Human Health Water Quality Standards for Toxic Pollutants

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Pendleton, Oregon

Presentation Overview

- Summary of Rulemaking Package
- Review Project History and Background
- Key Issues from comments received and how DEQ addressed comments
- Next Steps

Rulemaking Package Summary

- OAR 340-041-0033 and new Table 40: revised human health criteria for toxic pollutants;
- OAR 340-045-0105: new “intake credit” provision;
- OAR 340-041-0033(6): new “site-specific background pollutant criteria” provision;
- OAR 340-041-0059: revised variance rule;

Rulemaking Package Summary

- OAR 340-041-007 and -0061: revised rules explaining how the mechanisms for forestry and agricultural nonpoint sources work to meet water quality standards and the total maximum daily load (TMDL) load allocations under the Forest Practices Act and Agriculture Water Quality Management Act; and

- OAR 340-042-0040 and -0080: revised rules clarifying how air or land sources are treated in the development of TMDLs and TMDL load allocations for forest and agriculture.

Applicability of Rules

- DEQ also recommends that the revisions to the water quality standards rules related to the human health criteria and addressing implementation in NPDES permits become applicable under state law only after EPA approves the revisions they consider to be water quality standards.

Project History and Background

Project History and Background

- Summary of Process
- Fish Consumption Rate Project
- EQC Directive
- Rulemaking Process
- Public Comment on Proposed Rules

Summary of Process

Key Phases and Public Involvement

Fish Consumption Rate Project (2006-2008)

- 7 Workshops
- Human Health Focus Group
- Fiscal Impact and Implementation Advisory Committee

Development of Proposed Rules (2008-2010)

- Implement EQC's Oct. 2008 Directions
- 2 Stakeholder Advisory Groups

Comment Period & Final Rules (Dec. 2010-June 2011)

- 9 Public Hearings, 1075 Commenters

Fish Consumption Rate Project

- 3 Governments Partnership
  - DEQ
  - EPA
  - Confederated Tribes of the Umatilla Indian Reservation

- Key Objectives:
  - To examine scientific basis of selecting a fish consumption rate
  - To select credible, relevant studies appropriate for Oregon
  - To discuss policy implications

EQC Directives

1. *Revise Oregon's toxics criteria for human health based on a fish consumption rate of 175 grams per person per day*

- Final proposed rules based on 175 g/day

Water Quality Program

2. *Propose rule language that will allow DEQ to implement the standards in NPDES permits and other Clean Water Act programs in an environmentally meaningful and cost-effective manner;*

- Final proposed rules contain NPDES permitting tools identified during the rule development process
  - Complement existing tools
  - Likely to meet Clean Water Act
- Evaluated potential impacts to permitted sources

Water Quality Program

3. *Propose rule language or develop other implementation strategies to reduce the adverse impacts of toxic substances in Oregon's waters that are the result of non-point source (not via a pipe) discharges or other sources not subject to section 402 of the Clean Water Act; and*

- Evaluated sources of pollutants: agricultural, forestry, and urban runoff; air emissions; contaminated industrial sites
- Discussed with stakeholder advisory committee whether changes are needed to DEQ's approaches
  - Rule clarifications regarding nonpoint sources
  - Implementation-Ready TMDLs
- Concurrent effort: Toxic Reduction Strategy

Water Quality Program

4. *Develop a proposed rule and implementation methods that carefully consider the costs and benefits of the fish consumption rate and the data and scientific analysis already compiled or that is developed as part of the rulemaking proceeding.*

- Arsenic, iron, and manganese rulemakings
  - EPA approved iron and manganese revisions on June 9, 2011
- Statement of Need and Fiscal and Economic Impact
  - Analysis of costs to implement rule revisions, including use of permitting tools
  - Quantitative and qualitative cost analysis
  - Qualitative benefits

Rulemaking Process

- Two Advisory Workgroups
  - Rulemaking Workgroup (met Dec. 2008-October 2010)
    - 8 members: municipal and county governments, industry, and environmental organizations
  - Non-NPDES Workgroup (met Nov. 2009-October 2010)
    - 13 members: Rulemaking Workgroup plus members representing the forestry and agricultural industry
- Charged with providing input on scope and content of proposed rules
- Issue papers
  1. Summarize workgroup discussions and concerns, including any issues the stakeholders identified as significant
  2. Include DEQ's recommended approach and analysis

Comment on Proposed Rule

- Comment Period Dec. 21, 2010 through March 21, 2011
  - Included extension
- Public hearings in Bend, Eugene, Medford, Coos Bay, Ontario, Pendleton, Portland (2), and Salem
- Approximately 1,075 commenters

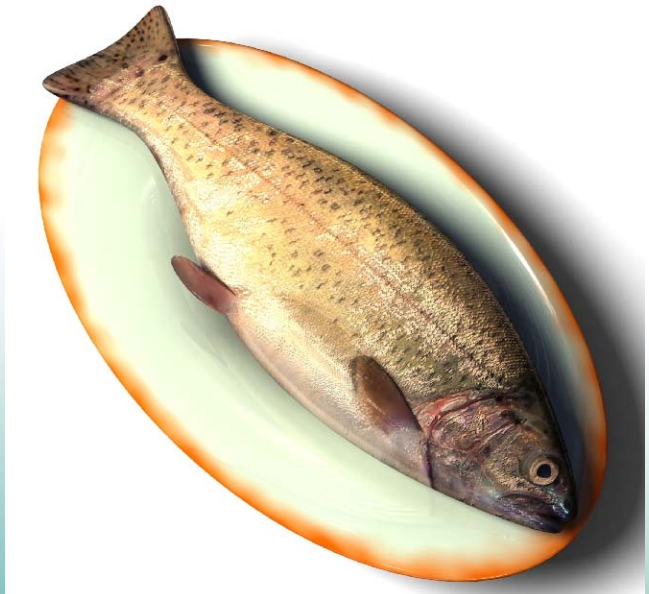
Key Issues

Stakeholder Input, Comments Received and Revisions

Key Issue: Selection of a Fish Consumption Rate

Proposed Revisions

- 113 “New” and revised criteria based on 175 grams/day
  - Current criteria based on 6.5 grams/day
  - Key revision to address EPA’s June 2010 disapproval



Key Issue: Selection of a Fish Consumption Rate

Summary of Comments/Input Received

- Fish consumption studies
  - Studies are outdated, rate doesn't reflect what Oregonians consume from Oregon waters, the rate results in unreasonable criteria values
  - Support DEQ's use of peer reviewed studies
- Including salmon in the fish consumption rate
  - Rate should not include salmon
- Known health effects associated with eating fish
  - Lack of evidence of health effects from pollutants in fish.
  - Appropriately protects the majority of Oregonians who consume fish

Key Issue: Selection of a Fish Consumption Rate

Responding to Comments

- Fish consumption studies
  - The 5 consumption studies used to develop the fish consumption rate are relevant and scientifically defensible
- Including salmon in the fish consumption rate
  - Continue to recommend including salmon in the fish consumption rate
- Known health effects associated with eating fish
  - Criteria based on toxicological data shown to cause adverse health effects

Key Issue: Selection of a Fish Consumption Rate

Revisions to the Proposed Rule

- No change to fish consumption rate
- Minor revisions and clarifications based on other comments

Key Issue: Adequacy of Permit Implementation Tools

Proposed Rules

- New Background Pollutant Allowance Rule
  - Applies to human health criteria for carcinogenic pollutants
  - Allows up to 3% increase in concentration where criterion is exceeded upstream of the discharge point
  - No increase in mass load to the receiving water
  - Receiving water cannot exceed a 1 in 10,000 risk level.

Key Issue: Adequacy of Permit Implementation Tools

Proposed Rules (cont.)

- New Intake Credit Rule
  - Allows facilities to account for pollutants already present in the intake water
  - The facility cannot increase mass or concentration of the pollutant at the point of discharge
- Revised Variance Rule

Key Issue: Adequacy of Permit Implementation Tools

Summary of Comments/Input Received

- Sufficiency
  - Not sufficient to address permitting issues
  - Insufficient detail about how permitting tools will be used,
  - Use of background pollutant allowance and intake credit rules for municipalities
- Legality
  - Questions regarding the proposed background pollutant allowance
  - Requested expansion of background pollutant allowance

Key Issue: Adequacy of Permit Implementation Tools

Responding to Comments

- Final proposed rule contains all permitting tools
- Did not receive any suggestions for specific tools that should be added besides multiple discharger variance
- Commitment to assess efficacy of tools and additional needs. Amended or new tools will be developed as needed.

Key Issue: Adequacy of Permit Implementation Tools

Revisions to the Proposed Rule

- No substantive revisions to intake credit rule
- Significant revisions to background pollutant allowance
  - Changed approach to be a performance-based standard resulting in site-specific criteria
  - Same objectives, conditions and outcomes as proposed rule
  - Includes additional detail and procedures for establishing site-specific criteria
  - Provides increased certainty about outcome resulting from rule
  - New name: site-specific background pollutant criteria

Key Issue: Detail and Implementation of Variances

Proposed Rule

- Variance synchronized with NPDES permit issuance
- Variance requests approved by DEQ Director and EPA
- Pollutant Reduction Plan required: Provides a mechanism for achieving water quality improvements when underlying WQS cannot be achieved in the short term

Key Issue: Detail and Implementation of Variances

Summary of Comments/Input Received

- Level of detail contained in proposed rule
  - Insufficient detail
- Applicability of variances
  - Revisions should not apply to use of variances for aquatic life criteria

Key Issue: Detail and Implementation of Variances

Summary of Comments/Input Received (cont.)

- Legality of certain aspects of the variance rule
  - Proposed revisions will allow variance durations that are too long
  - New sources should not receive a variance
  - Rule not adequate to show how existing use protections will be provided
  - Rule lacks an explicit requirement to comply with antidegradation
  - Rule does not adequately address nonpoint sources
- Multiple discharger variances
  - The rule should include a multiple discharger variance

Key Issue: Detail and Implementation of Variances

Responding to Comments

- Level of detail contained in proposed rule
  - DEQ sought balance between sufficient specificity and acknowledging variances will not be “one size fits all”
  - Provided additional information through draft IMDs, seminars with experienced states and EPA Regions

- Applicability of variances
  - Rather than having two separate variance provisions, maintained scope of existing variance rule
  - Revisions do not diminish water quality protections for aquatic life, rather require continued water quality improvement
  - EPA required to consult under Endangered Species Act for aquatic life criteria variances

Key Issue: Detail and Implementation of Variances

Responding to Comments (cont.)

- Legality of certain aspects of variance rule
  - Final proposed rules reflect DEQ's understanding of federal requirements (i.e., existing uses, nonpoint sources, variance term)
  - Variance rule doesn't supersede other applicable requirements related to antidegradation or whether a new source will be allowed to site on a waterbody

Key Issue: Detail and Implementation of Variances

Responding to Comments (cont.)

- Multiple discharger variances
  - No facility category and pollutant information identified during rule development process or comments on proposed rule
  - DEQ will pursue in the future if available information indicates need

Key Issue: Detail and Implementation of Variances

Revisions to the Proposed Rule

- Clarified the data that must be submitted by permittee
- Clarified responsibilities for who makes “findings”
- Removed cleanup sites as an eligible situation for new permittee variances
- Removed detail regarding circumstances under which DEQ grants a variance based on natural or human-caused conditions

Key Issue: DEQ Authority for Nonpoint Source-Related Revisions

Proposed Rules

- Clarified that forest management activities need to meet water quality standards
- Clarified DEQ's role with Depts. of Agriculture and Forestry for nonpoint source regulation, and to describe how WQS are generally implemented on agricultural and forest lands.
- Revised TMDL rules to clarify that:
  - Forestry and agricultural nonpoint sources need to meet TMDL load allocations
  - Air and land sources can be included in TMDL load allocations

Key Issue: DEQ Authority for Nonpoint Source-Related Revisions

Summary of Comments/Input Received

- DEQ overreached its authority in the proposed revisions
- Revisions will discourage actions by landowners
- Revisions represent an improvement over current rules
- Scope of revisions is not broad enough to ensure reduction of pollutants by nonpoint sources

Key Issue: DEQ Authority for Nonpoint Source-Related Revisions

Responding to Comments

- DEQ consulted with ODA, ODF, DOJ in developing revisions and confirmed it has authority to make proposed revisions
- Revisions do not establish new authority for DEQ; ODA and ODF roles do not change
- DEQ believes that the FPA should meet water quality standards
- DEQ believes that Area Plans and Rules should meet water quality standards when they are fully implemented
- DEQ agrees that when a waterbody is not meeting water quality standards that area plans and rules or FPA are subject to TMDL load allocation

Key Issue: DEQ Authority for Nonpoint Source-Related Revisions

Revisions to the Proposed Rule

- Changed rule so that load allocation development is required rather than discretionary on the part of DEQ for waterbodies not meeting water quality standards

Key Issue: Economic Impacts

Statement of Need and Fiscal and Economic Impact

- Published with proposed rule
- Analysis of incremental costs based on proposed rule revisions
  - Does not address costs associated with complying with existing rules
- Describes impacts to businesses, local government, the general public, other state agencies, and DEQ
  - Quantitative analyses where information available to DEQ (Science Applications International Corporation report)
  - Qualitative analyses describing circumstances under which costs may be incurred

Key Issue: Economic Impacts

Summary of Comments/Input Received

- Impact of rules on Oregon's economy
  - Will result in need for expensive or unproven treatment technologies that will cause businesses to close
  - General economic concerns based on a perception that DEQ will have new authority to regulate nonpoint sources
- Level and accuracy of DEQ's analysis of potential costs
  - Requests for DEQ to conduct further analysis of costs

Key Issue: Economic Impacts

Summary of Comments/Input Received (cont.)

- Human health criteria are not achievable; treatment technologies, if available, are too expensive
  - Facilities will not be able to meet permit limits for PCBs and legacy contaminants, metals, phthalates,
  - One commenter provided cost information for advanced treatment technologies

Key Issue: Economic Impacts

Summary of Comments/Input Received (cont.)

- Cost estimates for variances
  - Questioned the accuracy of the information contained in DEQ's analysis
  - Some commenters offered alternative estimates
- Economic impact on landowners
  - Some commenters asserted that significant economic impacts will occur to businesses associated with agriculture and forestry

Key Issue: Economic Impacts

Responding to Comments

- Impact of rules on Oregon's economy
  - DEQ discussed and evaluated potential impacts throughout rulemaking process
  - Identified implementation tools capable of addressing current and future permitting challenges to ensure unreasonable costs are avoided
- Level and accuracy of cost analysis
  - Used all known information to analyze potential costs

Key Issue: Economic Impacts

Responding to Comments (cont.)

- Achievability of revised human health criteria
  - Many pollutants that frequently occur at high levels largely addressed by recent WQS revisions
  - Permitting tools can be used where treatment is infeasible or available technologies are prohibitively expensive
  - DEQ agrees with the specific cost estimates for technologies described by commenter
  - DEQ will evaluate additional or different needs in future

Key Issue: Economic Impacts

Responding to Comments (cont.)

- Cost estimates for variances
  - Based on cost estimates provided by EPA contractor (SAIC report)
  - Two alternative estimates provided by commenters
    - First estimate did not cause DEQ to change its analysis
    - Second provided only single estimate without cite, analysis, or basis for estimate
  - Estimates provided did not warrant changes to the cost analyses

Key Issue: Economic Impacts

Responding to Comments (cont.)

- Impact of rule on landowners
  - Many commenters expressed concerns, however, no commenter provided specific cost information or descriptions of how the rules are anticipated to result in the economic consequences described
  - DEQ expects when relevant statutes and rules are fully implemented, they will be sufficient to meet WQS

Key Issue: Environmental Effect of the Proposed Rules

Summary of Comments/Input Received

- DEQ failed to identify the environmental problem the proposed standards will address
- Rules aren't sufficient to address known environmental problems; rules do not reach broadly enough
- Request for implementation strategy to address categories of toxic pollutants and all pollutant sources within a watershed

Key Issue: Environmental Effect of the Proposed Rules

Responding to Comments

- WQS are needed to protect beneficial uses (fish consumption)
  - Basis for CWA programs to prevent pollution (e.g., including adverse health effects)
  - Benchmarks for implementing restorative actions (e.g. TMDLs)

- Sufficiency of proposed rules
  - Proposed rules in conjunction with existing standards and implementation programs sufficient to address known environmental issues
  - Build upon existing regulatory and non-regulatory programs
  - Tools legal under Clean Water Act and DEQ's existing authorities

Key Issue: Environmental Effect of the Proposed Rules

Responding to Comments (cont.)

- Implementation strategy for toxic pollutants
  - Evaluation of permit impacts and approaches
    - DEQ analyzed its own data and the data provided by stakeholders to examine impact of new criteria on permitted sources
  - Toxics Reduction Strategy
  - Basin assessments

Impacts to Permittees from Proposed Human Health Criteria

Determined by asking: Which criteria are likely to be exceeded in municipal or industrial effluent?

To answer this question, DEQ staff performed a "Tier 1 Reasonable Potential Analysis" on a variety of facilities.

Reasonable Potential Analysis (RPA): What is it?

RPA is:

- A tool for establishing which pollutant(s) are likely to cause an exceedance of water quality criteria in effluent.
- A statistical analysis typically based on a minimum of 4 samples.

- What the results mean:
  - "RP=yes" is shorthand for: the Reasonable Potential Analysis indicates that the water quality criterion is likely to be exceeded for this pollutant.

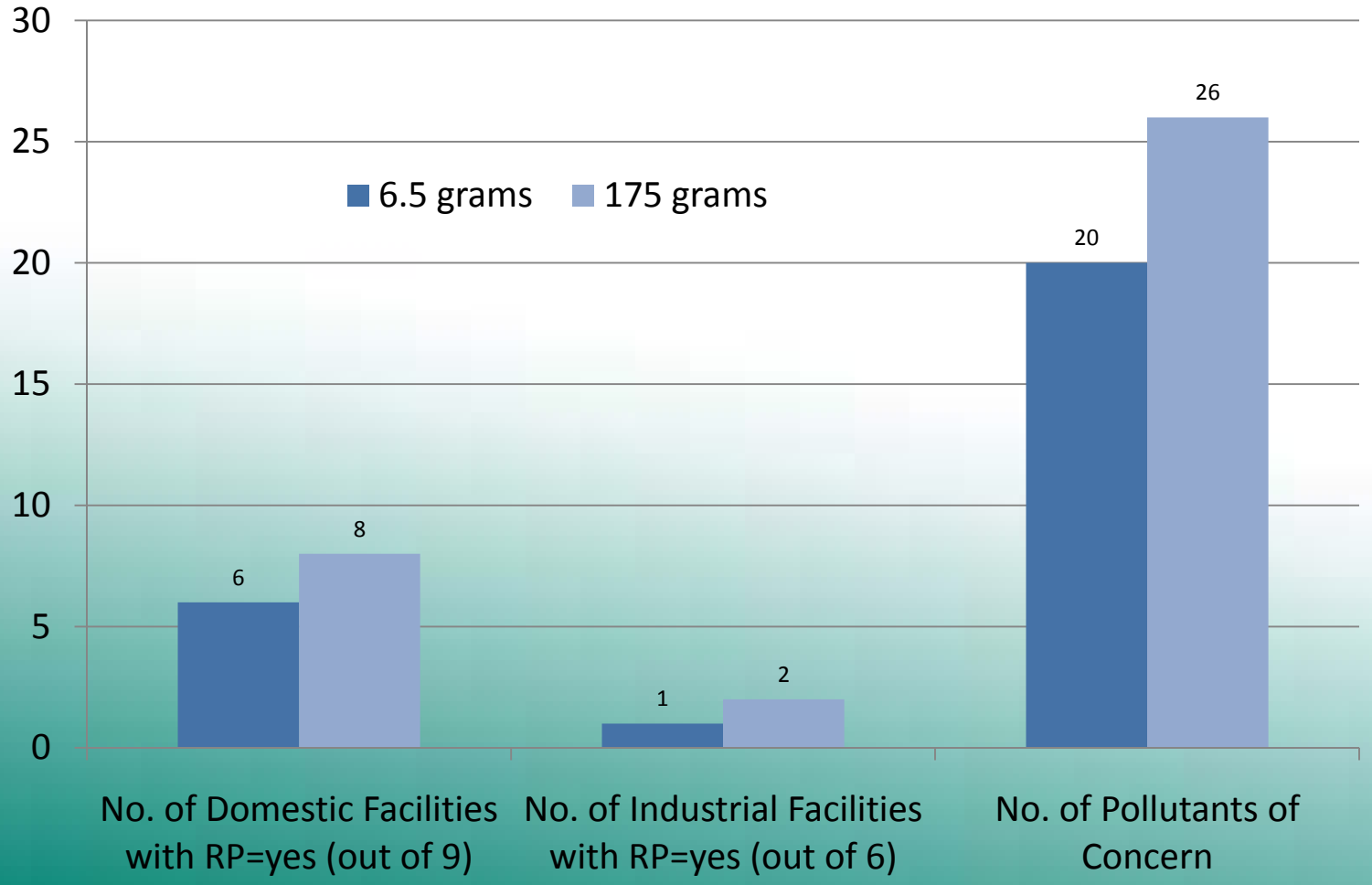
Description of Dataset

- DEQ staff performed a “Reasonable Potential Analysis” using the following:
  - 15 facilities (9 domestic, 6 industrial)
  - Over 7000 data points
  - Criteria based on 2 fish consumption rates: 6.5 g/day and 175 g/day

- Because DEQ did not have adequate data on which to characterize the receiving streams, the DEQ analysis assumed no dilution. This is called a “Tier 1 analysis”.

Water Quality Program

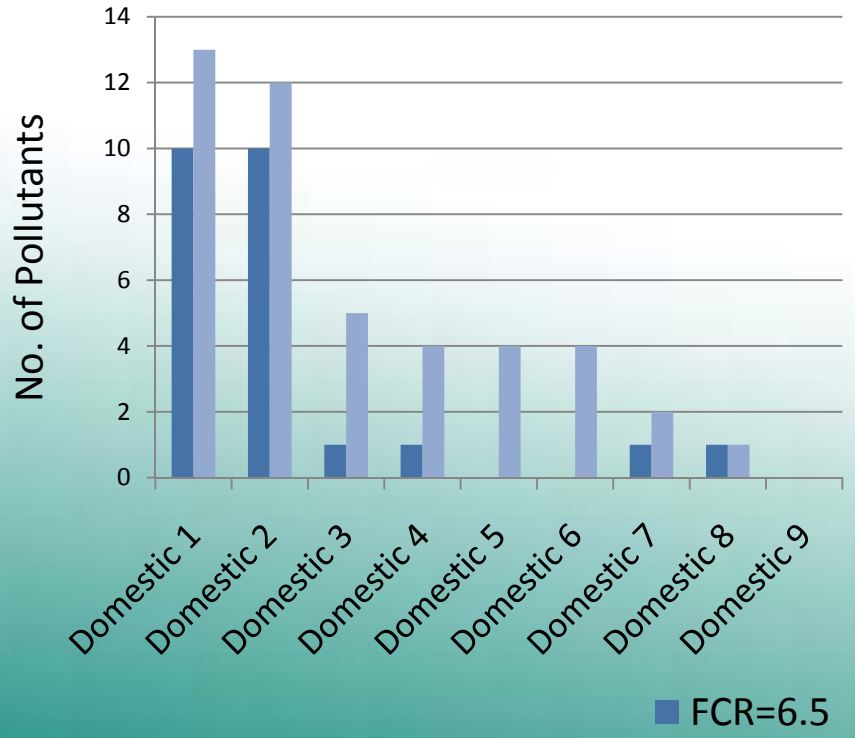
Impact of Higher Fish Consumption Rate



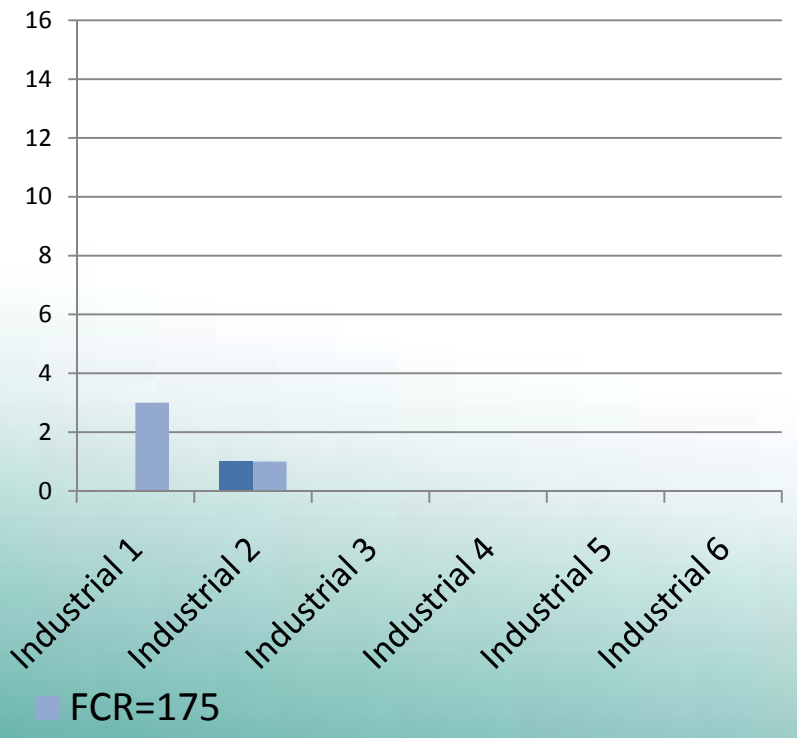
Water Quality Program

Impact of Higher Fish Consumption Rates on…

Domestic Facilities

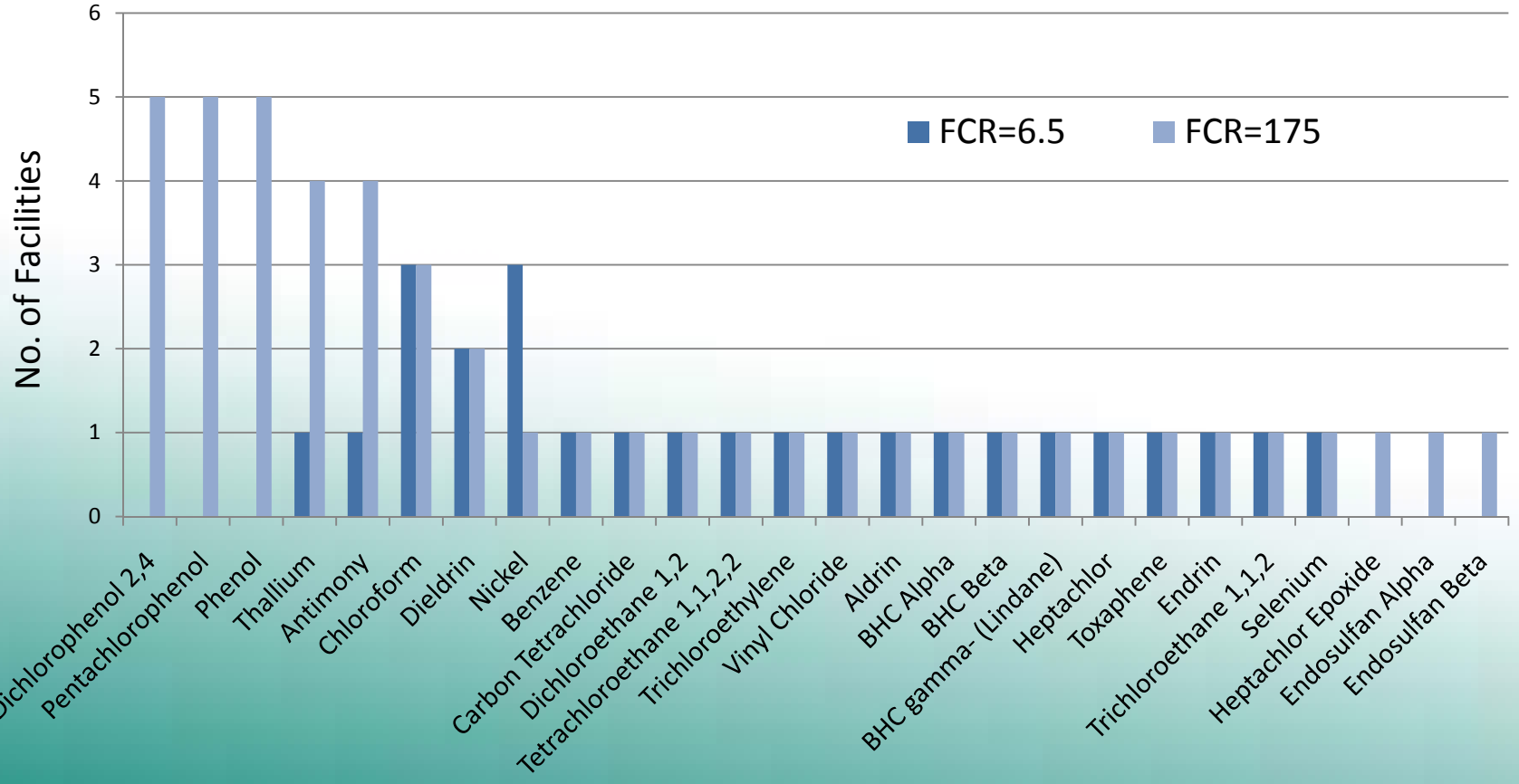


Industrial Facilities

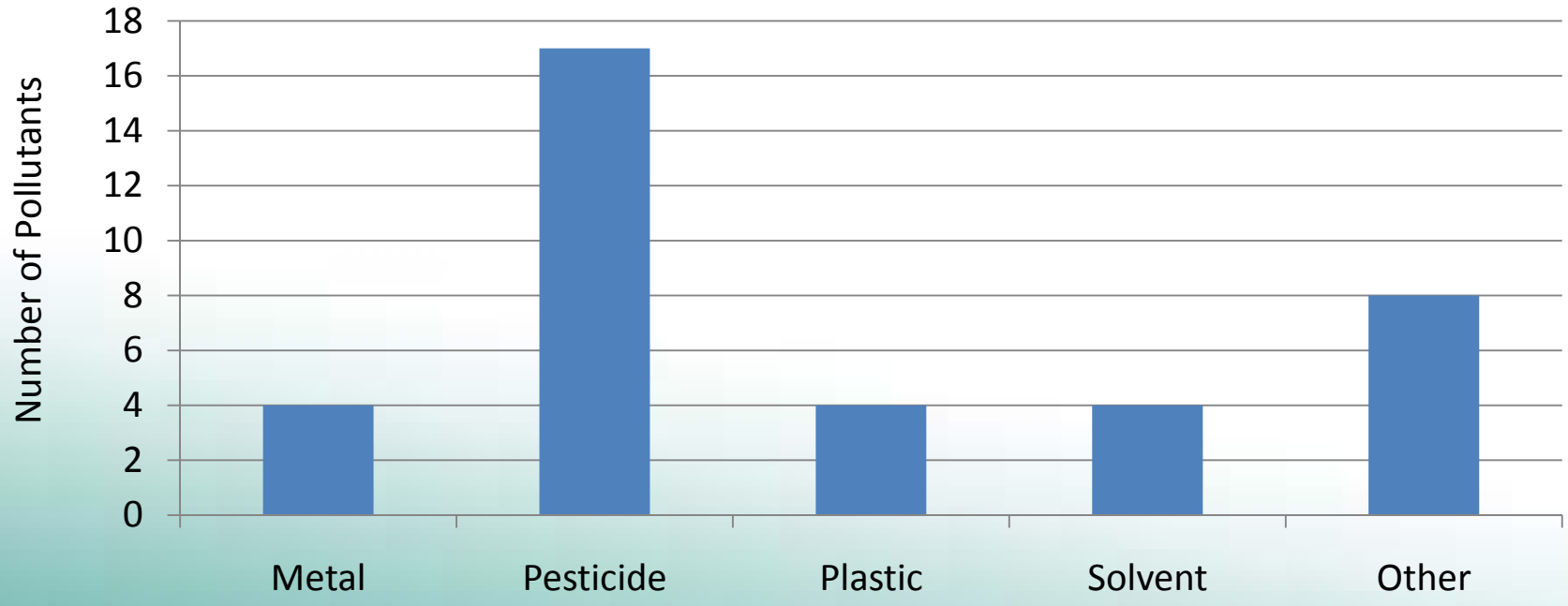


Water Quality Program

Pollutants of Concern



What are these pollutants?



Notes:

1. Some pollutants fall into more than one category.
2. "Other" includes refrigerants, products of combustion, chemicals that are precursors to the manufacture of other chemicals, and more.

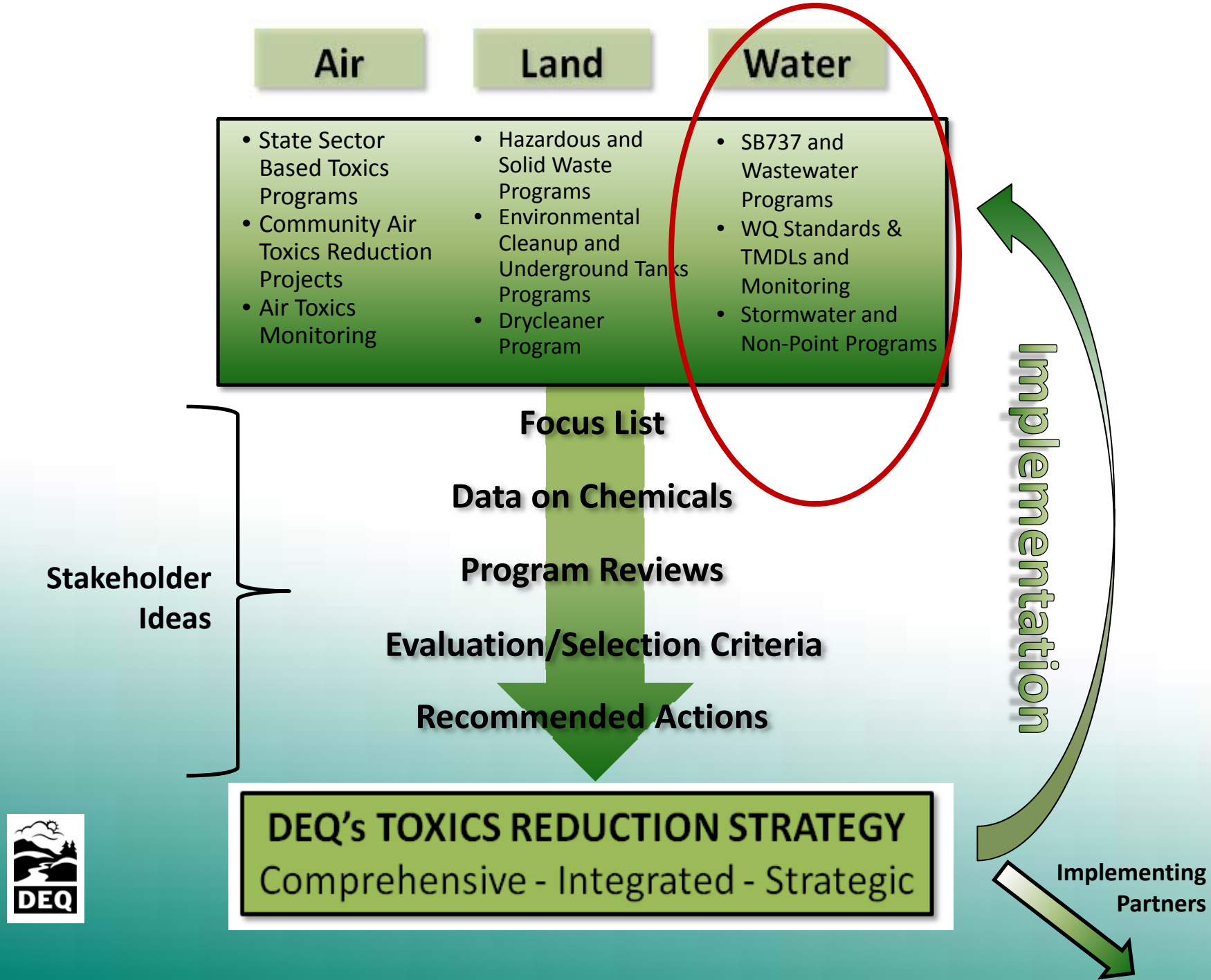
Summary of Results

- Regardless of the fish consumption rate used, most municipalities had RPA=yes for one or more chemicals.
- For industrial facilities, the frequency of RP=yes is less.
- The final results will depend on available dilution.
- The pollutants showing up in effluent most frequently are pesticides.

General Approach to Permitting

DEQ will approach permitting and the identification of appropriate permitting tools using the following procedures and hierarchy:

1. Tier 2 Reasonable Potential Analysis is performed (includes evaluation of data quality, sufficiency and representativeness)
2. Identification of potential pollutant sources
3. Identification of appropriate permitting tool(s):
   A. Intake Credit
   B. Site-Specific Background Pollutant Criterion Provision
   C. Compliance Schedule
   D. Variance in conjunction with pollution reduction plan
4. TMDL /Water Quality Standards Change


Air
Land
Water
• State Sector Based Toxics Programs
• Community Air Toxics Reduction Projects
• Air Toxics Monitoring
• Hazardous and Solid Waste Programs
• Environmental Cleanup and Underground Tanks Programs
• Drycleaner Program
• SB737 and Wastewater Programs
• WQ Standards & TMDLs and Monitoring
• Stormwater and Non-Point Programs
Focus List
Data on Chemicals
Program Reviews
Evaluation/Selection Criteria
Recommended Actions
Stakeholder Ideas
Implementation
DEQ's TOXICS REDUCTION STRATEGY
Comprehensive - Integrated - Strategic
Implementing Partners
DEQ

Water Quality Programs

- WQ Standards
- TMDLs
- NPDES Permitting
- Stormwater and Non-Point Programs
- Basin Assessments
- Lab Toxics Monitoring Program
- Pesticide Stewardship Partnership
- Senate Bill 737

DEQ's TOXICS REDUCTION STRATEGY

Comprehensive - Integrated - Strategic

Next Steps

Timeline and Follow-Up Actions

Action	Timeline
NPDES PERMITTING STRATEGIES	
Include intake credit guidance in Reasonable Potential Analysis IMD	**Final IMD**: +90 days from Secretary of State filing of adopted rules
Develop Site-Specific Background Pollutant Criteria IMD	**Final IMD**: +180 days following EPA approval
Finalize Variance IMD	**Final IMD**: +90 days following EPA approval
Identify and develop variances and/or variance templates for initial candidates	Fall 2011 through Winter 2012/2013
Evaluate need for multiple discharger variance for PCBs or other pollutant	Early 2013 - Early 2015
Site-specific arsenic rulemakings	Winter 2011/2012 through Spring 2013

Timeline and Follow-Up Actions

Action	Timeline
NONPOINT SOURCE STRATEGIES	
Finalize TMDL IMD	**Final IMD**: Jan. 2012
MOU with ODF	**Final** signed by November 30, 2011
MOA with ODA	**Final** signed by November 30, 2011
Additional chapters for Antidegradation IMD describing how antidegradation rule relates to nonpoint sources	**Final IMD**: ~2 years
OVERALL STRATEGY	
Toxics Reduction Strategy	**Draft Strategy to Stakeholders:** August - September 2011 **EQC presentation:** October 2011 **Final Strategy:** February 2012

Department Recommendations