**Background Pollutant Concentration Allowance –**

**a Water Quality Standards Provision**

**Note:** This document summarizes ideas from prior documents and discussions for the purpose of Rulemaking Workgroup discussion.

**Problem Statement:**

For the purpose of this discussion paper, “background pollutants” means pollutants in the ambient water upstream of a discharge, which could come from natural or upstream sources, (e.g. natural sources, nonpoint sources and upstream discharges). Pollutants known or suspected to be in Oregon waters at background concentrations above the revised criteria include arsenic, iron, manganese, mercury, PCBs and DDT.

Some point sources in Oregon take water in from and discharge wastewater back into water bodies that have ambient pollutant levels that exceed the water quality criteria. In this situation, no dilution is available to help the facility meet the water quality criteria. Rather the facility must meet its water quality based effluent limit (WQBEL) at the “end-of-pipe.“ Some facilities add no mass load of the pollutant, but they use the water in a manner that increases the concentration of the pollutants in their water supply prior to discharging it. For example, a non-contact cooling water facility reduces the volume of water through evaporation and thus the mass of the pollutant is contained in a smaller volume of water, increasing its concentration. These sources are then not able to meet a water quality based effluent limit (WQBEL) for their discharge. In Oregon, most facilities recycle their cooling water, using it multiple times before discharging. Multi-pass cooling allows the facility to conserve water and, therefore, withdraw less water from the river, leaving more instream. It also allows them to discharge less heat back into the river. For these reasons, multiple pass cooling is environmentally preferable over single pass cooling. However, it does lead to a greater concentration of conservative pollutants such as metals in the effluent.

For facilities that increase neither the mass nor the concentration of a pollutant above their intake water levels, an “intake credit” provision in the permitting procedures (modeled after that used in the Great Lakes) may provide relief. The source would not be responsible for removing the pollutants they took in via their intake water and did not add through their process. However, for facilities that increase the concentration of the pollutant, such as through evaporative cooling, even though they do not increase the mass and do not add the pollutant through their process, the “intake credit” permitting provision does not apply. In order to meet their WQBEL, the facility would be required to treat their wastewater to remove the background pollutants that were in the river water, or sometimes even in a municipal water supply.

DEQ and the Rulemaking Workgroup have discussed using variances to address this issue. Some stakeholders are concerned that the variance process will be unnecessarily burdensome and uncertain for this situation. Variances are temporary and would need to be renewed with every permit renewal (or possible more frequently). In addition, each variance and each renewal of a variance must be approved by EPA. For the described situation where background pollutants exceed the criteria, a TMDL or other plan to reduce the sources of the pollutants needs to be completed and implemented. These stakeholders feel that the regulated sources that use the water but contribute no additional pollutant load, however, should not be penalized in the interim, before a TMDL is completed.

**Description:**

A background pollutant allowance provision in the water quality standards would allow a defined “*de minimis*” or insignificant increase in concentration of the pollutant in the receiving waters under specified circumstances, such that human health risk is not measurably altered. If DEQ pursued this approach, it would be necessary to:

* Define the allowed increase, how it would be derived and the compliance point (i.e. after “rapid and complete mixing”);
* Specify that the allowance would apply only to the pollutant mass in a facility’s source water; and
* Demonstrate how the water quality standard, with such a provision included would protect human health

**Applicability:**

This provision would be applicable to sources that:

* discharge to waters that exceed the criteria for the pollutant of concern, and
* do not add mass of the pollutant to the wastewater through their process.

All technology based requirements would continue to apply, this provision would only affect a water quality based effluent limit.

The provision would no longer apply if the source is give a wasteload allocation through a TMDL process.

**Pros:**

* Provides relief to dischargers who might otherwise to incur significant cost to remedy a small incremental increase in the concentration of a pollutant in water bodies that already exceed the water quality criteria.
* Eliminates the need to do variances for this particular set of circumstances, reducing discharger and agency administrative costs for about the same environmental outcome.

**Cons:**

* Some stakeholders may feel this is not sufficiently protective of human health.
* Some stakeholders may feel that because the facilities use water, it is their responsibility to meet concentration limits, even though they do not contribute to the pollutant load.

**DEQ Recommendation:**

Desired Outcomes:

1. A facility that does not add a pollutant through their process and does not increase the mass of the pollutant discharged above the amount they received from the river in their intake water should not be responsible for removing those pollutants, which are coming from natural or upstream sources, even if they concentrate the pollutant by reducing the water volume through evaporative cooling.

2. Facilities should meet all state or federal technology based requirements duly promulgated and applicable to the source/source category.

3. For the relevant pollutants, sources should be responsible for providing data on intake water pollutant concentrations and for characterizing or assessing the ambient water quality in the vicinity of their discharge. Modeling is an acceptable alternative for assessing water quality.

4. Human health must be protected.

General Principles for Solutions:

1. Where the problem is widespread and not facility specific, solve the problem at the most systemic administrative level possible rather than facility by facility in order to be efficient with public resources.

2. Minimize economic impacts to sources that do not produce environmentally meaningful results.

3. Protect the beneficial use, in this case human health.

***Draft background pollutant provision***

If the background pollutant concentration in a water body exceeds an applicable human health criterion for a carcinogen, the Department may authorize a discharge concentration that exceeds that background concentration if:

a. The mass of the pollutant in the discharge does not exceed the mass that is attributable to the pollutant in the facility's intake water.

b. The pollutant's concentration assuming mix with the 100% of the 7Q10 flow of the water body does not exceed:

**option 1**: the human health criterion at a risk level of 10-4 (this would apply to carcinogens only)

**option 2**: the human health criterion at a FCR of XXX

**option 3**: an increase of not more than X % (e.g. 3%)

**others**?

c. The discharge of the pollutant complies with all applicable technology-based effluent limits, other applicable water quality standards, and the provisions of any applicable total maximum daily load; and

d. No other technologically and economically feasible means that would not have significant adverse environmental consequences are available to reduce the pollutant concentration in the discharge to the applicable water quality criterion.