

Regulatory Mixing Zone Internal Management Directive

Introduction

The Oregon Department of Environmental Quality (DEQ) is committed to the protection of public health and the environment through the implementation of a science-based and consistent water quality permitting program. The calculation and implementation of Regulatory Mixing Zones by DEQ permit writers is a key component of the permitting process.

DEQ has revised its mixing zone guidance (officially known as the Regulatory Mixing Zone Internal Management Directive (IMD)) to reflect improvements in technology, a greater understanding of toxicology and more comprehensive environmental data.

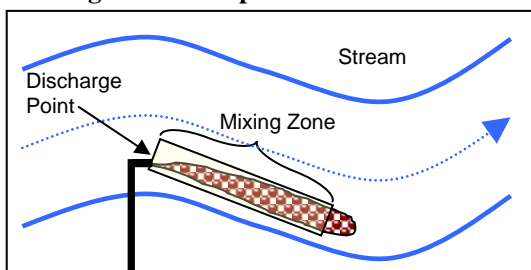
The IMD will go into effect July 1, 2008. DEQ will process all completed applications received after this date under the guidelines contained in the IMD.

In clarifying and strengthening its procedures for determining mixing zones, DEQ is also meeting its commitments to the Blue Ribbon Committee on Wastewater Planning to issue “up-to-date, consistent water quality permits,” as specified in the *Blue Ribbon Committee Report on Key Enhancements to the Oregon Wastewater Permitting Program* (August 2004).

What is a mixing zone?

A mixing zone is an area where wastewater discharged from a facility enters and “mixes” with a stream or water body. A mixing zone is an established area where water quality standards may be exceeded as long as acutely toxic conditions are prevented and the state’s “designated beneficial uses” of water (such as swimming, fishing and drinking water) are protected.

Mixing Zone Example



DEQ calculates mixing zones to be as small as feasible while being protective of human health and the environment.

Improvements to mixing zone process

This directive strengthens protection of public health and the environment through increased data collection and a more thorough analysis that better supports implementation of the state’s water quality standards for protecting human health, such as:

- Using the latest technology in environmental mapping, stream modeling and laboratory sample analysis to assess mixing zones.
- Standardizing the process for the calculation of mixing zone size and alignment.

Mixing zones are designed to be protective

DEQ does not permit mixing zones in locations where there is long-term (chronic) human exposure, such as wading beaches or dinking water intakes. Furthermore, DEQ’s water quality rules do not allow for the discharge of toxic chemicals in concentrations that are dangerous for people and wildlife if they swim or float through a mixing zone.

Are mixing zones legal?

Yes. Under federal rules, states are allowed to use mixing zones. Oregon’s mixing zone rule has been reviewed and approved by the U.S. Environmental Protection Agency (EPA).

Who is affected by this Directive?

This directive affects about 300 facilities (including both municipal wastewater treatment plants and industries) which operate under existing water quality permits. DEQ will review each mixing zone during the next five-year permit renewal cycle. All renewed permits will be subject to the guidance in the updated directive. New permit applicants will also be affected.

How the Directive works

This directive is in two parts:

Part 1 provides background information on mixing zone regulations, sizing guidelines from EPA, mixing zone study components and checklists to assist permit writers in making key



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decisions. This will allow permit writers to properly size and locate the zones so that they are protective of the environment and public health.

Part 2 details the information needed for DEQ's assessment of each mixing zone. When DEQ evaluates a new application or renews an existing permit, it will use an environmental mapping process to characterize special habitat for threatened or endangered species (such as salmon), public swimming beaches, shellfish harvesting areas, drinking water intakes and other uses in the vicinity of the proposed or permitted discharge.

DEQ will use this information, along with pertinent data about the discharge, to determine if a mixing zone can safely be allowed and how it should be sized. In most cases, this process will include environmental mapping that will help permit writers and the public better visualize the mixing zone and its surrounding area.

How are toxic pollutants addressed in the Directive?

DEQ is currently regulating toxic pollutants from municipal and industrial dischargers through the National Pollution Discharge Elimination System (NPDES) permitting program by implementing water quality-based effluent limits

In June 2007, the Oregon Legislature enacted Senate Bill (SB) 737, which addresses some discharges of persistent bioaccumulative toxics ("persistent pollutants"). Included in this IMD is a brief discussion of persistent bioaccumulative toxics, their potential effects on human health and the environment, and a summary of the law's key requirements. SB 737 requires DEQ to:

- By June 2009, consult with all interested parties to develop a list of persistent pollutants that have a documented effect on human health, wildlife and aquatic life, and
- By June 2010, report to the legislature on the list of priority persistent pollutants; point, non-point and legacy sources of priority persistent pollutants "from existing data;" and source reduction and control methods that can reduce discharges.
- By 2011 Oregon's 52 large municipal wastewater treatment plants will develop

plan to reduce persistent pollutants through pollution prevention and toxics reductions.

DEQ water quality permitting

The calculation and alignment of a mixing zone is an important component of the overall permitting process that includes the following steps:

- Review of water quality data of the waterway that the source is discharging to.
- Ongoing sampling and assessment of the facilities' treated effluent.
- Evaluation of the receiving water body to prevent any degradation of water quality.
- Development of water effluent limits to ensure the protection of public health and the environment.

Public review of mixing zone information

The public has access to all DEQ water quality permits. For more details on a particular permit, contact the nearest DEQ office to schedule an appointment to see permit files. The files will include specific information about the mixing zone and toxic pollutants monitoring data. DEQ regularly announces public comment review periods for new permit and permit renewal.

The Regulatory Mixing Zone Internal Management Directive is available on DEQ's Web site at:

www.deq.state.or.us/wq/pubs/pubs.htm.

Maps of mixing zones for sources that discharge to the Willamette River can be found at:

<http://www.deq.state.or.us/wq/wqpermit/mixingzones.htm>.

Alternative formats

Alternative formats (such as large type or Braille) of this document can be made available. Contact DEQ's Office of Communications & Outreach, Portland, at (503) 229-5317, or call toll-free in Oregon at 1-800-452-4011, ext. 5317, for more information.