

# Water Quality Standards Rulemaking: Revised Water Quality Standards for Human Health and Revised Water Quality Standards Implementation Policies

## Questions and Answers

### ***1. What are water quality standards?***

Water quality standards establish goals for Oregon's surface waters, such as protecting communities of fish and other organisms that live in the water, sources of drinking water and helping ensure that the fish we eat from Oregon waters is safe. DEQ's final rules establish levels of toxic pollutants (also known as the human health criteria) that allow the state to meet the goals of safely eating fish and drinking water.

### ***2. How does DEQ ensure that Oregon waters meet the water quality standards?***

DEQ ensures water quality standards are met by putting in place requirements for sources of these pollutants when needed. Two important ways DEQ accomplishes this is by issuing permits to facilities that discharge treated wastewater, also known as National Pollutant Discharge Elimination System (NPDES) permits, and by developing clean water plans, also known as Total Maximum Daily Loads (TMDLs), when data or information indicate the waterbody does not meet water quality standards. In addition, DEQ works with land management agencies such as the U.S. Forest Service and Oregon Department of Transportation, as well as regulatory agencies such as the state Departments of Forestry and Agriculture, to prevent nonpoint source pollution.

### ***3. What did this rulemaking do?***

This rulemaking revised the state's toxics water quality criteria to establish appropriate water quality standards goals protecting Oregonian consumption of fish as a regular part of their diet and the ability of communities to obtain drinking water from Oregon streams and lakes without adverse health effects caused by toxic pollutants. This rulemaking also includes several new and revised implementation tools to assist wastewater and industrial dischargers in complying with new requirements that may result from the new water quality standards. Because toxic pollutants also come from nonpoint sources of pollutants such as agricultural, forestry and construction activities, DEQ revised elements of the water quality standards and pollution load allocation (Total Maximum Daily Load) rules to clearly state that best management practices and other control measures established by the Oregon Department of Forestry must not violate water quality standards. Further, state Agricultural Water Quality Management Act plans must be designed to achieve and maintain water quality standards. These changes make DEQ's rules consistent with existing state statutes.

#### ***4. What are toxic water pollutants? Which toxic pollutants is DEQ concerned about?***

Toxic water pollutants are chemicals released into waters in amounts that can be harmful to fish, wildlife or people. They can come from “point” sources such as municipal wastewater treatment plants and industries, or “nonpoint” activities such as agriculture, forestry, roads, and construction activities. Some toxic pollutants are naturally occurring, but many are manufactured for use in industry or agriculture, or for personal uses such as hygiene and medical care. These synthetic and naturally occurring chemicals can be concentrated to toxic levels and transported to streams through human activities such as mining or wastewater treatment and through processes such as erosion.

Toxic pollutants of concern addressed by this rulemaking include methylmercury (produced from the burning of fossil fuels), bis (2-ethylexyl) phthalate (a plasticizer), benzo(a)pyrene, chlordane, toxaphene, dioxin, and now-banned pollutants such as PCBs, the pesticide aldrin and insecticide DDT, which remain in the environment as persistent and bioaccumulative toxics. These “PBTs” can build up in the food chain to levels that are harmful to human and ecosystem health. They can also be transported long distances and can move among land, air and water. Because of their persistent and bioaccumulative properties, these pollutants do not break down easily and are particularly difficult to clean up. Many of these substances are human-made and have only been in existence for a relatively short period of history. Others are natural elements, such as mercury. It is the refinement and concentrated human use of these substances that creates environmental and human health problems.

#### ***5. What are the human health effects of toxic contaminants?***

Many of the pollutants addressed by the toxics criteria can cause cancer. Others can cause adverse health effects on the immune system, reproductive system, nervous system or endocrine system. Mercury can affect the nervous system and the brain; even low doses can impair the physical and mental development of human fetuses and infants exposed via their mother’s diet. DDT has been linked to neurological and developmental disorders in birds and other animals. People can be exposed to these pollutants through the consumption of fish and water contaminated with these pollutants. EPA maintains a database containing numerous studies documenting the adverse health effects associated with these pollutants. Additional information on the health effects of toxic substances may be found in the [Human Health Focus Group Report](#) (available on DEQ’s water quality standards/toxics web page) and on EPA’s water quality criteria websites.

#### ***6. Why did DEQ propose this rule?***

DEQ’s current human health toxics criteria do not provide adequate protection for Oregonians who eat fish and shellfish on a regular basis. These revisions address concerns expressed by Tribes and the U.S. Environmental Protection Agency about previous criteria DEQ adopted in 2004, which were not protective because they were based on a low fish consumption rate (17.5 grams per day or 2.3 8-ounce fish or shellfish meals per month).

In June 2010, EPA disapproved the 2004 criteria based on these concerns, causing Oregon’s criteria to revert back to criteria based on an even less-protective fish consumption rate of 6.5 g/day. This rule addresses EPA’s disapproval by adopting significantly more protective human health toxics criteria

based on a higher fish consumption rate of 175 g/day (23 8-ounce meals per month). In the absence of this rulemaking, EPA would have been required to adopt human health toxics criteria for Oregon.

### ***7. Will this rule result in the reduction of toxic pollutants?***

Not all pollutants addressed by this rulemaking will need reduction, although there are some that DEQ is aware of that will likely need further reduction (see Question #4). For many pollutants of concern, actions are already occurring to reduce these pollutants. This rulemaking will result in requirements to continue those efforts and, where the pollutants are found at high levels, additional actions may be needed to reduce levels of those pollutants.

### ***8. When do the rules become applicable?***

The Environmental Quality Commission adopted the human health toxics criteria and accompanying implementation policies on June 16, 2011. However, the rules that EPA considers water quality standards will only become effective after EPA approval (i.e. human health criteria, site-specific background pollutant provision, and variances). EPA will likely complete its review by fall 2011 or early 2012. The other rules become applicable upon adoption by the Environmental Quality Commission and publishing in the Secretary of State bulletin.

### ***9. Who is affected by these rules?***

Oregonians who eat fish and shellfish on a regular basis will benefit from the health protections provided by the revised human health criteria. Cities, businesses and other facilities that discharge to state waters will be affected by this rulemaking if their discharge contains one or more of the regulated toxic pollutants. Forest and agricultural land managers, transportation and other construction projects and other parties subject to programs that control point and nonpoint sources of pollution could also be affected if their activity results in the transport of regulated toxic pollutants to surface waters. Residents and consumers may also be affected in cities that implement pollution reduction programs or enhance their wastewater treatment.

### ***10. How much will the new rules cost?***

The potential cost of the new rules will vary widely depending on the pollutants, the source of the pollutants and whether additional actions are needed to help achieve the new standards. DEQ compiled a “Statement of Need and Fiscal and Economic Impact” that is available on its website and describes potential fiscal impacts and estimated costs, where known.

Generally, if dischargers use tools, such as intake credits or a site specific background pollutant provision, anticipated costs will be minimal. However, if a discharger cannot achieve effluent limits to meet water quality standards with these tools, a variance may be another option for a discharger. There will be costs associated with applying for a variance, implementing a pollutant reduction plan, and renewing a variance (if needed). In some cases, a discharger may be required to install treatment technologies or optimize existing treatment to either meet or approach effluent limits necessary to meet water quality standards. Dischargers are not expected to install costly, unproven treatment technologies to meet effluent limits.

Additional waterbodies in Oregon may be listed as “impaired” for toxic pollutants in the future, leading to an increase in the subsequent number of TMDLs developed to meet toxics load allocations. Entities identified to participate in the TMDL may include Oregon Department of Agriculture, Oregon Department of Forestry, the U.S. Bureau of Land Management, U.S. Forest Service, municipalities and irrigation districts. These agencies may need additional resources in order to conduct TMDL implementation monitoring and best management practice effectiveness monitoring. It is difficult to quantify the potential costs to these agencies or other significant pollutant sources until data is collected and analyzed. It is likely that many of the management practices to control toxics from nonpoint sources will be the same under the new criteria as they would be to meet current criteria.

### ***11. How did DEQ develop the fish consumption rate of 175 grams/day, and how does it protect most Oregonians?***

Between 2006 and 2008, DEQ conducted an extensive outreach and information gathering project in collaboration with EPA and the Confederated Tribes of the Umatilla Indian Reservation. It held seven public workshops to solicit broad public input and consulted with two advisory groups; one focused on evaluating public health data and information and the other focused on evaluating economic impacts and implementation strategies.

From these workgroup discussions and analysis of fish consumption studies, DEQ concluded that a fish consumption rate of 175 g/d, or about 23 8-oz fish meals per month, is a reasonable and protective rate to use as the basis for Oregon’s human health criteria.

The EPA, CTUIR, and DEQ issued a joint [recommendation](#) to the Environmental Quality Commission on Oct. 23, 2008 to revise Oregon’s toxics criteria for human health based on a fish consumption rate of 175 g/d. The commission agreed with this recommendation and directed DEQ to proceed with a rulemaking process to revise the criteria.

175 grams per day represents the 95th percentile value from a comprehensive study of Columbia River Tribes (the Columbia River Inter-Tribal Fish Commission study) and is within the range of the 90th percentile values from other Northwest studies. The 175 g/d rate is consistent with public health experts’ recommendations to:

- use 90th or 95th percentile values to represent the proportion of the population the criteria should be designed to protect,
- use a fish consumption rate that represents fish consumers, rather than a per capita rate derived from the overall population including both consumers and non-consumers of fish, and
- include salmon and other marine species in the rate.

### ***12. Does the fish consumption rate vary geographically? If not, why?***

No, the fish consumption rate does not vary geographically across the state. Although DEQ and stakeholders discussed the idea of applying different consumption rates for different geographic areas within the state during development of the 2004 toxics criteria, DEQ did not pursue this option because nearly all the major river basins in Oregon are usual and accustomed fishing areas for an Oregon tribe.

In addition, people may catch fish in many locations around the state and not just in the river basin in which they live. Another factor in applying the fish consumption rate to all waters of the state is that having different criteria in different basins can create complexities in the regulations and its implementation.

### ***13. Why were salmon and other marine fish included in the fish consumption rate?***

Salmon and other marine fish spend the majority of their life cycle in the ocean, where they have the potential to be exposed to toxic pollutants accumulated over their lifetime. Although pollutant concentrations in the deep ocean are not likely to be influenced by Oregon water quality standards, DEQ and stakeholders recommended that salmon and marine fish be included in the fish consumption rate because these fish are an important part of the fish diet in the Northwest. DEQ did not use the highest fish consumption values from studies that included large amounts of marine fish.

Also, these fish spend some portion of their life in Oregon fresh and coastal waters and thus may be exposed to contaminants carried by state rivers to estuaries and important coastal waters. Water quality standards in Oregon apply to fresh, estuarine, and marine waters within Oregon's jurisdiction.

### ***14. Do any other states use this fish consumption rate?***

No other state is using this fish consumption rate. As a result, Oregon will have the most stringent human health toxics criteria of any state in the country. Other states with fish consumption rates that are higher than the EPA nationally recommended rate of 17.5 g/day are in the 30 - 33 g/day range. The EPA has approved a fish consumption rate of 389 g/day for the Confederated Tribe of the Umatilla Indian Reservation and a rate of 170 g/day for the Warm Springs Indian Reservation. Both tribes are in Oregon.

### ***15. Not everyone eats this much fish from Oregon waters. Why is it set so high?***

A fish consumption rate of 175 g/day protects 90 to 95 percent of Oregon's population who regularly eat fish and shellfish. DEQ acknowledges that not all Oregonians eat fish, or eat less fish than this population. The Oregon Environmental Quality Commission agreed with this rate and directed DEQ to use a fish consumption rate of 175 g/day to protect a majority of Oregonians, rather than using a per capita consumption rate of the total population and including people who do not eat fish or eat it rarely.

### ***16. How can dischargers meet these very low toxic criteria?***

Some dischargers may already be able to meet requirements based on the revised criteria; other dischargers may use pollutant source reduction or treatment technologies, or a combination of these approaches to comply with new requirements. The options available will vary depending on the pollutant and the source of that pollutant. In some cases, if treatment technologies or other approaches are not available that would result in meeting the new requirements, DEQ will explore other approaches that may allow the facility to comply with its requirements while continuing to make progress toward meeting the standards (e.g., compliance schedules, variances with pollutant reduction plans—see question #10).

***17. What if a discharger cannot meet revised criteria for a toxic pollutant?***

In some cases, a discharger will need time to implement pollution reduction programs or to install new treatment systems. DEQ can put a schedule of actions in a permit that allows the discharger to operate until these actions can be put in place and result in reducing pollutant concentrations.

The final rule includes three permitting tools to assist dischargers in this position. The first, an intake credit, allows a discharger to account for a pollutant that is already in its intake water. The second tool is a site-specific background pollutant provision. Similar to the intake rule, this rule allows up to a 3% increase in the concentration of a pollutant already present in its intake water, as long as the discharger does not increase the mass of the pollutant. The third, a variance, is a tool that is already available in Oregon and has been used many times in other states. DEQ is proposing rule revisions to clarify the variance procedures and make this a more usable alternative. This approach will allow a discharger to put in place affordable treatment technologies and actions that will result in progress toward meeting the pollutant goals, but not require the use of prohibitively expensive treatment. DEQ will use this tool where appropriate and has EPA support for this approach.

***18. How will DEQ manage the anticipated workload associated with permit compliance and enforcement?***

Reducing toxic pollutants in Oregon waters is a DEQ priority. DEQ will continue to manage its resources and priorities to address increased workloads where they occur. These revised rules will result in changes in requirements and actions over time (e.g., upon permit expiration and renewal). In some cases, the resource requirements will not result in differences from DEQ's implementation of the current rules. By clarifying the variance provision and adopting the site-specific background pollutant and intake credit provisions, permit writers will have clearer direction and guidance to address these situations. In addition, DEQ anticipates that EPA will be able to assist with some aspects of implementation, such as the economic analysis required for some variances. EPA has provided this assistance for other states.

***19. Will landowners be given load allocations to comply with a TMDL?***

DEQ anticipates that it will work with ODF for non-federal forests, ODA for agricultural lands, and other designated management agencies to implement TMDLs. Although DEQ has authority under Oregon Administrative Rule 340-042 to assign load allocations to sources, including individual landowners, DEQ believes it is more efficient to use existing programs such as Oregon Forest Practices Act rules and Agricultural Water Quality Management area plans and rules to meet load allocations for nonpoint sources. DEQ will provide opportunities for ODA and ODF to develop implementation strategies for landowners to meet load allocations.

***20. Do the revisions related to forestry and agriculture best management practices and other control measures provide DEQ with additional authority?***

No. The revisions to the water quality standards and pollution load allocation (Total Maximum Daily Load) rules makes more clear how DEQ will interact with the state Departments of Agriculture and Forestry to use the agencies' respective authorities to achieve water quality standards. In addition, the

rules make clear that best management practices and other control measures established by the Oregon Department of Forestry must not violate water quality standards. Further, the rules state that Agricultural Water Quality Management Act plans must be designed to achieve and maintain water quality standards. These changes make DEQ's rules consistent with existing state statutes.

***21. What happens if implementation of Best Management Practices established by ODF or implementation strategies for Agricultural Water Quality Management Area plans do not show progress in waterbodies meeting water quality standards?***

TMDL implementation is a developing, often phased-in process and DEQ expects that adjustments will be needed over time to attain water quality standards. If TMDL milestones and timelines are not being met, DEQ will work with sources, including ODF or ODA, to determine whether additional measures or resources are needed to meet TMDL milestones and load allocations and to attain water quality standards in the waterbody.

***22. What is EPA's role in this rulemaking?***

EPA will review and approve or disapprove Oregon's rules it considers water quality standards, as required by the federal Clean Water Act. DEQ anticipates that EPA will act within approximately six months of the June 2011 adoption by the Environmental Quality Commission. EPA must ensure that the criteria protect fishing, swimming and other uses of the nation's waters and serve the act's goal "to restore and maintain the physical, chemical and biological integrity of the nation's waters." EPA sets national water quality criteria recommendations for toxic pollutants and has published guidance for how states should establish human health criteria. In absence of the Environmental Quality Commission adoption of the human health criteria, EPA would have had to set criteria for the state of Oregon within a reasonable time frame.

***23. Will EPA approve these new standards?***

DEQ has worked closely with EPA at all levels in developing these new criteria and standards. EPA is supportive of DEQ's efforts and prefers that Oregon adopt revised toxics criteria for human health rather than EPA acting on behalf of the state. EPA has provided feedback throughout the toxics criteria review and development project; that feedback is reflected in the final rule.

***24. I understand there is a lawsuit related to this rulemaking. What effect does it have on Oregon's rulemaking efforts and timeline?***

In 2006, Northwest Environmental Advocates filed suit against EPA because EPA had not acted on the toxics water quality standards DEQ adopted in 2004. EPA and Northwest Environmental Advocates entered into an agreement that required EPA to approve or disapprove Oregon's 2004 standards. EPA did not immediately act since DEQ was already underway with revisions to those standards. EPA expressed a strong preference for Oregon to complete their work to adopt more protective toxics criteria. The Clean Water Act gives primary responsibility for setting water quality standards to the states. In June 2010, EPA disapproved the majority of DEQ's human health criteria for toxic pollutants. They concluded that the fish consumption rate used to set the 2004 criteria was inadequate to protect

all Oregonians based on the amount of fish and shellfish some are known to consume. EPA's June action addressed their obligation under the litigation.

The adopted human health criteria for toxic pollutants will address EPA's disapproval. Without revisions to Oregon's water quality standards to address EPA's disapproval, EPA must establish standards for Oregon.

***25. What would happen if DEQ did not complete this rule in a timely fashion?***

The adopted human health criteria for toxic pollutants will address EPA's disapproval. In addition to revising the numeric human health criteria, the EQC adopted rules that will be used to implement these criteria. If the June 2010 deadline had not been met, EPA was prepared and required to step in and adopt protective toxics criteria for Oregon. If this occurred, it is likely that EPA would include in its rule only the numeric criteria values.

***26. How does this rulemaking relate to separate DEQ water quality rulemakings to revise human health criteria for arsenic, iron and manganese?***

DEQ expedited revisions to the arsenic, iron and manganese criteria, and adopted final revisions for iron and manganese in December 2010. The criteria for iron and manganese are now applicable for state and Clean Water Act purposes following EPA's approval on June 9, 2011. DEQ reopened the public comment period on arsenic at the end of January 2011. The Environmental Quality Commission adopted the revised criteria for arsenic in April 2011, however, the arsenic criteria revision must await EPA approval before it becomes applicable.

The expedited rulemakings for arsenic, iron and manganese human health criteria will result in criteria that continue to protect health and address the naturally-occurring concentrations of these pollutants. DEQ withdrew the iron and manganese human health criteria that are not necessary to protect human health. The arsenic criteria incorporate the same higher fish consumption rate used to revise the other toxics criteria in order to protect fish consumers. In addition, the adopted arsenic criteria are based on other scientific information and policy considerations to account for the presence of natural sources of arsenic in Oregon waters and to balance the goals of human health protection and a program that is cost effective and will achieve environmental results.

***27. What else is DEQ doing to address toxic pollutants in Oregon?***

DEQ is developing an agency-wide toxics reduction strategy using a comprehensive and integrated approach to determine how to most effectively and efficiently reduce the release of priority toxics to Oregon's air, land and water. Recommendations from this agency-wide strategy could include enhancing existing toxics programs; adding new voluntary, incentive or regulatory programs; and improving the alignment/coordination of all toxics reduction programs. DEQ expects a final toxics reduction strategy in February 2012. Additional information is on DEQ's website:

<http://www.deq.state.or.us/toxics/index.htm>.

DEQ also has several programs already underway that contribute to controlling and reducing toxics in Oregon's environment, including the water quality standards rulemaking, water quality's Priority Persistent Pollutants project, the Portland Air Toxics Solutions project, Clean Diesel initiatives, product stewardship initiatives (e.g., electronic and paint waste recycling), household and small business hazardous waste collection events, the watershed-based Pesticide Stewardship Partnership Program, the state drinking water source protection program, the Toxics Use and Hazardous Waste Reduction Program, hazardous waste management compliance activities, the contaminated site cleanup program and others.

***28. Where else can I go to find out more about this rulemaking?***

For more information on this rulemaking, including final rule language, human health toxics criteria (Table 40), responses to public comments, and supporting issue papers, visit the human health toxics rulemaking website: <http://www.deq.state.or.us/wq/standards/humanhealthrule.htm>.