DEQ Nutrient Work Group
15th Meeting Summary
December 15, 2011

Introductions
A list of the members of the Nutrient Work Group (NWG) and others in attendance is attached below as Appendix 1.

Agenda
- Review of the September 29, 2011 Meeting Summary
- Private Sector Economic Impacts Nutrient Work Group Subgroup Report
- Draft Circular DEQ-12 and New Rules Package
- Example of Permits Developed under DEQ-12 and New Rule Package
- Individual Variances Document
- Topics from the September 29, 2011 NWG Meeting
- NWG Work Plan
- Public Comment
- Meeting Schedules

Review of the September 29, 2011 Meeting Summary
Dave Galt noted that he should be listed as a member of the NWG representing the Montana Petroleum Association with Bill Mercer as his alternate. NWG members present at this meeting had no other comments on the September 29 meeting summary.

Private Sector Economic Impacts Nutrient Work Group Subgroup Report
Dr. Jeff Blend reported on the November 2, 2011 meeting of the Private Sector Economic Impacts Subgroup. Conclusions from this meeting included:
- Industries in Montana cannot provide specific plant cost and impact data because of proprietary and confidentiality concerns;
- EPA guidance regarding the private sector is not complete but it can provide the basis for the statewide impact demonstration; however, DEQ will have to come up with its own strategy for a private demonstration;
- The demonstration should attempt to account for the recession; and
- The demonstration should be as simple as possible and completed as soon as possible.

DEQ has retained a contractor to review existing discharge permits, to help estimate costs, and to help look at financial impacts. About 65 businesses that have surface water discharge permits to state waters would be affected by nutrient criteria, and another 150 businesses such as confined animal feeding operations may be impacted by numeric nutrient standards.

Given the lack of plant specific data, DEQ will address the costs and impacts of complying with the numeric nutrient standards on profitability, liquidity, jobs, and local economy for generic plants representative of Montana businesses (if such representative data is available). Data for this analysis will be taken from the University of Montana Bureau of Business and Economic

Research, the Montana Department of Labor, the Montana Department of Revenue, and the US Census of Manufacturing. The analysis will assume that the parent company of a Montana business will not absorb any of the standard compliance cost and that costs will not be passed on to consumers, so that all of the financial impact will be born by the local business. Compliance costs will be taken from the Water Environment Research Foundation (WERF) study of nutrient standards. DEQ intends to complete a draft analysis by the end of December and provide it to the NWG for comments at a later date.

Dr. Blend also stated that the demonstration of statewide significant and widespread economic impact of the numeric nutrient standards for the public sector to support the general variance has been completed and is now under review by EPA.

Question - I know that you are struggling to come up with numbers for the private sector analysis. Short of supplying specific numbers for Montana plants, is there other information that industry could provide?
Answer - We are getting compliance cost information from the Stillwater Mining Company, which is helpful. Advice about plant financial data would be welcomed.

Question - Could you attempt to determine how standards might affect profits on a percentage basis?
Answer – We can try with the data available. We will have numbers in the draft private sector demonstration on which the public can comment. We will likely address small plants via a narrative rather than by using numbers.

Question - What about businesses that discharge to ground water?
Answer - The nutrient standards are surface water quality standards, and therefore are applicable only to surface water discharges. Ground water discharges are covered by ground water discharge permits and must meet ground water standards. If ground water discharges connect directly to surface water, they would be subject to the numeric nutrient standards and would need a surface water discharge permit.

Question - What is the status of EPA's consideration of the demonstration of substantial and widespread impacts for the public sector?
Answer by Tina Laidlaw - EPA will not comment officially until the rule package is submitted to it. However, we have been participating in NWG meetings, and have not had concerns with the public demonstration.

Draft Circular DEQ-12 and New Rules Package

Claudia Massman and Mark Bostrom passed out and reviewed two draft documents entitled "Department Circular DEQ-12, Parts A and B Montana Base Numeric Nutrient Standards and Nutrient Standards Variances" and "Nutrient Standards Rules". These documents had been posted prior to this meeting on the NWG web page at:
http://www.deq.mt.gov/wqinfo/NutrientWorkGroup/default.mcpx.

Circular DEQ-12 consists of two parts, Part A and Part B. Part A would be adopted by the Board of Environmental Review (BER) and Part B by DEQ. Upon adoption the two parts, Circular

DEQ-12 would be incorporated by reference into DEQ water quality rules. For informational purposes, the draft Part B contains two conceptual proposals for general variances after May 31, 2016. Prior to this date, Part B would incorporate the statutory language of 75-5-313 MCA. Parts A and B would be considered through one rule notice, hearing and set of public comments.

Highlights of the NWG questions and comments concerning the Circular DE-12 follow.

Question - Would BER and DEQ consider the Circular in a joint process?
Answer - Yes.

Question - What would be the role of Circular DEQ-12?
Answer - The rules for the nutrient standard variances would be adopted and the Circular would be incorporated in them by reference. Adopting by reference is necessary because the Circular is not written in the specific format required by the Secretary of State for the Administrative Rules of Montana (ARM).

Question - Table 12A-1 contains different standard numbers than Dr. Suplee has reviewed with this group. Could he provide a detailed discussion of the standards to the NWG at a future meeting?
Answer - Yes.

Question - Is there a deadline for technical comments on the Circular DEQ-12?
Answer - No. The Circular and rule documents are merely preliminary drafts.

Question - Table 12A-1 lists the values for Flint Creek total phosphorus (TP) and total nitrogen (TN) as X and Y. What does X and Y mean?
Answer - The X and Y are placeholders reflecting the fact that the numbers have not yet been developed. They will be prior to taking the rule package to the BER.

Question - Will DEQ fill in all of the blanks in Table 12A-1 before it is proposed for adoption?
Answer - Yes.

Comment - DEQ should get the numbers for Flathead Lake out for public review sooner rather than later.

Question - Table 12A-1 has different a period of application than municipalities now have in their discharge permits. We now have a period of June - September. Is DEQ's intent to change the period to July - September?
Answer - Yes.

Question - Could permits have different periods of application for discharges into the Flathead River because it flows into Flathead Lake?
Answer - If a stream discharges into a lake and is a source of nutrients for the lake as determined in a TMDL, then the period of application would be determined by the lake not the stream category.

Question - Because the City of Helena discharges into Lake Helena, would it have a year round period of application?
Answer - Yes, if the discharge contributes nutrient to the lake.

Question - What about the City of Whitefish and Whitefish Lake?
Answer - DEQ is looking at this situation. The TMDL and standards groups are working together to make wadeable stream, large river, and lake period of application determinations.

Question - What about the case when the stream numbers would be more strict seasonally than the lake year-round requirement?
Answer - The more stringent requirement may be applied. We are discussing internally about the Table 12A-1 values for streams and lakes.

Question - Current rules at 17.30.631 include numerical nutrient standards for the Clark Fork River. Will the Clark Fork standards be moved to Circular DEQ-12?
Answer - Yes. They are deleted from the draft rule language and moved to Table 12-A-1 of the Circular.

Comment - Part B of the Circular DEQ-12 includes a definition of "limits of technology" (LOT). My understanding is that LOT is based on biological treatment in municipal systems. Municipal systems have more heat in their input water than do mining treatment systems. The kinetics for biological treatment of nitrogen is impacted by temperature. If the standards are limited to the summer months, mining treatment systems can meet them. If they apply in the winter, then the LOT levels are not correct for mining treatment systems that discharge to surface water or ground water directly connected to surface water.

Question - I am concerned that the LOT represents optimal system operations. What happens when system operations are not optimal? Could someone sue contending that the LOT numbers are enforceable numbers?
Answer - The LOT numbers in the Circular are applied in the variance context. Permits address long-term and monthly average levels that take into account variable treatment system operation.

Question - Would section 3.0 of the Part B of Circular DEQ-12 be in the rules?
Answer - Part 3.0 acknowledges that the current statute authorizes individual variances. Each individual variance would be considered a temporary water quality standard and would require a separate rule making and EPA approval. Table 12B-2 is included only for illustrative purposes and would not be included in the final version of DEQ-12.

Question - Would the conceptual proposal in Part B be included in the rules?
Answer - No. Again, the conceptual proposal is for illustrative purposes only. DEQ has no authority to change the variance categories mandated by statute.

Comment - DEQ should not act to take compliance strategies off of the table.

Question - Do standard assessments take into account natural nutrient contributions?

Answer - Yes. The ecoregions have different background contributions. Background is included in local site specific standards and in TMDLs.
Question - If under the variance a discharger is subject to 1 milligram total phosphorus per liter and 10 milligrams total nitrogen per liter discharge limitations, do the required reporting values (RRV) in Section 2.1 of Part A still applicable?
Answer - Normally sampling is based on the level of detection. The default levels are either specified in Circular DEQ-7 or RRV or another value specified in a permit.

Question - Can a discharger choose either the total Kjeldahl nitrogen or the nitrate + nitrite measurement?
Answer - In some cases, the sum of the two methods would be required.

Question - Is the required reporting value (RRV) currently achievable in the state labs?
Answer - Yes.

Comment - The WERF study found that the accuracy of the laboratory tests depended on which tests were routine. Results from tests that were not routine had a large amount of variance.

Question - Is it correct that the lab tests are accurate only to ±5 mg/l?
Answer - The accuracy is based on detection limits in a clear sample matrix. In this case, for a 99% confidence level, the variability was 20%. The variability was generally a function of the matrix, not the lab.

Comment - For radio nuclides, compliance was a function of which laboratory did the testing.
Response - There appears to be three groups of labs, those that work for industry, those that work for regulatory agencies, and university labs.

Question - Are the RRVs based on what is achievable at the best of labs under the best conditions or real world conditions?
Answer - The RRV levels are practical requirements.

Comment - It would be useful in the Part A preamble to discuss the 2008 technical document as the context for the standards.

Question - What group in DEQ will review the optimization study required for permittees receiving a general variance?
Answer - The studies will be reviewed by the permit shop with assistance from the Todd Teegarden's group, i.e. the Technical and Financial Assistance Bureau. We will check to see if the study looks reasonable based on a preliminary engineering review.

Comment - The provisions of the wastewater facility optimization study appear to benefit mechanical treatment systems, but not lagoon systems because of a limit about how much the latter can achieve through operational and maintenance changes. Communities with lagoon systems may be forced into nutrient trading.
Response - We are not sure that trading is the only option for lagoon systems. Small communities may have to hire consultants to consider other options such as land application.

Question - In Conceptual Option 1 of Part B, Table C1 defines categories by population rather than flow. Why take a population approach?
Answer - For some small communities with high flow because of leakage into the treatment system, population would be a better measure of affordable treatment that would flow levels. This table is only one approach and DEQ is looking for feedback on approaches to categories applicable after 2016. Changes to the categories for the general variance would require legislative approval. If the NWG advices DEQ to pursue Option 1 after 2016, we may wish to form a subgroup to consider category definitions.

Comment - A community would know treatment system flow but may not know the population in its service territory.

Question -What about communities on the edge of the 1 million gallons per day (gpd) category?
Answer - If a general variance would not work, a community could pursue an individual variance.

Comment - A population category may benefit small communities because a small number of treatment system customers would have a limited ability to pay for system improvements.

Comment - Tiered categories may discourage small communities from changing from a lagoon to a mechanical treatment system.

Question - Is DEQ looking for a consensus from the NWG about Option 1 or 2?
Answer - The two options are only a straw man to stimulate comments.

Question - Option 2 lists specified factors that would have to change before the general variance treatment requirements would be made more stringent. Has DEQ been coordinating its deliberations with EPA?
Response by Tina Laidlaw - EPA has actively participated in NWG meetings and has had continuing discussions with DEQ. We do not anticipate a problem with the general variance for the public sector. We do not know yet about the private sector variance. We are interested in how the state will address the post-2016 period.

Comment - SB367 which was passed by the last legislature was endorsed by all NWG members and provides for the general variance. I will not sign off on a rule making package to implement SB367 until I know what EPA's position will be. I want a written EPA position.
Response by Tina Laidlaw - We have tried to be clear about EPA's concerns; however, we will not respond formally until we have a rule package from the BER and DEQ.

Comment - I will not sign off on a package of rules until I understand EPA's position. Once the BER and DEQ have acted, it is too late to expect changes.
Response - DEQ will discuss this with EPA to see your concern can be accommodated.

Comment - One of the factors to be evaluated under Option 2 is whether best management practices (BMPs) for non-point sources have been widely applied. For 2016, DEQ should have a goal of making BMPs regulatory requirements.
Response - The planning shop works with the non-regulated community. We are trying to ensure funds for defining and implementing BMPs. We are also interested in implementing nutrient trading. We will provide an overview of department actions regarding non-point nutrient sources at a future NWG meeting.

Comment - The current regulatory scheme is a disincentive for hooking up septics to municipal treatment systems.

Comment - We had a meeting of the trading subgroup yesterday. We talked about the need for a case study that would quantify septic system nutrient contributions. A trading credit would only address the need of point source dischargers.

Comment - I am confused about whether section 3.0 of Part B and particularly its last paragraph and Table 12B-2 would be included in the rules.
Response - Table 12B-2 is just an example of the records that DEQ would keep. We may remove the last paragraph.

Question - Would each individual variance require a separate rule making?
Answer - Yes. Individual variances constitute temporary water quality standards and would require a separate rule.

Comment - I am concerned about specifying the LOT in the rule. LOT should be facility specific.
Response - We will look into fleshing out the LOT provisions.

Comment - Under the third paragraph of section 3.0 of Part B a discharger would have to demonstrate that it would not qualify for a general variance and that no reasonable alternatives exist before receiving an individual variance.
Response - This language is taken from the statute.

Question - Are the variance periods for a general and individual variance addititive?
Answer - The total period for variances is 20 years.

Question - Can a separate variance be obtained for phosphorus and nitrogen?
Answer - Yes. We will clarify the language of the Circular to this effect.

Example of Permits Developed under DEQ-12 and New Rule Package

Jenny Chambers passed out a handout entitled "Nutrient Permitting Examples Based on DEQ-12" and discussed the examples using a PowerPoint presentation entitled "Permit Examples – Draft DEQ-12 and Rule Package"

Highlights of the NWG questions and comments concerning the permitting examples follow.

Question - Are the examples designed to illustrate compliance with and variances from the numeric nutrient standards?
Answer - Both.

Comment - The default value of the coefficient of variation, 0.6, may not be a good assumption for nutrients particularly at low discharge levels where the variability is the highest.

Comment - You said that the reasonable potential determination is based on the process for toxic substances. If a toxic substance standard is violated at the edge of a mixing zone, something bad may happen. This may not be true for nutrients.

Comment - Data are available for other treatment plants outside of Montana. Could this data be used for your analysis of nutrient discharges?
Answer - There are pros and cons with using other plant data. We prefer to use the default coefficient of variation if plant specific data are not available.

Comment - The number of samples is an issue. Public water treatment plants have continuous on-line data for operations at low levels.

Question - Would sampling be limited to a three-month period?
Answer - A three-month period may be applied if the standard is seasonal but would not be if year-round discharge is an issue.

Question - Can upstream discharger use up the assimilative capacity of a stream?
Answer - A TMDL determines an equitable load allocation.

Comment - Nonpoint sources may consume assimilative capacity.

Question - In subsequent permits, variance levels may be "dialed down"?
Answer - Yes. A discharger that receives a variance must show progress toward meeting the numeric nutrient standard.

Question - If example 2 occurs on an impaired stream, would a discharger be allowed the full assimilative capacity?
Answer - If the stream is impaired for nutrients, then the discharger may have a zero load effluent limit to avoid making the situation worse.

Question - What about the non-degradation analysis?
Answer - Non-degradation applies only to new sources and high quality waters. High quality waters are those of water bodies not listed on the 303(d) list of impaired water bodies and are parameter specific.

Question - The standard is specified as a concentration. Can the average monthly limit (AML) be based on mass loading rather than concentration?
Answer - We will look into this for a future meeting as well as the method for converting mass and concentration.

Comment - Dr. Suplee reported at the last NWG meeting that the dose-response study found a 15-21 day response time to nutrient discharges. DEQ should consider the how a discharge amount affects the beneficial use over time. Allowing discharge operations flexibility regarding the time period may not harm the environment.

Comment - When the standards are based on a 14Q10, viewing nutrients narrowly at the edge of the mixing zone is a conservative assumption that stacks the deck against dischargers. A watershed approach is better than a mixing zone approach.

Comment - As a discharger, I would like to have options for basing permits on concentration or mass loading.
Response - This will be discussed more internally. However, if this approach is selected and the discharger does not specify concentration or load in the permit application, then DEQ will default to concentration.

Question - If a streams response to nutrient is limited by either phosphorus or nitrogen, could permits be based only on compliance with the limiting nutrient?
Answer - This approach may result in a race to the bottom. A tributary stream (e.g. Flint Creek) may be limited by only one, but downstream area (mainstem of the Clark Fork River) may not be. Site specific standards are difficult to set. Predicting whether phosphorus or nitrogen will be limiting to manage environmental impacts is difficult to make.

Comment - Small communities may want to upgrade their treatment systems to maximize the improvement of water quality, but they have limited financial ability to do so. One five-year permit cycle may use up a community's debt capacity for 20 years. We therefore want to make only one change to the treatment system in the 20-year period.

Individual Variances Document

Dr. Blend stated that this document has not yet been drafted. He is proceeding with the public sector portion, but the private sector variance criteria have not yet been developed.

Topics from the September 29, 2011 NWG Meeting

Participants in this meeting had no additional discussion of topics from the September 29 meeting.

NWG Work Plan

Based on the discussion at this meeting, the participants in this meeting asked that the following topics be addressed at future NWG meetings:

- A discussion by Dr. Suplee of the revised values of the numeric nutrient standards;

- Specification of the standards in both concentration and mass units and a method for converting from one to the other;
- Addressing nitrogen and phosphorus separately in nutrient discharge permits and variances;
- An overview of DEQ non-point source actions; and
- The demonstration of the statewide significant and widespread economic impact for the private sector to support the general variance to the numeric nutrient standards

Given these topics and DEQ's desire to have the NWG members to sign off on the rule making package before submitting it to the Board of Environmental Review, DEQ will likely revise the schedule for adopting the rules. Rules may not be considered for adoption until the fall of 2012.

Public Comment

Tina Laidlaw stated that the State of Colorado is scheduled to release its proposal for addressing numeric nutrient standards on January 20, 2012.

Meeting Schedules

The next meeting of the NWG was set for Tuesday, February 2, 2012 in Helena at locations to be announced.

Appendix 1
NWG Attendance List
September 29, 2011

Members

Jeff Tiberi	Montana Association of Conservation Districts
John Wilson	City of Whitefish - MLCT
John Rundquist	City of Helena - Montana League of Cities and Towns (MLCT)
Scott Murphy	Morrison-Maierly, Inc.
Debbie Shea	Montana Mining Association
Scott Murphy	Morrison-Maierly, Inc.
Dave Galt	Montana Petroleum Association
Michael Perrodin	BNSF Railway
Brian Sugden	Plum Creek
Mark Lambrecht	WETA

Alternate Members

Doug Parker	Hydrometrics (alternate for Debbie Shea)
Kate Miller	Montana Department of Commerce (alternate for Jim Edgcomb)
Bill Mercer	Holland & Hart (alternate for Dave Galt)

Non-Voting Members

Dr. Jeff Bland	DEQ Economist

Other Meeting Participants

Jenny Chambers	DEQ Water Protection Bureau Chief
Bob Bukantis	DEQ, Water Quality Planning, Water Quality Standards Section Supervisor
Claudia Massman	DEQ Attorney
Mark Bostrom	DEQ Water Quality Planning Bureau Chief
Dave Clark	HDR
Ron Alles	City of Helena
Shari Johnson	City of Polson
SE Leyne	Browning, Kaleczyc, Berry, and Hoven
David L. Nielsen	Helana
Judel Buls	AE2S, Inc.
Todd Teegarden	DEQ Technical and Financial Assistance Bureau Chief
Steve Kilbreath	DEQ Public Water Supply and Subdivisions Bureau, Subdivision Review Section Supervisor
Carson Coate	EPA - Montana Office
Tina Laidlaw	EPA
Randall Rappe	City of Great Falls
Robin McCulloch	Montana Bureau of Mines and Geology

NWG Facilitator

Gerald Mueller	Consensus Associates