NUTRIENT WORK GROUP MEETING SUMMARY
March 13, 2023

9:00 a.m. – 11:00 a.m.
Hybrid Meeting: Zoom and DEQ Room 111

ATTENDANCE: NUTRIENT WORK GROUP MEMBERS

Representative & Affiliation	Representing
Shannon Holmes City of Livingston	Point Source Discharger: Middle-Sized Mechanical System (<1 MGD)
Alan Olson Montana Petroleum Association	Point Source Discharger: Non-POTW
Kelly Lynch (Amanda McInnis substituting) Montana League of Cities and Towns	Municipalities
Matt Vincent Montana Mining Association	Mining
Kristin Gardner Gallatin River Task Force	Conservation Organization: Local
Sarah Zuzulock Zuzulock Environmental Services	Conservation Organization: Regional
Andy Efta U.S. Forest Service, Northern Region	Federal Land Management Agencies
Tina Laidlaw U.S. Environmental Protection Agency	Federal Regulatory Agencies
Jeff Schmalenberg MT Dept. of Natural Resources and Conservation	State Land Management Agencies
Samantha Tappenbeck Flathead Conservation District	Soil and Water Conservation Districts – West of the Continental Divide
Scott Buecker (Kelsey Wagner substituting) AE2S	Wastewater Engineering Firms

NOT IN ATTENDANCE: NUTRIENT WORK GROUP MEMBERS

Representative & Affiliation	Representing
Louis Engels City of Billings	Point Source Discharger: Large Municipal Systems (>1 MGD)
Rika Lashley Morrison-Maeirle	Point Source Discharger: Small Municipal Systems with Lagoons
Rachel Cone Montana Farm Bureau	Farming-Oriented Agriculture
Raylee Honeycutt Montana Stockgrowers Association	Livestock-Oriented Agriculture
Guy Alsentzer Upper Missouri Waterkeeper	Environmental Advocacy Organization

Representative & Affiliation	Representing
David Brooks Montana Trout Unlimited	Conservation Organization: Statewide
Pete Cardinal Pete Cardinal Outfitters	Water or Fishing-Based Recreation
Nick Banish Gallatin Local Water Quality District	County Water Quality Districts or Planning Departments
Dan Rostad Yellowstone River Conservation District Council	Soil and Water Conservation Districts – East of the Continental Divide
Julia Altemus Montana Wood Products Association	Timber Industry

ATTENDANCE: OTHER PARTICIPANTS

Aaron Losing
Amanda Knuteson
Amelia Flanery, DEQ, Surface Water Discharge Permitting
Amy Steinmetz, DEQ, Waste Management and Remediation Division Administrator
Andy Ulven, DEQ, Water Quality Planning Bureau Chief
Bill Andrene
Brian Heaston, City of Bozeman
Casey Lewis, Flathead Basin Commission Executive Director
Christina Staten, DEQ, Watershed Management Section
Coralynn Revis, HDR
Darrin Kron, DEQ, Monitoring and Assessment Section Supervisor
Dave Clark, HDR
Ed Coleman, City of Helena
Elizabeth Palmer
Eric Regensburger, DEQ, Water Quality Modeler
Eric Trum, DEQ, Watershed Protection Section Supervisor
Erik Makus, EPA, Federal Regulatory Agency
George Fink
Hannah New, DEQ, Surface Water Discharge Permitting
Heather Henry, DEQ
Jeff May, DEQ, Surface Water Discharge Permitting
Jack
Joanna McLaughlin, DEQ, Water Quality Permit Writer
Joe Lierow, ExxonMobil Billings Refinery
Josh
Katie Makarowski, DEQ, Standards and Modeling Section Supervisor
KC Harvey Environmental
Kevin Grabinski
Kristi Kline, Montana Rural Water Systems
Kurt Moser, DEQ, Legal Counsel
Kyle Milke, DEQ, Adaptive Management Program Scientist
Leea Anderson, City of Helena
Lisa Anderson, DEQ, Watershed Protection Bureau
Mark Ockey, DEQ, Watershed Protection Section

Mary Godfrey, DEQ, Program Support Specialist
Matte Wolfe, Sibanye Stillwater
Michael Kasch, HDR
Michael Suplee, DEQ, Water Quality Standards and Modeling
Moira Davin, DEQ, Public Information Officer
Peggy Trenk, Treasure State Resources Association
Peter Scott
Rickey Schultz, HDR Engineering
Ryan Leland, City of Helena
Ryan Sudbury
Ryan Urbanec
Steven Frazee, WET
Susie Turner
Vic Watson, University of Montana Watershed Clinic

MEETING PURPOSE / OBJECTIVES

Meeting Goal: Discuss how Wisconsin implements the AMP and DEQ's proposal for permitting and interim limits. Presentation on nutrient trading (Circular DEQ-13).

- **EPA Presentation**
  - Wisconsin AMP Implementation
- **Narrative Nutrient Standards Permitting Two-Pager**
- **Nutrient Trading (Circular DEQ-13)**

MEETING HIGHLIGHTS / DECISIONS MADE

- Wisconsin AMP Implementation
- Narrative Nutrient Standards Permitting Two-Pager – available on NWG webpage
- Nutrient Trading (Circular DEQ-15)
- April 10, 2023 NWG meeting cancelled
- Next NWG meeting will be on May 17, 2023 starting at 9 a.m.

MEETING INITIATION

Moira Davin, DEQ Public Information Officer and meeting facilitator, welcomed everyone to the meeting at 9:05 a.m. Moira Davin went over meeting logistics (slide 2, **Attachment A**), the meeting agenda (slide 3, **Attachment A**), and took a roll call of Nutrient Work Group (NWG) members present either via Zoom or in Room 111 of the DEQ Metcalf Building in Helena (slide 4, **Attachment A**). Moira Davin then handed it over to Amy Steinmetz for staff updates.

Amy Steinmetz, DEQ, Waste Management and Remediation Division Administrator, stated that it is time for her to step away from leading the NWG and will be transferring her responsibilities to Andy Ulven, DEQ, Water Quality Planning Bureau Chief.

EPA PRESENTATION - WISCONSIN AMP IMPLEMENTATION

Erik Makus, EPA, Federal Regulatory Agency presented website links to the Wisconsin (WI) Department of Natural Resources (DNR) Adaptive Management webpage, a mapping tool with adaptive management program (AMP) info available for download, and the WI Administrative Code regarding adaptive management (WAC-NR-217.18) (slide 8, **Attachment A**).

Erik Makus Cont'd (slide 9, **Attachment A**) – The basic goal when the facility enters the AMP is that the facility is committing to restoring water quality in the watershed. Wisconsin adopted P standards into law, but not nitrogen. Typically, the adaptive management plan includes a significant reduction in P immediately, in the first permit term, equal to the facilities contribution to the watershed. This is a greater reduction than what the facility would have under a variance or trading. Erik Makus pointed out that adaptive management was the least common compliance tool used in WI, most facilities have chosen a variance. In addition to the P reductions in the first permit term, in the second and third permit term, P must be reduced to meet the goal to restore water quality in the watershed.

Erik Makus Cont'd (slide 10, **Attachment A**) –In WI, facilities must apply if they want to be in the AMP. The facility must meet certain eligibility requirements. Those criteria include P criterion are exceeded in the receiving water due to P contributions from point sources (PS) and nonpoint sources (NPS); NPS loading needs to be $\geq$ 50% of the total P contribution, or the permittee demonstrates that the applicable P criterion can't be met without NPS control; proposed Water Quality Based Effluent Limitations (WQBELs) would require tertiary treatment (filtration); and the permittee has submitted an AMP that identifies specific actions to be implemented, including watershed source identification studies, goals and measures for the adaptive management plan, identification of partners including partners level of support, and a financial ability demonstration (including partners, contracts, etc.).

Erik Makus Cont'd (slide 11, **Attachment A**) – Minimum requirements for the WI AMP permits are effluent/receiving water monitoring, implementation of the AMP, optimization, reporting procedures, numeric effluent limitations, and provisions for removal from AMP.

Erik Makus Cont'd (slides 12-20, **Attachment A**) – Erik Makus presented three examples of small, medium, and large sized facilities in the WI AMP, Cuba City, Oconomowoc, and Madison Metropolitan Sewerage District, respectively.

Moira Davin asked if there were any questions or discussion to be had on this topic.

Andy Efta, U.S. Forest Service Northern Region, asked if Erik Makus could speak to what the rest of the AMP looked like outside the purview of the permit. Who were the contributors?

Erik Makus stated that typically, in the eligibility criteria, to be in the AMP you need to demonstrate NPS P is significant, $\geq$ 50%. Most of these permits are in their first permit term. Cuba City's adaptive management plan requires reduction of 280 lb P/year in the first permit term equal to their facility load. They had to do a lot of NPS work. In the AMP before getting into the program they have identified 4 barn yards or lots that have a mini concentrated animal feeding operation type situation, golf course fertilization rates, these were the things they were looking at and working towards. They have made some significant gains on that it appears. I haven't seen the second permit cycle.

Sarah Zuzulock, Zuzulock Environmental Services, asked if Erik Makus had any sense of whether some AMPs in WI required P reductions greater than what the discharger is contributing? She also asked if there have been any examples of how they quantify the NPS reductions to ensure they are meeting those AMP commitments?

Erik Makus stated that as far as quantifying, he mentioned WI adopted NPS management rules in their state law when they adopted this adaptive management. They do have some suggestions for modeling quantifying impacts from barnyards and things like that. They use what is in their state law for modelling and they have some more guidance they might use. Ultimately, the facility goal is not to show they reduced load by x-amount of pounds, they are committed to showing through sampling the watershed has met its water quality standards. They want to be as accurate as they can in their modeling. It comes down to the water quality standards.

Moira Davin noted there were no more questions and turned it over to Andy Ulven to present the Narrative Nutrient Standards Permitting Two-Pager.

NARRATIVE NUTRIENT STANDARDS PERMITTING TWO-PAGER

Andy Ulven (page 1, **Attachment B**) – DEQ put together a two-page handout titled "Implementing Narrative Nutrient Criteria and Adaptive Management Plans in Montana Pollutant Discharge Elimination System (MPDES) Permits". Kyle Milke sent it out a couple weeks back and has posted it on the DEQ webpage to inspire conversations and prepare any questions. DEQ discussed this handout with a few NWG members over the last couple of weeks. Andy Ulven went over the highlights. The motivation for this was DEQ heard a desire for more information on permitting and how the AMP would work with MPDES permits. Eric Sievers and his team put most of this together. Montana Pollutant Discharge Elimination System permits must include a final effluent limit, but compliance is determined by meeting interim limits. Narrative water quality criteria are based on achieving full support of beneficial uses.

Andy Ulven Cont'd – Andy Ulven went on to explain that if not enough response variable data is available, ecoregional ranges would apply until there is enough data. Montana Pollutant Discharge Elimination System permits may include an interim effluent limit. The interim limit may be a continuation of the previous permit limit including optimization of the facility. The limit could be based on current performance or design capacity. There is flexibility for site specific considerations as more is learned about the waterbody. Andy Ulven then talked about page two of **Attachment B**.

Moira Davin asked if there were any questions on this document? No questions or comments. Moira Davin mentioned the next presentation is from DEQ, and turned it over to Eric Regensburger, DEQ, Water Quality Modeler to talk about Circular DEQ-13.

NUTRIENT TRADING (CIRCULAR DEQ-13)

Eric Regensburger Cont'd (slide 23, **Attachment A**) – He sated he was part of team that put together Circular DEQ-13. Circular DEQ-13 was adopted in December of 2012. Trading is a tool to meet Total Maximum Daily Loads (TMDLs) load allocations, offset new or increased loads on a TMDL waterbody, or comply with water quality based effluent limits for nutrients (slide 24, **Attachment A**). Department of Environmental Quality has only done septic trades to date. Circular DEQ-13 has a lot of information on other trades in addition to septic trading. Nutrient trading can be used with or without an AMP (slide 25,

Attachment A). Generally trading is a tool in the toolbox. Trades can happen between PS to PS and PS to NPS. It is rare when NPS to NPS happens.

Eric Regensburger Cont'd (slide 27, **Attachment A**) – When credits are generated, they have to meet the baseline condition. They can only be generated after meeting baseline. For PS, when there is no TMDL, it will be a reduction below water quality based standard. For PS with a TMDL, it will be a reduction below the waste load allocation. You cannot trade reductions below a PS variance. The NPS baseline is reduction below that required by any statute or rule governing in its NPS activity.

Eric Regensburger Cont'd (slide 28, **Attachment A**) – Credits are expressed as pounds of pollutant per applicable period of time that is delivered to surface waters in the watershed. Credits cannot be banked for a future time period, unless it is demonstrated that an off-season reduction provides a water quality benefit within the applicable period of the standards.

Eric Regensburger Cont'd (slide 29, **Attachment A**) – Trading is done in the same watershed. Circular DEQ-13 encourages upstream trading. DEQ-13 does allow for downstream trading, however, it creates a hot spot where the credit is applied and where the credit is generated. In Montana, there has been one permit with downstream trading and that was in Billings.

Eric Regensburger Cont'd (slides 30-34, **Attachment A**) – Montana uses a septic trading tool that is a method for estimating attenuation of nutrients from septic systems, known as the MEANSS model. Other proposed methods for determining credits are also allowed in DEQ-13 as approved by DEQ. MEANSS was developed in 2010 to provide site specific estimates of septic attenuation. It uses readily available NRCS soils data and location data to estimate the amount of nitrogen and phosphorus reaching surface water from each septic. The amount of nitrogen and phosphorus entering surface waters is used as part of the decision on the final trade ratio.

Eric Regensburger – Provided an example of how trade credits are calculated for septic trading. Also provided a brief summary of the Helena septic trade project that resulted in trade ratio of 3.88.

Moira Davin asked if there were any questions.

Erik Makus asked if all the trading examples in Montana right now are septic connections? Eric Regensburger stated that is correct and that some places have discussed trading, but none have gone forward with it yet.

PUBLIC COMMENT

None was received.

UPCOMING MEETINGS

Moira Davin mentioned that the NWG talked last meeting about cancelling the April 10, 2023 meeting. She opened it up for comments on if the NWG wants to meet in April. No comments. The April 10, 2023 NWG meeting was cancelled. She mentioned that the NWG will reconvene in May and from there the group can determine a schedule as well.

Moira Davin asked if there were any final questions.

Sarah Zuzulock asked when will there be info on the macroinvertebrates and the translator. Mike Suplee, DEQ, Water Quality Standards and Modelling stated that DEQ is doing some external review and that it should be ready by the May NWG meeting. There will be additional macroinvertebrate work coming around June. Mike Suplee mentioned that DEQ will discuss Δ DO for western Montana at the May meeting.

No further questions.

Meeting end: 10:10 a.m.

ATTACHMENT A: MARCH 13, 2023 NUTRIENT WORK GROUP MEETING PRESENTATION SLIDES

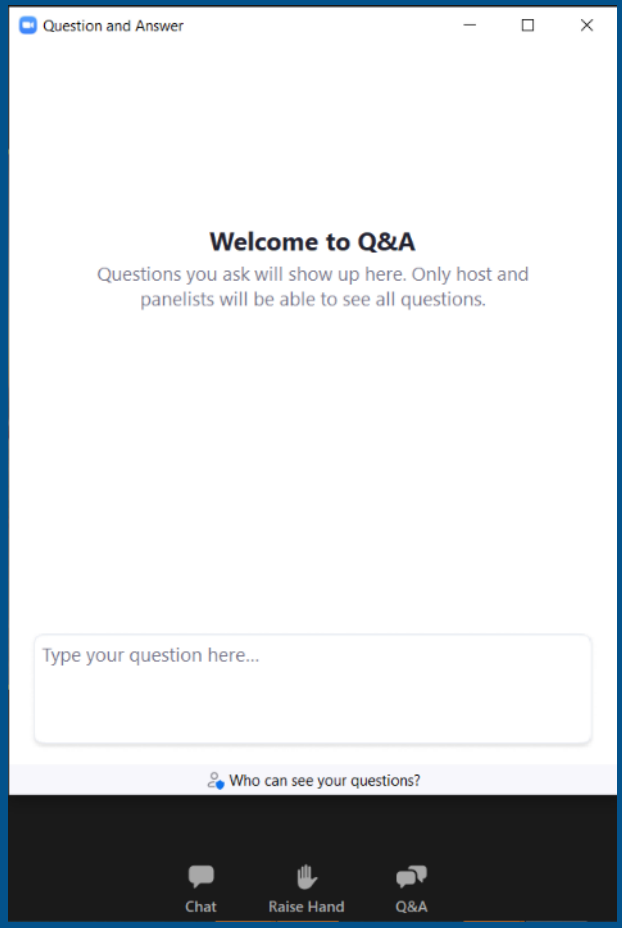
Nutrient Work Group

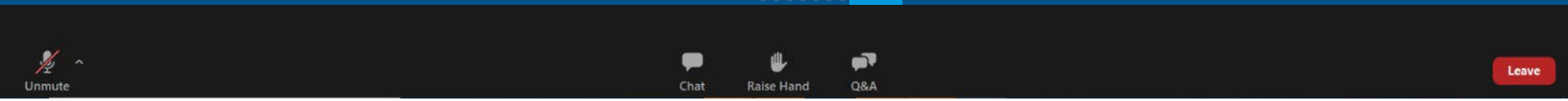
March 13, 2023

DEQ MONTANA

Welcome!

- This meeting is a webinar
- NWG members will be panelists
- Members of the public can raise their hand or use the Q&A feature to ask questions during the public comment portion of the meeting
- *9 raises your hand if you're on the phone
- State your name and affiliation before providing your comment





DEQ MONTANA

Agenda

Meeting Goal: Discuss how Wisconsin implements the AMP and DEQ's proposal for permitting and interim limits. Presentation on nutrient trading (Circular DEQ-13).

Preliminaries
- Nutrient Work Group Roll Call

DEQ Updates
- Staff Updates

EPA Presentation
- Wisconsin AMP Implementation

Narrative Nutrient Standards Permitting Two-Pager

Nutrient Trading (Circular DEQ-13)

Public Comment & Close of Meeting
- Public Comment

DEQ MONTANA

Roll Call

Nutrient Work Group Members

Interest Group	Representative	Substitute
Point Source Discharger: Large Municipal Systems (>1 MGD)	Louis Engels	
Point Source Discharger: Middle-Sized Mechanical Systems (<1 MGD)	Shannon Holmes	
Point Source Discharger: Small Municipal Systems with Lagoons	Rika Lashley	
Point Source Discharger: Non-POTW	Alan Olson	
Municipalities	Kelly Lynch	
Mining	Matt Vincent	
Farming-Oriented Agriculture	Rachel Cone	
Livestock-Oriented Agriculture	Raylee Honeycutt	
Conservation Organization - Local	Kristin Gardner	
Conservation Organization – Regional	Sarah Zuzulock	
Conservation Organization – Statewide	David Brooks	
Environmental Advocacy Organization	Guy Alsentzer	
Water or Fishing-Based Recreation	Pete Cardinal	
Federal Land Management Agencies	Andy Efta	
Federal Regulatory Agencies	Tina Laidlaw	
State Land Management Agencies	Jeff Schmalenberg	
Water Quality Districts / County Planning Departments	Nick Banish	
Soil & Water Conservation Districts – West of the Continental Divide	Samantha Tappenbeck	
Soil & Water Conservation Districts – East of the Continental Divide	Dan Rostad	
Wastewater Engineering Firms	Scott Buecker	
Timber Industry	Julia Altemus	

DEQ Updates

DEQ Updates

- Staff Updates

AMP/Permit Examples from Wisconsin

DEQ MONTANA

Resources

- Wisconsin Department of Natural Resources Adaptive Management Webpage: https://dnr.wisconsin.gov/topic/Wastewater/AdaptiveManagement.html
- Mapping tool with AMP info available for download: https://dnr.wisconsin.gov/topic/Wastewater/AmWqtMap.html
- Wisconsin Administrative Code regarding AMP (WAC-NR-217.18): https://docs.legis.wisconsin.gov/code/admin_code/nr/200/217/iii/18

WI Adaptive Management Concept

- Facility is committing to reduce P and restore water quality in watershed in 10 to 20 years.
- To that end, facility typically tasked with making phosphorus reductions equal to the facility's contributing phosphorus load in 1st permit term.
  - Note this is likely a greater reduction than would be required under other options like trading or variance.
- Current status in WI (approximate):

Permitting Strategy	Count
Multi-discharger variance (lagoons)	130
Individual variance	30
Trading Schemes	50
Watershed Adaptive Management	20
Total	230

AMP Option Eligibility (WAC-NR-217.18(2))

- Eligibility Criteria:
  - Phosphorus criterion is exceeded in receiving water due to phosphorus contributions from point and nonpoint sources.
  - NPS loading is >=50% of the total phosphorus contribution, or the permittee demonstrates that the applicable phosphorus criterion can't be met without NPS control.
  - Proposed WQBEL would require tertiary treatment (filtration).
  - Permittee has submitted an AMP that identifies specific actions to be implemented, including:
    - Watershed Source identification study
    - Goals and measures for plan
    - Identification of partners, including partners level of support
    - Financial ability demonstration (including partners, contracts, etc.)

AM Permit Terms and Conditions (WAC-NR-217.18(3))

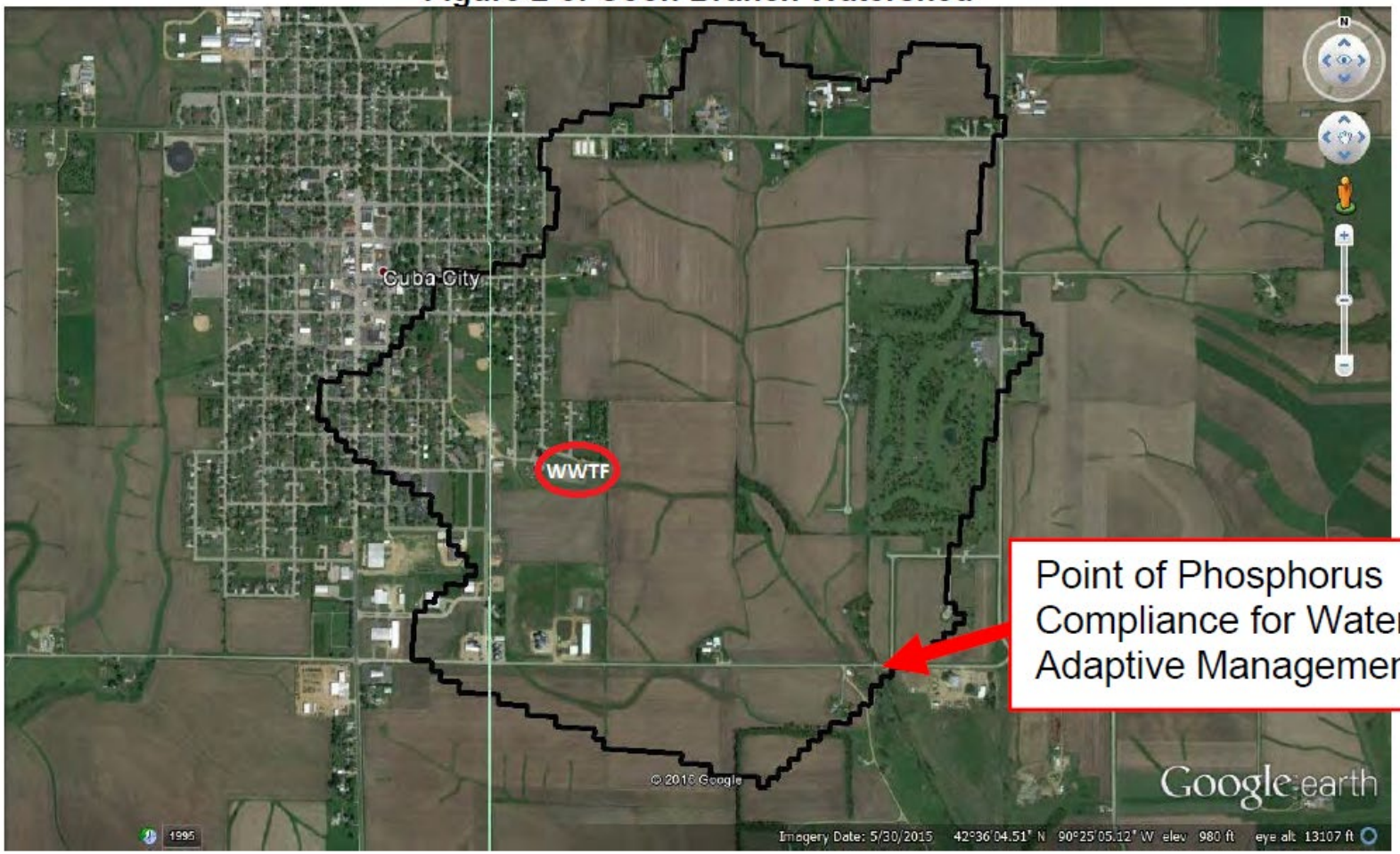
- "At a minimum, the permit must include:"
  - Effluent/receiving water monitoring
  - Implement the AMP
  - Optimize plant
  - Reporting procedures
  - Numerical effluent limitations
  - Provisions for removal from AMP

Cuba City, Wisconsin, WI0022217

- Service population: 2,000
- Average daily discharge: 0.16 mgd
- Design discharge: 0.3 mgd
- Receiving water: Coon Branch of the Galena River
- Facility type: Oxidation ditch, BNR, chemical precipitation
- Cuba City's consultant submitted a 105 page AMP to WDNR.
- WDNR determined the facility met eligibility requirements for AM.

Cuba City (Figure 2-3, AMP Document)

Figure 2-3: Coon Branch Watershed



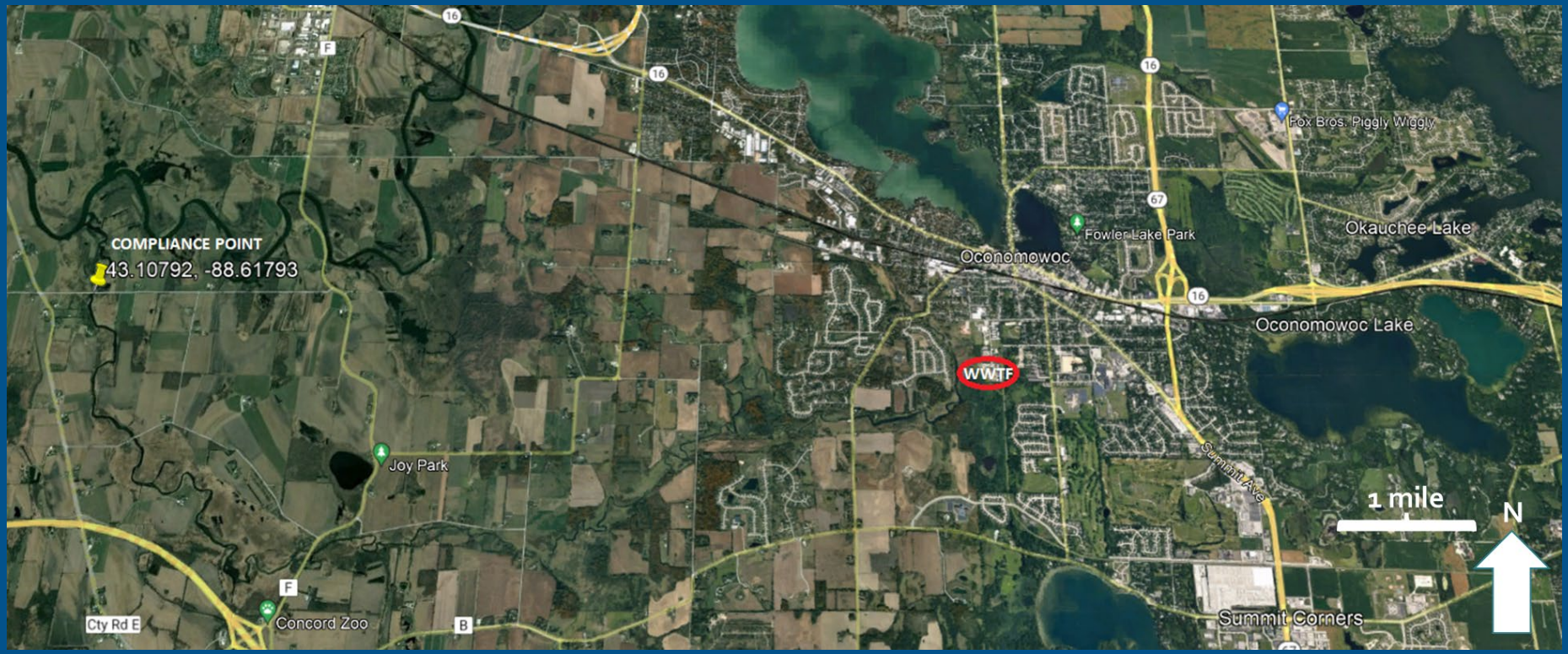
Permit Requirements Related to AMP – Cuba City

- AMP Phase 1 TP interim limit of 0.6 mg/L (6 month average) and 1.0 (monthly average), effective either immediately (1 mg/L) or after 13 months (0.6 mg/L).
- Sampling locations: Outfall (effluent), and one in-stream (the 'compliance point' for AMP).
- TP Monitoring: 3/week effluent, biweekly receiving stream. River flow monitoring each time a TP sample is taken (biweekly).
- Section 2.2.1.5: TP and AMP Requirements:
  - Reduce TP load by 280 lbs/year by end of first permit term (which is facility's annual load).
  - By end of 2nd permit term, TP load reduction goal is 2,250 lbs/year.
  - By end of 3rd permit term, TP load reduction 2,996 lbs/year.
  - If TP is not reduced by 280 lbs/year by end of permit term, the AMP option may be removed.
  - Final limits: 0.075 mg/L TP 6-month average, 0.22 mg/L TP monthly average.
- Continue to optimize performance.
- Report Schedule
  - annual reports documenting metrics outlined in AMP and progress towards the 280 lbs/year reduction.
  - End of Cycle 1: Report of in-stream and effluent trends, resubmit application with updated information.

Oconomowoc, Wisconsin, WI0021181

- Service population: 21,000
- Average daily discharge: 2.4 mgd
- Design flow: 4.0 mgd
- Receiving water: Oconomowoc River
- Facility type: Mechanical plant with BNR/chemical precipitation
- Oconomowoc's consultant submitted a 97 page AMP to WDNR.
- WDNR determined the facility met eligibility requirements for AM.

Oconomowoc (Google Earth Image)



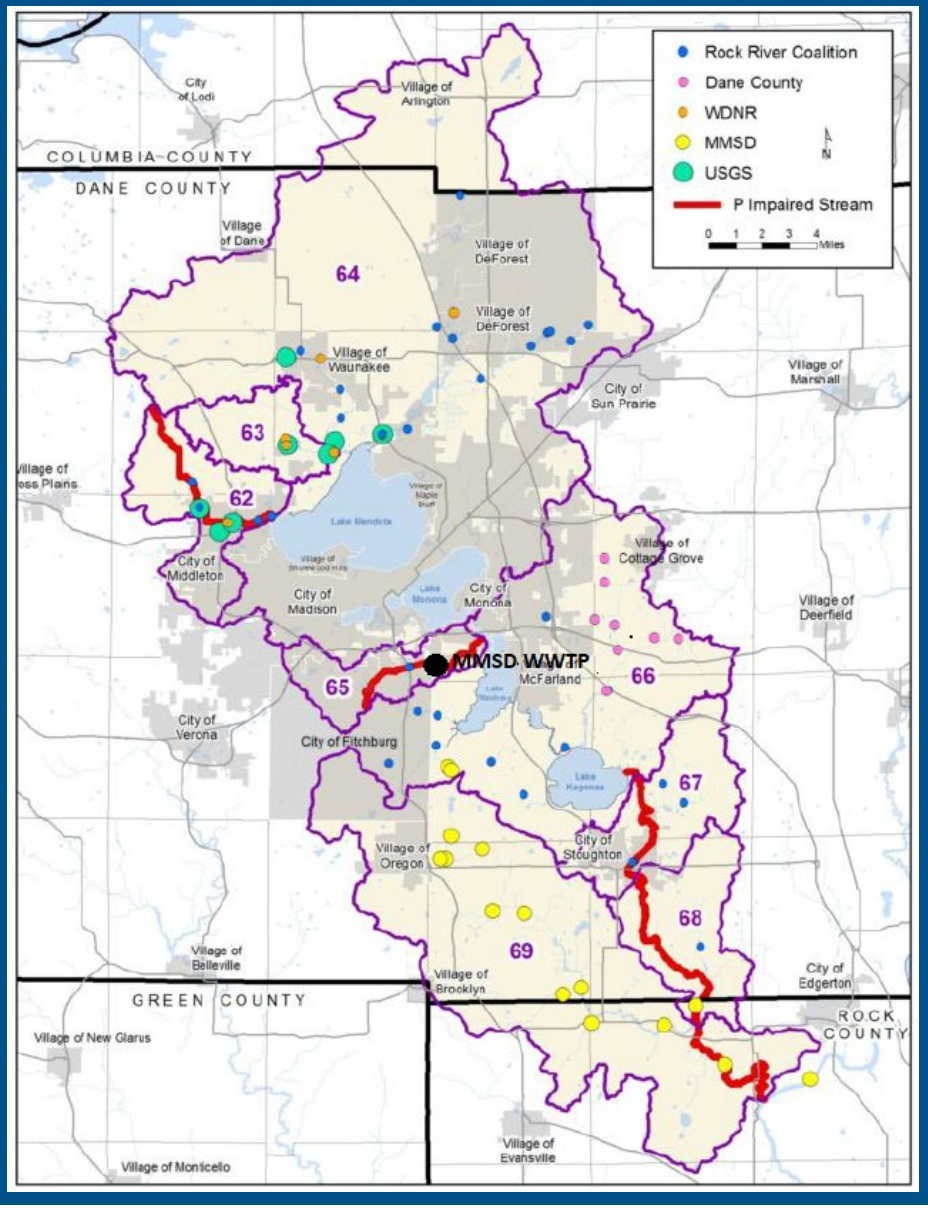
Permit Requirements Related to AMP – Oconomowoc

- AMP Phase 1 TP interim limit of 0.6 mg/L (6 month average) and 0.95 (monthly average), effective either immediately (0.95 mg/L) 0r in 30 days (0.6 mg/L).
- Sampling locations: Outfall (effluent), and one in-stream (the 'compliance point' for AMP).
- TP Monitoring: 3/week effluent, biweekly receiving stream. River flow monitoring each time a TP sample is taken (biweekly).
- Section 3.2.1.6: TP and AMP Requirements:
  - Reduce TP load by 5,079 lbs/year by end of first permit term (which is greater than facility's annual load).
  - By end of 2nd permit term, TP load reduction goal is 7,850 lbs/year.
  - By end of 3rd permit term, TP load reduction 9,750 lbs/year.
  - If TP is not reduced by 5,750 lbs/year by end of first permit term, the AMP option may be removed.
  - Final limits: Based on 2015 TMDL; result in about 77% reduction from WWTP.
- Section 3.2.1.8: Reopener Clause
- Continue to optimize performance.
- Report Schedule (Section 5.2) – annual reports documenting metrics outlined in AMP and progress towards the 280 lbs/year reduction.
- End of Cycle 1: Report of in-stream and effluent trends, resubmit application with updated information.

Madison Metropolitan Sewerage District (MMSD), WI0024597

- Service population: approximately 500,000 (28 sanitary districts)
- Average daily discharge: 40 mgd
- Design flow: 50 mgd
- Receiving water: Badfish Creek and Badger Mill Creek
- Facility type: Advanced secondary treatment mechanical plant with BNR.
- MMSD's consultant submitted a 130 page AMP to WDNR.
- WDNR determined the facility met eligibility requirements for AM.

Madison Metropolitan Sewerage District (Figure 2-4, AMP Document)

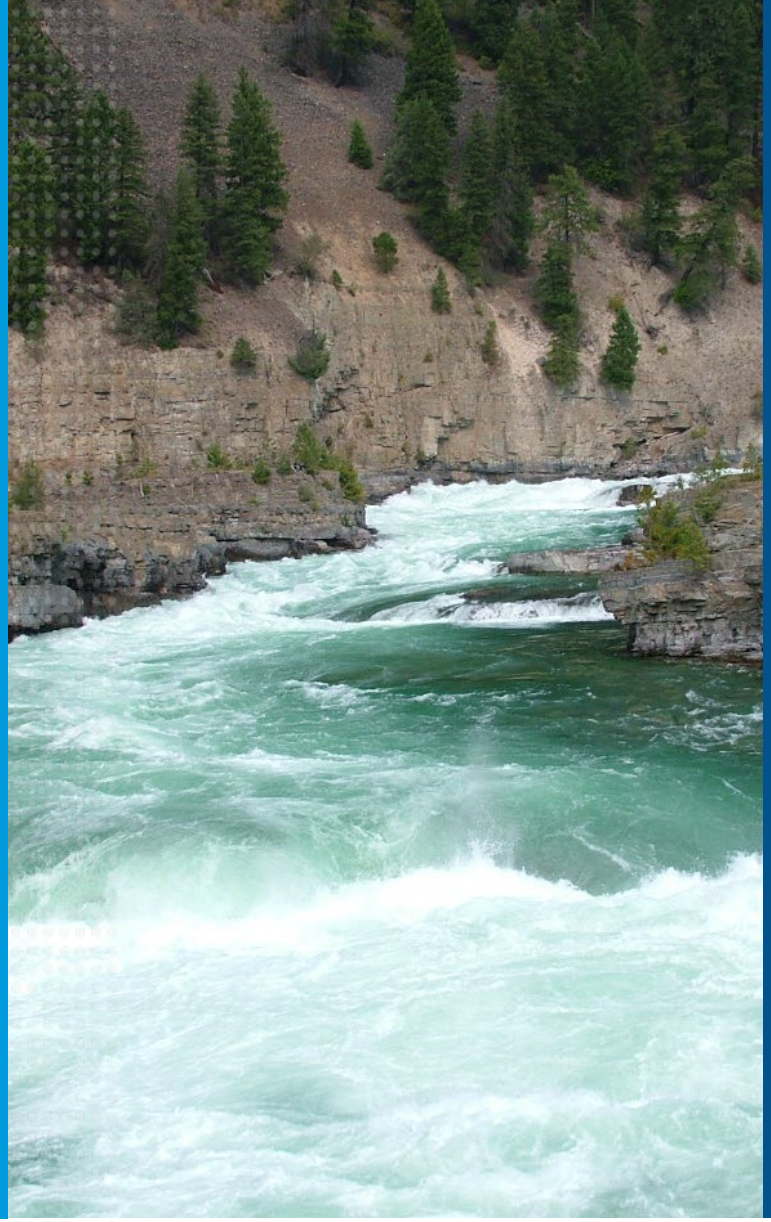


Permit Requirements Related to AMP – MMSD

- AMP Phase 1 TP interim limit of 0.6 mg/L (6 month average) and 1.0 (monthly average), effective within 30 days.
- Sampling locations: Sampling locations in both watersheds.
- TP Monitoring: 3/week effluent, biweekly receiving stream. River flow monitoring each time a TP sample is taken (biweekly).
- Section 7.1.4: TP and AMP Requirements:
  - Reduce TP load by 5,329 lbs/year by end of first permit term (which is 40% of facility's annual load of 13,320 lbs/year).
  - By end of 2nd permit term, TP load reduction goal is 52,648 lbs/year.
  - By end of 3rd permit term, TP load reduction 95,724 lbs/year.
  - If TP is not reduced by 5,329 lbs/year by end of permit term, the AMP option may be removed.
  - Final limits: 0.075 mg/L TP 6-month average, 0.22 mg/L TP monthly average.
- Continue to optimize performance.
- Report Schedule
  - annual reports documenting metrics outlined in AMP and progress towards the 5,329 lbs/year reduction.
  - End of Cycle 1: Report of in-stream and effluent trends, resubmit application with updated information.

Narrative Nutrient Standards Permitting Handout

DEQ MONTANA



Nutrient Trading (Circular DEQ-13)

DEQ MONTANA

DEQ Nutrient Trading (Circular DEQ-13)

Nutrient Work Group

March 13, 2023

Eric Regensburger

eregensburger@mt.gov

406-444-6714

DEQ MONTANA

Nutrient Trading Summary

- Details in Circular DEQ-13 (December 2012)
- Trading is a tool to meet TMDL load allocations, offset new or increased loads on a TMDL water body, or comply with water quality based effluent limits for nutrients.
- Point source trade details are included and enforced through the MPDES permit.
- Generation of credits should be secured for at least the length of the permit (typically 5 years).
- To date, only septic trades implemented in MT

DEQ MONTANA

Nutrient Trading and AMP

- Nutrient trading can be used in conjunction with an AMP or without an AMP.
- Trading is a tool in the toolbox.
  - With the amount of available trading partners in MT it is likely not a stand-alone solution to site-specific nutrient issues.
- MT trading business case study (2014) concluded not enough potential nutrient sources to justify a centralized approach (e.g. a DEQ managed trading program). Rather, buyer-seller arranged trades were the recommended option.

DEQ MONTANA

Trading Partners

- Point source to point source. Point source to Non-point source (NPS). NPS to NPS.
- Point sources (MPDES permit)
- Nonpoint sources (ie…septic systems, logging, agricultural, livestock, animal feeding operations, etc.)
- Third parties (local governments, nonprofits, private brokers etc.)

DEQ MONTANA

Trade Credits - Baseline

- Credits can be generated and transferred by PS or NPS entities.
- Credits can only be generated after baseline conditions are met.
- PS Baseline
  - Reductions below water-quality based standard (no TMDL)
  - Reductions below TMDL load allocation (TMDL)
  - Cannot trade reductions below a variance
- NPS Baseline
  - Reductions below that required by any statute or rule governing its nonpoint source activity. (TMDL or no TMDL)

DEQ MONTANA

Trade Credits - Seasonality

- Credits are expressed as pounds of nitrogen or phosphorous per applicable period of time that is delivered to surface waters in the watershed.
- Credits cannot be banked for a future time period, unless it can be demonstrated that an off-season reduction provides a water quality benefit within the applicable period of the standards.

Location of Trade

- In the same watershed
- DEQ-13 encourages upstream trading - credits are generated upstream in the watershed of where they are applied.
- DEQ-13 does allow downstream trading, but it has its caveats:
  - Creates a “hot spot” between where the credit is applied and where the credit is generated
  - More EPA scrutiny
  - May increase the trade ratio

DEQ MONTANA

Trade Credit Sources

- DEQ-13 includes summary of trading credit calculations for non-point best management practices used by other states and agencies (Idaho, Oregon, Ohio, NRCS, and EPA) that are allowed for MT trades.
  - Standard trade ratios for common agriculture and livestock BMPs
  - Revised Universal Soil Loss Equation, Version 2 (RUSLE2)
  - Spreadsheet Tool for Estimating Pollutant Loads (STEPL) / Pollutant Load Estimation Tool (PLET)
- Montana's Septic Trading Tool – Method for Estimating Attenuation of Nutrients from Septic Systems (MEANSS) is included in DEQ-13.
- Other proposed methods for determining credits are also allowed in DEQ-13 as approved by DEQ.

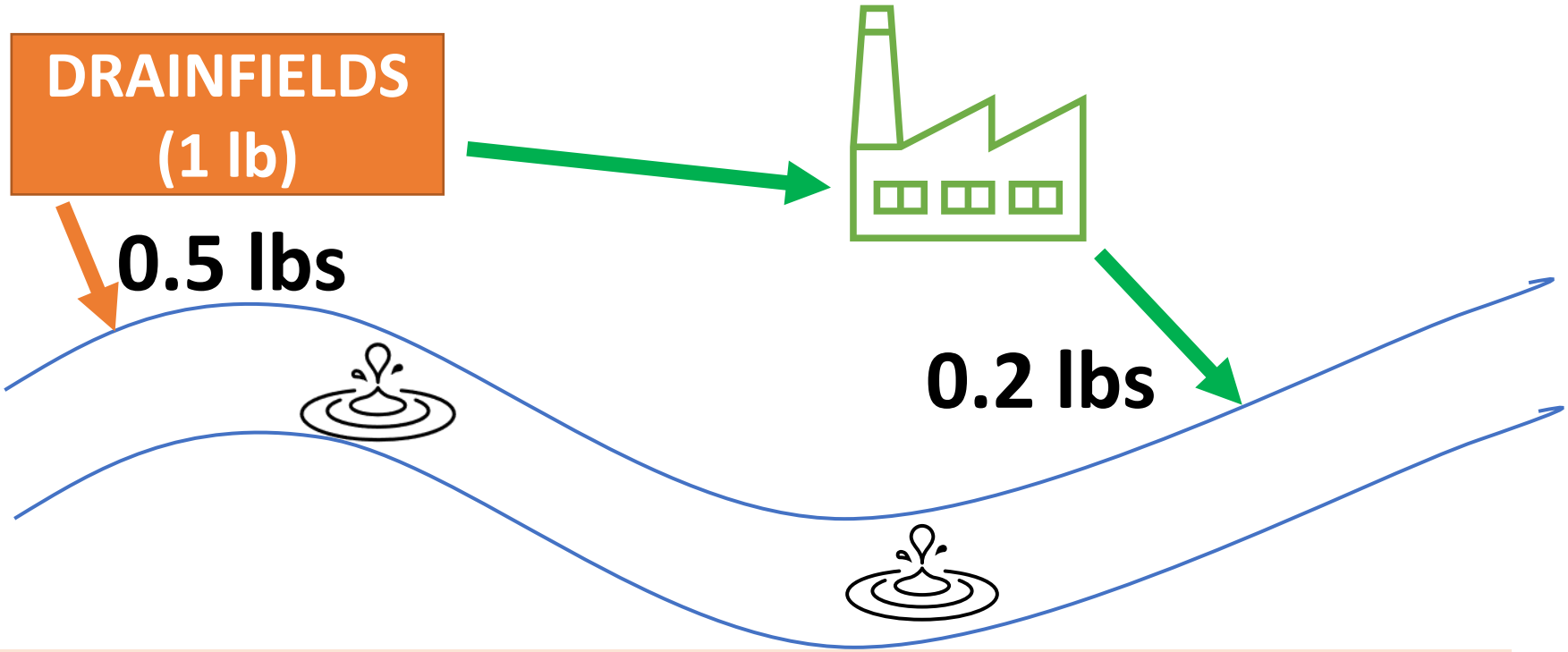
DEQ MONTANA

MEANSS Summary

- Developed at DEQ ~2010 to provide site-specific estimates of septic nutrient attenuation
  - Lack of existing models/methods to provide those estimates
  - Included in DEQ-13 for septic trades
  - Included in numerous TMDL load allocations
- Estimate nitrogen and phosphorus reductions as septic system wastewater migrates to and enters surface water.
- Uses readily available NRCS soils data (HSG and $CaCO_3$) and location data to estimate amount of nitrogen and phosphorus reaching surface water from each septic.
- Amount of nitrogen and phosphorus entering surface water used as part of final trade ratio.

DEQ MONTANA

TRADE CREDIT CONCEPT



IN THIS EXAMPLE, OUT OF 1 LB NITROGEN DISCHARGED FROM SEPTICS, 0.5 LBS REACHES STREAM. WHEN SEPTICS HOOK UP TO WWTP THAT SAME 1 LB IS TREATED AND 0.2 LBS DISCHARGED TO STREAM. WWTP RECEIVES 0.3 LBS (0.5 – 0.2) OF ADDITIONAL NITROGEN LOAD TO MPDES EFFLUENT LIMIT.

Trade Ratios

- Trades are based on a trading ratio. The ratio is then converted to credits as shown in previous example.
- For every pound of nutrient reduction generated by the seller the buyer (permittee) receives “X” pounds of credit. The trade ratio is 1/X (X is <=1).
- Trade ratio begins at 1 and then can be increased for:
  - Delivery Ratio (where applicable)
    - In previous example, reduction of septic load from 1 to 0.5 lbs is a delivery ratio of 2.
  - Uncertainty Ratio (where applicable)
- Septic trade ratios also account for municipal wastewater discharge concentration (“treatment ratio”)
  - In previous example, the WWTP effluent load of 0.2 lbs is applied to the final trade ratio. The final trade ratio is based on the original load (1 lb) and the final load that is removed from the stream (0.3 lbs) ……. **1/0.3 = 3.33**.

DEQ MONTANA

Helena Septic Trade Ratio Example

- To determine trade ratio for future septic system hookups, DEQ analyzed 9,090 existing septic systems in several subwatersheds outside the city's service area.
- The average nitrogen delivery ratio estimated using MEANSS was 2.12. For every 2.12 pounds discharge from septic systems, 1 pound reached surface water (or for every 50 mg/L discharged, 23.4 mg/L reached surface water).
- After accounting for Helena's WWTP nitrogen effluent concentration limit (10.5 mg/L), the final trade ratio was 3.88 (50 / 12.9).

DEQ MONTANA

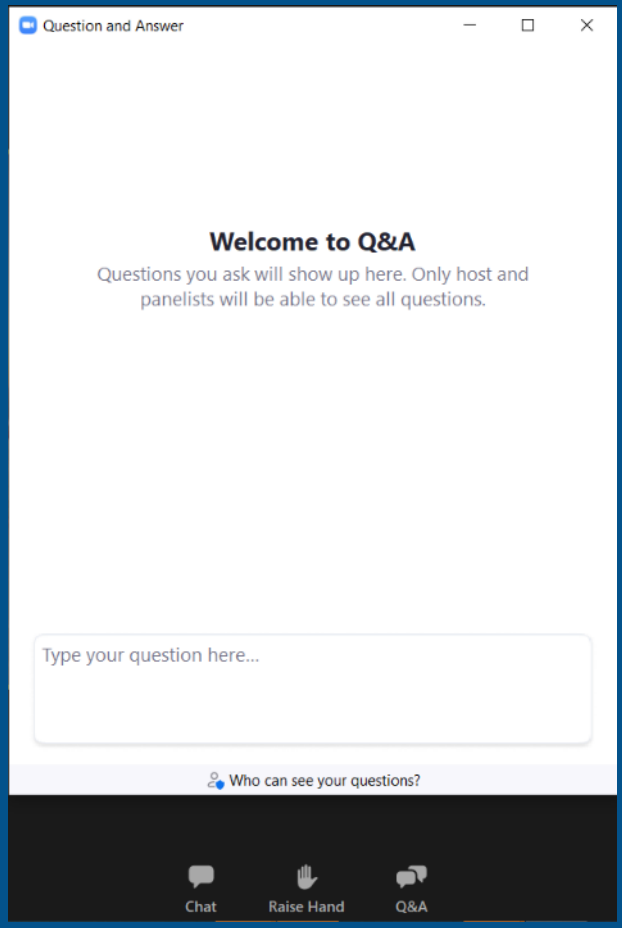

questions ....
power
bear

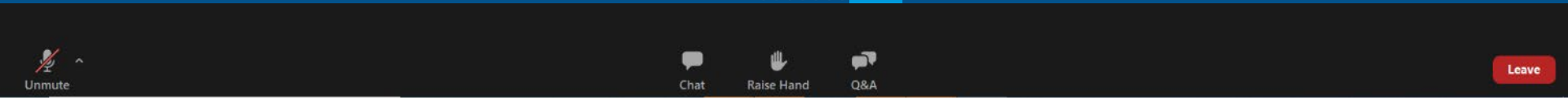
PUBLIC COMMENT

DEQ MONTANA

Questions/ Comments

- Raise hand (*9 if on the phone) or type questions into the Q&A
- DEQ will unmute you if you wish to provide your comment orally
- If calling by phone, press*6 to unmute
- State your name and affiliation before providing your comment





Meeting Summary

- Wisconsin adaptive management implementation
  - Permitting examples
- Narrative Nutrients Standards Permitting handout
- Nutrient trading (Circular DEQ-13)
- April 10, 2023 NWG meeting

Thanks for Joining Us

Contact:
Kyle Milke
kyle.milke@mt.gov

To submit comments or questions

Submit Comments or Questions

https://deq.mt.gov/water/Councils

DEQ MONTANA

ATTACHMENT B: MARCH 13, 2023 NARRATIVE NUTRIENT STANDARDS PERMITTING TWO-PAGER

Implementing Narrative Nutrient Criteria and Adaptive Management Plans in Montana Pollutant Discharge Elimination System (MPDES) Permits

MPDES Permits Must Include a Final Effluent Limit

- The final effluent limit* achieves the water quality standard outside the mixing zone (or at the end of pipe if no mixing zone is granted). However, permit compliance is determined by meeting interim limits (see below).
- The narrative water quality criteria are based on achieving full support of all beneficial uses. That is determined by measuring the response variables in the near field area (unless there are compelling reasons to establish additional monitoring sites further downstream).
- If there isn't enough response variable data to assess the narrative criteria via DEQ's narrative nutrient standards translator, the ecoregional range will apply as the criterion (and basis for final effluent limit) until there is enough data to use the narrative nutrient standards translator.

There are Multiple Paths to Achieving a Final Effluent Limit at a Later Date:

- Adaptive Management Program
- Compliance schedule, which include requirements to show incremental progress towards achieving final limits
- Variance

MPDES Permits May Include an Interim Effluent Limit that Applies to that Permit Cycle or Until the Final Limit is Achieved or Modified by the Adaptive Management Process

- The interim limit may be a continuation of the previous limit.
- If there is no existing limit, the interim limit may be based on current performance ("cap at current").
- The effluent limit must be at least as stringent as any previous one, unless an exception to anti-backsliding applies.
- Special conditions in the permit will require the permittee to demonstrate progress towards the final effluent limit.
- Adaptive management plan steps would be identified as special conditions that demonstrate progress towards the final effluent limit.
- Montana's approach provides flexibility for site-specific considerations and permit limit modifications as more is learned about the receiving waterbody.

Staged Waste Load Allocation (WLA) Implementation

End Goal: Attainment of Beneficial Uses.

When the Total Maximum Daily Load (TMDL) target represents concentrations below the current limits of treatment technology for Total Nitrogen or Total Phosphorus:

2023	2023	2026-2028	2028
WLA is incorporated via an AMP compliance schedule; TMDL document amended to incorporate staged implementation	Permittee collects 3-5 years of monitoring data via AMP Monitoring Plan	TMDL target may be revised based upon monitoring data results and DEQ reassessment	If applicable, revised WLA incorporated into permit. Permittee may meet limits, enter variance process, or continue with AMP Implementation Plan. A revised WLA implementation schedule will be developed as needed

Staged Implementation in Permits

End Goal: Attainment of Beneficial Uses.

2023	2028	2033	2038
Capped at current performance; Optimization required; Develop AMP monitoring plan	Incorporate concentration identified through optimization; re-evaluate final permit limit based on monitoring results	Evaluate implementation effectiveness and need for additional projects; Plan for incremental facility process improvement, if applicable	DEQ evaluates continued eligibility for AMP program; If no longer eligible, other compliance options will be recommended

**Final effluent limit is a state and federal requirement.*