JANUARY 11, 2013

ANALYSIS OF MONTANA NUMERIC NUTRIENT STANDARDS AND VARIANCE ISSUES

## 1. INTRODUCTION

In evaluating Montana's numeric nutrient standards and related variance provisions to address stakeholder issues, evaluate consistency with CWA provisions, and develop a strategy to support a successful EPA review, there are four areas of analysis that will help in developing recommendations for next steps. These include 1) a review of SB367, Circular D-12, and proposed implementing regulations with related guidance; 2) a review of applicable CWA provisions together with supporting regulations and guidance; 3) an evaluation of key stakeholder comments; and 4) an analysis of EPA Region 8 issues shared to date. Each of these is addressed in turn below:

## 2. MONTANA LEGISLATION, REGULATIONS, AND GUIDANCE

Senate Bill 367 outlines an approach that includes provisions for individual, general and alternative variances. It also includes presumptive general variance end-of-pipe nutrient effluent concentrations, regular variance review cycles, specific variance term time frames, and optimization provisions. Finally, it reflects an emphasis in a number of places on exploring reasonable alternatives and alternative effluent management methods to reduce in stream nutrient loadings including reuse, recharge, land application, and trading. As with any legislative outline, the challenge from a review and implementation perspective lies in understanding how each provision operates standing alone, how different provisions inter-relate, the mandatory or discretionary nature of each provision, where there is flexibility, and how each term and provision inter-faces with the rest of the State's water quality standards program regarding scope, technical basis, and consistency.

Beginning with individual variances, section 1 provides that MDEQ shall approve individual variances in a discharge permit where there is an "adequate justification" under section 2 that attainment of base nutrient standards is "precluded" by economic impacts, limits of technology, or both. Section 2, in turn, requires MDEQ to develop guidelines for individual variances to ensure that economic impacts from base numeric standards on public and private systems are "equally and adequately addressed". As part of this process, Section 2 provides that MDEQ "shall consider economic impacts appropriate for application within Montana" while "acknowledging" that "advanced treatment technologies" for removing nutrients will result in "significant and widespread economic impacts"[1] Finally, section 3 requires MDEQ to

[1] In contrast to the "state-wide" general variance provisions of Section 5, the individual variance review process under Sections 2 & 3 is done on a "case-by-case" basis. This may be a critical distinction in terms the scope of individual variances and MDEQ's authority to consider which classes of permittees most appropriately should consider individual versus general variances. Current DEQ-12 guidance under section 3 of Part B suggests that individual variances are intended only for permittees who have difficulty meeting general variance requirements. However, an important question to evaluate is whether there is flexibility under the language of SB 367 to consider individual variances for permittees where new information may indicate their site-specific circumstances are sufficiently different from base-line assumptions in the State's general economic impacts analysis that would allow them either to go beyond general variance effluent limits or consider fuller implementation of reasonable alternatives such as trading or source controls even if on a partial basis. If that kind of flexibility exists, it would allow continued support for the broad administrative efficiencies gained through a general variance while allowing MDEQ to implement individual variances on a case-by-case basis where appropriate to address unique impacts for permittees who cannot meet general variance requirements. For other permittees with more advanced treatment already in place or access to

review each individual variance application to determine if there are "reasonable alternatives"[2] to the variance such as trading, permit compliance schedules, general variances, alternative variances, or alternative effluent management loading reduction methods such as reuse, recharge, or land application that "preclude" the need for an individual variance.

General Variances are provided for under Section 5(a) which goes beyond "acknowledging" impacts on a case-by-case basis and offers the legislative conclusion on a "state-wide basis" that treatment to base standards would result in "substantial and widespread economic impacts". Section 5(b) then provides that MDEQ "shall approve" general variances for permittees that meet the TN and TP concentrations specified in subsection 5(b) (i.e., 1mg/l TP & 10mg/l TN if ≥ 1 MGD; 2mg/l TP & 15mg/l TN if < 1MGD; and current performance for lagoons).[3] Section 6 specifies that the concentration levels in section 5 remain in effect until May 31, 2016 by which time these levels must be adopted into rule. Section 7 specifies that MDEQ "shall revisit and update" these levels "immediately after May 31, 2016 and every 3 years thereafter" and provides that the maximum TP and TN levels "must be updated" pursuant to section 7 "if more cost-effective and efficient treatment technologies are available"[4]

Section 8 provides that the term of a variance "may" be established for up to 20 years, but requires that the variance, itself, "must" be reviewed by the Department every 3 years from the date of adoption to ensure that the justification for its adoption remains valid." Under the terms of SB 367, individual, general, and alternative variances are implemented as part of the State's existing MPDES program which operates on a 5 year issuance and reissuance cycle[5]. Thus new information or updated variance justifications under a triennial variance review process can be considered and implemented for individual permittees every 5 years, at a minimum. Section 9 goes on to state that permittees receiving variances "shall evaluate" current operations to optimize nutrient reductions with existing infrastructure and "shall

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additional reasonable alternatives, it would assure highest attainable uses are met to the greatest extent possible as well as continue incremental progress towards meeting base numeric nutrient standards. With regard to reasonable alternatives, including trading, broader flexibility in utilizing individual variances would expand possibilities to consider and implement innovative source control and watershed-wide pollution management strategies (called for under Section 2 but not section 5) for a larger class of permittees with resulting variance requirements that might be both less expensive and more effective in achieving long-term nutrient reductions.

[2] Clarification may be helpful here on the question of "reasonable alternative" to what? Presently there seems to be a wide spectrum of options that could include reasonable alternatives either to compliance with base standards, meeting general variance requirements, or simply whatever is available to avoid the need for an individual variance. It is worth noting that the difficulty with an objective of simply avoiding an individual variance could be that some of the innovative options referred under Section 3 including source controls, reuse, or trading would not appear to be possible without an individual variance process – thus making exploration of innovative options and avoidance of an individual variance that implements them mutually exclusive. A second area of possible clarification goes to the question of how an analysis of impacts used to justify not meeting base standards can be used to calibrate and justify an individual variance option with lesser impacts that have not been analyzed, but still may represent support for meeting highest attainable uses. In other words, the economic analysis under Section 2 appears to address impacts from compliance with base standards compliance but not consider what is economically possible short of that (including, for example, full or partial reliance on utilization of reasonable alternatives).

[3] An additional area of clarification here may be whether by the mandatory terms of Section 5, the Department is precluded from requiring or providing individual variances for particular permittees where a "reasonable alternative" specified in section 3 may be readily available to achieve lower loading concentrations than provided by Section 5 end-of-pipe effluent levels. If there is such an impediment, this may be viewed as inconsistent with SB367's policy emphasis on reasonable alternatives.

[4] To assure effective implementation of this provision, it would appear important to specify in regulation or guidance the specific baseline of assumed treatment technology that is used to support the general variance levels under Section 5.

[5] The confluence of 3 administrative time frames here may be helpful in making the case that a possible 20 year variance term is conditioned upon the results of mandatory triennial reviews and 5 year permit terms. (A comparable range of issues was considered and addressed by states and stakeholders supporting development of regulatory guidance for the Great Lakes System. That process concluded that a 5 year variance term was appropriate – which it may be argued is the functional equivalent to the interface of MT's three time frame provisions noted above.)

analyze" cost-effective measures to reduce nutrient loadings without "substantial investment in new infrastructure[6]. Section 9 also provides that the Department "may request" the permittee to provide the results of the "optimization study" and "nutrient reduction analysis" within 2 years of receiving the variance.[7]

With regard to alternative variances, Section 10(a) provides that a permittee may request such a variance upon a demonstration that achieving nutrient concentrations established under either an individual variance[8] or a general variance[9] would result in an "insignificant[10] reduction of in stream nutrient loading". [11] It also requires that permittees with an alternative variance comply with Section 8 (variance terms and triennial reviews) and Section 11 (encouragement of alternative effluent management methods). While the language of Section 10 does not specify this, related interpretive guidance suggests that alternative variance be used as a kind of "de minimums" exemption from the need to further reduce nutrient loadings based on factors unrelated to economic impacts.[12]

Finally, Section 11 provides that alternative effluent management methods to reduce in stream nutrient loadings be encouraged including consideration of reuse, recharge, land application, and trading.

## 3. CWA REVIEW AND ANALYSIS FACTORS

[6] Development and implementation of optimization studies and nutrient reduction analyses under individual, general and alternative variances required under section 9 of SB 367 potentially offer a good basis for demonstrating the variance program's emphasis on supporting incremental progress toward highest attainable uses. However, current DEQ-12 guidance on wastewater facility optimization studies appears to be drafted in a way that would limit focus of optimization studies and nutrient reduction analyses only to changes in O&M and would seem to automatically preclude any evaluation of possible structural changes that might support existing treatment system optimization. The language of Section 9 appears to emphasize no "substantial investment in new infrastructure". Encouraging flexibility to allow consideration of both O&M and possible low-cost upgrades to existing infrastructure that could facilitate optimization of current systems may be important in demonstrating commitment to continued incremental progress.

7 A question that may come up is whether the Department believes it is appropriate to consider these studies and analyses in conjunction with triennial review results as part of the 5 year permit issuance and reissuance process. Clarification on this point may operate to further strengthen the link between the development of valuable new information, triennial reviews of existing justifications and the use of this information to reduce nutrient loadings through the permit process.

8 Which calls for a review of "reasonable alternatives" including those specified under section 11 (e.g., reuse, recharge, land application, and trading).

9 With concentrations specified under section 5

10 Section 10(b) suggests that the term "insignificant" be considered in terms of the permittee's contribution to overall nutrient loadings to the watershed

[11] A question may arise as to the basis under section 9 regarding the recommended scope of findings and demonstrations needed to support an alternative variances (i.e.,, "net environmental benefit", "environmental harm", and "material progress") which are important but don't appear to relate to SB367's stated goal of authorizing variances to address substantial and widespread economic impacts.

12 Further clarification of how this section may be implemented could be helpful to respond to concerns that Section 10 as currently interpreted would operate to undercut Sections 2 & 5 and provide a second tier of exemptions from individual and general variances which, themselves, already provide a temporary exemption from base numeric nutrient standards. An additional issue here may be how to defend reliance on a proposed non-economic impact basis for alternative variances when the state's justification for any variance under SB367 appears tied to economic impacts and technical feasibility. In this regard, a possible alternative area of focus might be consideration of non-economic issues under Section 10 in the context of TMDLs and findings of nonsignificant degradation.

EPA regulations at 40 CFR 131.13 provide clear authority for variances. Part 131.5 also specifies that any new or revised state water quality standards must be reviewed by EPA for approval or disapproval and, as part of that process, the Agency must determine whether the State

> "(1) has adopted water uses which are consistent with the requirements of the Clean Water Act;
> (2) has adopted criteria that protect the designated water uses;
> (3) has followed its legal procedures for revising or adopting standards;
> (4) standards . . . are based upon appropriate technical and scientific data and analysis . . .,"

The central importance of a strong technical and scientific analysis to support new or revised water quality standards is affirmed by 40 CFR 131.6(f) which requires that the State also provide "general information which will aid the Agency in determining the adequacy of the scientific basis of the standards . . . as well as information on general policies applicable to State standards which may affect their application and implementation." In summary, while any revisions or updates to existing standards begin with a clear State legislative or administrative policy directive and mandate, they must also be supported by an equally clear record of relevant technical data, consistent analysis, and sound science to be ultimately defensible.

What is perhaps less well understood, is that to support the Agency's responsibilities under the CWA, the technical recommendation of an EPA analyst on approval or disapproval of a State water quality standards action must reflect an independent review of the State's underlying record, the factual basis for its action, and a determination, as noted above, that the action is "based upon appropriate technical and scientific data and analysis." In other words, the Agency must be prepared to defend its own approval or disapproval based upon a review of the State's technical and scientific record. This is relevant to an analysis of what flexibility and options may be useful to explore to support a CWA consistency review and how to make a strong case that the State's action is approvable.

Turning more specifically to the prerequisites for an approvable variance, guidance summarized in EPA's 1998 Advanced Notice of Proposed Rulemaking (63 FR 36758, July 7, 1998) identifies what the Agency has indicated are essential elements:

- A variance should be granted only where there is a demonstration that one of the use removal factors (40 CFR 131.10(g)) has been satisfied;
- A variance is granted to an individual discharger for a specific pollutant(s) and does not otherwise modify the standards;
- A variance identifies and justifies the numerical criteria that will apply during the existence of the variance;
- A variance is established as close to the underlying criteria as is possible;
- A variance is reviewed every three years, at a minimum, and extended only where the conditions for granting the variance still apply;
- Upon expiration of the variance, the underlying numerical criteria have full regulatory effect;
- A variance does not exempt the discharger from compliance with applicable technology or other water-quality-based limits; and
- A variance does not affect effluent limitations for other dischargers.

## 4. MONTANA STAKEHOLDER ISSUES

a. New Dischargers

Issue: Whether nutrient variances are available to new dischargers

Analysis:

Section 75-5-313, MCA as amended by SB 367 provides for individual, general, and alternative nutrient standards variances. In the case of general variances under subsection 5, the amended language provides for different time-limited maximum TN and TP concentrations or operational requirements based upon whether a waste water treatment facility has a discharge equal to or greater than 1 MGD, less than 1 MGD, or is classified as a treatment lagoon. SB 367 does not, on its face, appear to address the question of new, recommencing, or existing discharges. Nor does it appear to provide that otherwise relevant or applicable Montana water quality or permitting statutory or regulatory provisions are superseded by the new variance language, except where specific wording in the variance provisions of Section 75-5-313 has been explicitly deleted or revised.

Under a traditional analysis of multiple inter-related program provisions and requirements that may be consistent in some regards and potentially inconsistent in others, an answer to this question in terms of how MDEQ proceeds, might be to consider a review of all relevant State water quality and permitting program requirements together with an analysis of how best to read or interpret them together in a way that gives meaning and operational clarity to each provision without rendering any existing requirement inoperative or void. An example of this is discussed in more detail below in connection with Issue No. 2 and how to implement the State's new variance provisions in the context of current existing use requirements.

In terms of EPA review of new or revised state water quality standards required under section 303(c)(2)(A) of the Clean Water Act, the applicable review criteria is consistency with Clean Water Act requirements as reflected both in the Act, accompanying implementing regulations, and related interpretive policies and guidance. The applicability of variances to new or recommencing dischargers was considered and explicitly addressed by the Agency in the development of mandatory Water Quality Guidance for 8 Great Lakes States found at 40 CFR 132. It was also referenced and addressed again in EPA's 1998 Advanced Notice of Proposed Rulemaking (ANPRM).

While not specifically controlling on States outside the Great Lakes System, the variance implementation procedures of 40 CFR 132 lay out EPA's position that water quality standards variance procedures for point sources not apply to new dischargers or recommencing dischargers (Appendix F to Part 132, Procedure 2(A)(1)). The accompanying rationale indicates that variances are intended to provide relief to existing discharges which are already in place who generally have fewer options, less flexibility and potentially greater retrofit expenses associated with meeting new standards. By contrast the preamble to these water quality standards regulations indicate that "New and recommencing discharges should design their facilities and treatment to meet water quality standards" (58 FR 20923, April 16, 1993). This position is reiterated in the Agency's 1998 Water Quality Standards ANPRM both with regard to water quality standards variances for Great Lakes States and, more generally for Temporary Standards nationally which are similar to variances (63 FR 36759 & 36761, July 7, 1998). In summary, SB 367 does not appear to squarely address the question of new dischargers. Applicable EPA regulations and guidance make clear the Agency's view that variances should not be available to new or recommencing discharges. In light of explicit EPA regulatory and preamble language, the availability of best management practices and alternative source pollution control strategies in many situations and, perhaps most importantly, Agency policy that variances are intended to support

dischargers in moving toward water quality standards attainment - not to further cause or contribute to their non-attainment, this likely will be a core issue for EPA.

b. Relationship Between Variances and Existing Use Provisions:

Issue: Whether variances supersede or "trump" antidegradation provisions

Analysis: Certain stakeholders at the November 15th meeting at MDEQ appeared to be raising the issue of whether the variance provisions of SB 367 "trumped" the State's existing nondegradation requirements.

As with the discussion regarding New Dischargers above, this analysis does not offer a conclusion as to the operation of Montana law and whether the revisions reflected in SB 367 operate individually or in combination with current State program requirements to supersede present MDEQ Non Degradation provisions. However in the context of an EPA review, several points may be useful to consider.

First, to the degree that current MDEQ nondegradation requirements are interpreted to be superseded or affected by the terms of SB 367, it is likely that EPA will conclude that a review of SB 367 should include an evaluation the revised operation of the State's nondegradation program as a related change in water quality standards.

Second, existing provisions at ARM 17.30.705(2)(a) appear to provide that existing uses and the water quality necessary to protect those uses must be maintained and protected. If accurate, this is consistent with the "Tier 1" existing use provisions of 40CFR131.12(a)(1) which provide that "Existing in stream water uses and the level of water necessary to protect the existing uses shall be maintained and protected." However, to the extent that the issue raised by stakeholders is whether a general or individual variance under SB 367 can operate to authorize a new TN or TP discharge into waters that would otherwise be classified in non-attainment status with the establishment of the base numeric nutrient standards in DEQ-12, Part A, this may raise a CWA consistency issue. To the degree that SB 367 variance provisions can be read or is interpreted to allow for a lowering of current water quality necessary to protect and maintain an existing use, EPA would likely be unable to approve such a provision.

Third, with regard to Tier II high-quality waters, it appears that certain stakeholders may be asking whether a variance under SB 367 operates to obviate the need for a Tier II anti-degradation review in high quality waters and, while the variance is in effect, authorizes the temporary lowering of water quality below that necessary to support a currently attained CWA section 101(a)(2) designated use. Agency guidance and preamble explanation makes it clear that variances are limited-term exemption from otherwise applicable water quality standards intended to support incremental movement toward attainment of those standards. A variance which operated to authorize degradation of high quality water below a currently attained designated use would likely be considered by EPA to be inconsistent with the anti-degradation provisions of 40CFR131.12 and the requirements of the CWA.

c. Variance Term

Issue: Whether the variance term provisions of SB 367 are consistent with the CWA

Analysis: Section 8 of SB 367 provides that "An individual, general, or alternative nutrient standards variance may be established for a period not to exceed 20 years and must be reviewed by the department every 3 years from the date of adoption to ensure that the justification for its adoption remains valid."

The triennial review requirement of Section 8 appears to be consistent with the 3 year state review time frame reflected in 40 CFR 131.20 and also consistent with the objective behind Part 131.20 to assure there is an opportunity to re-examine whether new information is available that indicate that the original variance should be updated, revised, or withdrawn. One provision of Part 131.20 that does not appear to be reflected in Section 8 (but may be addressed elsewhere in the State's water quality program) is the requirement for public hearings as part of the triennial review process.

On the question of a possible 20 year variance term, Section 8 appears to provide discretion but does not require that result. This may be an important distinction in making the case that this provision can be interpreted as consistent with the CWA as neither the Act nor regulations at Part 131 directly address the issue of variance term. However, the minimum essential elements of an approvable variance outlined above under CWA variance factors do suggest that when a variance is reviewed every three years, it should be "extended only where the conditions for granting the variance still apply" [emphasis added]. In addition, when the Agency and Great Lakes States directly addressed this issue in 1995 as part of developing Water Quality Guidance For The Great Lakes system, the variance implementation provisions of Appendix F specifically provided that "A WQS variance shall not exceed five years or the term of the NPDES permit, whichever is less." (40 CFR 132 App F, Procedure 2).

Since the 20 year provisions of Section 8 appear to require MDEQ judgment and the State's proposed rules for Nutrient Standards Variances do not appear to add further interpretive detail on when and under what circumstances a particular variance term should be provided, this may be an area of flexibility where additional discussion as to what is minimally necessary to demonstrate consistency with the CWA would be useful. The combination of three administrative time frames in the State's water quality program here may be helpful in making the case that a discretionary 20 year variance term which is conditioned upon the results of mandatory triennial reviews as well as 5 year permit terms is consistent with CWA objectives of securing the highest attainable level of water quality under the variance, itself, and more broadly in ensuring reasonable incremental progress towards attaining base numeric nutrient standards. If a permittee were to request a presumptive non-reviewable 20 year variance term, the challenge would be to explain how that is consistent with a mandatory triennial review cycle and a commitment toward incremental progress under a temporary variance program.

d. Relationship Between Individual v. Multiple/General Variances

Issue: Whether individual variances are more appropriate than multiple or general variances

Analysis: EPA has historically considered the development of variances in the context of specific dischargers, single pollutants, and individual water bodies. However, more recently the Agency has approved situations in which multiple discharger variances may be appropriate. It has also indicated support for grouping waters together in a watershed in a single variance application. The key to a multiple discharger variance is the ability to demonstrate that the rationale for grouping several dischargers to a single water body together reflects information indicating that they are similarly situated, have comparable treatment in place, and can make a common showing of substantial and widespread economic and social impacts. The challenge in grouping water bodies in a single watershed together lies in developing a strong factual record with site-specific information to show how each individual water has water quality

characteristics that are comparable to the larger group and, collectively, how those waters meet the applicable requirements of 40 CFR 131(10)(g).

Although it may be more difficult to demonstrate, the same principle applies to state-wide variances for multiple dischargers to multiple water bodies. There must be a strong technical and analytic record that can demonstrate that the rationale and justification for the variance is common to each facility across the state and that each discharger is faced with a similar challenge and reflects common site-specific circumstances in meeting the baseline designated use in question. The core rationale underlying Montana's substantial and widespread economic impact general variance demonstration is based upon an analysis of available facility-specific information regarding a common set of low baseline numeric nutrient criteria that although scientifically well-founded, will in practice be very difficult to meet in the near-term. The basic assumption supporting the demonstration is that the application of reverse osmosis to 100% of each facility's waste stream would result in a common and widespread series of economic impacts that would preclude attainment of the base standards in the near term and thus justify the development of a short-term variance. However, as more information becomes available on a facility-specific basis with implementation of the variance program, it is important to recognize that the underlying record supporting this justification is likely to change. The net result of this is that as updated analysis on underlying general variance assumptions change, the scope and specific application of the general variance may also need to change to remain defensible and consistent with the underlying record. This may require a review and possible revision to the coverage of the general variance as it applies to different classes of dischargers. It may also entail a broader reliance on the individual variance process.

e. General Variance TP/TN Performance Levels

Issue: Relationship of general variance levels to base numeric nutrient standard levels

Section 5 of SB 367 establishes three levels of general variance TN & TP end-of-pipe effluent concentrations based upon the size and nature of the discharger. Facilities discharging at or over 1 MGD a day must meet 1mg/l TP and 10 mg/l TN calculated as a monthly average. Facilities discharging less than 1 MGD per day must meet 2 mg/l TP and 15 mg/l TN calculated as a monthly average. And lagoons that are not designed to actively remove nutrients must maintain current performance levels.

Several of the essential variance elements outlined above are relevant to supporting the general variance in SB 367. First, substantial and widespread economic impacts must be demonstrated under Part 131.10(g)(6). Second, the variance must identify and provide a technical basis for the specific alternative numeric criteria that will apply. And, third, the variance must be established as close to the underlying numeric criteria as possible to show both that the highest attainable use is being realized and that further incremental progress towards the underlying standard is occurring.

Taking the first of these in turn, the economic impacts demonstration submitted to support the statewide general variance is based upon the analytic assumption that all facilities will need to upgrade to R/O for 100% of their flow. In addition, it assumes that lagoons are inherently constrained and can do nothing further to optimize performance, reduce flow, lower TN & TP concentrations, or take advantage of high flow in stream conditions. It is also based upon best information available at the time it was conducted.

However, more site-specific data, economic detail, and technical treatment train information is likely to become available with implementation of the variance program. The challenge, then, is that while EPA has accepted the initial economic impacts justification based on a worst-case analysis, as the

resolution of that analysis sharpens and become more discharger- specific under the mandatory triennial review process, it will become increasingly difficult to maintain a factually-based record to support worst-case assumptions for each facility across the State regardless of treatment in place, receiving water flow, or existing TN/TP end-of-pipe concentrations. The issue that may be raised then is not whether a state-wide variance is or is not conceptually possible under the CWA. It is whether the factual record supporting the general variance can continue to demonstrate that all facilities in a particular general variance class are sufficiently comparable in terms of site-specific and facility-specific characteristics to continue to be treated in a similar way under a common variance, particularly in light of the Section 8 requirement that the initial variance justification be reviewed every three years to ensure that the assumptions, facts, and analysis upon which it is based remain valid.

SB 367, itself, appears to offer several areas of possible flexibility that may be available to address this issue in terms of individual variances for unique circumstances and possibly the ability to refine the initial classification system under Section 5 as part of the update process. However to evaluate a broader use of this flexibility, it may be necessary to reconsider aspects of currently proposed implementing regulations and related guidance. At the moment, they do not appear to have been drafted with this broader approach in mind.

The second variance factor goes to the technical basis of numeric variance criteria presently reflected in Section 5(b) of SB 367. The State's economic impact justification for private businesses indicates that it relied upon a five level wastewater treatment-effectiveness and cost model to frame its analysis based upon a WERF 2011 report by Falk et al. The specific general variance levels in Section 5(b) are most comparable to Level 2 in the WERF report. Appendix D of MT's economic impact report also lists 25 additional studies that were considered to assess and evaluate the treatment effectiveness and costs associated with Reverse Osmosis in level 5, the highest and most costly level of treatment considered in the 2011 WERF study. A strong argument can be made that a comprehensive consideration of available information was undertaken as the basis for developing the two general variance performance levels. Thus, it would appear there is a solid technical basis for the specific TN and TP concentrations called for under the general variance. However, an additional question that may be raised as part of a subsequent review process is whether the Department can provide a more detailed explanation of how, from a specific technical and calculational point of view, the specific TN and TP numeric values were derived based upon the studies and technical data that were taken into consideration.

The third element concerning general variance numeric levels goes to the issue of understanding the degree to which a particular level is established as close to the underlying criteria as is possible. By way of context, if the first variance element relates to establishing that there are, indeed, substantial and widespread economic impacts; and the second factor confirms that there is a technical basis for whatever numeric end-of-pipe concentration is ultimately chosen; then the third element addresses the core objective of a temporary variance that end-of-pipe concentrations have been established to assure that the highest attainable interim use is actually being achieved while the variance is in place, and that reasonable incremental progress toward the baseline standard will take place.

The challenge with the third variance factor is that it may be difficult to demonstrate that compliance with general variance performance levels assures that the highest use attainable supported by one discharger is the same as for another - unless the site-specific and facility-specific characteristics of particular dischargers within an effluent performance class are consistent and vary comparable. The broader the scope and geographic applicability of a general variance, or the larger a particular discharger class within the variance may be, the more likely it is that this will be a technically difficult showing to sustain based on the underlying record.

As discussed above, the State's economic impact analysis for private businesses was based on available data. But even that data illustrates the potential challenge of this factor as implementation and triennial reviews move forward. For example, of approximately 50 MPDES permits for private businesses with nutrient discharges and enough information to evaluate possible impacts, the study indicates that 32 had sufficient data information to assess the likely level of treatment in place at each facility. Approximately half of the facilities in this latter group had treatment in place at or below Level 2 and, therefore, would need to do more to achieve the general variance levels. However, the information available on the other half suggests that they may have treatment in place that is better than or more advanced that the level 2 which most closely matches the general variance performance concentrations in Section 5. So for those facilities with more advanced treatment already in place, the question may be raised as to whether current general variance levels represent the highest use supportable by those particular dischargers?

Again, having the flexibility to consider individual variances to address unique circumstances in which the discharger can be given credit for the treatment it already has in place, or where there may be a reasonable alternatives available for all or part of a particular effluent flow, may be one possible approach for addressing this issue.

## 5. KEY EPA R8 ISSUES

a. Demonstration of substantial and wide spread impacts

Issue: 1) Whether a one-time demonstration sufficient
2) Whether each discharger must demonstrate site-specific impacts

Given the current and very specific triennial review requirements under both 40CFR131.20 and Section 8 of SB 367, together with the emphasis of each on new information and the need to confirm the continued validity and relevance of prior assumptions and variance justifications, it would seem difficult to argue that review of a variance justification is not appropriate. Decisions on the nature, extent, and focus of that review, however, may benefit from further discussion – particularly as to whether a specific discharger is more appropriately covered under a general or individual variance. Moreover, since the State's demonstration is primarily based on the economic infeasibility of moving all dischargers to R/O, there would still appear to be substantial room for additional discussion around other levels of appropriate treatment above Level 2 and the availability and implementation of both reasonable alternatives and alternative effluent management methods.

b. Statewide General Variances for Major dischargers

Issue: Whether a statewide general variance can be supported under a CWA consistency review.

This issue is discussed in several different contexts above. The answer may well depend in part on how the initial question is framed. There is no prohibition of general variances under the CWA or related regulations, and the Agency has indicated an openness to multiple discharger and multiple water body variances to the extent there can be a facility-specific and water body–specific demonstration of core similarities between dischargers to a single water body and for multiple water bodies within a watershed.

This will likely be a difficult CWA consistency issue. But as discussed above, depending on the flexibility to create additional general variance categories and expand the flexibility and availability of individual variances, there may be middle ground worth exploring that will meet both the concerns of a CWA consistency review and the needs and expectations of the State.

c. Highest Attainable Interim Limits

Issue: Whether highest attainable limits are assured under a general variance approach.

Assuring that variance performance levels are as close as possible to the underlying base standard is a core variance objective. But that objective is implemented in the context of recognizing and taking into account the substantial and widespread economic impacts that are the basis and justification of a variance, in the first place. The central goal is to assure that dischargers are doing what can reasonably be done to maximize interim loading reductions while collectively moving toward the longer term goal of ultimately attaining the underlying standard where possible.

This will undoubtedly be a central CWA consistency issue. As discussed above, making the technical case that a single general variance effluent level supports the highest attainable use in multiple contexts across the State can be more difficult to do - the broader and less specific a general variance is. However, to the extent more flexibility is available to add additional variance categories or levels and consider individual variances for unique circumstances, this may be an issue worth exploring further.

d. Alternative Variances

Issue: Whether an alternative variance is approvable under a CWA consistency review.

The issue of alternative variances is possibly the most difficult issue to address in the context of a CWA consistency review, given the current interpretive guidance and proposed rules that have been developed. Relevant guidance appears to emphasize three factors (i.e., “net environmental benefit", “environmental harm”, and “material progress”) upon which to base a demonstration of "insignificant reduction of instream nutrient loading". These three factors represent important issues but don’t appear to relate to SB 367’s stated goal of authorizing variances to address substantial and widespread economic impacts. However, it may be that the fairly general language of SB 367 can be considered somewhat more broadly to allow the possibility of revisions to presently outlined alternative variance factors.

As noted above, issues presently addressed in alternative variance guidance are important and relevant to a water quality program. But, beyond the strong policy interests they reflect and the longer-term program development goals that may be at play, it is not clear that they are central to the key questions that need to be addressed in the context of effectively implementing a reasonable and balanced variance program under SB 367. Other parts of the State's water quality program may well be worth considering to address these additional issues including TMDLs and exploring a longer term partnership on what are the essential elements of a technical and scientifically defensible bio-criteria program.

## 6. COMMUNICATION AND APPROVAL STRATEGY

There are a number of questions that are likely to come up as part of a CWA Consistency Review. The highest priority issues will include 1) scope and availability of individual variances, 2) operation, updates, and continued record support for general variances, 3) rationale for alternative variances, and 4) implementation of variance term provisions. Each of these is analyzed in more detail above and possible

alternative perspectives and solutions are suggested in the areas of policy and implementation to successfully bridge elements of a CWA variance consistency review and the current provisions of SB 367.

In terms of developing an effective strategy to help gain agreement between EPA and Montana in support of a positive consistency review, a receptiveness to further considering and possibly updating or adjusting current water quality standards policies and implementation approaches will be necessary for all parties. Put another way, the easiest default path forward will be to focus on areas of disagreement, maintain current interpretive positions on both sides and, almost certainly, reach the conclusion that a positive review is not within reach. An alternative approach that has a much higher likelihood of success would be to jointly review and explore the basis and objectives of existing policies and implementation guidance on the key issues outlined above and evaluate whether alternative approaches can be developed which substantially meet the same goals albeit in a slightly different way.

Both EPA and Montana have made it clear in different contexts that there is a strong and shared commitment to the principle of flexible variance programs that effectively facilitate successful, transparent, and accountable implementation of science-based state-wide numeric water quality standards. Precisely because existing EPA regulations address variances at a general level and current Montana statutory provisions appear to offer interpretive flexibility that has not yet been formalized, there is the potential and flexibility to explore and identify an approvable technically-based approach that can be implemented within the context of current statutory and existing final regulatory provisions.

Three strategic components important to support a successful consistency review include a demonstration of sound science, senior management leadership and engagement, and expert technical support. These are discussed in more detail below.

a) Sound Science

An essential foundation for the negotiation process must include credibility and confidence in the science and technical analysis underlying both development of the base nitrogen and phosphorus standards as well as the derivation of cost and treatment effectiveness values for different levels of technology and reasonable alternative control strategies that has been developed by MDEQ. Without confirmation and clarity around this baseline information, the CWA consistency discussion will lose its central focus on the best approach for variances and, instead, invite continued detours to discuss and challenge the underlying scientific and technical analysis that supports the need for variances. Clearly, this analysis will need to be presented, clarified, explained, and understood. But the stronger and more compelling the basis for both the standards, associated technology and source control options, and related economic analysis, the greater the acceptance will be of the importance and interest in a balanced, incremental, transparent and accountable approach to variances.

One way to accomplish this in connection with the baseline nutrient standards is to develop and publish one or a series of peer-reviewed articles on the research, methodology, and analysis underlying the derivation of nitrogen and phosphorus values reflected in Part A of DEQ -12. The article(s) become a compelling and public part of the underlying record of the nutrient standards and variance package submitted to EPA. They also act as an independent touchstone to drive the interest and commitment in developing an approvable approach to achieving the baseline standards over time.

With regard to documentation of the assumptions, calculations and data used to derive the general variance effluent values and the associated treatment effectiveness and costing figures, development of a detailed technical support document will be an important step not only for supporting the current general

variance approach, but also for allowing the incremental evaluations and site specific assessments that almost certainly will be necessary as new information becomes available as part of the iterative triennial review process. Clarity and transparency about the underlying costing analysis and treatment effectiveness calculations will be required to support approval of the current package. This documentation will then also serve as important baseline and incentive against which to evaluate the options of simply meeting general variance values as they're incrementally lowered, or possibly investing further consideration into the implementation of reasonable alternatives including source controls and trading.

b) Senior Management Leadership

Given the novel and innovative aspects of certain parts of MDEQ's variance approach, engagement and leadership of both EPA and Montana career and political senior management will be essential. Active senior management direction and support is necessary to guide the evaluation and assessment of alternative policy and technical options and implementation approaches that may need to be considered to identify an approvable variance approach consistent with both S367 and the CWA. Montana, EPA Region 8 and EPA Headquarters technical and policy staff will need senior management prioritization, permission, and encouragement to search for common ground solutions particularly where those solutions may require adjusting, expanding, or simply clarifying existing policy or interpretive positions.

Because EPA decisions in this context may be considered precedential and potentially applicable outside of Montana, the engagement of EPA Headquarters management on a contemporaneous basis in coordination with Region 8 is essential. Without a committed partnership between Montana, Region 8, and Headquarters senior managers, staff may find themselves considering or dismissing solutions that may or may not be fully consistent with regional and national policy concerns and senior management perspectives regarding overall program implementation . And without that senior management partnership to help expedite and resolve possible road blocks, it is more than likely there will not be enough time to engage in this process, reach resolution, and allow MDEQ to meet its deadlines to finalize implementation regulations and administratively codify general variance effluent values by May of 2016. Of longer-term concern, the failure to expeditiously reach agreement to help guide development of approvable implementation regulations and guidance may also impede MDEQ's ability to "immediately" revisit and update these values part of Montana's mandatory triennial review process.

This suggests the need for a series of activities some of which have already begun and are well along, others of which can occur simultaneously or consecutively as the parties determine is most helpful, and still others of which need to be started up at the earliest opportunity. In this latter regard, a critical next step will need to be a senior management outreach and engagement process to explore whether there is the commitment, capacity, and interest within EPA Region 8 and EPA's Office of Water at Headquarters as well as within MDEQ to pursue this in more detail. This can be followed or simultaneously supported both by a briefing and education phase to assure that all parties share a current and common understanding of each other's positions, concerns and objectives. An initial issue identification and options generation process may also be helpful to assess the contours and limits of a broader discussion and negotiation. There already is a high level of familiarity with the provisions of S367 and the overall Montana approach between MDEQ and EPA Region 8. This understanding is perhaps less detailed within EPA Headquarters regarding the most current versions of implementing regulations, implementation guidance, and record support documentation.

Because of competing programmatic priorities, the complexity of some of these issues, their precedential nature, and the dedication of resources and focus that will be needed to successfully complete an extended discussion in a limited time frame, it will be important for MT to engage in a joint rather than a sequential

conversation with Region 8 and Headquarters to explore whether such a commitment is likely to generate a useful outcome. To support this process, it may be useful first to schedule a senior management status update meeting with Region 8 to confirm at an organizational level the nature, scope, and detail of their current technical thinking, views, and policy analysis. Put another way, it is essential to understand how Region 8 management, in addition to staff, view the priority of this issue and the available flexibility to address it. At the same time, it will be important to schedule a meeting with both the Acting Assistant Administrator for the Office of Water (OW) at Headquarters as well as the Director of the Office of Science and Technology (OST) to provide a briefing on Montana's current activities and timelines. A major goal of the meeting would be to request feedback on Headquarters' interest and commitment to engage at a senior political and career management level in possibly a facilitated process to reach an approvable variance approach that is consistent with both the CWA and Montana's legislative direction.

A strong reason for OW's and OST's engagement is that they are on record as considering the development of a number of regulatory updates to clarify and strengthen national water quality regulations. One of the issues under review is how to proceed with more specific provisions addressing water quality variances. Thus, Headquarters has a natural interest in partnering with Region 8 and Montana, not to pre-empt the Region's role, but to assure coordination and timely input as the national regulatory process moves forward.

An equally important issue will be for MDEQ to figure out its "bottom line" in terms of priority, commitment, and resources available from a political and career management perspective to support an intensive technical and policy discussion. Given the work and investment to date in the stakeholder process and program development details, how much flexibility is there to consider some of the "adjustments", reframing and alternatives outlined above (as well as others, of course)? There often is more flexibility than may initially be apparent, particularly if the alternatives and additional perspectives being offered for consideration are sound, technically based, and clearly tied to meeting the objectives of the program. But, the amount of "running room" or at least openness to exploring a common path forward is important to consider in evaluating next steps.

An additional aspect to consider is whether it would be helpful for the Governor to send a letter to the Administrator requesting this kind of management engagement and leadership. It clearly signals senior political interest and support. And it is likely to "raise the stakes" in terms of Headquarters' "go/no go" evaluation of whether or not to proactively engage. If a decision were made to go ahead with the letter, it would need to present the environmental importance and policy urgency of this issue. It should also detail the value and strength of the stakeholder process and the sound science that MDEQ has relied upon as well as provide an explanation of the programmatic stakes and implementation deadlines that are involved. Finally, it should underscore Montana's commitment to fully implementing a strong science-based numeric nutrient standards program in addition to its willingness to tackle and pilot an innovative approach to addressing one of the most intractable challenges facing national and State water quality programs. More specifically, Montana's leadership and progress should be emphasized in terms of taking concrete steps to address the linked issue of how to couple and act upon science-driven but often low criteria values with the development of balanced implementation strategies that are effective, accountable, technically defensible, and transparent. Equally important to note is Montana's interest in encouraging and providing incentives for a range of innovative pollution reduction approaches including source control and trading as part of the solution.

c) <u>Expert Technical Support</u>

Montana, EPA Region 8, and EPA's Office of Water each have highly capable technical and policy experts available to address water quality issues. The challenge will be assuring the timely and responsive engagement of this expertise as part of the negotiation process - hence the need for senior management prioritization, support, and engagement. Where there is particularly detailed or complex analytic, data processing, or additional technical literature review work to be done, it will also be important to have outside water quality expertise (generally in the form of contractor support) that can be applied. In this regard, it is worth noting that despite clear prioritization and management direction, there often can be limits to what already over-committed expert staff can do. In these cases, responsive additional technical support can be immensely helpful and, occasionally, pivotal. The timely availability of technical and policy expertise applied to "how come", "what if", or "how to" questions will be key to constructively and effectively supporting a successful negotiation process. Simply getting together to review and discuss existing policy perspectives without expert technical and policy support to explore both the limits, flexibility, and basis of current positions as well as to evaluate additional options is unlikely to generate an approvable package tied to a technically-based record – something that both Montana and EPA will need to rely upon as part of their respective review processes.