Ammonia Rulemaking

Response to Internal Comments—Aug. 11, 2014

## Ammonia Technical Support Document Comments

**1. I know what the LCR, UWR, etc. means. But will others? (Shannon Hubler)**.

**Andrea**: Yes, not everyone will know what these abbreviations mean in regards to T&E species, but there are 15 of these terms to spell out in the footnote and I don’t think it’s critical for understanding in this document.

**2. What would we do for waters that get down to a pH of 6 which apparently happens in some of our coast range high precipitation waters? (Deb Sturdevant).**

**Andrea:** Yes, the criteria were normalized based on a pH range of 6.5 – 9.0. I think we would just have to use a pH of 6.5 if pH values are lower and a pH of 9 if the pH values are higher. One state asked EPA about this on a call about, I believe, waters that have very low pH due to acid mine drainage, and EPA said that it’s usually an exception rather than the norm, so something else is going on in the system. They did not recommend extrapolating outside the pH range. For the current NH3 criteria, the calculator does not calculate criteria outside the pH ranges. For the 2012 Integrated Report, we plugged in 6.5 or 9.0 for pH values outside those ranges.

**3. Does it cover the “clams” as well? (Shannon Hubler):**

**Andrea:** Yes, I believe if mussels were present at a site and there was no clam data in the national dataset, we would retain the mussel toxicity data to be protective of all mollusks at a site. This concept would be explored more if site-specific criteria were proposed at a site. Clam data was used to develop the CCC, but not sure if available for CMC.

**4. This seems out of place, do pebblesnails have some special significance for OR? (Debra Sturdevant)**

**Andrea:** The reason I included pebblesnails (5th most sensitive species in the chronic dataset) is to provide context of why the criteria are also based on sensitivity of snails to ammonia. It wouldn’t matter whether OR had pebblesnails are not (they are present in OR, though). The pebblenail data would serve as surrogates for any kind of freshwater snail present in OR.

**5. I believe there are more snails present in OR than your table suggests (Shannon Hubler)**

**Andrea:** Yes, you are right. This info was on Xerces website, but I went back as you suggested and used your spreadsheets on the non-pulmonate snail data for the maps and updated the table accordingly. Looks like there are approximately 16 species or taxa of snails found in OR, although it’s probably not an exclusive list.

**6. It might also be helpful to have a chart or table comparing the proposed 30-day criteria to the existing 4-day criteria for a set pH (I would recommend 7 as a typical value for mixed pH). This may help to address questions regarding the comparisons without the use of the 2.5 multiplier. (Rob Burkhart).**

**Andrea:** I will do that if I have time

**7. How about the general biocriteria standard which states no detrimental changes in the resident biological community? (Shannon Hubler)**

**Andrea:** The biocriteria language is a standard as opposed to a fish use subcategory (as far as I know) which is what we’re getting at here—how to apply different acute criteria based on the presence or absence of salmonids.

**8. In the ammonia TSD I just had one clarification to make on the bottom of page 17. (Kathleen Collins, EPA)**

Generally, the majority of Oregon’s waterbodies support salmonid use. According to OAR 340-041-0002(54): “Salmonid or Salmonids" means native salmon, trout, mountain whitefish and char including bull trout. For purposes of Oregon water quality standards, salmonid does not include brook or brown trout because they are introduced species.” The fish use category of “cool water species” does not support any salmonid use. Therefore, **the most stringent acute criterion would apply, and** the only situation where the ammonia criteria based on “salmonids not present” (**i.e., the less stringent acute criterion**) could be applied would be waterbodies designated as “cool water species” (such as highly alkaline and saline lakes in Goose and Summer Lake subbasin) or where only brook or brown trout are present. Because mussels were more sensitive than salmonid species in chronic toxicity tests, salmonid presence/absence criteria were not developed for the chronic criteria.

Also, the insertion of the phrase “…or where only brook or brown trout are present” is confusing since the maps don’t have a “brook and brown trout” designated use (I assume that the maps were *not* developed based on the presence or absence of brook or brown trout – since these species are excluded in your definition of salmonids – so it would seem that the maps should be applicable and don’t really need further explanation).  It might make the document more clear if this phrase was deleted.

**There are water bodies where native salmonids are no longer present, but introduced species (brooks/browns) occur. Most likely this would be a brook trout situation. High alpine lakes (native salmonids maybe never were present) or cold headwater reaches are the most common examples. (Shannon Hubler)**

**Andrea:** I re-worked this section after also discussing w/ Deb. The revision includes the edits suggested above. Since we do not have maps indicating presence or absence of brook or brown trout, I removed this phrase from the text above. This means that if there were circumstantial evidence that a waterbody only had brook or brown trout (i.e. not “salmonids” as defined in our rules), we still wouldn’t be able to apply the less stringent acute ammonia criteria because DEQ does not possess “official” brook and brown trout fish use maps. Maybe there is a solution for this, but generally, this is how we would implement this.

**9. Maybe need additional parentheses and definitions. See comments in Toxics Tables document. (Rob Burkhart)**

$$Acute Criterion=0.7249 ×( \frac{0.0114}{1+10^{7.204-pH}}+\frac{1.6181}{1+10^{pH-7.204}})×MIN\left(51.93, 23.12×10^{0.036×\left(20-T\right)}\right)$$

**Andrea:** I double-checked the equation above against EPA’s and they didn’t include parentheses either. I think you could add parentheses (see red above) here, but if you used the “order of operation” (?) methodology wouldn’t you automatically do the addition first regardless of the parentheses? Sorry, not sure here…

**10. Plain English/Active Voice edits from Maggie**

**Andrea:** Generally, accepted most edits. All font is Cambria now, including titles of tables, Appendices and section headers. I didn’t like Times New Roman for table titles… I didn’t change any language or tables that were directly from EPA documents.

## TABLE Comments

**1. Ammonia language:**

**-Requested that we include mussel language in table—based on presence of mussels (Debra Sturdevant)**

**-Requested that we include presence AND absence of salmonids (Rob Burkhart, Kathleen Collins)**

**-Requested that we include fish use maps on table, so you have a reference for salmonids presence/absence (Kathleen Collins)**

**- I don’t understand this language. Do you mean the acute criteria apply only if any salmonids are present and the chronic criteria apply only if salmonids in other than early life stages are present? Will the reader know what stages are considered early? Either way this needs to be recast as a condition because in its current form it could be read to be background information on how the criteria were developed. (Larry Knudsen)**

**Andrea:** I’ve re-worked the language here in consideration of comments (see below). I don’t think we should include mussel language in Table 30. I think it is confusing to specifically point out mussels as the sensitive species. We do not include the most sensitive species in any of our other toxics criteria footnotes. For example, if rainbow trout were the most sensitive species for copper toxicity, we wouldn’t say we’re assuming rainbow trout are everywhere, or based on presence of rainbow trout, etc. Mussels are a newer species for EPA toxicity tests, and at one time EPA was contemplating ammonia criteria based on the presence or absence of mussels, so right now, there’s more attention on mussels, but the reality is, the criteria are not bifurcated based on mussels present or absent, so we shouldn’t point this out in the table. Site-specific criteria could be considered based on mussels not present in a waterbody, but that info doesn’t belong in a WQS table.

What does make the difference is the presence or absence of salmonids for the acute criteria. Deb had some suggested language that I expanded on a bit. Larry had a question about what stage of fish are considered early, so I added “any” to the language below. I also added the fish map website reference. I also included the OAR basin criteria references although the range does include more than just the beneficial uses. Larry says it’s OK to refer to a website w/ the fish use maps as long as the website/maps are treated as rule. Per Larry suggestion, I made additional revisions to the SW ammonia criteria language to include salinity dependence and a reference to DEQ’s SW NH3 calculator. I checked in with EPA to see whether these changes to the SW criteria would trip WQS review. This is her reply on 8/5/14:

“The changes are nicely done and very clear. The saltwater changes are fine too, our review would be limited to acknowledging the changes, and we would approve the changes as non-substantive editorial revisions to the WQS that don’t change the underlying criteria that were previously approved by EPA….its essentially just a way to acknowledge and track any changes made to the standards.”

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 3 | *Ammonia* | 7664417 | n | *The ammonia criteria are pH and temperature dependent-- See ammonia criteria Tables 1-3 at end of Table 30.***M** | *The ammonia criteria are pH, temperature and salinity dependent. Values for saltwater criteria (total ammonia) can be calculated from the tables specified in Ambient Water Quality Criteria for Ammonia (Saltwater)--1989 (EPA 440/5-88-004;*[*http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm*](http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm)*). Also see DEQ’s calculator for calculating saltwater ammonia criteria at:* [*http://www.deq.state.or.us/wq/standards/toxics.htm*](http://www.deq.state.or.us/wq/standards/toxics.htm)*.* |
| **M** *The acute criteria in Table 1 apply in waterbodies where DEQ designates salmonids as the beneficial use in OAR 340-041-0101 - OAR 340-041-0340. The acute criteria in Table 2 apply in waterbodies where salmonids are not the beneficial use. The chronic criteria in Table 3 do not change based on the presence or absence of salmonids or the presence of any early life stage of fish. Refer to DEQ’s beneficial use website at:* [*http://www.deq.state.or.us/wq/standards/uses.htm*](http://www.deq.state.or.us/wq/standards/uses.htm) *for additional information on salmonid beneficial use designations, including tables and maps.* |

Deb, you thought we should take the EPA references, as well as the reference to DEQ’s calculator out of the saltwater ammonia table.

“I think only the reference should be in the rule – it’s published and will not change. But where to find it the document and other helpful tools (i.e. the links) should be provided on the web page, not in the rule language itself.”

You have a point that websites can change. In fact, last year for the Clarifications rulemaking, I updated the web link to the saltwater ammonia doc on EPA’s website. We could just remove it now. We don’t include a web link to EPA’s 2013 FW criteria, just the pub #. Similarly, normally I would agree that we shouldn’t put a weblink to DEQ’s website with the saltwater ammonia calculator, but I don’t think people would necessarily know to go to that website otherwise. EPA’s doc isn’t very helpful in figuring out the saltwater criteria. Their tables don’t contain all the criteria based on pH, temp and salinity—just ranges…. Larry made a point about this in his comments above.

**I propose taking out the EPA weblink reference, but let’s keep in the reference to DEQ’s calculator for now.**

**2. The formulas may be clarified by defining “Min” and “T”. (Rob Burkhart)**

**Andrea:** “T” is fairly easy to insert, but the “Min” definition is more complicated… Adding definitions could make the table too busy, but let’s see what kind of input we get from the public. A reader could refer to the EPA criteria document to get this specification.

**3. Did anyone QA the criteria tables? (Rob Burkhart)**

**Andrea:** I copied and pasted the tables directly from EPA’s criteria document. However, if EPA made an error on their table, I would likely not catch it. I spot-checked each table and Spencer replicated results from his RPA spreadsheet for various criteria at certain pH and temps. EPA also reviewed the tables, but I don’t know how extensive that review was. EPA did confirm the correct equations were used which is the most important factor, since if we did discover an error in the table later on, I think it would be a reasonable assumption to say that the equation trumps the derived criteria in the table.

**4. Comment on Table 31 Guidance Values: Same comment as above, about clarifying who should review the scientific literature. Without saying more than “may be appropriate,” it’s not very informative about when such a search should be done. (Jane Hickman)**

Excerpt of language:

“The following chemicals/compounds/classes are of concern due to the potential for toxic effects to aquatic organisms; however, no guidance values are designated. If these compounds are identified in the waste stream, then a review of the scientific literature is appropriate for deriving guidance values.”

**Andrea:** I understand the need for clarification, but DEQ to my knowledge, has never used these values as guidance values in the NPDES program, so we really don’t know whether the presence of these chemicals in the waste stream would automatically trigger a review of scientific literature. Therefore, I don’t think as part of this rulemaking we should be definitive and say “is” here.

**5. Comment on Table 40: Should there be a reference to the distinction between priority and non priority pollutants? Is there a CFR that says to treat these differently? (Jane Hickman)**

**Andrea:** I’ve never been crystal clear about the differences between a priority and non-priority pollutant, but generally the priority pollutants were a negotiated list of pollutants published in 1979. As far as I know, there’s not really a distinction between a priority and non-priority pollutant in how they are implemented. I think a state would need to demonstrate why criteria for a non-priority pollutant are not needed during rule adoption revisions. We discussed this as part of the human health toxics rulemaking about whether we needed the distinction or not--no strong feelings either way, so we decided to keep the distinction in the table. I don’t think as part of this rulemaking we should make any additional clarifications here.

EPA website info: <http://water.epa.gov/scitech/methods/cwa/pollutants-background.cfm#pp> and

 <http://water.epa.gov/scitech/methods/cwa/pollutants.cfm>

**6. Table 30 comment: As I understand things, you want the table to be effective on filing with the SOS, but not applicable until the changes are approved by EPA. If so, there may be no reason to highlight the effective date here. (Larry Knudsen)**

**Andrea:** Currently, I have a placeholder at the top of Table 30 to insert the date for when EPA approves the revisions and makes the changes applicable for CWA programs. Since we’re going to have two tables that we submit to SOS—one currently effective, and the other only effective following EPA approval—then you probably don’t need a date, since we would simply remove the old table and keep the newly approved table in the OAR as part of another “expedited” rulemaking. However, I think it’s helpful to have a reference date at the top of the toxics tables… Table 31 and 40 also include dates. Let me know, though, if this preference could cause problems.

**7. This would be read as saying that there is a preference but not a requirement. Is that what you mean? (Larry Knudsen)**

**Jane Hickman suggested changing the word to “must”.**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 18 | Endosulfan | 115297 | n | 0.22 **A , H**  | 0.056 **A , H**  | 0.034 **A , H**  | 0.0087 **A, H** |
| ***A*** *See expanded endnote A at bottom of Table 30 for alternate frequency and duration of this criterion.***H** *This value is based on* *the* *criterion published in Ambient Water Quality Criteria for Endosulfan (EPA 440/5-80-046) and should be applied as the sum of alpha- and beta-endosulfan.* |

**Andrea:** I’m hesitant in changing wording here although I recognize the lack of clarity. DEQ chose to continue having criteria for endosulfan as part of the 2004 rulemaking even though EPA removed natl criteria rec’s for endosulfan and instead relied on separate alpha and beta criteria (DEQ also has alpha and beta criteria). These criteria were not re-evaluated in the 2011 rulemaking—just updated based on a higher FCR. We may want just a teeny bit of wiggle room if new info indicates otherwise. Therefore, I am reluctant to revise wording to a stronger interpretation, although generally, I think we would apply the criteria based on the sum of alpha and beta.

**8. Do you intend for the application to be discretionary or should this read “must be applied.” (Larry Knudsen).**

**Endnote A: Alternate Frequency and Duration for Certain Pesticides**

This criterion is based on EPA recommendations issued in 1980 that were derived using guidelines that differed from EPA's 1985 Guidelines which update minimum data requirements and derivation procedures. The CMC may not be exceeded at any time and the CCC may not be exceeded based on a 24-hour average. The CMC may be applied using a one hour averaging period not to be exceeded more than once every three years, if the CMC values given in Table 30 are divided by 2 to obtain a value that is more comparable to a CMC derived using the 1985 Guidelines.

**Andrea:** This is discretionary. Either a user applies the criteria stated in the table, or if they want to use the acute duration and frequency applicable to most of the other criteria, they need to divide that criterion by 2.

## Notice Document

**1. I think having tables in a different "rule" will be confusing. Right now there is at least a connection between the rule number and the table number (perhaps not for toxics, but for the beneficial uses tables). I know this isn't your doing. Was this a SOS decision? (Deb Sturdevant)**

**Andrea:** This is a DEQ decision. The air and land programs are also beginning to move all their tables to -8000 rules in their respective divisions. Apparently, SOS can’t hotlink from the toxics rule regs directly to the tables in -8000 rule, so that’s the inconvenient part, but on the positive side, it will be convenient for staff and the public to go to one rule in Div. 41 where ALL the tables and maps would be.

**2. Can we make NMFS biological opinion available on our website or provide a link to the services websites? (Debra Sturdevant)**

**Andrea:** I’ve never been able to find it on NMFS or any other website. Just searched again and couldn’t find it.

**3. Do we know if there are any permits with ammonia limits based on acute criteria (like individual storm water permits)? (I don’t know of any.) What about CAFO permits? (I’m guessing they’re technology based and/or non-discharging, but I don’t know.) (Rob Burkhart)**

**Andrea:** Yes, the 1200Z industrial stormwater permits have ammonia limits. CAFOs are non-discharging.

## Proposed Rules

**Definitions Rule (OAR 340-041-0002) Comments**

**1. Do we make any note of the NCC disapproval in the definition of “applicable criteria,” which references the NCC? (Aron)**

**Jane**: We shouldn’t change it, for the same reason we aren’t amending the narrative criteria or temperature standard.

**SNC/NCC (OAR 340-041-0007 and 340-041-0028) Comments**

**1. Do we make plain language revisions to these sections?**

**Jane/Larry**: We shouldn’t change these sections, as we do not want to open up the standards as revisions. We are only adding a clarifying note.

**Snake River (OAR 340-041-0124) Comments**

**1. Do we make plain language revisions to the TDS criterion?**

**Debra:** No, the changes would be beyond “plain language” and should be part of a larger cleanup rulemaking.

**Umatilla Basin (OAR 340-041-0315) Comments**

**1. Should we change “greater” to “more” in part 1 and make suggested plain language changes in 2(b)? The change makes it inconsistent with other basin-specific standards.**

**Aron:** These changes seem to me to be a plain language change that is simply what is grammatically correct and do not have additional implications. As long as we’re clear in the report that these are plain language changes, I think we should move forward with them

**2. Do we propose to remove the fishing use from the overflow channels of the WDMC? (Debra)**

**Aron:** I think we decided to hold off on this unless there was a specific need through the permitting process.

**3. Notification that Redband trout use doesn’t apply in the canal. (Debra)**

**Aron:** EPA only approved removal of Redband trout in the constructed portion of the canal, not the overflow channels; as a result Figure 310A only incorrectly identifies Redband trout use for the constructed portion.

**Toxics Rule (OAR 340-041-0033) Comments**

**1. Effectiveness date of revisions.** General questions about how DEQ indicates effectiveness date in toxics rule since some of the revisions would be considered WQS revisions per EPA, while other revisions would be clarification only. Also, should we have the effectiveness language as a lead in paragraph (OK to do per Maggie and Larry) without numbering, so that once EPA approves revisions considered WQS, then DEQ can go back and just remove the effectiveness language without having to renumber.

**Andrea:** In discussions w/ Deb, Maggie and Larry, I recommend having the effectiveness language as a lead in paragraph, rather than numbered. I renumbered the entire rule and corrected cross-references, as well as cross-references outside Div. 41. DEQ also included two Table 30s—one that is effective now and one that is effective only after EPA approval. Although some of the revisions to Table 30 should not be considered WQS revisions, it is probably more straight-forward and less confusing to have ALL the changes in Table 30 become effective upon EPA approval. Per Larry—“This is probably the preferred solution if DEQ wants to make sure that the more stringent revisions to criteria do not apply independently as a matter of state law [e.g. under CWA Section 401(d)].”  This is similar to what we did w/ the Corrections and Clarifications rulemaking last year, except we didn’t have two separate tables since EPA planned on acting by a certain date.

**2. Andrea, I know you are working with Larry and Maggie to figure out the best way to do this. If we do it as you have suggested here, then I think we'll need a written communication from EPA early in their review process that clearly delineates what they view as a standard that they intend to act on and what does not so that we are clear about what we can go ahead and consider effective.**

**Andrea:** I’m not sure if we’ll be able to get EPA to write out a list for us, but I’ve been touching base w/ R10 about most of the proposed changes that could potentially be viewed as a WQS change.

**Site-Specific Background Pollutant Criteria**

**1. There were a number of suggestions to make this section read better—either more definitions or plain English edits. (Maggie Vandehey, Jane Hickman)**

**Andrea:** Deb and I are very hesitant in changing this particular section language too much. We borrowed much of it from EPA’s language in the Great Lakes Initiative rule. I would need more time to really think about whether the changes suggested would unintentionally change meaning and/or trip EPA standards review. Even though EPA eventually approved this section, it was touch and go for awhile. Therefore, I only accepted straight-forward plain English edits.

**2. Perhaps a question for Larry. Just as we don't want to open the statewide narratives and temperature rule for amendment, I don't want to open the background pollutant provision or arsenic reduction policy to amendment. Are we doing that here? Or are they open anyway because they are part of -0033? (Debra Sturdevant)**

**Andrea:** If I understood Larry correctly, if you make edits to a rule, the whole rule is open for public comment, however, we can say something like, “DEQ appreciates your comment, but it is out of the scope of this rulemaking…”. I believe EPA would review each edit to evaluate whether that edit is a change to WQS or is just a clarification.

**Arsenic Reduction Policy**

**1. Effectiveness language. I had questions about whether we could remove language which discusses effectiveness following EPA approval, since the rule is already effective. (Andrea Matzke)**

**Andrea:** I didn’t see anyone objecting to it, so I propose to remove subsection (a) since the rule is already effective.

**2. Statutory Authority section at end of rule: Has someone verified authorities? (Maggie Vandehey)**

**Andrea:** Per email discussion with Jane Hickman, since Larry reviewed the authorities last year during the toxics Corrections and Clarifications rulemaking, and the changes proposed in this rulemaking should not change authorities, then the authorities should be correct.

## Invitation to Comment

**1. Deb had some edits to this document.**

**Andrea:** I accepted some of the comments, but I’m generally referring to Maggie’s standard language she uses for this document.