

NORTHWEST ENVIRONMENTAL ADVOCATES



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via email only: everett.carrie@deq.state.or.us

Re: **Draft NPDES Permit for McFarland Cascade Holdings Inc.**

Dear Ms. Everett:

Please find Northwest Environmental Advocate's comments on the draft NPDES Permit for McFarland Cascade Holdings Inc. below.

I. Mercury

We agree that all sources of mercury should be required to institute Mercury Minimization Plans ("MMP") as is required in Schedule D Condition 8. We disagree that DEQ can issue a permit without a water quality-based effluent limit ("WQBEL") for mercury. First, while NWEA does not believe that the Willamette Mercury TMDL is an actual TMDL, DEQ did submit it to EPA for approval and EPA did approve it as a TMDL. Therefore, this permit must conform to the assumptions and requirements of the approved TMDL. 40 C.F.R. § 122.44(d)(vii)(B). The TMDL states that "[p]oint sources within a sector will be required to develop mercury minimization plans and to monitor their effluent to better characterize their contribution of mercury and the effectiveness of management measures. The implementation of best management practices (BMPs) should allow point sources to meet the overall allocation for the specific sector." *Id.* at 3-34. It also requires "an 'across the board' reduction of 27% for each of the source categories considered in the analysis." *Id.* Therefore, DEQ must establish a WQBEL of 27 percent of the total mercury loading in the MCHI effluent as called for in the TMDL. In addition, as the TMDL states that BMPs should be sufficient to meet the overall allocation for the sector, namely MCHI's contribution to the 27 percent reduction, and that minimization plans must establish the "effectiveness of management measures," the permit must *establish* that the BMPs will in fact result in that level of reduction. BMPs are allowed only when numeric effluent limitations are "infeasible." 40 C.F.R. § 122.44(k)(3). However, DEQ has not demonstrated that it is infeasible to take the amount of mercury measured in the MCHI effluent and reduce it by 27 percent to establish a numeric effluent limit. Therefore, there is no basis for use of BMPs *solely* without a numeric effluent limit. If DEQ believes that having the BMPs is also "reasonably necessary to achieve effluent limitations and standards," DEQ is well within its rights to include the BMPs in addition to the numeric effluent limit. 40 C.F.R. § 122.44(k)(4). We agree that it is appropriate for DEQ to require both. One thing is clear: DEQ cannot ignore TMDL wasteload allocations. *See e.g.*, Letter from Michael J. Lidgard, Manager, NPDES Permits Unit, EPA, to Spencer Bohaboy, ODEQ Re: U.S. Environmental Protection Agency Comments Draft National Pollutant Discharge Elimination System Permit and Fact Sheet Oak

Lodge Water Reclamation Facility, NPDES Permit No. 100986 (July 18, 2013) at 2 (“temperature limits are required for discharges to impaired waters with an EPA-approved TMDL and assigned wasteload allocation[.]”).

Moreover, the draft permit in Schedule A Condition 4 calls for development of a plan that involves only “identification” and “monitoring.” Condition 4.e, which arguably comes the closest to actual pollution controls, does not require any pollution reduction. Instead, it calls for “[i]dentification of potential methods for reducing or eliminating mercury.” After two years MCHI will have issued a plan with “potential methods” which it then must “implement[.]” within one month of DEQ’s approval. Permit Schedule A, Condition 4.f. It is unclear how DEQ thinks that MCHI can implement a “potential method.” There is, additionally, no accountability for failure of MCHI to institute an *effective* plan, so long as it’s a plan. This provision is, in short, a fig leaf, just as the so-called TMDL for Willamette mercury has always been. But so long as DEQ has sought credit for developing a mercury TMDL, and EPA has approved it as a TMDL, DEQ must issue permits consistent with it. In any case, the actual conditions of the permit do not assure that it will assure compliance with the statute and regulations, as required. 40 C.F.R. § 122.4(a).

The permit contains too much ambiguity as to what little accountability might be inferred from its present language. Condition 4 states that “[i]f it is determined that the MMP is not effective . . . DEQ may reopen the permit to modify the permit conditions, including a possible numeric effluent limit.” This raises several questions. First, if DEQ believes that it is possible, in the event that MCHI fails to do a good job with its MMP, to establish a numeric effluent limit, why does it not believe that it is capable of establishing such a limit now? Such a limit is required in light of the “wasteload allocation” established in the TMDL which cannot be ignored. *See supra*. Moreover, where BMPs are allowed in lieu of WQBELs, it is only where the WQBELs cannot be set, 40 C.F.R. § 122.44(k), but here DEQ is saying that it is capable of setting them. Second, when will DEQ make this determination? Third, how will the determination of ineffectiveness be made? Is this effectiveness in achieving the 27 percent reduction of the WLA that is not expressed in the permit or is it in the eye of the DEQ staff beholder? Fourth, why does this attenuated reduction not require a compliance schedule? These questions are both questions and rhetorical statements (comments). Since DEQ has admitted it is capable of setting numeric effluent limits, it must do so here. DEQ has not established a date for determining the efficacy of the MMP nor a method of evaluating it. And, a compliance schedule is required in the permit because on its face the permit does not ensure that water quality standards will be met at the time the permit is issued as is required. 40 C.F.R. § 122.4(a); 40 C.F.R. § 122.44(d).

However, DEQ cannot rely only on the outcome of the TMDL to meet water quality standards because it was established to meet a human health criterion for mercury that is now superseded by new human health criteria and which failed to address the levels of mercury that can be allowed for the protection of aquatic and aquatic-dependent wildlife pursuant to DEQ’s narrative criteria for toxics. *See, e.g.*, OAR 340-041-0033(2) (toxic substances may “not be introduced . . . in amounts, concentrations, or combinations that may . . . bioaccumulate in aquatic life or wildlife to levels that adversely affect . . . aquatic life, wildlife, or other designated beneficial uses.”). Federal regulations pertaining to the issuance of NPDES permits explicitly require consideration of narrative criteria which are, of course, only pertinent where numeric criteria are not established or they are inadequately protective. *See, e.g.*, 40 C.F.R. § 122.44(d)(i) (“Limitations must control all pollutants or pollutant parameters . . . which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to

cause, or contribute to an excursion above any State water quality standard, *including State narrative criteria for water quality.*)(emphasis added). *See American Paper Institute v. U.S. EPA*, 966 F.2d 346, 351 (D.C. Cir. 1993); *see also In re Town of Newmarket, New Hampshire*, NPDES Appeal No. 12-05, slip. op. at 26 (EAB Dec. 2, 2013) (“In order to translate those narrative standards into numeric effluent limitations for the Newmarket permit, the Region had to perform a three-step analysis: (1) translate the State’s narrative water quality standard into a numeric instream water quality target; (2) determine whether the discharge from the Newmarket Plant has a ‘reasonable potential’ to cause or contribute to an exceedance of that instream water quality target; and (3) if so, calculate the numeric permit effluent limitation that is necessary to achieve the instream water quality target.”). Therefore, DEQ must use the assumptions underlying the TMDL as a basis for WQBELs, but must further increase the load reductions in proportion to the changes that have been made in the human health criteria since the TMDL was developed, and, in addition, interpret and apply the applicable narrative criteria to the extent necessary. The WQBEL must be consistent with the assumptions of the TMDL and comply with the currently applicable standards in this permit. *See* 40 C.F.R. § 122.44(d)(1)(vii)(B).

In addition, DEQ may not include a mixing zone for mercury in the MCHI permit. A mixing zone for all pollutants appears to have been established in Schedule A, Condition 2. Having established a TMDL with *load* reductions and wasteload allocations, DEQ cannot issue wasteload allocations in permits that apply *after* those loads have been diluted in a mixing zone. Where the issue is dilution, as in numeric criteria which are established as concentrations, and to the extent mixing zones are allowed and applicable, dilution is an appropriate calculation to make to evaluate whether a discharge is meeting the concentrations established in a criterion. A wasteload allocation is not, however, a concentration; it is a load. A wasteload, therefore, must apply to the end-of-pipe and cannot be evaluated after dilution because dilution is not logically applied to loads, only to concentrations. The load is the load, regardless of the concentration that results.

In addition, mixing zones are not allowed for pollutants being discharged into streams that are water quality limited for that pollutant because the permit cannot ensure that the discharge is not causing or contributing to the violation. 40 C.F.R. § 122.4(a); 40 C.F.R. § 122.44(d). In Idaho, where EPA issues NPDES permits and Idaho has the ability to modify the permits to include mixing zones through the issuance of 401 certifications, the mixing zone rules are similar to those in most states. Along with various conditions and considerations of width, flow, and the like, Idaho’s mixing zones include the following narrative: “The mixing zone is to be located so it does not cause unreasonable interference with or danger to existing beneficial uses.” *See* IDAPA 58.060.01.b. This is similar to the requirements of OAR 340-041-0053 that preclude impacts to existing and designated uses and degradation of the ecosystem. In discussing the Idaho restrictions in the context of allowing a mixing zone for a discharge to an impaired water body, EPA has stated that: “A mixing zone for temperature is not permissible in this case because the stretch of the Boise River where Darigold discharges is listed on the Idaho Section 303(d) list for temperature (as well as nutrients, sediment and bacteria). Idaho’s mixing zone policy (IDAPA 16.01.02.060.b) does not allow a mixing zone if it causes unreasonable interference with or danger to existing beneficial uses. Therefore, the state could not certify further thermal impairment of the Boise River” and “[b]ecause the beneficial use of the Boise River is already at risk for temperature, any increased thermal loading above that required of the beneficial use criteria would be inappropriate.” *See* EPA, Response to Comments, Darigold Inc. (undated) at 1, 3. Likewise, in developing another Idaho permit, EPA concluded that:

Mixing zone allowances will increase the mass loadings of the pollutant to the water body, and decrease treatment requirements. Mixing zones can be used only when there is adequate receiving water flow volume and the receiving water meets the criteria necessary to protect the designated uses of the water body. . . . Effluent limit and reasonable potential calculations for cadmium, lead, and zinc did not use mixing zones because the receiving water does not meet water quality standards for those pollutants.

EPA, Revised Fact Sheet, City of Coeur d'Alene Wastewater Treatment Plant at C-3. Moreover, EPA concluded that where a "mixing zone is not authorized (for lead and zinc, in this case), either because the receiving water already exceeds the criterion, the receiving water flow is too low to provide dilution, or the State does not authorize one, the criterion becomes the WLA." *Id.* at C-4. Here, DEQ cannot authorize a mixing zone for mercury discharging to water quality-limited waterbodies because such a discharge would contribute to the violation.

Finally, it is unclear how this proposed permit conforms with the almost non-existent description of NPDES permitting contained in DEQ's Internal Management Directive on Implementation of Methylmercury Criterion in NPDES Permits, issued January 2013. The IMD states that "if a quantifiable concentration of total mercury is detected in a facility's discharge it must be evaluated for reasonable potential." *Id.* at 2. In addition, the IMD states that: "Any facility contributing significant and consistent concentrations of total mercury to the receiving water body is considered to have the reasonable potential to exceed the water quality criterion unless a site-specific survey determines otherwise." *Id.* at 3. Contrary to the IMD, however, DEQ has not made a reasonable potential determination for MCHI. And it has not explained why the IMD is not being followed for this permit. Even so, it is obvious that MCHI's contribution of mercury, present in its effluent and being discharged to a water quality-limited system, has reasonable potential to cause or contribute to a violation of water quality standards.

It is NWEA's view that the IMD is a flawed document with little regulatory value. The IMD, in a single paragraph, states that no effluent limits are required even, apparently, where, as here, a TMDL has been completed that makes the link between methylmercury tissue levels and water column levels. *Id.* This rationale is based on the fact that DEQ has adopted a fish tissue-based criterion and "permit limits for MeHg cannot be expressed in terms of a concentration (without a translation factor)." *Id.* DEQ is missing the fact that numeric effluent limits are required to be expressed as mass limitations, not concentrations. 40 C.F.R. § 122.45(f)(1) ("All pollutants limited in permits shall have limitations, standards or prohibitions expressed in terms of mass except . . . pH, temperature, radiation, or other pollutants which cannot appropriately be expressed by mass."). DEQ has not demonstrated that mercury cannot be expressed in terms of mass.

To the extent the Mercury Minimization Plan is a compliance schedule for meeting water quality standards for mercury, which we would dispute for the reasons explained above, DEQ has not complied with regulations on compliance schedules. 40 C.F.R. § 122.47(a)(3) (a schedule of compliance exceeding one year must have interim requirements and the date for their achievement, not to exceed one year each). Compliance schedule reporting must also be included in the permit. 40 C.F.R. §§ 122.41(l)(5), 122.47(a)(4).

Finally, DEQ is incorrect that its IMD in any way relieves the agency from complying the federal regulations in issuing this permit. *See* Mercury TMDL at 3-33 ("The water column

guidance value for total mercury (associated with the median value for the northern pikeminnow) is 0.92 ng/l (Table 3.3). If this guidance value were reached fifty percent of the time in the Willamette mainstem system, then our analysis predicts that average fish tissue concentrations of mercury in the northern pikeminnow will eventually fall below the threshold of 0.3 mg/kg thereby eliminating the need for fish consumption advisories pertaining to mercury.”). If DEQ was not prepared to use its methylmercury criterion as a tissue level for purposes of NPDES permitting, DEQ should not have deleted its human health criteria for mercury. In any case, DEQ has a TMDL, a tissue-based criterion, and narrative criteria, all of which apply to this discharge.

II. Copper

Copper is a known pollutant in the discharge. Fact Sheet at 4 (“Oil-borne preservatives include copper naphthenate (CuNap) and pentachlorophenol.”). The discharger has a history of copper permit limit violations. *See* Fact Sheet at 7. DEQ has determined that there is “a potential” for copper to exceed “the criterion” in the “final effluent,” whatever those terms mean. Fact Sheet at 11. DEQ also informs us that it has not required the permittee to obtain data on copper in the receiving stream. *Id.* The draft permit proposes to allow two years for such data collection, notwithstanding the age of this permit. *Id.* Needless to say, this is evidence of DEQ’s continued gross incompetence in permitting. Putting that aside, as we must, there are several problems with DEQ’s proposed approach.

First, DEQ refers to its criteria without telling the public whether it is using: (1) criteria disapproved by EPA, (2) criteria that pre-date the criteria disapproved by EPA to which Oregon has reverted, or (3) narrative criteria to provide appropriate protection in light of the EPA disapproval. Second, DEQ provides no concrete information in the fact sheet for the public to evaluate. *See* 40 C.F.R. § 124.8(b)(2) (A fact sheet must include “[t]he type and quantity of wastes, fluids, or pollutants which are proposed to be or are being treated, stored, disposed of, injected, emitted, or discharged.”); *see also* 40 C.F.R. § 124.8(b)(4) (the fact sheet must include “[a] brief summary of the basis for the draft permit conditions[.]”). Instead, there are vague references to inadequate information and statements that reflect past permit limits on copper with no rationale for those limits, either now or in the past. Third, there is no discussion of the role of hardness in establishing copper limits. Fourth, there is simply no basis given for the numeric copper limits proposed to be established in the draft permit.

A. DEQ Cannot Rely on its Existing Copper Criteria

Oregon’s water quality criteria for copper for the protection of freshwater aquatic life were 18 µg/L for acute exposure and 12 µg/L for chronic exposure, based on a water hardness of 100 mg/L. OAR 340-041, Table 20. Expressed as a function of hardness, the Table 20 criteria are acute criterion is $= (\exp(m_A * [\ln(\text{hardness})] + b_A)) * CF$ where $m_A = 0.9422$ and the b_A is $= -1.464$ and the chronic criterion is $= (\exp(m_C * [\ln(\text{hardness})] + b_C)) * CF$ where the $m_C = 0.8545$ and the b_C is $= -1.465$. The Environmental Quality Commission adopted aquatic life criteria for copper on May 20, 2004 which have been disapproved by EPA due to consultation under the Endangered Species Act. *See* OAR 340-041, Table 33B; *see also* EPA Clean Water Act 303(c) Determinations On Oregon’s New and Revised Aquatic Life Toxic Criteria Submitted on July 8, 2004, and as Amended by Oregon’s April 23, 2007 and July 21, 2011 Submissions (Jan. 20, 2013) at 6. These criteria are expressed as a function of hardness and set out in footnote F where the acute criterion is $= (\exp(m_A * [\ln(\text{hardness})] + b_A)) * CF$ where $m_A = 0.9422$, the b_A is $= -1.700$,

and the CF is 0.960 and the chronic criterion is $= (\exp(m_c * [\ln(\text{hardness})] + b_c)) * CF$ where the $m_c = 0.8545$, the b_c is $= -1.702$, and the CF is 0.960. For comparison, using a water hardness of 100 mg/L, the Table 33B criteria are 13.4 µg/L for acute exposure and 9.0 µg/L for chronic exposure.

On August 14, 2012 the National Marine Fisheries Service (NMFS) issued a biological opinion (“BiOp”) on some of Oregon’s aquatic life criteria. NMFS, Jeopardy and Destruction or Adverse Modification of Critical Habitat Endangered Species Act Biological Opinion for Environmental Protection Agency’s Proposed Approval of Certain Oregon Administrative Rules Related to Revised Water Quality Criteria for Toxic Pollutants, NMFS Consultation Number: 2008/00148 (Aug. 14, 2012). The relevant aspects of this BiOp with regard to the draft permit is the NMFS finding of jeopardy and adverse modification of critical habitat for both the acute and chronic criteria for copper from Table 33B based on the fact that Oregon’s criteria “cause significant adverse toxicological and biological effects on the listed species considered in this opinion.” *Id.* at 547. NMFS, with the agreement of EPA, was able to identify alternative numeric criteria for both copper criteria. *Id.* at 548. Accordingly, the Reasonable and Prudent Alternative (“RPA”) established in the BiOp is that EPA was required to disapprove Oregon’s acute and chronic criteria. NMFS concluded that the criteria it recommended will be “likely to avoid adverse chemosensory and behavioral effects to juvenile salmonid fishes” and that the chronic criterion is “unlikely to appreciably affect invertebrate productivity and abundance.” *Id.* at 554.

DEQ’s fact sheet for this discharge discusses copper to a very limited extent. It says nothing about the copper criteria, their current status, the role of narrative criteria in filling the gaps left by the EPA disapproval, and the role of hardness in applying hardness dependent criteria. DEQ’s fact sheet does not reflect the information on effects of copper on threatened and endangered species nor does it reflect the RPAs in the NMFS BiOp. As a consequence of its lack of knowledge about, apparently, everything, DEQ proposes to maintain the current copper effluent limits despite finding that “[t]he Tier 1 data indicates there is a potential for copper, iron and pentachlorophenol to exceed the criterion in the final effluent.” Fact Sheet at 11. The truth, however, is that DEQ is in receipt of information from NMFS and EPA that it must use to interpret and apply its narrative criteria for toxics that supersedes the currently-applicable numeric criteria which it now knows are not protective of designated uses. These criteria state that:

Toxic substances may not be introduced above natural background levels in waters of the state in amounts, concentrations, or combinations that may be harmful, may chemically change to harmful forms in the environment, or may accumulate in sediments or bioaccumulate in aquatic life or wildlife to levels that adversely affect public health, safety, or welfare or aquatic life, wildlife, or other designated beneficial uses.¹

* * *

The creation of tastes or odors or toxic or other conditions that are deleterious to fish or other aquatic life ... may not be allowed.²

¹ OAR 340-041-0033(2).

² OAR 340-041-0007(11).

The NMFS BiOp provides DEQ with sufficient information to interpret and apply its narrative criteria because DEQ's narrative criteria preclude the discharge of copper in amounts or concentrations that may be harmful to aquatic life and NMFS has found that criteria at the current EPA-approved numeric criteria are, in fact, harmful in violation of OAR 340-041-0033(2). In addition, a copper effluent limit based on the current copper criteria will allow the creation of odors or toxic conditions that are deleterious to fish that are not allowed pursuant to OAR 340-041-0007(11). As the NMFS BiOp explains:

Copper has been known to disrupt the normal function of the olfactory system in salmonids for over 45 years (Sprauge et al. 1965, Hara et al. 1976). More recent studies using EOGs and EEGs have shown disruption at concentrations of dissolved copper at or slightly above background concentrations (Baldwin et al. 2003, Sandahl et al. 2004). Hecht et al. (2007) defines background as surface waters equal to 3 µg/L dissolved copper, since experimental waters had background concentrations as high as 3 µg/L dissolved copper. There have been mixed results as to whether certain fish species are more sensitive than others to the olfactory neurotoxicity of copper. In experiments using EEG recordings, Hansen et al. (1999a) found that rainbow trout (*O. mykiss*) were more vulnerable than juvenile Chinook salmon (*O. tshawytscha*). Thus, while there may be modest differences in sensitivity for some species, the available evidence suggests that copper is a general olfactory toxicant for all freshwater fish. Although chemoreception is probably a fundamental function in most, if not all, fishes (Tierney et al. 2010), many of these studies evaluated copper avoidance or copper-induced olfactory impairment in salmonid fishes (e.g., Hansen et al. 1999a,b; Baldwin et al. 2003, 2011; Sandahl et al. 2007; McIntyre et al. 2008a).

Most behavioral studies on toxicity to chemoreception (i.e., avoidance, food attraction, and alarm response) are problematic because it is difficult to separate olfactory toxicity from other forms of toxicity (Tierney et al. 2010). Behavioral responses can integrate many inputs, which may introduce uncertainty when attributing olfactory impairment to altered behavioral responses (Tierney et al. 2010). A few olfactory toxicological studies have related effects across organizational levels and these can be divided into two categories: 1) those that relate changes in electrochemical responses to physiological responses or to behavioral responses; and 2) those that relate olfactory-mediated physiologic responses to behavioral responses (Tierney et al. 2010). For copper, Sandahl et al. (2007) demonstrated that the relationship between loss of sensory function (EOG) and behavioral impairment was highly correlated. Alarm pheromone (a substance released during fish injuries) triggered an average reduction in swimming speed of 74% and elicited a mean EOG response of 1.2 mV in unexposed salmon. Salmon exposed to 2 to 20 µg/L copper exhibited reductions in both EOG (50-92%) and in alarm response (Hecht et al. 2007, Sandahl et al. 2007). Statistically significant reductions in EOG response to skin extract occurred at all concentrations tested (2, 5, 10, and 20 µg/L copper), while no significant reductions in swimming speed (majority of fish did not become motionless) occurred at higher copper concentrations (5, 10, and 20 µg/L; Sandahl et al. 2007). In fish, direct exposure to dissolved copper can impair and destroy ORNs, although the precise mechanism remains unknown (Hecht et al. 2007).

Given the importance of sensory perception, impaired olfaction may in many cases be of more immediate survival concern than other physiological impairments (Tierney et al. 2010). The studies reviewed in this section illustrate several important aspects of copper toxicity to the olfactory system: 1) neurotoxic effects of copper can occur within minutes of exposure; 2) low concentrations can elicit responses; 3) at low concentrations, inhibition is transient and recovery can be seen within hours or when the toxicant is removed; and 4) incomplete or time-sensitive recovery of olfactory system to food-based, conspecific and predator-related odors, and reproductive pheromones.

Several studies indicate that thresholds exist between neurological, physiological and behavioral responses, and more than sufficient information exists to indicate that for fishes, olfaction is indispensable and sensitive to contaminants. Tierney et al. (2010) reviewed the ramifications for extrapolating neurological and physiological data to behavioral and ecological impacts as straightforward: lower order measures (e.g., EOG) may underestimate the impact of toxicity to higher order biological responses (e.g., mating). Tierney et al. (2010) report that setting regulations below where negative responses are observed in olfactory-based systems is not warranted until effects relevant to populations are better established.³

McIntyre et al. (2012) calculated survival probabilities for copper exposures relative to controls for coho salmon that ranged from 10 percent at 20 µg/L to 17 percent at 5 µg/L. McIntyre et al. (2012) also determined that relatively brief (3 hours) exposures to copper ranging from 5 to 20 µg/L eliminated the behavioral alarm response in coho salmon prey, leading in turn to increased detection, reduced evasion, and reduced survival during predation trials.

Experimental data suggests that significant amelioration of olfactory toxicity due to hardness is unlikely in typical Pacific salmonid freshwater habitats (Hecht et al. 2007). The experiment showed that hardness at 20, 120, and 240 mg/L Ca (experimentally introduced as CaCl₂) did not significantly protect juvenile coho salmon from olfactory toxicity following 30 minute laboratory exposures to 10 µg dCu/L above an experimental background of 3 µg/L (Baldwin et al. 2003).⁴

The olfactory effects described by NMFS are precisely those “odors or toxic or other conditions that are deleterious to fish or other aquatic life” that OAR 340-041-0007(11) proscribes.

B. DEQ Must Use Applicable Hardness Values for Receiving Waters

Copper criteria are hardness dependent. Although DEQ has left us in the dark as to which criteria it is using in this permit, Table 20 states that the “+” sign next to the numeric criteria indicate that “= Hardness Dependent Criteria (100 mg/L used).” It goes on to state, prior to giving the formulas and values set out above that “[t]he freshwater criterion for this metal is

³ BiOp, *supra* fn 21, at 305-6.

⁴ *Id.* at 307.

expressed as a function of hardness (mg/L) in the water column. Criteria values for hardness may be calculated from the following formulae[.]” The same is true of disapproved copper criteria.

DEQ is silent on the hardness assumed or measured in its evaluation of this draft permit. However, we know that DEQ can be very cavalier about hardness, despite the precision in its standard. For example, in the draft 2000J general permit DEQ established its effluent limit for copper using an assumed hardness of 100 mg/L for all waters. This apparently was based on the following analysis:

DEQ is proposing to maintain the individual permit limit on copper. The 12 µg/L maximum daily copper limit is in keeping with the previous permit limits for the individual irrigation district permits and is based on a hardness of 100 mg/L. To develop this hardness, DEQ searched the Laboratory Analytical Storage and Retrieval (LASAR) database (<http://www.deq.state.or.us/news/databases.htm>) for statewide hardness values in ditches, drains, culverts and canals. The average hardness was 140 mg/L. The data ranged from 11 to 580 mg/L. 2002 hardness data for West Extension Irrigation District indicates that hardness in the canal on average was 106 mg/L. Washington state provided the average hardness results in their 2011 irrigation pesticide general permit fact sheet. The fact sheet provided the average hardness from the sampling conducted in irrigation systems. Out of 782 samples, the average hardness was 122 mg/L. Samples results ranged from 10 to 440 mg/L.

DEQ, 2000J Fact Sheet at 18. There, DEQ called for a monthly grab sample of hardness “following a copper-based pesticide application” in Schedule B Condition 3.a.ii. Here there are no requirements whatsoever to obtain hardness samples. Even the requirement for supplemental toxics monitoring, in Schedule B §3, does not include monitoring for hardness at the same time as obtaining copper samples. As a result, DEQ is guaranteeing that the copper monitoring will not be usable. Nor are there any changes to the effluent limits based on *actual* hardness levels in the receiving water despite the fact that numeric criteria for copper are unambiguously “hardness dependent.” As we know, a decrease in water hardness increases copper toxicity. It is unclear why DEQ believes that it can ignore hardness in evaluated copper discharges from MCHI. DEQ must use values that provide the appropriate level of protection for all waters, namely the lowest hardness values, or it must ensure that the permit limits are appropriate for each receiving water.

C. DEQ Must Address the Limitations of Quantitation Limits

According to Schedule B Condition 3.a.ii of the permit, the quantitation limit for copper is 10 µg/L. The NMFS BiOp RPAs require EPA to recommend to Oregon and to promulgate for Oregon in the event of no state action a new acute criterion of 2.3 µg/L criterion and a new chronic criterion of 1.45 µg/L at 100 mg/L hardness. Both of these required criteria are well under the quantitation limit established by DEQ for monitoring the MCHI permit of 10 µg/L.

DEQ has an obligation to require the minimization of copper under this circumstance, particularly since the quantitation limit poses jeopardy to threatened and endangered species. Federal regulations prohibit DEQ from issuing NPDES permits “[w]hen the conditions of the permit do not provide for compliance with the applicable requirements of the CWA, or regulations promulgated under CWA[.]” 40 C.F.R. § 122.4(a). The Clean Water Act requires,

inter alia, that permits to discharge pollutants achieve “any more stringent limitation, including those necessary to meet water quality standards[.]” CWA 301(b)(1)(C). Likewise, federal regulations prohibit DEQ from issuing NPDES permits unless permit conditions can “ensure compliance with the applicable water quality requirements” of all affected states. 40 C.F.R. § 122.4(d). Use of an effluent limit that is based on a quantitation limit that is well above the applicable criteria does not ensure compliance with numeric water quality criteria and therefore is inconsistent with the law. Similarly an effluent limit that causes jeopardy to threatened and endangered species does not protect designated uses which are a required part of water quality standards.⁵

It may also be instructive for the DEQ to look at the Great Lakes Initiative (GLI) regulations, in which EPA created a procedure applicable to setting water quality-based effluent limits below the quantitation level in an area where EPA is more concerned about the effects of toxics, which presumably would also apply where NMFS has found jeopardy. 40 C.F.R. Part 132 Appendix F Procedure 8 D. GLI Procedure 8 requires the effluent limit to be established as calculated and that the “most sensitive, applicable, analytical method, specified in or approved under 40 CFR part 136, or other appropriate method if one is not available under 40 CFR part 136, to be used to monitor for the presence and amount in an effluent of the pollutant for which the WQBEL is established” be specified, along with the quantification level that can be achieved through that specified method. *Id.* at B.1. In addition,

The permit *shall* contain a reopener clause authorizing modification or revocation and reissuance of the permit if new information generated as a result of special conditions included in the permit indicates that presence of the pollutant in the discharge at levels above the WQBEL. Special conditions that may be included in the permit include, but are not limited to, fish tissue sampling, whole effluent toxicity (WET) tests, limits and/or monitoring requirements on internal waste streams, and monitoring for surrogate parameters. Data generated as a result of special conditions can be used to reopen the permit to establish more stringent effluent limits or conditions, if necessary.

Id. at C (emphasis added). In addition, EPA GLI rules require:

a condition in the permit requiring the permittee to develop and conduct a pollutant minimization program for each pollutant with a WQBEL below the quantification level. The goal of the pollutant minimization program [PMP] shall be to maintain the effluent at or below the WQBEL. In addition, States and Tribes may consider cost-effectiveness when evaluating the requirements of a PMP. The pollutant minimization program shall include, but is not limited to, the following:

1. An annual review and semi-annual monitoring of potential sources of the pollutant, which may include fish tissue monitoring and other bio-uptake sampling;

⁵ The legal definition of water quality standards includes the designated beneficial uses of aquatic life protection and protection of existing uses under the antidegradation policy, defined as those uses present at any time since November 28, 1975. *PUD No. 1 of Jefferson County v. Washington Department of Ecology*, 114 S.Ct. 1900, 1905 (1994); 40 C.F.R. §§ 131.12(a)(1), 131.3(e), 131.6(a), 131.3(f).

2. Quarterly monitoring for the pollutant in the influent to the wastewater treatment system;
3. Submittal of a control strategy designed to proceed toward the goal of maintaining the effluent below the WQBEL;
4. Implementation of appropriate, cost-effective control measures consistent with the control strategy; and
5. An annual status report that shall be sent to the permitting authority including:
 - a. All minimization program monitoring results for the previous year;
 - b. A list of potential sources of the pollutant; and
 - c. A summary of all action undertaken pursuant to the control strategy.
6. Any information generated as a result of procedure 8.D can be used to support a request for subsequent permit modifications, including revisions to (e.g., more or less frequent monitoring), or removal of the requirements of procedure 8.D, consistent with 40 CFR 122.44, 122.62 and 122.63.

While the GLI rules do not apply in Oregon, they provide a plausible path for DEQ to use to address quantitation levels that are well above the level of copper that causes jeopardy to threatened and endangered species. Doing nothing other than establishing the quantitation limits as the enforcement level for water quality-based effluent limits in the permit is not sufficient to meet the requirements of the CWA.

In addition, EPA regulations provide for the use of internal waste stream limits in instances where “permit effluent limitations or standards imposed at the point of discharge are impractical or infeasible.” 40 C.F.R. § 122.45(h)(1). Use of such an approach requires DEQ to set forth the circumstances that warrant the use of internal waste stream limits in the fact sheet. 40 C.F.R. § 122.45(h)(2). DEQ has neither considered nor set forth this rationale in the fact sheet. The circumstances as set forth in these comments, however, warrant use of internal waste stream limits because “such limitations [are] necessary [because] the wastes at the point of discharge are so diluted as to make monitoring impracticable[.]” *Id.* There may not be any internal waste stream that can be monitored for copper so as to overcome the detection problems; we do not have the expertise to know. But DEQ is required to evaluate the potential to do so in order that the discharge provides for compliance with the statute and implementing regulations. 40 C.F.R. § 122.4(a).

Finally, EPA has just issued a new rule, National Pollutant Discharge Elimination System (NPDES): Use of Sufficiently Sensitive Test Methods for Permit Applications and Reporting, 79 Fed. Reg. 49001 (Aug. 19, 2014). This rule “codify[ies] that under the National Pollutant Discharge Elimination System (NPDES) program, permit applicants must use ‘sufficiently sensitive’ analytical test methods when completing an NPDES permit application and the Director must prescribe that only ‘sufficiently sensitive’ methods be used for analyses of pollutants or pollutant parameters under an NPDES permit.” *Id.* While the rule is not yet effective, although it will be shortly, the preamble to the rule makes clear that it merely codifies existing EPA policy and interpretation of existing rules. *See, e.g., id.* at 49003 (“the Agency has historically expected that applicants would select from the array of available methods a specific analytical method that is sufficiently sensitive to quantify the presence of a pollutant in a given discharge. EPA has not expected that NPDES permit applicants would select a method with insufficient sensitivity, thereby masking the presence of a pollutant in their discharge, when an

EPA-approved sufficiently sensitive method is available.”). In order to demonstrate compliance with this rule and/or existing rules that have the same meaning, DEQ must discuss the matter in the fact sheet. *See* 40 C.F.R. §§ 124.8(b)(2),124.8(b)(4). *See also infra* discussion under “monitoring” with regard to sufficiently sensitive methods for copper and mercury.

D. DEQ Must Consider Synergistic Effects When Establishing Effluent Limits

The NMFS BiOp observes that:

Toxicity of copper to aquatic organisms is dependent on pH, temperature, alkalinity, hardness, and concentrations of bicarbonate, sulfide, and organic ligands (EPA 1980b as cited in EPA 2008), as well as the type and life stage of exposed organism (EPA 1999 as cited in EPA 2008). Copper is among the most toxic of the heavy metals to freshwater biota (Schroeder et al. 1966, Betzer and Yevich 1975 as cited in EPA 2008). In general, mortality of tested aquatic species is greatest under conditions of low water hardness, starvation, elevated water temperatures, and among early developmental stages (Eisler 1998a as cited in EPA 2008).

NMFS BiOp, *supra* fn 21, at 303. In addition to toxic effects, toxicity of copper is

influenced by chemical speciation, hardness, pH, alkalinity, total and dissolved organic content in the water, previous exposure and acclimation, fish species and life stage, water temperature, and presence of other metals and organic compounds that may interfere with or increase copper toxicity. Synergistic toxicity is suggested for mixtures of copper and aluminum, iron, zinc, mercury, anionic detergents, or various organophosphorus insecticides (Eisler 1998a).

Id. at 303. While lack of monitoring by DEQ and other entities results in lack of knowledge about the extent to which other pollutants implicated in creating deleterious synergistic effects with copper exist in Oregon’s waters, DEQ is already aware of two significant synergistic effects with water quality parameters: temperature and hardness, the latter of which is discussed above. Despite its awareness, DEQ has taken neither of these into account in establishing the effluent limitations in the proposed permit. Water temperatures in Oregon are almost ubiquitous in violating Oregon’s numeric criteria. Water temperatures are generally above the temperatures of 4.4 to 16°C used in the NMFS BiOp in the season to which this permit applies. *See id.* at 298, Table 2.6.2.2.6.11. In fact, most Oregon waters are not required to meet 16°C but rather than more generally applicable 18°C criterion. In the case of MCHI, the South Yamhill River into which it discharges is in violation of temperature standards. *See* Fact Sheet at 8-9.

Oregon’s narrative criteria for toxic substances, such as copper, prohibit the introduction of toxics “in waters of the state in . . . combinations that may be harmful[.]” OAR 340-041-0033(2). The combination of copper and temperature is harmful, as NMFS has explained. The combination of Oregon’s temperatures, copper, and low hardness levels – possibly as low as 11 mg/L – would likely have even greater deleterious effects on aquatic life including threatened and endangered species of salmonids for which NMFS found jeopardy at levels below Oregon’s numeric criteria at 100 mg/L hardness.

In addition, DEQ has not evaluated the potential for synergistic effects, required to be protected

against by Oregon's narrative criteria, where copper would be discharged into waters that contain aluminum, iron, zinc, mercury, anionic detergents, or various organophosphorus insecticides that NMFS found had synergistic effects on toxicity of copper to salmon and steelhead. NMFS BiOp at 303. Here, the MCHI discharge is known to include zinc, mercury, pentachlorophenol, iron, and arsenic. Therefore, DEQ is required to evaluate the combinations that may be harmful in order to comply with EPA regulations that require permitting authorities to include in NPDES permits conditions which "control all pollutants or pollutant parameters . . . [that] are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, *including State narrative criteria for water quality.*" 40 C.F.R. § 122.44(d)(1)(i)(emphasis added). DEQ does not have the option to ignore the narrative criteria. *See also Upper Blackstone Water Pollution Abatement District v. EPA*, 2012 Y.S. App. LEXIS 16145, August 3, 2012 (First Cir.).

E. DEQ Must Apply Copper Limits to Internal Waste Streams

DEQ knows that copper in the discharge exceeds Oregon's non-protective numeric criteria. Therefore, not only do copper levels need to decrease but they will have to decrease more significantly than DEQ is currently estimating, to the extent it is estimating. We cannot determine what DEQ might be thinking about the magnitude of the exceedance because DEQ has failed to provide information in the fact sheet on the facts, as required by 40 C.F.R. §§ 124.8(b)(2), 124.8(b)(4). In any case, DEQ is authorized to establish effluent limits on internal waste streams "[w]hen permit effluent limitations or standards imposed at the point of discharge are impractical or infeasible, effluent limitations or standards for discharges of pollutants may be imposed on internal waste streams before mixing with other waste streams or cooling water streams." 40 C.F.R. § 122.45(h)(1). Here, imposing effluent limits at the point of discharge is infeasible because such limits cannot be measured for compliance because they are so diluted as to make monitoring impracticable. Therefore, DEQ was required to not only establish appropriate effluent limits, as discussed above, which would likely be lower than the quantitation limit but it was required to set for the exceptional circumstances which make such internal waste stream limits necessary in the fact sheet. 40 C.F.R. § 122.45(h)(2). It is not clear to NWEA, because we are not engineers, that there is an appropriate internal point for monitoring and compliance. That is the purpose of the fact sheet, for DEQ to discuss this question, one that is essential to ensuring that the discharge does not violate water quality standards, a fundamental principle of the Clean Water Act.

III. Superfund Site

The fact sheet states that under the previous ownership of Taylor Lumber the groundwater became contaminated and the area is now a superfund site. Fact Sheet at 7. The contaminated groundwater is extracted and treated by the wastewater treatment system. *Id.* The fact sheet fails to discuss any of the pollutants of concern present in this groundwater. A quick internet search yields some information, such as "[t]he primary wood-treating chemicals used by TLT included creosote, pentachlorophenol (PCP), and Chemonite (a solution of arsenic, copper, zinc and ammonia)." Taylor Lumber and Treating Superfund Site Final Construction Report Prepared for U.S. Environmental Protection Agency Task Order Number 036-RD-RD-10F1 EPA

Contract Number 68-S7-04-01 (March 2009) at 1-1.⁶ Yet the fact sheet does not explain how and when the waste streams for this groundwater treatment and the current operations are co-mingled and, thus, where they could be subject to internal waste stream effluent limits if necessary. Nor does DEQ provide any information on the combination of the effluent with migration of contaminated groundwater to the South Yamhill River where the permit proposes to authorize a discharge. *See id.* at 1-4 to 1-5. And DEQ does not discuss all of the pollutants that are known to be present in the discharge to evaluate whether they require water quality-based effluent limits. 40 C.F.R. § 122.4(a).

IV. Temperature

According to the fact sheet, MCHI failed to perform weekly temperature monitoring for “multiple months” from 2008 through 2013. In typical DEQ fashion, only a warning letter was sent. In view of the fact that the discharger (1) has a long track record of not adhering to temperature monitoring requirements, (2) it discharges to a water quality-limited stream for that pollutant, (3) it has demonstrated toxicity at the edge of the mixing zone, toxicity which can be exacerbated by temperature, *see supra*, (4) discharges to a stream water quality limited for dissolved oxygen which is made worse by increases in temperature, and (5) compliance with the temperature standard requires continuous monitoring, the draft permit should be revised to require continuous temperature monitoring. EPA regulations call for continuous monitoring “when appropriate.” 40 C.F.R. § 122.48(b). DEQ’s own guidance states that “[c]ontinuous temperature recorders should be used to monitor compliance with the temperature criteria.” DEQ, Temperature Standard Implementation IMD (April 2008) at 22. While that reference pertains to monitoring instream water quality, limited and inadequate data is also defined as “only grab sample effluent temperature data, not continuous data,” elsewhere in the document. *Id.* at 81; *see also id.* at 112 (“When a WLA, which is expressed as a weekly average of the daily maximums, is translated into a permit limit, if continuous effluent temperature data is not available (i.e. effluent temperature is sampled only once or twice a week), there is uncertainty about whether the weekly average effluent heat load calculation is accurate.”). In addition, DEQ cannot be assured that the “maximum measured effluent temperature is 17.7°C,” as stated, Fact Sheet at 12, because it is possible that the MCHI failed to report monitoring of effluent that demonstrated higher temperatures or, alternatively, it failed for many years to conduct the required monitoring, leaving unknown whether that is the maximum effluent temperature.

DEQ is required to evaluate, as well, the possibility that the discharges of temperature in the effluent are contributing to the violations of the dissolved oxygen spawning criteria from January 1 to May 15th, in order to demonstrate the discharge is not causing violations of, *inter alia*, OAR 340-041-0007(10) (“The creation of . . . conditions that are deleterious to fish or other aquatic life . . . may not be allowed”) and impairment of designated uses.

V. Overflows

Figure 2, the Wastewater Treatment System, shows an “overflow to outfall” from the storage tank to the outfall. There is no reference in the fact sheet to this untreated/partially treated overflow, as in how often if ever it is used, other than a reference to an overflow’s having

⁶ Available at http://www.epa.gov/region10/pdf/sites/taylor_lumber/final_construction_rpt_033109.pdf

occurred during an “extreme storm event.” Fact Sheet at 7. There is no information on what constitutes an “extreme storm event,” what metering or monitoring has been required for when this overflow pipe has been or will be used, why it can be allowed to be used without violating the conditions of the permit, and whether the permittee is required to notify DEQ, pursuant to 40 C.F.R. § 122.41(1)(2), that an overflow is likely. It is unclear why DEQ is authorizing an industrial discharge that can suffer overflows from storm-driven events and whether this is legal.

VI. Phosphorous

The fact sheet states that the facility is not expected to discharge phosphorous and was not given a wasteload allocation in the 1992 TMDL for phosphorous that applies to the receiving waterbody. Therefore, the fact sheet should make clear that the wasteload allocation for phosphorous is zero. We recommend that the permit reflect that fact as well.

VII. Mixing Zone

DEQ has authorized a mixing zone, Fact Sheet at 9, without having receiving stream data for any of the pollutants that have been detected in the treated effluent, namely total copper, total iron, pentachlorophenol, and inorganic arsenic, *id.* at 11. DEQ states that once these data are obtained, it will be used to determine if there is “reasonable potential to violate the instream water quality criterion *at the edge of the mixing zone.*” *Id.* DEQ is incorrect; if the receiving water is violating water quality standards for any of these pollutants, no mixing zone may be authorized because there is no assimilative capacity in which mixing can take place. The rationale for this has been discussed above and is incorporated here. Moreover, DEQ has provided no information on the basis of the mixing zone authorized by this permit nor has it provided information on the impact of the flow-impaired status of the river, *id.* at 8, on the applicability of a mixing zone for any or all parameters contained in the discharge.

VIII. Inadequate Fact Sheet

The fact sheet fails to set out sufficient information to meet the requirements of 40 C.F.R. §§ 124.8(b)(2), 124.8(b)(4). These include, *inter alia*, the following types of information:

- applicable water quality standards and criteria;
- how pollutants of concern were identified;
- how effluent limits were derived;
- reasonable potential calculations, with the exception of pH;
- options for more sensitive methods for monitoring as needed to assess compliance with effluent limits and for data on effluent and receiving water quality;
- location of co-mingled wastes;
- substantiated monitoring based on variability, frequency, flow rate and history of the discharge; and
- basis for the size of the mixing zone.

IX. Failure to Establish Legal Effluent Limits

DEQ in its typical fashion has dragged its feet and failed to require the permittee to obtain the necessary data on toxic discharges. It has identified the pollutants it believes are in the treated effluent and for which “there is a potential for copper, iron and pentachlorophenol to exceed the

criterion in the final effluent.” Fact Sheet at 11. It has no data on inorganic arsenic in the discharge. *Id.* It has not received stream data for the pollutants which it proposes it will require to be collected for the first two years of the permit, after which “DEQ will calculate proposed effluent limits to be incorporated in the next permit renewal and discuss options for meeting these limits with the facility.” *Id.* DEQ cites nothing but its own “tiered RPA methodology” as its rationale for issuing a permit which likely does not meet federal law, in violation of 40 C.F.R. § 122.4(a)(1). While the fact sheet fails to explain how the previous and proposed current effluent limits were derived, it is implied that they were based on different data than the so-called Tier 1 data discussed in the fact sheet. *See id.* (“The facility conducted Tier 1 sampling during the last permit cycle[.]”). There are no data presented from the monitoring used to derive the past or proposed effluent limits and no data from this so-called Tier 1 monitoring so that a person can evaluate whether there has been a change in the quality of the discharge and receiving stream or not. There is no information on how previous effluent limits were derived leaving it unclear whether the current limits are sufficiently stringent. The strong implication, however, is that they are not.

DEQ is incorrect in believing that it can proceed on this basis to issue a new permit. First and foremost, federal regulations are very clear: 40 C.F.R. § 122.44(d)(1)(iii) (“When the permitting authority determines, using the procedures in paragraph (d)(1)(ii) of this section, that a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above the allowable ambient concentration of a State numeric criteria within a State water quality standard for an individual pollutant, *the permit must contain effluent limits for that pollutant.*”) (emphasis added). This view is consistent with that of EPA. For example, in Kentucky, EPA objected to 36 NPDES permits issued by the State of Kentucky without a reasonable potential analysis because the state felt it had insufficient data. EPA told Kentucky that all “available, valid, and representative data showing that the proposed discharges have the reasonable potential to cause or contribute to violations of [water quality standards]” must be considered in conducting a reasonable potential analysis. Letter from James D. Giattina, Director, Water Protection Division, EPA Region IV, to Sandy Gruzsky, Kentucky Department of Environmental Protection, Re: Notice of Specific Objection – Xinergy Corporation (KY0108014) (Oct. 22, 2010) at 3 (hereinafter “EPA Letter”). EPA pointed out that where there is existing information indicating that there may be reasonable potential for a discharge to interfere with water quality, issuing a permit without first conducting a reasonable potential analysis “does not comply with the CWA and its implementing regulations.” *Id.* at 3. *See also* EPA, Region 4: Kentucky Coal Mine Permits Public Hearings at <http://www.epa.gov/region4/kycoalminehearings/> (“In each case, EPA found that [Kentucky] had provided an incomplete analysis as to whether or not the proposed discharges had a reasonable potential to cause or contribute to a violation of Kentucky’s water quality standards. These incomplete analyses support EPA’s conclusion that [Kentucky] was not able to demonstrate that the permits contained effluent limits necessary to ensure that the proposed discharges would not cause or contribute to violations of Kentucky’s water quality standards.”); EPA, Region 4: Kentucky Coal Mine Permits Public Hearings, Resources at <http://www.epa.gov/region4/kycoalminehearings/resources.html#permits> (list of 36 permits with copies of EPA’s objections).

This same issue has arisen in Wisconsin, in the context of permitting regulations promulgated by the state. The regulations established a minimum number of data results before Wisconsin could determine whether a WQBEL is required in an NPDES permit for mercury. In a letter disapproving these regulations, EPA found that they were inconsistent with the requirements of 40 C.F.R. § 122.44(d)(1). As EPA explained, this regulation,

does not specify the nature of the information or the number of data points required, but recognizes that permitting authorities may have varying amounts and types of information. To ensure that limits are included in permits when technology-based controls are not sufficient to meet water quality standards, the reuligation requires a decision at the time of permit issuance. It does not provide an option of deferring a decision until the next time a permit is issued.

Letter from Bharat Mathur, Acting Regional Administrator, EPA Region 5, to Matthew J. Frank, Wisconsin Department of Natural Resources (Feb. 17, 2009), Attachment: EPA Review of NPDES Program Revisions in Wis. Admin. Code § NR 106.145 at 2-3. Moreover, EPA continued,

The [122.44(d)] procedure establishes a low threshold for making a decision to include a WQBEL (are or *may be* discharged at a level which will cause, have the *reasonable potential to cause, or contribute* to an excursion above any state water quality standard). Indeed, EPA recognizes that a permitting authority may include a water quality-based effluent limit even in the absence of facility-specific effluent data. Technical Support Document for Water Quality-based Toxics Controls, EPA/505/2-90-001 (U.S. EPA Office of Water, March 1991) at 50.

Id. at 3 (footnote 2) (emphasis in original). EPA went on to make clear that the size of the relative contribution of mercury from a source is irrelevant to the requirement to control the pollutant under an NPDES permit, *id.* at 3-4, and to dismiss the state's "scientific indefensibility" rationale for requiring more data, *id.* at 4. With regard to that point, EPA reminded Wisconsin, "[t]he purpose of a reasonable potential procedure is to project whether excursions beyond water quality criteria may occur and compare that projection to an estimated WQBEL, not to establish with certainty that any limit would be exceeded on a repeated basis over time." *Id.* at 5.

It is worth noting that we are unhappy about the prospect of DEQ's setting effluent limits based on no information on water quality of the receiving stream. However, that is a result of DEQ's incompetence, not ours. Because, as we have explained, DEQ must set effluent limits regardless of its not having these data, it must make assumptions and be as stringent as both the TMDL and the applicable water quality standards, which have become more stringent since issuance of the TMDL.⁷ As EPA explains, these assumptions must be protective:

[Kentucky's] RPA assumes a background concentration of zero. This is not a reasonable assumption . . . [Kentucky] should have obtained actual in-stream data,

⁷ See, e.g., Letter from Michael J. Lidgard, NPDES Permits Unit, EPA Region X to Spencer Bohaboy, DEQ, Re: U.S. Environmental Protection Agency Comments, Draft National Pollutant Discharge Elimination System Permit and Fact Sheet, Oak Lodge Water Reclamation Facility, NPDES Permit No. 100986 (July 18, 2013) at 2 ("temperature limits are required for dischargers to impaired waters with an EPA-approved TMDL and assigned waste load allocation (WLA). Pursuant to 40 CRF [sic] § 122.44, the permit needs to meet all applicable water quality standards (WQS) and be consistent with the assumptions and requirements of any available WLA. . . . The final permit should include a limit [for temperature] based on either the WLA [from the TMDL] or the water quality based effluent limitation, whichever is more stringent.").

or if such data was unavailable, used stream data from a reference stream with a similar flow and level of mining activity. Alternatively, [Kentucky] can request the applicant supply in-stream background data prior to permit issuance pursuant to 40 CFR § 122.21(g)(13).

EPA Letter at 6. Likewise, as DEQ has noted, MCHI's discharge is into a flow-impaired stream, Fact Sheet at 8, placing into question the use of a mixing zone. EPA Letter at 6; *also see supra*. In any case, these assumptions must be spelled out, RPAs included in the fact sheet, and limits established in the permit.

This approach of DEQ's, namely to never ensure sufficient information exists on effluent and receiving water quality sufficient to establish effluent limits, is chronic. In fact, DEQ agreed to stop this in a settlement of a lawsuit against EPA over Oregon's compliance schedule rules. *See e.g.* Settlement Agreement, *NEDC v. EPA*, Oregon Civ. No. 07-cv-1396 at 5 ("DEQ will ensure that the water quality of receiving water body is properly characterized."). And DEQ has issued almost no NPDES permits for the last two years, giving its staff more than adequate time to get sources with expired permits to gather the necessary data. But nothing has changed in DEQ's helpless and irresponsible attitude towards permitting. For example, DEQ has recently put out five draft permit renewals, every single one of which is lacking sufficient information on which to establish appropriate water quality-based effluent limits.

X. Whole Effluent Toxicity

Similar to DEQ's approach to quantitative data on toxics, discussed above, DEQ reports that "[s]everal of the [WET] tests showed acute and chronic toxicity at effluent concentrations less than what would occur at the edge of the ZID and mixing zone." Fact Sheet at 12. These tests were conducted way back in 2007 to 2009. Since that time apparently various random actions have taken place that are hoped to remedy the toxicity of the discharge. *Id.* at 13. There is no evidence that these actions were based on an organized evaluation of the data so there is no way of knowing whether the old WET tests are now irrelevant or not. However, the toxicity demonstrated is a violation of Oregon's narrative criteria for toxics. *See* OAR 340-041-0007(10) ("The creation of tastes or odors or toxic or other conditions that are deleterious to fish or other aquatic life or affect the potability of drinking water or the palatability of fish or shellfish may not be allowed"); OAR 340-041-0033(2) ("Toxic substances may not be introduced above natural background levels in waters of the state in amounts, concentrations, or combinations that may be harmful, may chemically change to harmful forms in the environment, or may accumulate in sediments or bioaccumulate in aquatic life or wildlife to levels that adversely affect public health, safety, or welfare or aquatic life, wildlife, or other designated beneficial uses."). Federal regulations require effluent limits that ensure no violation of narrative water quality standards. 40 C.F.R. §§ 122.44(d)(1)(i), (ii), (v), (vi). Specifically, "when the permitting authority determines, using . . . toxicity testing data . . . that a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above a narrative criterion within an applicable State water quality standard, *the permit must contain effluent limits for whole effluent toxicity.*" 40 C.F.R. § 122.44 (d)(1)(v). Here, DEQ has not proposed any effluent limits for WET. Moreover, DEQ has not demonstrated that it falls within the exception for including WET limits. *See id.* ("Limits on whole effluent toxicity are not necessary where the permitting authority demonstrates in the fact sheet or statement of basis of the NPDES permit, using the procedures in paragraph (d)(1)(ii) of this section, that chemical-specific limits for the effluent are sufficient to attain and maintain applicable numeric and narrative State water

quality standards.”). Instead, DEQ has just ignored the applicable federal regulations, including the requirement that effluent limits be “derived from, and compl[y] with all applicable water quality standards[.]” 40 C.F.R. § 122.44(d)(1)(vii)(A).

Moreover, DEQ’s planned future resolution of further toxicity is not consistent with federal regulations. Instead, DEQ states that “[i]f there are future WET test failures, the facility will be required to initiate a toxicity identification evaluation /toxicity reduction evaluation per the requirements in Schedule D.” Fact Sheet at 13. But this is not all the law requires. It requires effluent limits, as set out above, yet DEQ is planning on avoiding those limits even in the *next* permit.

DEQ might consider removing the word “our” from item no. 3 on page 13 of the fact sheet so that it isn’t so obvious that DEQ simply used the list provided by the permittee (and likely did no analysis beyond that list).

XI. Receiving Water Quality

DEQ observes that the South Yamhill River is water quality limited for temperature, flow, and dissolved oxygen. Fact Sheet at 8-9. It also states there is a phosphorous TMDL. *Id.* at 9. However, it fails to include that pollutant in the table of impaired parameters. A TMDL does not stop the water from being impaired, particularly because DEQ takes few actions to implement TMDLs. This parameter may not be relevant to this source but DEQ needs to get it right. In addition, DEQ should note information on parameters where DEQ has not made a finding of impairment but which may be impaired. A review of the 2010 assessment demonstrates the following:

Alkalinity	Category 3B Potential Concern
Ammonia	No indication of impairment however this is based on outdated criteria
Iron	Water quality limited – not identified or discussed in the Fact Sheet
Mercury	Potential concern – inadequate data (one of one exceeded criteria)

The fact sheet should discuss this information, and lack of information.

XII. Zinc, Arsenic, Pentachlorophenol, and Other Toxics

As mentioned elsewhere in this comment letter, DEQ has failed to discuss the changes in water quality standards that have occurred since it last issued a permit to this permittee with the exact same effluent limits. Therefore it is not clear whether there are other pollutants of concern that were not identified because DEQ has not bothered to update its analysis and therefore is using the wrong standards to evaluate discharge and receiving water quality and/or it was allowing permittees, including this one, to use data collected with quantitation limits too high to assess compliance with the new water quality standards. It is equally unclear if the previous permit effluent limits were calculated on the basis of assumed levels or actual data on hardness, temperature, and pH for those criteria that are calculated on a site-specific basis. DEQ also has not set out in the fact sheet which criteria are the most stringent as between human health and aquatic life, leaving it even more unclear whether new standards should be affecting this permit or not. For example, pentachlorophenol has both sets of criteria, one of which is based on calculations. It is not up to the public to figure this all out when it should be made clear in the fact sheet. And without this information it is very difficult, if not impossible, to comment on the

proposed quantitation limits established for a range of toxic pollutants. Our comments on certain specific pollutants serve as examples of what is wrong with this permit but should not be seen as exclusive. Moreover, monitoring for pentachlorophenol must include pH monitoring because it has pH dependent criteria. Zinc has hardness dependent criteria and therefore requires hardness monitoring. While some monitoring in the permit may require concurrent data collection, other sections of the permit simply fail to ensure that all required data are collected.

XIII. Monitoring and Sampling

All monitoring and sampling of effluent and receiving water must be sufficient to achieve the goal of ensuring the discharge does not cause or contribute to violations of water quality standards. Federal regulations require that NPDES permits specify that sampling be taken for the purpose of monitoring shall be “representative of the monitored activity. 40 C.F.R. §§ 122.41.(j)(1); 122.48. If quantitation limits exceed the limits established by the permit, the monitoring results will not be representative. Likewise, a permitting agency is required to establish effluent limits that will not allow the discharge to cause or contribute to violations of water quality standards. 40 C.F.R. §§ 122.4(a), 122.44(d). The agency determines when an application is complete and what other information is required. *See* 40 C.F.R. §§ 122.21(e), 122.28(b)(2). DEQ has not complied with these regulations because it has not set quantitation limits as the most sensitive available and sufficient to determine if permit limits are being met nor has it established monitoring requirements that achieve that same goal.

A. Quantitation Limits

In order to ensure that it issues a permit that is consistent with the statute and regulations, DEQ must specify quantitation limits that are adequate to ensure the effluent limits are sufficiently protective. Nationally, EPA concurs with this approach. *See* Memorandum from James A. Hanlon, Director Office of Wastewater Management, to Water Division Directors, Re: Analytical Methods for Mercury in National Pollutant Discharge Elimination System (NPDES) Permits (Aug. 2007) (in light of regulatory requirements for NPDES permitting, only the most sensitive methods are appropriate for setting permit limitations and for sampling and analysis of monitoring for compliance). EPA stated that:

Where a permit authority establishes a permit limit for mercury, it also needs to consider specifying an analytical method that the permittee must use to monitor for mercury during the term of the permit. Methods 245.1 and 245.2, as written, are not likely to be sensitive enough to detect or quantify the concentration of mercury in the discharge at a level that matches the limitation for mercury in the permit. EPA therefore expects the permitting authority to require the use of a sufficiently sensitive EPA-approved method for monitoring under the permit in order to ensure that the sampling and measurements required are “representative of the monitored activity” (as required by 40 CFR 122.41(j)(1)). For purposes of monitoring under a permit, a method for mercury is “sufficiently sensitive” when (1) its method quantitation level is at or below the level of the mercury limit established in the permit or (2) its method quantitation level is above the mercury limit in the permit, but the amount of mercury in a facility’s discharge is high enough that the method detects and quantifies the level of mercury in the discharge.

Id. at 4 (footnote omitted). Needless to say, EPA's rationale set out in this memorandum applies to all pollutants, not just mercury.

The test methods set out in Schedule B §1.a are not adequate to meet the requirements of the law. Of specific importance is the quantitation limit (QL) for copper, set by the permit at 10 µg/L. *See* Table B4. Based on the discussion above regarding DEQ's wholly inadequate copper limit for this permit, the QL for copper must be a lot lower. The permit should require the use of the 200.8 method for copper. For example, EPA states that using this method results in a QL of 1.6 µg/L. *See* Letter from Michael J. Lidgard, NPDES Permits Unit, EPA Region X to Nancy Stellmach, ODEQ, Re: Comments on Proposed National Pollutant Discharge Elimination System (NPDES) Permit for Koppers Inc., Permit No. 101642 (Nov. 7, 2012). Similarly, EPA has identified that use of method 1631E will produce a QL of 0.0005 µg/L. *Id.* We are not in a position to review all of the QLs that DEQ proposes to use in this permit. Instead, DEQ should explain whether it has used sufficiently sensitive methods or not and if not, why not. *See supra* discussion under copper effluent limits regarding use of sufficiently sensitive methods for applications and monitoring.

Oil and grease are limited in Outfall 005, Permit Schedule §1.b, and monitored under Schedule B, Table B2. The sample type is "visual" without explaining how this visual monitoring will be conducted. This is an inadequate explanation of how this monitoring will be performed.

B. Monitoring Requirements

To meet federal requirements for permitting, a permit must include monitoring requirements that take into consideration a permittee's compliance history, the effluent limits in the permit, qualities of the discharge, etc. This includes "type, intervals, and frequency sufficient to yield data which are representative of the monitored activity including, when appropriate, continuous monitoring." 40 C.F.R. § 122.48(b). The MCHI effluent limits include both daily maximum and monthly average limits for total arsenic, total copper, total zinc, pentachlorophenol, and pH. Schedule A § 1.a. Compliance with daily maximums cannot be ascertained by the monitoring intervals specified in Table B1 which, for these toxic pollutants, a minimum frequency of monthly grab samples. A monthly grab sample cannot provide a daily maximum value. In fact, a monthly grab sample cannot yield a monthly average as it is a single sample from which no average can be calculated. There is no discussion of the rationale in the fact sheet to understand what DEQ is thinking so there is no discussion, for example, of any reason to believe that the effluent is consistent in its quality. There is no discussion of how that could be true for MCHI, the effluent of which is partially driven by storm events. *See* Fact Sheet at 7 ("Overflow from treatment system during extreme storm event."). There is no discussion of how DEQ is taking MCHI's compliance history into account in monitoring for copper, a pollutant that is highly toxic to threatened and endangered salmonids, for which there is a history of violations, and an inadequate effluent limit. Because there is zero information on how the monthly average limits were established, there is no way for the public to comment on an appropriate monitoring frequency that mirrors that calculation but, as stated above, one data point cannot generate an average. And no daily monitoring means the permit contains no method of ascertaining compliance with daily maximum effluent limits, thereby violating the federal regulations discussed above. The fact sheet also does not discuss and the permit does not specify the location of monitoring.

C. Supplemental Toxics Monitoring

Schedule B § 3 calls for supplemental toxics monitoring to make up for the fact that DEQ has failed to ensure sufficient data exist on which to base this permit. This is not discussed in the fact sheet other than to observe that the data don't exist and DEQ is going to request them. Specifically, DEQ does not explain its rationale for data collection in November and February. Toxic levels in rivers are generally at their highest in low flows, which are in neither February nor November. The QLs listed in Table B3 are not sufficiently low to ensure any proper analysis of the results to compare with water quality standards. A single grab sample (four over two years) is not an adequate way to characterize the quality of the receiving water. The note that "[e]ffluent samples must be collected at the outfall 003 sampling point" does not adequately assure that these samples are prior to any dilution with river water because there is no statement elsewhere in the permit as to what "the sampling point" is. DEQ should specify precisely where the river samples are to be taken to ensure they are "representative of the background conditions." Since some DEQ water quality standards, including copper, are hardness dependent, DEQ must require collection of hardness data. Moreover, given that the DEQ is potentially planning on using EPA's biotic ligand model criteria, which requires around a dozen types of data, the permit must also require the collection of all these data types.⁸ It appears that DEQ is attempting to ensure that it will continue to not have sufficient data in the future to do its job. It is utterly unclear what is meant by the following: "South Yamhill River monitoring is not required if a minimum of four river samples from another source are available and approved by DEQ." *Id.* Such exceptions do not provide for public comment on what is an essential condition of this wholly inadequate permit. Table B4 of the permit calls for measuring inorganic arsenic but has a footnote saying that it may not be necessary, *id.* footnote 3, despite the fact sheet's statement that without inorganic arsenic effluent data, DEQ cannot "perform the analysis." Fact Sheet at 11. (That, of course, is the sole comment on DEQ's having any new toxic criteria at all.) We have not checked all of the QLs that are set out in Tables B4 through B7 but we know, as discussed above, that some do not correlate to water quality standards or effluent limits (including needed effluent limits) for which reason DEQ should evaluate each one and ensure that they have chosen methods and associated QLs that are sufficiently sensitive to do the task required. *See supra.* This is particularly true for those pollutants found by the National Marine Fisheries Service to pose a jeopardy to threatened and endangered species that inhabit the receiving water and for which EPA has disapproved those criteria. With regard to the dates on the WET testing in Table B8, it is unclear why DEQ has them correlate with the November supplemental sampling but not the February supplemental sampling. The fact that the last WET tests were conducted in 2007 through 2009 and "[s]everal of the tests showed acute and chronic toxicity at effluent concentrations less than what would occur at the edge of the ZID and mixing zone," strongly suggests – and that's an understatement – that DEQ should have WET tests run more frequently than twice per year for a minimum of two years. *See* Fact Sheet at 12. This is simply more evidence of DEQ's incredibly casual attitude towards NPDES permitting.

The same is true of the reporting requirements set out in Table B9. The Table B3 Supplementary Toxics monitoring is required by May 1, 2016 – a total of roughly seven years after the current permit has expired. There is no reason why preliminary data should not be provided to DEQ as

⁸ We believe that data are required on at least the following: (alkalinity, calcium (Ca²⁺), magnesium (Mg²⁺), sodium (Na⁺), sulfate (SO₄²⁻), potassium (K⁺), chloride (Cl⁻), dissolved organic carbon (DOC), and pH).

it is generated in the event that actions should be taken more swiftly than DEQ's usual permitting speed, which is glacial. Likewise, it is unclear why the monitoring to characterize the effluent, set out in Tables B4 through B7, is not to be done and reported to DEQ until February 1, 2019 – approaching nine years since expiration. What is the rationale for the dates set out in Schedule B § 4? Is this to ensure that DEQ doesn't feel compelled to reopen the permit and fix the known inadequate water quality-based effluent limits? There is no rationale whatsoever for this failure. To the extent that these data are needed for the next permit application, the permit should include them for that purpose. But these data are needed for the purpose of issuing this junky permit! *See* Section IX *supra*.

XIV. Special Conditions and Assurances

Schedule D § 5 talks about areas where it “may be cost prohibitive or impractical to construct containment pads.” The permit should require the permittee to (1) report on compliance with this condition, (2) justify any purported cost prohibitions or impracticalities. After all, how many log treatment facilities have turned into Superfund sites, including this one, poisoning land, water, and forcing taxpayers to pay for cleaning up the mess. Why should DEQ allow for after-the-fact spill cleanup instead of prevention?

DEQ's condition f, the reopener clause, does not save the illegal aspects of this permit.

This permit does not include language similar to the following that ensures the permit does not allow discharges that cause or contribute to violations of water quality standards: “No wastes may be discharged or activities conducted that cause or contribute to a violation of water quality standards in OAR 340-041 applicable to the XXX basin.” 40 C.F.R. § 122.4(a).

Conclusion

Comments above regarding the inadequacy of DEQ's fact sheet, the illegality of issuing a permit without setting appropriate water quality-based effluent limits, inappropriate quantitation limits and monitoring requirements, and proceeding without a complete application and adequate data are intended to cover all parameters, not just the individual parameters discussed in each section.

This permit and fact sheet need a lot of work, so much so that if DEQ were to issue the permit without substantial correction it would not meet federal regulations. If, on the other hand, DEQ revises the draft permit substantially, it must provide further opportunity for public comment. Either way, we look forward to a response from DEQ and request that the Response to Comments, required by 40 C.F.R. § 124.17, be provided to us.

Sincerely,



Nina Bell
Executive Director