***Corrections and Clarifications to Toxics Water Quality Standards Rulemaking 2013***

**Response to Internal Comments**

I have not included responses to ALL comments, but responded to many comments. Generally, I made suggested editing changes throughout all the documents. My responses below are grouped according to the document reviewed.

**Public Notice Document**

1. Name of Rulemaking: I’m keeping the Rulemaking title since it was decided on at the start of the rulemaking and there are MANY documents with this title now, so I don’t think it’s consistent to change at this point of the rulemaking. If there are requirements/policies in naming conventions for rulemaking, that should be written in guidance at the beginning of a rulemaking.

2. Kept information that described what the rulemakings were about in 2004, 2007 and 2011 (when the errors occurred). The Advisory Committee asked DEQ to add information about the rulemakings because they believe the public wouldn’t generally know what they were about.

3. Mainly kept information about what EPA would consider as water quality standards revisions (on first page). This was written based on EPA review and edits.

4. Key Legislators: no need to include others in addition to the legislators below.

* Senator Dingfelder, Chair of the Senate Committee on Environment and Natural Resources
* Representative Bailey, Chair of the House Committee on Energy and Environment

**Toxic Substances Rule 340-041-0033**

1. Effectiveness date of amendments: DEQ will propose a specific date where all revisions become effective at the same time—even those revisions not considered as WQS. It would be confusing to DEQ staff and the public to know which revisions are effective following EQC approval and those revisions that would not be effective until EPA approval, particularly for Table 30 which contains a mix of WQS-type revisions and non-WQS-type revisions. I’ve asked EPA what a conservative date of their action could be. They believe 90 days post SOS filing is reasonable. DEQ is proposing 120 days post SOS filing to account for the December holidays. Therefore, these amendments would become effective April 18, 2014. This date was also added to Tables 30, 31, and 40. The Bacteria and Groundwater rule changes, however, would become effective upon SOS filing following EQC adoption. These revisions are very minor and do not impose implementation issues. Larry Knudsen, DOJ, provided the revisions below.

*Excerpt from rule re: effective date amendment:*

 **1. 340-041-0033** **Toxic Substances**

(1) Amendments to sections (1-5) and (7) of this rule (OAR 340-041-0033) and associated revisions to Tables 20, 33A, 33B, 33C, and 40 become effective on April 18, 2014. The amendments do not become applicable for purposes of ORS chapter 468B or the federal Clean Water Act, however, unless approved by EPApursuant to 40 CFR 131.21 (4/27/2000).

**Table 30**

1. Italicizing non-priority pollutants—There were several comments about the ability to see the italicized pollutants. On a practical basis, it doesn’t matter if it’s a priority pollutant or not since the criteria are treated as regulatory numbers anyway, so we could even remove the designation altogether. We don’t need/want to call more attention to it by bolding the pollutant or putting a “NP” next to it, so I think for now, we’ll keep as is and see if we get any public comment about it.

2. Include Reference to Table 40 in the HHC column (and likewise include a reference to Table 30 in the ALC column in Table 40)? Not a bad idea, but I think we’ll leave it in case we have another Table name change in the future. We won’t have to then correct the citation. I think our website is pretty clear on which table is what if users are looking for the correct table to use. In addition, the OARs will now have the tables available to access by simply clicking on a link.

3. Footnote placement—A few commenters felt that all the footnotes should be at the end of the table and not inserted within the table itself because it was distracting. I agree it’s neater putting the footnotes at the end of the table, although I had received very positive comments about inserting footnotes within Table 40 during the Human Health rulemaking—they were easily referenced and you didn’t have to go to the end of the table to find them. Even though I think it’s visually a little awkward, one of the most important advantages I see to including the footnotes within the table is that it forces users to immediately look at the footnote associated with the criterion. From my experience with both internal and external users of the toxics tables, users don’t always pay attention to what the footnotes says because I suspect, they’re at the end of the table. I think it also cuts down on errors attributing the correct footnote to the criterion because your eye picks up the error more quickly. We had a number of footnote errors from 2004… For now, the WQS program wants to keep it as is, unless we get a lot of negative comments about it during public comment. I did change “Footnotes” to “Endnotes” since that is the more correct term if the notes are found at the end of a table.

4. Arsenic footnote: During the internal review, I asked EPA if the ALC for arsenic was expressed as total inorganic or total recoverable because the footnote described it as both III and V which are inorganic forms (note that the footnote and criteria that DEQ are reinstating from the 2004 rulemaking are based on EPA 304(a) recommendations). EPA indicated that it is actually expressed as total inorganic arsenic per National Toxic Rule. Therefore, DEQ proposes to change the footnote to “*Criterion is applied as total* ***inorganic*** *arsenic (i.e. arsenic (III) + arsenic (V)).”* Another reviewer had the same comment about the metal expression.

5. Should BHC Gamma (Lindane) FW acute criterion have the pesticide footnote as well? No—it was approved by EPA. EPA updated the acute criterion as part of the 1995 updates, so the old methodology (i.e. for frequency and duration components of a criterion) for pesticides and the pesticide footnote, do not apply anymore.

6. Based on a reviewer comment, I will list Cr III before Cr VI

7. DDT 4,4’—A reviewer had a question about the footnote. If the footnote says, “*This criterion applies to DDT and its metabolites (i.e. the total concentration of DDT and its metabolites should not exceed this value).”* why do we list DDT 4,4’? Why not just write, “DDTs”? Yes, it is a little confusing. We earlier wrote a DDT memo about which metabolites to include in the analysis. The memo says, *“*Because there is no clear direction on what DDT metabolites are included in the analysis of DDT for the aquatic life criteria, DEQ will refer to the DDT metabolites included as human health criteria. Therefore, separate analyses for DDD,-4,4’, DDE,-4,4’, and DDT,-4,4’ must be completed and then each result added together and compared to the aquatic life criterion for DDT,-4,4’.” I hadn’t found clear direction on this in the EPA DDT criteria document. The Standards program is hesitant to make clarifications here as part of this rulemaking since we’re trying to keep it to straight-forward corrections which would probably not be the case here.

8. A reviewer questioned whether the FW CCC for Se was correct. EPA’s 304(a) criterion is listed as 5.0 ug/L, while Table 30 is 4.6. EPA’s criteria for Se are expressed as total, while DEQ decided in 2004 to express Se as dissolved like the other metals, so it is correct.

9. Endnotes E and F for hardness-based footnotes. A reviewer proposed to add “expressed as CaCO3” to better describe hardness. We may not want to do that since there’s also a formula using Mg and Ca results to use for hardness if CaCO3 is not available, so we may unnecessarily limit the use of Mg and Ca data if we are too specific here.

In addition, the commenter asked if we should clarify the titles of these endnotes by adding the terms “total recoverable” and “dissolved” to the titles. It’s not a bad idea to provide clarifying language, but the titles get to be a bit lengthy (and they are already lengthy) if we also add this information there. The metal expression (i.e. total recoverable and dissolved) are in the first sentence of each of the descriptions, so I think it’s clear.

The commenter suggested revised language in both endnotes. I made the following edits:

Criteria values for hardness ~~may be~~ are calculated ~~from~~ using the following formulas…

10. There was a comment that for those metals which are not hardness-dependent whether we should just remove the conversion factors from the table in the footnote because someone may erroneously apply the CFs to criteria that already reflect it. I propose leaving the conversion factors there to make it clear which CFs were used to convert a total expression to a dissolved expression, even if the criterion already reflects the conversion. As part of its action, EPA will also approve/disapprove the applicable CFs as part of their action (for the criteria that changed). I think the footnote is written clearer than before, so hopefully users won’t use the CFs if the criterion is already converted to dissolved.

11. Ammonia Criteria. EPA pointed out that the freshwater ammonia criteria from 1985 (which is what DEQ reverts back to given the disapproval action) is NOT dependent on life stage, so I removed that language from the footnote. Instead I added language about the criteria being dependent on salmonid and coldwater species. See below:

*Criteria are pH, temperature, and salmonid or sensitive coldwater species dependent-- See document USEPA January 1985 (Fresh Water).*

In addition, EPA and another reviewer pointed out that part of the equation in the footnote was left off. See correction below:

**Chronic Criterion**

The 4-day average concentration of un-ionized ammonia (mg/L NH3) does not exceed more often than once every three years on average, the average numerical value given by:

CCCNH3 = 0.80/FT/FPH/RATIO

where FT and FPH are as above for acute criterion and:

RATIO = 16 7.7 ≤ pH ≤ 9

RATIO = 24 X (107.7 – pH/1 + 10 7.4-pH) 6.5≤ pH ≤ 7.7

TCAP = 15 C; Salmonids and other sensitive coldwater species present

TCAP = 20 C; Salmonids and other sensitive coldwater species absent

A commenter liked the addition of the freshwater ammonia equations and asked that the variables be defined. I added the definitions. Additionally, it would be good to add the saltwater ammonia equations to the table. DEQ staff could not find the ammonia saltwater equations in the 1989 EPA criteria document or elsewhere. When I asked R10 EPA staff about these equations, she did some research and talked to EPA HQ staff and this was her response:

“There are no simple equations that can be added to the WQS, the tables were done using computer models.  I sent a message to HQ to ask if there is a spreadsheet or something like that we can share with Oregon.”

Therefore, we will not add these equations to the endnotes, but will use the EPA saltwater spreadsheet to QA DEQ’s spreadsheet.

**Table 33C**

1. Should we rename Table 33C to Table 31 or 50 or ??? I received several comments about this because Tables 33A and 33B will be deleted and it probably doesn’t make much sense to retain a 33C. Since Table 33C is comprised of aquatic guidance values, we think the table should also be a “30’s something” table. We propose Table 31. I searched the following OAR 340 Divisions to determine whether or not references to Table 33C would need to be corrected: 40, 41, 42, 44, 45, 48, 50, 53, 55, 93, 94, 95, and 100-104. There were no references found.

2. Received comments from EPA and another reviewer about removing the arsenic guidance values from the table since we have ALC for arsenic. We agree to remove arsenic from the table. EPA also mentioned two additional pollutants:

* Acrolein – EPA developed new AL criteria in 2009 that are significantly more stringent than the guidance values in this table
* Diazinon – New AL criteria were developed in 2005 (less stringent for FW, new saltwater criteria)

Because this rulemaking is focusing on straightforward types of amendments, DEQ proposes not to update the guidance values for acrolein and diazinon.

A commenter also questioned why we have guidance values for Cr III and DDD 4,4’. Since we don’t have ALC for Cr III saltwater acute, we propose to leave the guidance value for saltwater acute. I would also propose to keep the guidance values for DDD 4,4’ since Table 30 does not contain criteria specifically for DDD 4,4’. The Table 30 DDT 4,4’ criteria values represent a summation of metabolites which could at least theoretically allow a greater concentration of DDD 4,4’ than the guidance value for the FW acute (not the case for the SW acute guidance value).

Generally, DEQ’s objective for Table 33C for this rulemaking is to update the formatting, rename it, and make straightforward corrections. Any other substantive type revision would have had to been discussed more with the Advisory Committee and internal staff. We may be able to address outstanding substantive issues in subsequent toxics rulemakings.

**Table 40**

1. The Clean Up program asked:

Previously I had asked about arsenic, and you explained why we have different risk values for it. After thinking about it some more, I suggest stating explicitly in the footnote that the values are based on regional background levels. You can add that the risk levels at background concentrations are approximately 1 x 10-5 and 1 x 10-4. I would not say 1.1 x 10-5 because this implies too much precision in the value. EPA and DEQ cleanup guidance says do not report cancer risk estimates to more than one significant digit.

Response from Debra Sturdevant: Mike’s suggestion starts getting into why we adopted the criterion we did rather than what it is.  I suggest not trying to go down that road in the table notes.  It is not short and simple to state it completely accurately and often when we try to make simplifying shortcuts it gets us in trouble.

I have no problem with using “approximately 1 x 10 -5 rather than 1.1 x 10-5.” This revision was made.

2. More comments from Clean Up program:

Two years ago I had comments on chromium 6, dioxins, PAHs, ethylbenzene, and other chemicals, but I understand we are being consistent with EPA. Someday I should just pass my concerns on to the EPA Superfund toxicologists and have them talk with EPA WQ folks about getting up to date on the latest toxicity information. I’ll move on now.

I placed the following comments in the clean version of Table 40, but I’ll repeat them here.

I do have a new thought on chromium. Putting carcinogenicity aside, EPA does not list an AWQC because they say chromium has a more stringent MCL. Why doesn’t EPA list the MCL in the AWQC table? They do for other chemicals. To me not listing an AWQC implies that it is not toxic enough to be concerned about, but the fact that chromium has an MCL is important (even if it is outdated). EPA at least includes chromium in their table, although without a value. You might consider showing chromium with its MCL, although this would not be consistent with EPA.

My understanding with the use of MCLs as AWQC is that in absence of other tox information (i.e. sufficient quality and quantity) that MCLs were used in the past, but that’s not what EPA would do now for developing AWQC criteria. Under the National Toxics Rule, EPA withdrew 8 human health toxics pollutants—Beryllium, Cadmium, Chromium III, Chromium VI, Lead, Mercury, Silver, Trichloroethane 1, 1, 1 because they did not generally have sufficient data anymore to support those criteria. In 2004, DEQ proposed to also withdraw those pollutants to align with EPA recommendations. EPA approved those withdrawals in 2010. I do know what you’re saying about the appearance of the withdrawal of Cr—i.e. not toxic.  That’s certainly not the case.  I think EPA, and the DEQ WQ program would agree, however, that having a MCL even in absence of an AWQC for total Cr is protective of human health, since the MCL must be met at the tap. The benefit of also having an AWQC for Cr would be the reduction of Cr to drinking water sources—i.e. less reduction effort/costs for the DW system. That being said, we would probably agree with EPA that we wouldn’t use the MCL value where there was no 304(a) criterion.  I don’t know where EPA is in developing a potential MCL for Cr VI….

Looking at chromium and the footnotes made me notice some of the other chemicals. We say the barium WQC of 1,000 ug/L is based on the MCL, but the MCL is 2,000 ug/L. “Based on” doesn’t necessarily mean equal to, but I wanted to call attention to this. The same applies to 2,4-D (WQC = 100 ug/L, MCL = 70 ug/L) and methoxychlor (WQC = 100 ug/L, MCL = 40 ug/L  ). For nitrates, WQC = MCL = 10,000 ug/L. I don’t see 2,4,5-TP in EPA’s AWQC or MCL tables.

Yes, you’re right. Some of the values that were based on MCLs and footnoted as such in Table 40 are NOT the current MCLs. EPA has since updated some of these MCLs, but I think the AWQC were not subsequently updated probably because the whole idea of applying MCLs to AWQC is already suspect. As part of the 2011 human health toxics rulemaking, I discussed with Jennifer Wigal whether or not we should update the HHC based on MCLs to EPA’s/OR’s current MCLs and she didn’t think we should go there. Mainly because it’s already difficult justifying AWQC based on MCLs, let alone justifying a different number other than EPA’s current 304(a) recommendations.

I obviously did not check every value, but for some reason I happened to notice that our value for endrin is not a factor of 10 lower than EPA’s value (DEQ = 0.024 ug/L v. EPA 0.060 ug/L). Also, methylmercury is not exactly a factor of 10 (DEQ = 0.04 mg/kg v. EPA 0.3 mg/kg tissue).

You’re observant, Mike! Yes, for these two, the Relative Source Contribution (RSC) factors were different than EPA’s RSC (The RSC identifies or estimates the portion of total exposure attributed to water and fish consumption, and therefore, accounts for potential exposure from other sources, such as skin absorption, inhalation, other foods and occupational exposures.). From research we did, we determined that endrin’s RSC was 0.8 (i.e. 20% of exposure comes from other sources than water and fish consumption) rather than EPA’s 0.2. That difference resulted in a criterion of 0.024 vs. 0.0060.

For meHg, because DEQ accounted for marine species in developing the fish consumption rate and EPA did not, DEQ completely removed the RSC value from the calculation. Because the primary human route of exposure to meHg comes from ingestion of fish and shellfish, and because DEQ included marine species in the development of its fish consumption rate, it would be “double counting” the exposure if DEQ incorporated the same RSC value used in EPA’s recommended meHg criterion.  As you know, MeHg is unique in that it is a fish tissue criterion and the primary route of exposure to humans is through the consumption of fish and shellfish.  The other criteria where RSC values have been established have other contributing sources of pollutant (e.g., consumption of food or other exposure routes), so removing the RSC would not be appropriate in those circumstances.