

QUESTION & ANSWER

Implementing Newly Approved Water Quality Toxics Standards for Human Health and Associated Implementation Policies

1. What does EPA's approval of Oregon's water quality standards mean?

EPA's approval on October 17, 2011 means that revised water quality standards for toxic pollutants affecting human health are effective throughout Oregon under all state and federal Clean Water Act programs. A site-specific background pollutant rule and a revised variance rule which can be used by water permit holders to help attain compliance with the revised standards also became effective upon EPA approval. This approval follows the Oregon Environmental Quality Commission's adoption of human health toxics criteria based on a per-capita fish consumption rate of 175 grams/day on June 16, 2011. At that time, the commission also adopted and made effective revisions to DEQ's water quality permitting rules addressing intake credits and revisions associated with DEQ's coordination with the state Departments of Agriculture and Forestry in carrying out agencies' roles to address nonpoint sources of pollution.

The revised standards should result in a reduction in toxic pollutants discharged in Oregon's waterways, leading to greater protection of drinking water sources and safer fish to eat. Protection and improvement of water quality throughout Oregon helps improve the state's livability.

2. Why are Oregon's surface water quality standards for human health more stringent than other states?

Water quality standards establish goals for Oregon's surface waters. These goals include protecting sources of drinking water and helping ensure that fish from Oregon waters are safe to eat. Oregon revised the standards to protect people who include fish in their diet, including those who do so regularly. The more fish, shellfish and water people consume containing toxic pollutants, the more they're at risk for developing illnesses such as cancer, cardiovascular disease, neurological and behavioral disorders and kidney disease. The revised standards reflect pollutant levels that are considered safe to consume and are consistent with the Oregon Environmental Quality Commission's policy to protect the majority of Oregonians who eat fish and shellfish from Oregon's rivers, lakes, and estuaries.

3. When will DEQ use these water quality standards regulations?

When wastewater-discharging facilities renew their pollutant discharge permits, DEQ will evaluate each facility, using the new water quality criteria. DEQ will review available information to determine whether new or more stringent discharge permit limits for the facility are needed. If data is insufficient to make this determination, DEQ will include expanded monitoring for toxic pollutants in the renewed permit. Permits typically remain in effect for a minimum of five years. DEQ believes about three years of monitoring data will be needed to properly evaluate permit limits based on the

new surface water quality standards. By conducting the monitoring in the first three years of the permit cycle, facilities will have two or more years of the cycle to consider their alternatives if DEQ determines that more stringent requirements are needed.

In addition, DEQ will compare these new standards against data for Oregon's rivers, lakes and estuaries when it updates its 303(d) list of impaired waters. Furthermore, these new standards will be used as targets, where appropriate, in developing future pollution load allocations (i.e. Total Maximum Daily Loads) in watersheds with impaired waters.

4. Will all water quality permit holders be affected by this rule?

No. The revised standards only apply to those cities and businesses that discharge treated wastewater to surface waters and are required to have a National Pollutant Discharge Elimination System (NPDES) permit. Cities and businesses that land-apply, evaporate or recharge aquifers with treated wastewater under a state Water Pollution Control Facility (WPCF) permit are subject to different treatment guidelines and are not affected by surface water quality standards.

For communities and businesses that have NPDES permits, revisions of the surface water quality standards will only affect those businesses and cities that are required to monitor for toxic pollutants and who are found to possess in their discharge significant pollutant concentrations that could result in failure to meet the surface water quality standards.

Municipalities

The majority of Oregon cities will not be affected by the revised standards. Most cities in Oregon (about 193 of 242) with a NPDES permit to discharge treated wastewater to surface waters have relatively small discharges (less than one million gallons per day) and are not required (by federal rule) to monitor for toxic pollutants. In a few cases where toxicity is known to be present in a city's effluent, monitoring for individual toxic pollutants is required.

Larger cities in Oregon (about 49 of 242) that have a NPDES permit to discharge one million gallons or more of wastewater per day to surface waters are required to regularly monitor for a core group of organic and inorganic toxic pollutants and other individual toxic pollutants (such as pesticides, PCBs) when known to be present in significant concentrations.

Industry

The extent to which industries will have more stringent requirements will depend on the industrial category and pollutants that are typically found in their waste streams. Generally, "primary" industrial facilities (about 20 in Oregon, including some pulp and paper mills and electronics facilities) are more likely to have revised discharge limits than industrial facilities classified as "non-primary."

5. How can a city or business find out if they're likely to be affected by the revised surface water quality standards?

For cities and businesses that are currently required to monitor for toxic pollutants, the simplest approach to determine the impact of the revised surface water quality toxic pollutant criteria is to review their past monitoring data with the DEQ staff person who wrote their permit. In some cases, the permit writer will know whether or not the new criteria will affect their permit requirements. In

cases where available information is insufficient to make this determination, additional monitoring will be necessary.

In an effort to ensure that DEQ develops NPDES permit monitoring requirements and permit limits in a consistent fashion across the state, DEQ recently issued an internal guidance entitled *Reasonable Potential Analysis for Toxic Pollutants Version 3.0*. This document explains how DEQ staff should develop monitoring requirements and permit limits for toxic pollutants, and can be found at: <http://www.deq.state.or.us/wq/pubs/imds/rpalMD.pdf>.

To contact the nearest water quality permit writer in a particular region of Oregon, call one of the following DEQ offices:

Eastern Region			
Bend	541-388-6146	Pendleton	541-276-4063
Hermiston	541-567-8297	The Dalles	541-298-7255
Northwest Region			
Gresham	503-667-8414	Portland	503-229-5263
North Coast	503-861-3280	Tillamook	503-842-3038
Western Region			
Coos Bay	541-269-2721	Medford	541-776-6010
Eugene	541-686-7838	Salem	503-378-8240

6. Will cities and businesses be subject to additional monitoring requirements as a result of the revised standards?

No. The revised surface water quality standards did not change the monitoring requirements and permit development processes. Instead the values against which the monitoring results will be evaluated (i.e. the human health criteria) have changed.

Table 1: Summary of Monitoring Requirements for Sewage Treatment Plants and Industries

Size of facility	Is monitoring for the human health surface water quality standards required?	How many parameters have to be monitored?
SEWAGE TREATMENT PLANTS		
Flow is under 0.1 million gallons per day	Only if known to be present in municipal source water or effluent	<ul style="list-style-type: none"> 7 conventional pollutants (e.g., pH, biochemical oxygen demand (BOD), temperature) Any known individual toxic pollutants
Flow is between 0.1 million and 1 million gallons per day	Only if known to be present in municipal source water or effluent	<ul style="list-style-type: none"> 7 conventional pollutants (e.g., pH, BOD, temperature) 8 additional conventional pollutants (e.g., NH₃, Cl⁻, Dissolved Oxygen (DO), Total Dissolved Solids (TDS))

		<ul style="list-style-type: none"> Any known individual toxic pollutants
Flow is more than 1 million gallons per day	Yes, all 133 of the core toxic pollutants and any of the 42 individual toxic pollutants when known to be present	<ul style="list-style-type: none"> 7 conventional pollutants (e.g., pH, BOD, temperature) 8 additional conventional pollutants (e.g., NH₃, Cl⁻, DO, TDS) 113 core toxic pollutants Any of the 42 individual toxic pollutants when known to be present
INDUSTRY		
Non-Primary Industry	Yes, any of the 250 core or individual toxic pollutants, when known to be present in intake water or effluent.	<ul style="list-style-type: none"> 7 conventional pollutants (e.g., pH, BOD, temperature) 8 additional conventional pollutants (e.g., NH₃, Cl⁻, DO, TDS) Any of the core 110 or individual 140 toxic pollutants when known to be present
Primary Industry	Yes, groups of core toxic pollutants determined by industrial category. Additional pollutants when known to be present.	<ul style="list-style-type: none"> 7 conventional pollutants (e.g., pH, BOD, temperature) 8 additional conventional pollutants (e.g., NH₃, Cl⁻, DO, TDS) Up to 110 of the core toxic pollutants, depending on industrial category Any of the 140 individual toxic pollutants when known to be present

More detail may be found in DEQ's *Internal Management Directive on Reasonable Potential Analysis*. This may be found at: <http://www.deq.state.or.us/wq/pubs/imds/rpalMD.pdf>

7. How much data will a city or business need to collect because of the revised standards?

The revised standards do not affect minimum data requirements currently established in the *Reasonable Potential Analysis Internal Management Directive* which are based on federal rules and state guidelines. Information about minimum data requirements is provided below.

Minimum Data Requirements:

Major municipal wastewater treatment plants will collect a minimum of four effluent samples for each toxic pollutant in question. This is called *Tier 1* monitoring. The four samples must be collected

between four and eight months apart, within the first two years of the permit, to ensure that they are representative of seasonal conditions.

During Tier 1 monitoring, industrial facilities will collect a minimum of four effluent samples for each toxic pollutant for which there is a water quality criterion. Depending on the facility's treatment performance, the number may be reduced in subsequent permit renewals. In some cases, qualitative information may be provided to DEQ in lieu of quantitative data.

Based on evaluation of the effluent monitoring data, DEQ may identify "pollutants of concern." For each pollutant of concern identified, a city or industry will need to provide data on ambient river conditions and data for potentially up to six additional effluent samples. Also, DEQ might recommend that the city or industry conduct a "source investigation" of the toxic pollutant to evaluate alternative implementation options, such as intake credits, site-specific criteria, or a variance justification. This is collectively called *Tier 2* monitoring and is normally completed in the third year of the permit term.

Again, DEQ's *Internal Management Directive on Reasonable Potential Analysis* contains more detail. This may be found at: <http://www.deq.state.or.us/wq/pubs/imds/rpalMD.pdf>

8. What options does a city or business have to meet standards, and how much will they cost?

If a Reasonable Potential Analysis indicates that a facility will not meet human health toxics standards, there are several options a city or business can consider. DEQ can provide time to come into compliance (through a "**compliance schedule**") if, for example, additional treatment technologies or optimizing current technologies will meet revised water quality standards, but a facility will need time to install equipment and obtain funding. Costs for a compliance schedule will depend on the activities a city or business takes to come into compliance.

Another option to meet the standards may be use of an **intake credit**. This new provision allows a facility to meet its effluent limit even if pollutants in its intake water are already exceeding water quality standards, as long as the facility does not add to the mass and concentration of that pollutant in its effluent. The discharger would typically conduct an investigation to quantify the pollutant source. Costs to cities and businesses to conduct this investigation would generally be minimal, but could vary in expense depending on the investigation's sophistication.

Permit holders may also consider a **site-specific background pollutant criterion**. Similar to intake credits, this tool can be used to account for pollutants already present in a facility's source water. Unlike an intake credit, however, an increase in pollutant concentration (up to 3 percent) may occur under certain circumstances. An increase in concentration can occur when a facility uses an evaporative cooling process which removes water volume and concentrates a pollutant, even if a facility doesn't add that pollutant in its process. This provision is limited to human health toxics criteria and is not applicable to other pollutants. Additionally, the provision can only be used for human health toxics that are carcinogens (cancer-causing pollutants) and cannot cause a risk greater than 10^{-4} (one additional cancer in 10,000 people). Permit holders with effluent containing human health toxics pollutants that are non-carcinogens cannot use this provision because a reference dose for these kinds of pollutants is used to determine risk. Concentrations exceeding a reference dose cannot ensure human health protection.

This provision results in a waterbody site-specific criterion and is subject to public notice and review. Although similar in scope to an intake credit, a city or business will likely incur some additional costs for use of a site-specific background pollutant criterion given the more complex nature of the provision and staff time in reviewing data and conducting the analysis. However, these costs would be considerably less than installing costly treatment technologies to remove a proportionally small amount of pollutant.

9. Are variances available if a city or business cannot meet revised standards? What are the costs?

If a city or business does not qualify for a compliance schedule, intake credit or a site-specific background criterion, they may qualify for a variance. Variances provide a means for achieving water quality improvements when underlying water quality standards cannot be met in the short term. There are six justification factors to allow a variance. DEQ anticipates that the following three justifications will more likely occur in Oregon: (1) If available treatment technologies are prohibitively expensive and pollution controls would cause widespread economic and social impacts; (2) when naturally-occurring pollutants prevent the attainment of the use; and (3) when human-caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place. For DEQ to grant a variance, a city or business must develop a Pollutant Reduction Plan describing how the facility will continue to make progress toward meeting the water quality standards. These plans may include alternatives to traditional end-of-pipe treatment (e.g. pollution prevention or source control) to reduce pollution and improve water quality. Use of this provision for individual permits is subject to public notice and review and must also be approved by EPA.

Cities and businesses that pursue this option will have costs associated with variance requests and approvals. Costs will depend on the complexity of the permit holder's individual circumstances and the amount and quality of data to support the request. Typically, data collected for an intake credit or a site-specific background pollutant criterion can be used to support a variance justification. Additional costs are likely to be associated with preparing and supporting an application (such as conducting an economic analysis, reviewing scientific literature for feasible pollutant removal technologies, etc.) as well as developing a Pollution Reduction Plan, including potential strategies and implementing actions contained in the plan. While variance renewals must go through the same administrative process and will incur some costs, the data, analyses and Pollution Reduction Plan associated with the original request may remain relevant and could be used where appropriate with updated information.

Generally, with any implementation compliance tool or treatment technology, precisely quantifying potential financial impacts would vary facility by facility and pollutant by pollutant.

10. What happens if a city or business is not eligible for any of the permitting options?

In this case, a permit holder may have several options, depending on individual circumstances. A business with an individual NPDES permit could explore the possibility of discontinuing its discharge to a waterbody, and instead connect to a municipal sewage treatment plant for more advanced treatment of its waste. Alternatively, treated wastewater could be reclaimed and not discharged to a waterbody (through irrigation, recharge of ground water, wetland treatment/support, etc.).

In selected cases, human health water quality criteria for toxic pollutants may not be appropriate for certain water bodies. In other cases, the waterbody's designated use may not be correct. In these cases, DEQ may pursue site-specific revisions to ensure that correct water quality standards apply.

11. What do the rule revisions relating to agriculture and forestry mean?

These revisions were intended to clarify existing rule language as well as formalize interagency coordination between DEQ and the Oregon Department of Forestry and Oregon Department of Agriculture.

12. Has DEQ been given more authority through this rulemaking?

No. DEQ revised these rules to be consistent with state statutes affecting nonpoint sources of pollution. DEQ was not given additional authority over agricultural and forestry land uses.

13. Am I in compliance with these new water quality standards if I've been meeting the environmental outcomes required in my Agricultural Water Quality Management (AgWQM) Area Plan and management measures under the Forest Practices Act (FPA)? What if I'm not?

Yes. These rule revisions will not generally affect farmers and foresters as long as they're meeting environmental outcomes in their Area Plans and Rules or the practices specified in the Forest Practices Act. These outcomes and practices are developed to achieve compliance with water quality standards. DEQ will work with ODA and ODF to revise these plans if they do not meet water quality standards.

If farmers and foresters are not meeting the requirements under the AgWQM Area Plan and FPA, they are subject to enforcement by ODA and ODF.

14. Where can I get more information about this rule? Are there going to be guidance documents available?

Background materials and documents associated with these revised standards and the associated rulemaking are at: <http://www.deq.state.or.us/wq/standards/humanhealthrule.htm>. DEQ will post updates on its human health toxics website as materials are developed. DEQ is developing internal management directives for variances, the site-specific background pollutant provision and TMDLs to provide guidance to DEQ staff implementing the revised standards and rules. Intake credits will be incorporated into the existing *Reasonable Potential Analysis Internal Management Directive*. DEQ will provide both internal and external training to further promote understanding of the revisions and their effects on affected parties.