new interim credits.

3.2.10. Termination of a WQT Agreement

Termination of a WQT Agreement by the Permittee: A permittee who wishes to use an alternative compliance option and chooses to discontinue trading should submit a "Notification of Trade Agreement Termination" form (Notice of Termination) to WDNR (see Appendix 5, p.67) with their application for permit reissuance or as part of a permit modification request. A reissued or modified permit will reflect the new compliance option requested by the permittee.

If WQBELs for the traded parameter are already in effect, however, the effluent limits will remain in effect, the permittee is required to remain in compliance with the limits, and a compliance schedule to implement alternative compliance options will not be available. If WQBELs for the traded parameter are not yet in effect, WDNR will not be able to extend the compliance schedule beyond the maximum period allowed by Wisconsin Administrative Code.

Termination of a WQT Plan by WDNR: WDNR will evaluate the appropriateness for the permittee to continue trading upon permit reissuance. If WDNR determines that the permittee has failed to comply with the actions specified in the trading plan or WPDES permit, then the permittee is in violation of their WPDES permit, and the permit may not be reissued until this violation has been resolved. To address this violation, a permittee may need to select an alternative compliance option other than trading. WDNR may also modify the requirements of trading upon permit reissuance to reflect new information and to assure compliance with water quality standards and trading requirements.

WDNR may terminate a trading plan based on any of the following reasons:

- The permittee's failure to implement the trading plan as approved; or
- New information becomes available that changes WDNR's determinations that trading is an acceptable option.

3.3. WQT Implementation

As part of trading implementation once WQBELs become effective, WDNR staff should track the use of credits, enforce when noncompliance occurs, and, on occasion, inspect sites that generate credits. The permittee will be responsible for submitting annual reports, management practice registration forms, and notices of termination to WDNR to aid in these decisions, as described in Table 9, p. 49. Additional guidance will be developed as more experience is gained with trading implementation.

Table 9. Implementation documentation required by the permittee.

Trading Document	Purpose	Parties Involved	Additional Guidance (click to follow)
Management Practice Registration	• Submitted to WDNR to register the management practice has been properly installed in accordance with the WQT plan • WDNR reviews and tracks registration using docket numbering system • Information can be reviewed later for trade verification and auditing	• Permittee/credit user • WDNR wastewater engineer/local trading coordinator • Statewide trading coordinator	
Annual Report	• Only required when NPS generates credits • Submitted to WDNR to verify management practices identified in the WQT plan are maintained • Informs WDNR of any changes made to the trade agreement. This may initiate the permit modification process. • Identifies any noncompliance with permit conditions on WQT that are not reported on discharge monitoring reports • WDNR reviews, tracks, and modifies permit as necessary	• Permittee/credit user • WDNR wastewater engineer/local trading coordinator • Statewide trading coordinator, if necessary	
Notice of Termination	• Only required when NPS generates credits • Submitted to WDNR prior to practice termination or as soon as the permittee becomes aware of the failure of a practice • Should be submitted no later than the annual report submittal date	• Permittee/credit user • WDNR wastewater engineer/local trading coordinator	

3.3.1. Management Practice Failure and Enforcement

There are several factors WDNR should consider when determining the appropriateness of trading enforcement actions, such as:

- Cause of the violation;
- Number of times that the discharger has not complied with permit requirements;
- Number of instances that the management practice in question has been damaged/ineffective;
- Whether the violation was self-reported;
- The significance of the violation (e.g., a violation that results in a 75% loss of credits is more significant than one the results in a 25% loss); and
- Time necessary to regain compliance.

Suggested Roles and Responsibilities for WDNR Staff

The wastewater engineer/specialist is responsible for determining whether enforcement actions are necessary and working with the permittee to bring them back into compliance as quickly as possible. Wastewater engineers may need to work with a number of staff including the local trading coordinator, statewide trading coordinator, local NPS coordinator, legal, or enforcement staff when making these decisions.

3.3.2. Compliance Inspections and WQT Auditing

Future editions of this guidance (or a separate guidance document) will need to include procedures that WDNR staff can follow to include an audit of the trading program when performing a compliance inspection.

Suggested Roles and Responsibilities for WDNR Staff

Trading program audits may be carried out by the regional NPS coordinator, wastewater engineer/specialist or local trading coordinator, depending on the type of practice used to generate the credits, and the staff availability in the district. The local trading coordinator will likely be responsible for tracking trades within their area.

3.3.3. Tracking WQT

WDNR will track the trading of credits within a watershed in order to prevent duplication of credit use, to ensure that the capacity of a watershed to generate credits is not exceeded by the number of credits being used within the , and to gauge the progress of TMDL implementation.

Suggested Roles and Responsibilities for WDNR Staff

The local trading coordinator will likely be responsible for tracking trades within their area.

3.3.4. Maintaining a List of Management Practices

The list of acceptable management practices, Table 4, p. 20 of this guidance, must be updated as WDNR gains experience with trading and the generation of credits through management measures and practices.

Suggested Roles and Responsibilities for WDNR Staff

The statewide trading coordinator is responsible for updating the list of acceptable management practices. Wastewater engineers/specialists and/or local trading coordinators should inform the statewide trading coordinator of needed practices as they arise.

3.3.5. Reviewing WQT Annual Reports

As listed in Section 3.2.3, p. 40, permits addressing point-to-nonpoint trading should require the permittee to submit an annual report. The annual report informs WDNR of the status of management practices and provides an update of the trading project overall. The annual report also provides the permittee an opportunity to submit "Water Quality Trading Management Practice Registration" forms, "Notification of Trade Agreement Termination" forms and any needed changes to the trading plan. These documents may be submitted prior to the annual report, if available. The permit can also specify specific dates/requirements for these submittals.

Annual Report Content: WDNR recommends that the permittee include the following information in the annual report:

- Verification that site inspections occurred;
- Brief summary of site inspection findings;
- Identification of noncompliance or failure to implement any terms or conditions of the permit or trading plan that have not been reported in discharge monitoring reports;
- Any applicable notices of termination or management practice registration; and
- A summary of credits used each month over the calendar year.

When identifying noncompliance in the annual report, the permittee should describe the noncompliance and its cause; identify the period of noncompliance including exact dates and times, and if the noncompliance has not been corrected, specify the anticipated time that compliance will be attained and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

When credits are reduced or eliminated for any reason, the permittee is still required to meet their WQBELs. To prevent noncompliance with WQBELs, changes to trading plans including changes in management practices, changes in trade agreements, and even changes in the location of management practice application must be addressed before credits are lost. Modifying the permit/trading plan will require at least 90 days.

Suggested Roles and Responsibilities for WDNR Staff

The permit drafter should include a requirement for submitting an annual report in the permit when a NPS generates the credits. Example permit language is provided in Appendix 7 and Appendix 8, pp. 74 and 81. Annual submittal dates should be included in a permit compliance schedule similar to that used with annual status reports for pollutant minimization plans.

The wastewater engineer/specialist will receive the annual report from the permittee. Upon receipt, the wastewater engineer should review the submittal for completeness, copy the annual report to SWAMP, update Event Tracker in SWAMP if a compliance schedule is involved and notify the local trading coordinator if additional input or review is needed.

If the annual report needs to be public noticed, staff should initiate discussions with permit coordinators to begin the public notice process as soon as possible. Public noticing is required when significant changes are proposed to previous trade agreements or the trading plan. If the annual report includes

revised trade agreements, staff should review the documents to ensure that they meet the legal requirements and protocols for trading, and the permittee maintains compliance with their permit. The statewide trading coordinator should be consulted when necessary.

3.3.6. Notification of Trade Agreement Termination

If a trade agreement or the trading plan needs to be terminated during the permit term, the permittee should submit a Notice of Termination to the wastewater engineer/specialist to inform WDNR of the termination. WDNR staff should use this information to determine if a permit modification is required due to the termination, the termination will result in non-compliance, or other permit actions are required due to the termination.

When credits are reduced or eliminated for any reason, the permittee is still required to meet their WQBELs without any grace period. To prevent noncompliance with WQBELs, changes to trading plans must be addressed before credits are lost. Modifying the permit/trading plan will require at least 180 days.

The blank Notice of Termination form, as shown in Appendix 5, p. 67, is available for download at http://dnr.wi.gov/topic/SurfaceWater/waterqualitytrading.html . This document should be submitted to WDNR prior to practice termination, no later than the submittal date of the annual report.

Suggested Roles and Responsibilities for WDNR Staff

The wastewater engineer/specialist will receive the Notice of Termination from the permittee. Upon receipt, the wastewater engineer should ensure that SWAMP adequately reflects that the submittal has been received and pass the Notice to the local trading coordinator for review. The local trading coordinator is responsible for reviewing the notification. In most cases, notices of termination will be public noticed. The local trading coordinator should coordinate communication with the permit drafter and wastewater engineer/specialist as soon as possible to complete the public notice process. If the revised trade agreements or management practice registration forms are submitted to WDNR, the local trading coordinator should review the agreements to ensure that they meet the legal requirements and protocols for trading. The statewide trading coordinator should be consulted when necessary.

3.3.7. Reviewing Management Practice Registration Forms

As described in Section 3.1.6, p. 38, the purpose of management practice registration is to let WDNR know that a management practice identified in the trading plan has been properly installed and is established and effective. Registration forms may be submitted throughout the permit term, so long as they are submitted before the credits generated by that practice are used to determine compliance with a WQBEL. If significant changes are made to the management practices identified in the trading plan, registration forms should be submitted to cover these new practices.

Suggested Roles and Responsibilities for WDNR Staff

The wastewater engineer/specialist will receive registration submittals. Upon receipt, the wastewater engineer should ensure that the registration form is complete, that SWAMP adequately reflects the submittal has been received, ensure that the permittee is in compliance with any applicable steps in the compliance schedule and send the submittal to the local trading coordinator for review. The local

trading coordinator should track this information in order to monitor implementation progress. The local trading coordinator should also determine whether or not these registration forms need to be public noticed. In most cases, the annual report and/or Notice of Termination will be public noticed in lieu of noticing the management practice registration. If necessary, the local trading coordinator should coordinate communication with the permit drafter and wastewater engineer/specialist as soon as possible to complete the public notice process. The statewide trading coordinator should be consulted when necessary.

Glossary

Bioaccumulative Chemical of Concern (BCC): Any substance that has the potential to cause adverse effects which, upon entering the surface waters, accumulates in aquatic organisms by a human health or wildlife bioaccumulation factor greater than 1000, as defined by s. NR 105.03 (9), Wis. Adm. Code.

Calendar Year: The time period from January 1 through December 31 inclusive for a given year.

Certification: An authorized representative of the permittee has attested in writing that a statement is true.

Concentrated Animal Feeding Operation (CAFO): An animal feeding operation to which any of the following apply: the operation has 1,000 animal units or more at any time and stores manure or process wastewater in a below or at grade level storage structure or land applies manure or process wastewater; the operation has 300 to 999 animal units and has a Category I unacceptable practice under s. NR 243.24 (1) (a), Wis. Adm. Code; or under s. NR 243.26 (2), Wis., Adm. Code, the operation is designated by WDNR as having a significant discharge of pollutants to navigable waters or has caused the fecal contamination of water in a well.

Credit Generator: The person generating pollutant reduction credits. This can either be a permittee that agrees to reduce their discharge of the traded pollutant below levels otherwise authorized by their WPDES discharge permit, or a person who is not required to obtain a WPDES discharge permit but wishes to reduce their loadings of the traded pollutant.

Credit Threshold: The pollutant loading level below which reductions must be made to generate pollutant reduction credits.

Credit User: A permittee who wishes to use pollutant reduction credits to allow a discharge of the traded pollutant above levels otherwise authorized by their WPDES discharge permit.

Current Pollutant Load: For NPSs, the pollutant load existing at the time that the trade agreement is reached pursuant to s. 283.84, Wis. Stats.

Cross-pollutant Trading: The use of discharge or load reductions generated for one pollutant to be used to compensate for an increase in the discharge or loading of a different pollutant.

Hydrologic Unit Code (HUC): A national standard hierarchical system based on surface hydrologic features to delineate watersheds in the United States by the U.S. Geological Survey. Each hydrologic unit is identified by a unique hydrologic unit code (HUC) consisting of two to twelve digits based on the six levels of classification. For example, a 12-digit HUC represents the sixth-level (subwatershed) of classification.

Impaired Water: A water body that WDNR has identified to EPA under 33 USC 1313 (d)(1)(A).

Local Governmental Unit: A political subdivision of this state, a special purpose district in this state, an instrumentality or corporation of such a political subdivision or special purpose district, a combination

or subunit of any of the foregoing or an instrumentality of the state and any of the foregoing as defined by s. 16.97 (7), Wis. Stats.

Load Allocation (LA): The portion of a receiving water's loading capacity that is allocated to a NPS or group of NPSs under a TMDL.

Management Practices: Structural or non-structural measures, practices, techniques or devices employed to avoid or minimize soil, sediment or pollutants carried in runoff to waters of the state, as defined by s. NR 151.002 (4), Wis. Adm. Code.

Municipal Separate Storm Sewer System (MS4): A conveyance or system of conveyances including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, constructed channels or storm drains, which meets all the following criteria: Owned or operated by a municipality; designed or used for collecting or conveying storm water; which is not a combined sewer conveying both sanitary and storm water; and which is not part of a publicly owned wastewater treatment works that provides secondary or more stringent treatment; as defined in s. NR 216.002 (17), Wis. Adm. Code.

Nonpoint Source (NPS): A source of pollutant loading to surface waters of the State other than a source defined as a PS.

Performance Standard: A narrative or measurable number specifying the minimum acceptable outcome for a facility or practice, as defined by s. NR 151.002 (33), Wis. Adm. Code.

Phosphorus Impaired Water: A surface water listed on the 303 (d) list that is impaired for P, nutrients, or diurnal swings of dissolved oxygen, as defined in s. NR 217.11 (4), Wis. Adm. Code.

Phosphorus Index (PI): Wisconsin's agricultural land management planning tool for assessing the potential of a cropped or grazed field to contribute P to the surface water, as defined by s. NR 151.015 (15s), Wis. Adm. Code.

Point Source (PS): A discernible, confined, and discrete conveyance, including but not limited to any pipe, ditch, channel or tunnel from which pollutants may be discharged into waters of the State. A discernible, confined and discrete conveyance of stormwater for which a permit is required under s. 283.33 (1), Wis. Stats., is also defined as a PS.

Pollutant Load Reduction: The amount (mass) of a given pollutant over a specified period (day, month, year) that is made available by a credit generator for a trade. When divided by the trade ratio, the pollutant load reduction becomes the pollutant reduction credit.

Pollutant Reduction Credit or **Credit:** The amount (mass) of a given pollutant over a specified period (day, month or year) that is available to the credit user in a trade. The pollutant reduction credit equals the pollutant load reduction divided by the trade ratio.

Surface Waters: All natural and artificial named and unnamed lakes and all naturally flowing streams within the boundaries of the state, but not including cooling lakes, farm ponds and facilities constructed for the treatment of wastewaters.

Technology-based Effluent Limitation(s) (**TBEL):** An effluent limitation or limitations established pursuant to ss. 283.13 (1) through (4), Wis. Stats., and, with respect to TP, effluent limitations established pursuant to Subchapter II of ch. NR 217, Wis. Adm. Code.

Total Maximum Daily Load (TMDL): The maximum amount of a pollutant a waterbody can receive and still meet applicable water quality standards. In this guidance document, TMDL is also used when referring not only to the derivation of the total assimilative capacity of a waterbody, but also to the allocation of capacity to point and NPSs. Only TMDLs that have been approved by USEPA and are included in an areawide water quality management plan may be used to derive WPDES permit effluent limits.

Wasteload Allocation (WLA): Pollutant-specific allocation for an individual PS, which ensures that the level of water quality to be achieved by the PS complies with all applicable water quality standards.

Water Quality-based Effluent Limitation(s) (WQBEL): An effluent limitation or limitations determined by using applicable water quality criteria (e.g., aquatic life, human health, wildlife, translation of narrative criteria) for a specific PS to a specific receiving water for a given pollutant or based on the facility's WLA from a TMDL.

Water Quality Standards: Standards established by WDNR pursuant to s. 281.15, Wis. Stats., for the physical, chemical and biological characteristics of a water which must be maintained to make it suitable for specified uses. Water quality standards consist of the designated uses of the waters or portions thereof and the water quality criteria for those waters based upon the designated use.

Watershed Adaptive Management Option: A strategy to achieve the TP water quality criteria in s. NR 102.06, Wis. Adm. Code, in the most economically efficient manner, and as soon as possible, taking into consideration the contributions of P from point and NPSs in a watershed as specified by s. NR 217.18, Wis. Adm. Code.

Watershed: An area of the land that drains to a common lake, pond, river, stream, or other surface waters of the State that is delineated for the purpose of instituting water quality management activities.

WPDES Permit: A Wisconsin Pollution Discharge Elimination System discharge permit issued under ch. 283, Wis. Stats.

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Appendix 1. Section 283.84, Wisconsin Statutes

Trading of water pollution credits. (1) The department shall administer a program for the trading of water pollution credits that is consistent with the federal Water Pollution Control Act, 33 USC 1251 to 1387. Subject to sub. (1m), under the program the department may authorize a person required to obtain a permit to increase the discharge of pollutants above levels that would otherwise be authorized in the permit if the person does one of the following:

(a) Reaches a binding, written agreement with another person who is required to obtain a permit under which the other person agrees to reduce the discharge of pollutants below the levels that would otherwise be authorized in the other person's permit.

(b) Reaches a binding, written agreement with another person who is not required to obtain a permit under which the other person agrees to reduce the amount of water pollution that it causes below the levels of water pollution that it causes when the agreement is reached.

(c) Reaches a binding, written agreement with the department or a local governmental unit, as defined in s. 16.97 (7), under which the person pays money to the department or local governmental unit and the department or local governmental unit uses the money to reduce water pollution or to provide cost−sharing, for the purposes of s. 281.16 (3) (e) or (4), for projects to reduce water pollution.

(d) Reaches a binding, written agreement with the department under which the person reduces the discharge of pollutants under another permit that the person holds below the levels that would otherwise be authorized in the other permit.

(e) Reaches a binding, written agreement with the department under which the person constructs a project or implements a plan that results in reducing the amount of water pollution from sources other than the source covered by the permit.

(1m) Under the program, the department may authorize a person to increase a discharge of pollutants above levels that would otherwise be authorized in the permit only if all of the following apply:

(a) The agreement under sub. (1) results in an improvement in water quality.

(b) The increase in pollutants and the reduction in pollutants provided for in the agreement under sub. (1) involve the same pollutant or the same water quality standard.

(d) [sic] The increase in pollutants and the reduction in pollutants occur within the same basin or portion of a basin, as determined by the department.

(3m) A person engaged in mining, as defined in s. 293.01 (9), prospecting, as defined in s. 293.01 (18), or nonmetallic mining, as defined in s. 295.11 (3), may not enter into an agreement under sub. (1).

(3r) The department shall include terms and conditions related to agreements under sub. (1) in new and reissued permits.

(4) The department shall modify the permits of persons entering into agreements under sub. (1) to enable the agreements to be implemented and to include terms and conditions related to the agreements.

(6) [sic]The department may promulgate rules for the administration of this section.

History: 1997 a. 27; 2001 a. 16; 2003 a. 33; 2011 a. 151.

Appendix 2. Notice of Intent

State of Wisconsin
Department of Natural Resources
101 South Webster Street
Madison, WI 53707

Notice of Intent to Conduct Water Quality Trading
Form 8700-nnn (R10/12)

Notice: Any personally identifiable information submitted on this form will be used for program purposes only, but is available for inspection and copying under Wisconsin's public records laws. This form should be completed by any permittee that intends to pursue pollutant trading as a method for complying with a permit limitation. Failure to complete this form would not result in penalties.

Applicant Information

Permittee Name	Permit Number **WI-**	Facility Site Number

Facility Address	City	State	ZIP Code

Project Contact Name(if applicable)	*Address*	*City*	*State*	*Zip Code*

Project Name

Receiving Water Name	Parameter(s) being traded	HUC 12

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 (check all that apply):
☐ Permitted Discharge (non-MS4)
☐ Permitted MS4
☐ Permitted CAFO
☐ Non-permitted urban 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; Broker Name: _____
☐ No
☐ Unsure

Permitted Discharge Information (Traditional Municipal/Industrial Discharge, MS4, CAFO):

Discharge Type	Permit Number	Name	Contact Address	Is the PS currently in compliance with their permit requirements?
☐ Traditional ☐ MS4 ☐ CAFO				☐ Yes ☐ Unsure ☐ No
☐ Traditional ☐ MS4 ☐ CAFO				☐ Yes ☐ Unsure ☐ No
☐ Traditional ☐ MS4 ☐ CAFO				☐ Yes ☐ Unsure ☐ No

☐ Traditional ☐ MS4 ☐ CAFO				☐ Yes ☐ No	☐ Unsure
☐ Traditional ☐ MS4 ☐ CAFO				☐ Yes ☐ No	☐ Unsure

Nonpoint Information (Agricultural, non-permitted urban, etc.):

Will other improvements be made to improve effluent quality towards permit compliance?

☐ Yes *(if yes, please attach a description of these improvements)*
☐ No
☐ Unsure

Practices that will be used to generate credits:

Method for quantifying credits generated: ☐ Monitoring
☐ Modeling, Names:_____
☐ Other: _____

Projected date credits will be available:

The preparer certify 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

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

NOTE: The *Authorized Representative* is someone who is authorized to sign all applications, reports or other information submitted to the DNR. This person may be; for a corporation, a responsible corporate officer including a president, secretary, treasurer, vice president or manager; and for a municipality, a ranking elected official; for a corporation or a municipality, another person authorized by one of those officers or officials and who has responsibility for the overall operation of the facility or activity regulated by the permit. This is the person to whom we will send information regarding the application, the draft permit and permit reissuance.

Appendix 3. Water Quality Trading Checklist

State of Wisconsin
Department of Natural Resources
101 South Webster Street
Madison, WI 53707

Water Quality Trading Checklist
Form 8700-nnn (R10/12)

Notice: Any personally identifiable information submitted on this form will be used for program purposes only, but is available for inspection and copying under Wisconsin's public records laws. This form should be completed by any permittee that intends to pursue pollutant trading as a method for complying with a permit limitation. Failure to complete this form would not result in penalties.

Applicant Information

Permittee Name	Permit Number **WI-**	Facility Site Number

Facility Address	City	State	ZIP Code

Project Contact Name(if applicable)	*Address*	*City*	*State*	*Zip Code*

Project Name

Receiving Water Name	Parameter(s) being traded	HUC 12

Credit Generator Information

Credit generator type (check all that apply):
- ☐ Permitted Discharge (non-MS4)
- ☐ Permitted MS4
- ☐ CAFOs
- ☐ Non-permitted urban 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

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

Permitted Discharge Information (Traditional Municipal/Industrial Discharge, MS4, CAFO):

Are each of the point sources identified in this section are 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				

Does plan have a narrative that describes:			Plan Section
a. Summary of discharge and existing treatment	☐ 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	

Non-Permitted Discharge Information (Non-permitted urban, agricultural, other):

Type	Practices Used to Generate Credits	Method of Quantification	Trade Agreement Number	Have the practice(s) been formally registered?
☐ 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
☐ 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	
b. Management practices used to generate credits	☐ Yes	☐ No	
c. Amount of credit being generated	☐ Yes	☐ No	
d. Description of applicable trade ratio per agreement/management practice	☐ Yes	☐ No	
e. Location where credits will be generated	☐ Yes	☐ No	
f. Timeline for credits and agreements	☐ Yes	☐ No	
g. Method for quantifying credits	☐ Yes	☐ No	
h. Tracking procedures	☐ Yes	☐ No	
i. Conditions under which the management practices may be inspected	☐ Yes	☐ No	
j. Reporting requirements should the management practice fail	☐ Yes	☐ No	
k. Operation and maintenance plan for each management practice	☐ Yes	☐ No	
l. Location of credit generator in proximity to receiving water and credit user	☐ Yes	☐ No	
m. Practice registration documents, if available	☐ Yes	☐ No	
n. History of project site(s)	☐ Yes	☐ No	
o. Other: _____	☐ Yes	☐ No	

The preparer and owner certify 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

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

NOTE: The *Authorized Representative* is someone who is authorized to sign all applications, reports or other information submitted to the DNR. This person may be; for a corporation, a responsible corporate officer including a president, secretary, treasurer, vice president or manager; and for a municipality, a ranking elected official; for a corporation or a municipality, another person authorized by one of those officers or officials and who has responsibility for the overall operation of the facility or activity regulated by the permit. This is the person to whom we will send information regarding the application, the draft permit and permit reissuance.

Appendix 4. Management Practice Registration

State of Wisconsin
Department of Natural Resources
101 South Webster Street
Madison, WI 53707

Water Quality Trading
Management Practice Registration
Form 8700-nnn (R10/12)

Notice: Any personally identifiable information submitted on this form will be used for program purposes only, but is available for inspection and copying under Wisconsin's public records laws. This form should be completed by any permittee that intends to pursue pollutant trading as a method for complying with a permit limitation. Failure to complete this form would not result in penalties.

Permittee Information

Permittee Name	Permit Number **WI-**	Facility Site Number

Facility Address	City	State	ZIP Code

Project Contact Name(if applicable)	*Address*	*City*	*State*	*Zip Code*

Project Name

Broker/Exchange Information

Was a broker/exchange be used to facilitate trade?	☐ Yes ☐ No
Broker/Exchange Organization Name:	Contact:
Address:	Phone/E-mail:

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				

County:	Closest Receiving Water Name:	HUC 12:	Parameter(s) Traded:

The preparer and owner certify 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

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

For Department Use Only

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

NOTE: The *Authorized Representative* is someone who is authorized to sign all applications, reports or other information submitted to the DNR. This person may be; for a corporation, a responsible corporate officer including a president, secretary, treasurer, vice president or manager; and for a municipality, a ranking elected official; for a corporation or a municipality, another person authorized by one of those officers or officials and who has responsibility for the overall operation of the facility or activity regulated by the permit. This is the person to whom we will send information regarding the application, the draft permit and permit reissuance.

Appendix 5. Notice of Termination

State of Wisconsin
Department of Natural Resources
101 South Webster Street
Madison, WI 53707

Notification of Trade Agreement Termination
Form 8700-nnn (R10/12)

Notice: Any personally identifiable information submitted on this form will be used for program purposes only, but is available for inspection and copying under Wisconsin's public records laws. This form should be completed by any permittee that intends to pursue pollutant trading as a method for complying with a permit limitation. Failure to complete this form would not result in penalties.

Applicant Information

Permittee Name	Permit Number **WI-**	Facility Site Number

Facility Address	City	State	ZIP Code

Project Contact Name(if applicable)	*Address*	*City*	*State*	*Zip Code*

Project Name

Receiving water name	Parameter(s) being traded	HUC 12

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 (check all that apply):
☐ Permitted Discharge (non-MS4)
☐ Permitted MS4
☐ Permitted CAFO
☐ Non-permitted urban discharge
☐ Agricultural nonpoint source discharge
☐ Other- Specify: _____

Trade Agreement number(s) to be terminated:

Amount of trading credit being terminated:

Effective date of termination:

Reason for termination:

Is this agreement being updated or replaced?
☐ Yes *(new trade registration required before trade is effective)*
☐ No

Will this termination result in non-compliance with the effective limit or other permit requirements?
☐ Yes
☐ No
☐ Unsure

The preparer and owner certify 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

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

NOTE: The *Authorized Representative* is someone who is authorized to sign all applications, reports or other information submitted to the DNR. This person may be; for a corporation, a responsible corporate officer including a president, secretary, treasurer, vice president or manager; and for a municipality, a ranking elected official; for a corporation or a municipality, another person authorized by one of those officers or officials and who has responsibility for the overall operation of the facility or activity regulated by the permit. This is the person to whom we will send information regarding the application, the draft permit and permit reissuance.

Appendix 6. Sample WPDES Permit Conditions: Point-to-Point Water Quality Trade with Annual WLAs

Sample WPDES permit conditions are provided below for a municipal wastewater treatment facility (WWTF), the credit user, and an industrial discharger, the credit generator. For this example, both PSs discharge to the Lower Fox River. However, the following permit conditions may be used with any approved TMDL that expresses WLAs in pounds per year. The municipal WWTF will use pollutant reduction credits to demonstrate compliance with WLA-derived WQBELs for TP and TSS. To generate credits, the industrial discharger will accept reduced WLA-derived WQBELs for both TP and TSS.

For this example, WQBELs for TP and TSS become effective in the municipal WWTF permit on January 1, 2015, one year after the reissued permit's effective date. The one-year delay after permit reissuance allows time for the industrial discharger's permit to be modified to include effluent limits reflective of the trade. The one-year compliance schedule included in the municipal WWTF's reissued permit does not have interim compliance dates since the compliance schedule is only one year in length and shortens the compliance schedule contained in the previous permit by one year. That is, the municipal WWTF's previous permit required TP and TSS WQBELs to become effective January 1, 2016, two years after permit reissuance.

Requirements to submit a Notice of Intent, and a trading plan accompanied by a Water Quality Trading Plan Checklist are not included in the example permit since it is assumed that these documents were submitted by the municipal WWTF prior to permit issuance.

A condition to optimize wastewater treatment pursuant to Section 2.6, p. 5 is not included in the example permit for the industrial credit generator since proposed effluent limits reflecting the trade require an improvement in effluent quality.

WLAs from the Lower Fox River TMDL and WLA-derived WQBELs for both PSs are provided below.

WLAs and Pollutant Reduction Credits

	TP			TSS		
Permittee	WLA (lbs/yr)	Pollutant Reduction Credits[1] (lbs/yr)	Basis of WQBELs after Applying Credits (lbs/yr)	WLA (lbs/year)	Pollutant Reduction Credits[1] (lbs/yr)	Basis of WQBELs after Applying Credits (lbs/yr)
Municipal WWTF (credit user)	3,467	455	3,922	147,003	4,167	151,170
Industrial Discharger (credit generator)	5,648	500	5,148	111,969	5,000	106,969

[1] Trade ratio equals 1.1 for TP and 1.2 for TSS.

TP and TSS WQBELs

Permittee	TP[1] 6-Month Average[3] (lbs/day)	TP[1] Monthly Average[3] (lbs/day)	TSS[2] Monthly Average[3] (lbs/day)	TSS[2] Weekly Average[3] (lbs/day)	TSS[2] Daily Maximum[3] (lbs/day)
Municipal WWTF (credit user)	10.7 (12.1)	32.1 (36.3)	543 (559)	716 (737)	–
Industrial Discharger (credit generator)	18.7 (17.1)	56.1 (51.3)	487 (466)	–	953 (911)

[1] Municipal WWTF and industrial discharger equivalent TP effluent concentrations equal 0.13 and 0.15 mg/L, monitoring frequencies equal 5 times per week and 2 times per week, coefficients of variation equal 0.6 and 0.6, and 6-month multipliers equal 1.13 and 1.21, respectively. (See WDNR's TMDL-WPDES implementation guidance for more information on deriving WQBELs from TMDL WLAs.)

[2] Municipal WWTF and industrial discharger TSS monitoring frequencies equal 5 times per week and 2 times per week, and coefficients of variation equal 0.6 and 0.6, respectively. Municipal WWTF weekly and monthly average multipliers equal 1.78 and 1.35. Industrial discharger daily maximum and monthly average multipliers equal 3.11 and 1.59.

[3] WQBELs in parentheses have been adjusted to reflect the trade.

1 Municipal WWTF (credit user) Permit Conditions

1.1 Monitoring Requirements and Limitations

1.1.1 Sampling Point (Outfall) 001 – TREATED EFFLUENT

Monitoring Requirements and Effluent Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Suspended Solids, Total	Weekly Avg.	45 mg/L	5/Week	24-hr Flow-Prop. Comp.	
	Monthly Avg.	30 mg/L	5/Week	24-hr Flow-Prop. Comp.	
	Weekly Avg.	737 lbs/day	5/Week	Calculated	Limit effective 1/1/2015
	Monthly Avg.	559 lbs/day	5/Week	Calculated	Limit effective 1/1/2015
	–	lbs/yr	Annual	Calculated	Begin reporting for 2015(*first full year TSS WQBELs are effective*). See 1.1.1.2.

Monitoring Requirements and Effluent Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Phosphorus, Total	Monthly Avg.	1.0 mg/L	5/Week	24-hr Flow-Prop. Comp.	
	Monthly Avg.	36.3 lbs/day	5/Week	Calculated	Limit effective 1/1/2015
	6-Month Avg.	12.1 lbs/day	5/Week	Calculated	Limit effective 1/1/2015. Apply 6-month average limit to periods May through October and November through April
	–	lbs/yr	Annual	Calculated	Begin reporting for 2015(*first full year TP WQBELs are effective*). See 1.1.1.2.

1.1.1.1 Water Quality Trading

The permittee may use water quality trading to demonstrate compliance with total suspended solids (TSS) WQBELs of 543 lbs/day monthly average and 716 lbs/day weekly average, and total phosphorus (TP) WQBELs of 32.1 lbs/day monthly average and 10.7 lbs/day 6-month average. TSS and TP WQBELs in the above table represent the application of pollutant reduction credits equal to 455 lbs/yr for TP and 4,167 lbs/yr for TSS pursuant to Water Quality Trading Plan WQT-2013-00001. Further, the permittee shall:

- Notify WDNR within 7 days of becoming aware that pollutant reduction credits used or intended for use by the permittee have become unavailable or are determined to be invalid; and
- Provide WDNR written notice within 7 days of the water quality trading plan being amended, modified, or revoked. This notification shall include the details of any amendment or modification in addition to the justification for the changes.

In the event pollutant reduction credits as defined in the approved water quality trading plan are no longer generated, the permittee shall comply with the WQBELs for TSS and TP contained in this footnote.

Pollutant reduction credits used to demonstrate compliance with TSS and TP WQBELs must be generated under water quality trading plan approved by the Department. Any change in the number of available pollutant reduction credits requires a modification of this permit.

Under any of the following conditions, the Department may modify or revoke and reissue this permit to eliminate permit terms and conditions related to water quality trading and require the permittee to comply with WQBELs without the use of credits:

- The permittee fails to implement the water quality trading plan as approved;
- The permittee fails to comply with permit terms and conditions related to water quality trading; and

- New information becomes available that would change the Department's determinations that water quality trading is an acceptable option.

1.1.1.2 Calculating and Reporting 12-Month Rolling Sums

Total monthly loads (lbs/month) shall be calculated by multiplying the monthly average discharge concentration (mg/L) by the total flow for the month (MG/month) and by the conversion factor of 8.34. Sum the total monthly loads from the twelve months of the calendar year. Subtract the pollutant reduction credits of 4,167 lbs/yr for TSS and 455 lbs/yr for TP from the annual total and report the results (lbs/yr).

2 Schedule of Compliance

2.1 WQBELs for TP and TSS

The permittee shall comply with the water quality based effluent limits (WQBELs) for TP and TSS as specified in Table 1.1.1 of this permit in accordance with the following schedule.

Required Action	Date Due
Comply with TP and TSS WQBELs: Comply with the TP and TSS WQBELs as specified in Table 1.1.1.	1/1/2015

1 Industrial Discharger (credit generator) Permit Conditions

1.1 Monitoring Requirements and Limitations

1.1.1 Sampling Point (Outfall) 001 – TREATED EFFLUENT

Monitoring Requirements and Effluent Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Suspended Solids, Total	Daily Max.	21,646 lbs/day	5/Week	24-hr Flow Prop. Comp.	Limit effective until 1/1/2015
	Monthly Avg.	11,514 lbs/day	5/Week	Calculated	Limit effective until 1/1/2015
	Daily Max.	911 lbs/day	5/Week	Calculated	Limit effective 1/1/2015
	Monthly Avg.	466 lbs/day	5/Week	Calculated	Limit effective 1/1/2015
	–	lbs/yr	Annual	Calculated	Begin reporting for 2015(*first full year TSS WQBELs become effective*). See 2.1.1.2.

Monitoring Requirements and Effluent Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Phosphorus, Total	Monthly Avg.	1.0 mg/L	2/Week	24-hr Flow Prop. Comp.	
	Month Avg.	51.3 lbs/day	2/Week	Calculated	Limit effective 1/1/2015
	6-Month Avg.	17.1 lbs/day	2/Week	Calculated	Limit effective 1/1/2015. Apply 6-month average limit to periods May through October and November through April
	–	lbs/yr	Annual	Calculated	Begin reporting for 2015 (*first full year TP WQBELs are effective*). See 2.1.1.2.

2.1.1.1 Water Quality Trading (WQT)

The permittee has agreed to provide pollutant reduction credits of 5,000 lbs/yr for TSS and 500 lbs/yr for TP as part of Water Quality Trading Plan WQT-2013-00001. To make the credits available, the permittee must comply with the effluent limitations of 911 lbs/day daily maximum and 466 lbs/day monthly average for TSS, and 51.3 lbs/day monthly average and 17.1 lbs/day 6-month average for TP. If credits are not provided, the permittee's WQBELs equal 953 lbs/day daily maximum and 487 lbs/day monthly average for TSS, and 56.1 lbs/day monthly average and 18.7 lbs/day 6-month average for TP. Further, the permittee shall:

- Notify WDNR within 7 days of becoming aware that pollutant reduction credits provided by the permittee have become unavailable.
- Provide WDNR written notice within 7 days of the trade agreement upon which the approved water quality trading plan is based being amended, modified, or revoked. This notification shall include the details of any amendment or modification in addition to the justification for the changes.

2.1.1.2 Calculating and Reporting 12-Month Rolling Sums

Total monthly loads (lbs/month) shall be calculated by multiplying the monthly average discharge concentration (mg/L) by the total flow for the month (MG/month) and by the conversion factor of 8.34. Sum the total monthly loads from the twelve months of the calendar year. Add the pollutant reduction credits of 5,000 lbs/yr for TSS and 500 lbs/yr for TP to the annual total and report the results.

Comments for the Permit Drafter

In the above example, any change in the amount of available pollutant reduction credits will require a modification of both the credit user's and credit generator's permit.

Appendix 7. Sample WPDES Permit Conditions: Point-to-Nonpoint Water Quality Trade with Annual WLAs

Sample WPDES permit conditions are provided below for a municipal wastewater treatment facility (WWTF) that will use pollutant reduction credits generated by a NPS to meet TMDL-derived WQBELs . The municipal WWTF discharges to the Lower Fox River. The NPS is located in the Lower Fox River drainage area upstream from the municipal WWTF. Note that the following permit conditions may be used with any approved TMDL that expresses WLAs in pounds per year.

For this example, the permit becomes effective January 1, 2014 and WQBELs for TP and total TSS become effective January 1, 2016. NPS pollutant load reductions become available at the end of the 2015 growing season from installed management practices. The reissued permit retains the effective date for WQBELs from the previous permit, but, modifies the original compliance schedule to include completion dates for the installation of management practices.

Since the municipality is upgrading its wastewater treatment facility in addition to acquiring pollutant reduction credits, the example permit does not contain a condition to optimize wastewater treatment.

Requirements to submit a Notice of Intent, and a trading plan accompanied by a Water Quality Trading Plan Checklist are not included in the example permit. Water Quality Trading Plan WQT-2013-00002 was submitted by the municipal WWTF and approved by WDNR prior to permit issuance. However, the example permit's compliance schedule requires the municipal WWTF to submit Management Practices registration Forms.

The municipal WWTF's pollutant reduction credits and TMDL-derived WQBELs are provided below. Since interim pollutant reduction credits are available for five years, from January 1, 2016, when use of the credits begins, through December 31, 2020, interim credits will be available to the municipal WWTF for the term of the reissued permit. The next permit reissuance will address the replacement of interim credits with long-term credits when the former credits expire.

Municipal WWTF Pollutant Reduction Credits for the Trading Partners

Trading Partner	TP Pollutant Load Reduction[1] (lbs/yr)	TP Pollutant Reduction Credits[1] (lbs/yr)	TSS Pollutant Load Reduction[1] (lbs/yr)	TSS Pollutant Reduction Credits[1] (lbs/yr)
Municipal WWTF (credit user)		1,241 Interim[2] 830 Long-term[3]		24,010 Interim[2] 16,005 Long-term[3]
NPS (credit generator)	3,350 Interim[2] 2,240 Long-term[3]		50,420 Interim[2] 33,610 Long-term	

[1] Trade ratio equals 2.7 for TP and 2.1 for TSS.

[2] Interim pollutant reduction credits are available from January 1, 2016 through December 31, 2020.[3] Long-term pollutant reduction credits are available from January 1, 2021 until the management practice is removed or its design life of ten years is reached, whichever is shorter.

Municipal WWTF TP and TSS WQBELs

Permittee	TP[1] 6-Month Average (lbs/day)	TP[1] Monthly Average (lbs/day)	TSS[2] Monthly Average (lbs/day)	TSS[2] Weekly Average (lbs/day)
Municipal WWTF	10.7	32.1	543	716

[1] Municipal WWTF TP WLA equals 3,467 lbs/yr, equivalent effluent concentration equals 0.13, monitoring frequency equals 5 times per week, coefficient of variation equals 0.6, and 6-month multiplier equals 1.13. (See WDNR's TMDL-WPDES implementation guidance for more information on deriving WQBELs from TMDL WLAs.)

[2] Municipal WWTF TSS WLA equals 147,003 lbs/yr, monitoring frequency equals 5 times per week, and coefficient of variation equals 0.6. Municipal WWTF weekly and monthly average multipliers equal 1.78 and 1.35.

1 Municipal WWTF (credit user) Permit Conditions

1.1 Monitoring Requirements and Limitations

1.1.1 Sampling Point (Outfall) 001 – TREATED EFFLUENT

Monitoring Requirements and Effluent Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Suspended Solids, Total	Weekly Avg.	45 mg/L	5/Week	24-hr Flow Prop. Comp.	
	Monthly Avg.	30 mg/L	5/Week	24-hr Flow Prop. Comp.	
	–	lbs/yr	Annual	Calculated	Begin reporting for 2016 (*first full year TSS WQBELs are effective*). See 1.1.1.1.
	–	lbs/day	5/Week	Calculated	
WQT TSS Credits	–	lbs/day	5/Week	Calculated	Effluent limitations and reporting requirements effective 1/1/2016. See 1.1.1.2 through 1.1.1.5 for instructions on water quality trading.
WQT TSS Computed Compliance	Weekly Avg.	716 lbs/day	5/Week	Calculated	
	Monthly Avg.	543 lbs/day	5/Week	Calculated	
Phosphorus, Total	Monthly Avg.	1.0 mg/L	5/Week	24-hr Flow Prop. Comp.	
	–	lbs/yr	Monthly	Calculated	Begin reporting for 2016(*first full year TP WQBELs are effective*). See 1.1.1.1.
	–	lbs/day	5/Week	Calculated	

Monitoring Requirements and Effluent Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
WQT TP Credits	–	lbs/day	5/Week	Calculated	Effluent limitations and reporting requirements effective 1/1/2016. Apply 6-month average limit to periods May through Oct. and Nov. through April. See 1.1.1.2 through 1.1.1.5 for instructions on water quality trading.
WQT TP Computed Compliance	Monthly Avg.	32.1 lbs/day	5/Week	Calculated	
	6-Month Avg.	10.7 lbs/day	5/Week	Calculated	

1.1.1.1 Calculating and Reporting 12-Month Rolling Sums

Total monthly loads discharged (lbs/month) shall be calculated by multiplying the monthly average discharge concentration (mg/L) by the total flow for the month (MG/month) and by the conversion factor of 8.34. Sum the total monthly loads from the twelve months of the calendar year. Subtract the pollutant reduction credits of 24,010 lbs/yr for TSS and 1,241 lbs/yr for TP from the annual total and report the results (lbs/yr).

1.1.1.2 Water Quality Trading (WQT)

The permittee may use water quality trading to demonstrate compliance with WQBELs of 716 lbs/day weekly average and 543 lbs/day monthly average for TSS and 32.1 lbs/day monthly average and 10.7 lbs/day 6-month average for TP. Pollutant reduction credits equal to 1,241 pounds per calendar year for TP and 24,010 pounds per calendar year for TSS as specified in Water Quality Trading Plan WQT-2013-00002 are available from January 1, 2016 through December 31, 2020. Beginning January 1, 2021 through December 31, 2025, available pollutant reduction credits equal to 830 pounds per calendar year for TP and 16,005 pounds per calendar year for TSS.

Only those pollutant reduction credits established by a water quality trading plan approved by the Department may be used by the permittee to demonstrate compliance with the WQBELs identified in this footnote. If the permittee wishes to use pollutant reduction credits not identified in an approved water quality trading plan, the permittee must amend the plan or develop a new plan and obtain Department approval of the amended or new plan prior to use of the new pollutant reduction credits. Prior to Department approval, the amended or new water quality trading plan will be subject to notice and opportunity for public comment. Any change in the number of available credits requires a permit modification.

In the event pollutant reduction credits as defined in the approved water quality trading plan are no longer generated, the permittee shall comply with the WQBELs for TSS and TP contained in this footnote.

1.1.1.3 Demonstrating Compliance Using Water Quality Trading

Use the following method to demonstrate compliance with the TSS WQBELs identified in this footnote.

- Select how many pounds of TSS pollutant reduction credits to be used for the month. The total of TSS credits selected for the twelve months of a calendar year shall not exceed that specified in the previous footnote.
- Divide the TSS credits selected for the month by the number of days in the month:

  TSS credits selected for the month (lbs/month) ÷ number of days in the month (days/month) =

  Average monthly TSS credit (lbs/day)

  If no TSS credits are available, the average monthly TSS credit shall equal 0 (zero).
- For each day that TSS is monitored at Sampling Point 001, report the average monthly TSS credit as calculated above on the monthly discharge monitoring report (DMR). Use the "WQT TSS Credits" column on the monthly DMR to report the average monthly TSS credit. With TSS monitoring required 5 times per week, the average monthly TSS credit should be repeated at least twenty times in the "WQT TSS Credits" column on each monthly DMR.
- For each day that TSS is monitored at Sampling Point 001, subtract the average monthly TSS credit from the TSS measured at Sampling Point 001:

  Measured TSS (lbs/day) at Sampling Point 001 – Average monthly TSS credit (lbs/day) =

  Adjusted TSS discharge (lbs/day)

  Report the adjusted TSS discharge as calculated above on the monthly DMR for each day that TSS monitoring occurs at Sampling Point 001. Use the "WQT TSS Computed Compliance" column on the monthly DMR to report the adjusted TSS discharge. With TSS monitoring required 5 times per week, the adjusted TSS discharge should be reported at least twenty times in the "WQT TSS Computed Compliance" column on each monthly DMR.
- Use the adjusted TSS discharge values reported in the "WQT TSS Computed Compliance" column of the DMR to demonstrate compliance with the TSS WQBELs.

Use the following method to demonstrate compliance with the TSS WQBELs identified in this footnote.

- Select how many pounds of TP pollutant reduction credits will be used for the month. The total of TP credits selected for the twelve months of a calendar year shall not exceed that specified in this footnote.
- Divide the TP credits selected for the month by the number of days in the month:

  TP credits selected for the month (lbs/month) ÷ number of days in the month (days/month) =

  Average monthly TP credit (lbs/day)

  If no TP credits are available, the average monthly TP credit shall equal 0 (zero).

- For each day that TP is monitored at Sampling Point 001, report the average monthly TP credit as calculated above on the monthly discharge monitoring report (DMR). Use the "WQT TP Credits" column on the monthly DMR to report the average monthly TP credit. With TP monitoring required 5 times per week, the average monthly TP credit should be repeated at least twenty times in the "WQT TP Credits" column on each monthly DMR.

- For each day that TP is monitored at Sampling Point 001, subtract the average monthly TP credit from the TP measured at Sampling Point 001:

  Measured TP (lbs/day) at Sampling Point 001 – Average monthly TP credit (lbs/day) =

  Adjusted TP discharge (lbs/day)

  Report the adjusted TP discharge as calculated above on the monthly DMR for each day that TP monitoring occurs at Sampling Point 001. Use the "WQT TP Computed Compliance" column on the monthly DMR to report the adjusted TP discharge. With TP monitoring required 5 times per week, the adjusted TP discharge should be reported at least twenty times in the "WQT TP Computed Compliance" column on each monthly DMR.

- Use the adjusted TP discharge values reported in the "WQT TP Computed Compliance" column of the DMR to demonstrate compliance with the TP WQBELs.

1.1.1.4 Additional Water Quality Trading Requirements

When the permittee uses water quality trading to demonstrate compliance with WQBELs, the permittee shall comply with the following:

- Failure to implement any of the terms or conditions of the approved water quality trading plan is a violation of this permit.

- 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 that specified in approved water quality trading plan. Such a certification may be made by including the following statement as a comment on the monthly discharge monitoring 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.

- At least once a year the permittee or the permittee's agent shall inspect the location of each nonpoint source management practices that generate pollutant reduction credits to confirm the implementation of the management practices and their appropriate operation and adequate maintenance.

- The permittee shall notify WDNR within 7 days of becoming aware that pollutant reduction credits used or intended for use by the permittee are not being generated as defined in the approved water quality trading plan.

- The permittee shall provide WDNR written notice within 7 days of the trade agreement upon which the approved water quality trading plan is based being amended, modified, or revoked. This notification shall include the details of any amendment or modification in addition to the justification for the changes.

- The permittee shall not use pollutant reduction credits for the demonstration of compliance when pollutant reduction credits are not being generated.

1.1.1.5 Annual Water Quality Trading Report

When using water quality trading to demonstrate compliance with WQBELs, the permittee shall report by January 31st each year the following information:

- 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; and
- 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 this permit with respect to water quality trading that have not been reported in discharge monitoring reports.

1.1.1.6 Water Quality Trading Reopener Clause

Under any of the following conditions, the Department may modify or revoke and reissue this permit to eliminate permit terms and conditions related to water quality trading and require the permittee to comply with WQBELs without the use of credits:

- The permittee fails to implement the water quality trading plan as approved;
- The permittee fails to comply with permit terms and conditions related to water quality trading; and
- New information becomes available that would change the Department's determinations that water quality trading is an acceptable option.

2 Schedule of Compliance

2.1 WQBELs for TP and TSS

The permittee shall comply with the TP and TSS mass effluent limits as specified in Table 1.1.1 of this permit in accordance with the following schedule.

Required Action	Date Due
Submit Progress Report on Management Practices Installation: Submit a progress report on the installation of management practices as identified in the in the Water Quality Management Plant WQT-2013-00002 as approved by the Department.	9/30/2014
Complete Installation of Management Practices: Complete the installation of management practices as identified in the Water Quality Management Plant WQT-2013-00002 as approved by the Department.	5/1/2015
Management Practices: Management practices as identified in Water Quality Management Plan WQT-2013-00002 shall become effective and the permittee shall submit a completed Management Practice Registration Form 8700-nnn for each site.	12/31/2015
Comply with TP and TSS Mass Limits: Comply with the TP and TSS mass limits as specified in Table 1.1.1.	1/1/2016

2.2 Annual Water Quality Trading Report

As specified in 1.1.1.5, the permittee shall submit annual water quality trading reports in accordance with the following schedule.

Required Action	Date Due
Submit Annual WQT Report: Submit 1st annual WQT report.	1/31/2017
Submit Annual WQT Report: Submit 2nd annual WQT report.	1/31/2018

Comments for Permit Drafters

The effluent limitations and monitoring requirements table in the above example is organized to produce monthly DMRs with the mass discharge column, the trading credits column and the trading computed compliance column adjacent to each other and in the order presented here. Organizing the DMR in this way will help make it a little easier for the permittee and WDNR to verify the correct application of trading credits.

If interim pollutant reduction credits expire during the permit term, the permit drafter should ensure all permit conditions are consistent with the change in credits. For example, Footnote 1.1.1.3 above must be amended to include the long-term credits with a starting date.

Any change in the amount of pollutant reduction credits that are available will require a modification of the permit presented in the above example.

Appendix 8. Sample WPDES Permit Conditions: Point-to-Nonpoint Water Quality Trade with s. NR 217.13, Wis. Adm. Code, Concentration WQBELs and Monthly WLAs

Sample WPDES permit conditions are provided below for an industrial permittee that will use pollutant reduction credits generated by a NPS to demonstrate compliance with water quality-based effluent limitations (WQBELs) for TP of 75 µg/L 6-month average and 230 µg/L monthly average. The industry discharges to a tributary of the Rock River. The NPS is located in the drainage area of the same tributary. The industrial permittee already complies with TP and TSS WQBELs derived from Rock River TMDL WLAs.

For this example, the permit and WQBELs for TP and TSS become effective January 1, 2014. Non-TMDL WQBELs for TP and management practices that generate the credits become effective July 1, 2015. The reissued permit modifies the compliance schedule contained in the previous permit by shortening the effective date for the TP non-TMDL WQBELs by six months and includes completion dates for the installation of management practices. Further, Water Quality Trading Plan WQT-2013-00003 was submitted by the industrial permittee and approved by WDNR prior to permit reissuance.

Since the industry is upgrading its wastewater treatment facility in addition to acquiring pollutant reduction credits, the example permit does not contain a condition to optimize wastewater treatment.

From July 1, 2015 through June 30 2020, the NPS will provide 2,570 pounds per year of TP pollutant load reduction, which after the application of a trade ratio of 2.8 makes 918 pounds per year of interim TP pollutant reduction credits available to the industrial discharger. From July 1, 2020 through the remaining ten-year design life of the management practice, 860 pounds per year of TP pollutant load reduction will be provided, which equals 307 pounds per year of long-term TP pollutant reduction credits after that application of the trade ratio.

1 Permit Conditions for Industrial Discharger (credit user)

1.1 Monitoring Requirements and Limitations

1.1.1 Sampling Point (Outfall) 001 – TREATED EFFLUENT

Monitoring Requirements and Effluent Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Suspended Solids, Total	Daily Max.	30 mg/L	3/Week	24-hr Flow Prop. Comp.	
	Monthly Avg.	15 mg/L	3/Week	24-hr Flow Prop. Comp.	
	Daily Max.	801 lbs/day	3/Week	Calculated	
	Monthly Avg.	327 lbs/day	3/Week	Calculated	

Monitoring Requirements and Effluent Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
WLA Suspended Solids, Total	Daily Max.	lbs/day	3/Week	Calculated	See 1.1.1.1 for TMDL-derived effluent limitations.
	Monthly Avg.	lbs/day	3/Week	Calculated	
Phosphorus, Total	Rolling 12-Month Avg.	1 mg/L	3/Week	24-hr Flow Prop. Comp.	
WQT TP Credits	–	mg/L	3/Week	Calculated	Effluent limitations and reporting requirements effective July 1, 2015. See 1.1.1.3 and 1.1.1.6 for instruction on water quality trading.
WQT TP Computed Compliance	Monthly Avg.	0.230 mg/L	3/Week	Calculated	
	6-Month Avg.	0.075 mg/L	3/Week	Calculated	
Phosphorus, Total	Daily Max.	lbs/day	3/Week	Calculated	See 1.1.1.7. for TMDL-derived effluent limitations.
	Monthly Avg.	lbs/day	3/Week	Calculated	

1.1.1.1 TSS TMDL-Derived Effluent Limitations

TSS effluent limitations derived from the Rock River TMDL are provided in the following table.

TMDL-Derived Effluent Limitations for TSS					
Month	**Daily Maximum (lbs/day)**	**Monthly Average (lbs/day)**	**Month**	**Daily Maximum (lbs/day)**	**Monthly Average (lbs/day)**
January	360	152	July	360	152
February	400	164	August	360	152
March	360	152	September	380	158
April	380	158	October	360	152
May	360	152	November	380	158
June	380	158	December	360	152

1.1.1.2 Water Quality Trading (WQT)

The permittee may use water quality trading to demonstrate compliance with WQBELs for TP of 75 µg/L 6-month average and 230 µg/L monthly average. Pollutant reduction credits equal to 918 pounds per calendar year for TP are available until June 30, 2020 as specified in Water Quality Trading Plan WQT-2013-00003. Available TP pollutant reduction credits equal 307 lbs/yr for the period from July 1, 2020 through June 30, 2014.

Only those pollutant reduction credits established by a water quality trading plan approved by the Department may be used by the permittee to demonstrate compliance with the WQBELs identified in this footnote. If the permittee wishes to use pollutant reduction credits not identified in an approved water quality trading plan, the permittee must amend the plan or develop a new plan and obtain

Department approval of the amended or new plan prior to use of the new pollutant reduction credits. Prior to Department approval, the amended or new water quality trading plan will be subject to notice and opportunity for public comment. Any change in the number of available credits requires a permit modification.

In the event pollutant reduction credits as defined in the approved water quality trading plan are no longer generated, the permittee shall comply with the WQBELs for TP contained in this footnote.

1.1.1.4 Demonstrating Compliance with TP WQBELs Using Water Quality Trading

Use the following method to demonstrate compliance with the TP WQBELs.

- Select how many pounds of TP pollutant reduction credits will be used for the month. The total of TP credits selected for the twelve months of a calendar year shall not exceed that specified in this footnote.

- Divide the TP credits selected for the month by the number of days in the month:

  TP credits selected for the month (lbs/month) ÷ number of days in the month (days/month) =

  Average monthly TP credit (lbs/day)

  If no TP credits are available, the average monthly TP credit shall equal 0 (zero).

- For each day that TP is monitored at Sampling Point 001, convert the average monthly TP credit to a concentration using the effluent flow rate recorded for the same day that TP was monitored:

  Average monthly TP credit (lbs/day) ÷ [Effluent flow rate (MGD) x 8.34] =

  WQT TP Credit (mg/L)

  Report the WQT TP credit as calculated above on the monthly discharge monitoring report (DMR) for each day that TP monitoring occurs. Use the “WQT TP Credit” column on the monthly DMR to report water quality trading TP credits. With TP monitoring required 3 times per week, a water quality trading TP credit should be reported at least twelve times in the “WQT TP Credit” column on each monthly DMR.

- For each day that TP is monitored at Sampling Point 001, subtract the “WQT TP Credit” from the effluent concentration measured at Sampling Point 001:

  TP effluent concentration (mg/L) at Sampling Point 001 – WQT TP Credit (mg/L) =

  Adjusted TP Concentration (mg/L)

  Report an adjusted TP concentration as calculated above on the monthly DMR for the each day that TP monitoring occurs. Use the “WQT TP Computed Compliance” column on the monthly DMR. At least twelve adjusted TP concentrations should be reported in the “WQT TP Computed Compliance” column on each monthly DMR.

- Use the adjusted TP concentrations reported in the “WQT TP Computed Compliance” column on the monthly DMR to demonstrate compliance with the TP WQBELs specified in this footnote.

1.1.1.5 Additional Water Quality Trading Requirements

When using water quality trading to demonstrate compliance with WQBELs for TP, the permittee shall comply with the following:

- Failure to implement any of the terms or conditions of the approved water quality trading plan is a violation of this permit.
- 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 that specified in the approved water quality trading plan. Such a certification may be made by including the following statement as a comment on the monthly discharge monitoring 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.

- At least once a year the permittee or the permittee's agent shall inspect the location of each nonpoint source management practices that generate pollutant reduction credits to confirm the implementation of the management practices and their appropriate operation and adequate maintenance.
- The permittee shall notify WDNR within 7 days of becoming aware that pollutant reduction credits used or intended for use by the permittee are not being implemented or generated as defined in the approved trading plan.
- The permittee shall provide WDNR written notice within 7 days of the trade agreement upon which the approved water quality trading plan is based being amended, modified, or revoked. This notification shall include the details of any amendment or modification in addition to the justification for the changes.
- The permittee shall not use pollutant reduction credits for the demonstration of compliance when pollutant reduction credits are not being generated.

1.1.1.6 Annual Water Quality Trading Report

When using water quality trading to demonstrate compliance with WQBELs, the permittee shall report by January 31st each year the following information:

- 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.

1.1.1.7 TP TMDL-Derived Effluent Limitations

Effluent limitations derived from the Rock River TMDL for TP are provided in the following table.

TMDL-Derived Effluent Limitations for TP					
Month	**Daily Maximum (lbs/day)**	**Monthly Average (lbs/day)**	**Month**	**Daily Maximum (lbs/day)**	**Monthly Average (lbs/day)**
January	15.6	6.51	July	12.3	5.15
February	17.3	7.24	August	14.9	6.23
March	14.3	5.98	September	15.6	6.51
April	13.5	5.63	October	16.0	6.69
May	11.5	4.83	November	16.6	6.95
June	13.3	5.55	December	16.1	6.72

1.1.1.6 Water Quality Trading Reopener Clause

Under any of the following conditions, the Department may modify or revoke and reissue this permit to eliminate permit terms and conditions related to water quality trading and require the permittee to comply with WQBELs without the use of credits:

- The permittee fails to implement the water quality trading plan as approved;
- The permittee fails to comply with permit terms and conditions related to water quality trading; and
- New information becomes available that would change the Department's determinations that water quality trading is an acceptable option.

2 Schedule of Compliance

2.1 Non-TMDL WQBELs for TP

The permittee shall comply with the monthly average and six-month average concentration limits for TP as specified in Table 1.1.1 of this permit in accordance with the following schedule.

Required Action	Date Due
Submit Progress Report on Management Practices Installation: Submit a progress report on the installation of management practices as identified in the in the Water Quality Management Plant WQT-2013-00003 as approved by the Department.	9/30/2014
Complete Installation of Management Practices: Complete the installation of management practices as identified in the Water Quality Management Plant WQT-2013-00003 as approved by the Department.	4/1/2015
Management Practices: Management practices as identified in Water Quality Management Plan WQT-2013-00002 shall become effective and the permittee shall submit a completed Management Practice Registration Form 8700-nnn for each site.	7/1/2015
Comply with TP Effluent Limits: Comply with the monthly average and six-month average concentration limits for TP as specified in Table 1.1.1.	7/1/2015

2.2 Annual Water Quality Trading Report

As specified in 1.1.1.6, the permittee shall submit annual water quality trading reports in accordance with the following schedule.

Required Action	Date Due
Submit Annual WQT Report: Submit 1st annual WQT report.	1/31/2016
Submit Annual WQT Report: Submit 2nd annual WQT report.	1/31/2017
Submit Annual WQT Report: Submit 3rd annual WQT report.	1/31/18

Comments for Permit Drafters

The effluent limitations and monitoring requirements table in the above example is organized to produce monthly DMRs with the TP concentration column, WQT TP credits column, and the WQT TP computed compliance column adjacent to each other and in the order presented here. Organizing the DMR in this way will help make it a little easier for the permittee and WDNR to verify the correct application of trading credits.

If interim pollutant reduction credits expire during the permit term, the permit drafter should ensure all permit conditions including all effluent limitation table footnotes are consistent with the change in credits.

Any change in the amount of pollutant reduction credits that are available will require a modification of the permit presented in the above example.

Appendix 9. Public Notice Language for Water Quality Trading

Proposed additions to the WPDES public notice to address water quality trading are provided below.

1. For use when noticing the first permit to allow water quality trading.

PUBLIC NOTICE OF AVAILABILITY OF A WATER QUALITY TRAFDING PLAN AND INTENT TO REISSUE A WISCONSIN POLLUTANT DISCHARGE ELIMINATION SYSTEM (WPDES) PERMIT No.WI-0000000-00-0

Water Quality Trading: The Department has tentatively decided to approve the permittee's water quality trading plan and allow the permittee to demonstrate compliance with WQBELs for "Insert Pollutant Name" using "Enter # of Credits" lbs/year of pollutant reduction credits.

2. For use when an amended or new water quality trading plan is submitted during the term of a permit that already allows water quality trading.

PUBLIC NOTICE OF AVAILABILITY OF A WATER QUALITY TRAFDING PLAN FOR WISCONSIN POLLUTANT DISCHARGE ELIMINATION SYSTEM (WPDES) PERMIT No.WI-0000000-00-0

The Department has tentatively decided to approve "Choose 'a new' or 'an amended'" water quality trading plan and allow the permittee to demonstrate compliance with WQBELs for "Insert Pollutant Name" using "Enter # of Credits" lbs/year of pollutant reduction credits, which is "Choose 'an increase' or 'a decrease'" of "Enter # Credits Changing" lbs/year.

Appendix 10. Contact Information

WDNR is committed to making trading as flexible and accountable as possible. As permittees work towards developing and implementing a trading strategy, WDNR staff are available to answer questions and provide technical feedback. Questions can be directed to the local Water Quality Trading (WQT) and Adaptive Management (AM) coordinator or wastewater engineer/specialist provided in the following list.

Location	Contact Information	WDNR Office	Counties Served
Statewide WQT coordinators	Kevin Kirsch Kevin.Kirsch@Wisconsin.gov 608-266-7019 Mike Hammers Mike.Hammers@Wisconsin.gov 608-267-7640	GEF 2	Statewide
Statewide AM coordinator	Amanda Minks Amanda.Minks@Wisconsin.gov 608-264-9223	GEF 2	Statewide
Northern District AM/WQT coordinator	Lonn Franson Lonn.Franson@Wisconsin.gov 715-634-9658	Hayward Service Center	Ashland, Barron, Bayfield, Burnett, Douglas, Forest, Florence, Iron, Langlade, Lincoln, Oneida, Polk, Price, Rusk, Sawyer, Taylor, Vilas, Washburn,
Southern District AM/WQT coordinator	Amy Schmidt Amy.Schmidt@Wisconsin.gov 608-275-3258	Fitchburg Service Center	Columbia, Dane, Dodge, Grant, Green, Iowa, Jefferson, Lafayette, Richland, Rock, and Sauk
Southern District AM/WQT coordinator	Sharon Gayan Sharon.Gayan@Wisconsin.gov 608-263-8707	Milwaukee Headquarters	Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Walworth, Washington, and Waukesha
Eastern District AM/WQT coordinator	Keith Marquardt Keith.Marquardt@Wisconsin.gov 920-303-5435	Oshkosh Service Center	Brown, Calumet, Door, Fond du Lac, Green Lake, Kewaunee, Manitowoc, Marinette, Marquette, Menominee, Oconto, Outagamie, Shawano, Waupaca, Waushara, and Winnebago
Western District AM/WQT coordinator	Mike Vollrath Michael.Vollrath@Wisconsin.gov 608-275-3288 Pat Oldenburg Patrick.Oldenburg@Wisconsin.gov 715-831-3262	Eau Claire Service Center	Adams, Buffalo, Chippewa, Clark, Crawford, Dunn, Eau Claire, Jackson, Juneau, La Crosse, Marathon, Monroe, Pepin, Pierce, Portage, St. Croix, Trempealeau, Vernon, Wood,