



State of Oregon
Department of
Environmental
Quality

An Overview of Oregon DEQ's Toxics Monitoring Efforts and Their Relevance to the Agency's Toxics Reduction Strategies

Issue:

Protecting Oregonians and the environment from toxic chemicals is an overarching priority for the Oregon DEQ

- Thousands of chemicals used, produced and transported in Oregon enter its air, water and land
- Overlapping authorities regulating manufacture, transport, storage, use of toxic chemicals are distributed among multiple State and Federal agencies complicates reduction efforts
- Ongoing public / private toxics reduction efforts promising but not well integrated

Agency Response

Oregon DEQ initiates development of the **Toxics Reduction Strategy**.

- Interagency, multimedia, comprehensive, long-range
- Identifies Focus List of most toxic chemicals targeted for reduction
- Reduces toxics at the source whenever feasible
- Establishes inter-agency and community partnerships to educate State Government, business and the public how they can reduce reliance on toxic chemicals
- Monitoring of environmental metrics over time provides feedback, assess strategy effectiveness

DEQ's Draft State-Wide Toxics Reduction Strategy

| Action | Process/Rationale | Outcomes |
|---|---|--|
| Identify Chemicals / Classes for reduction based on Risk | <p>"Focus List" of chemicals</p> <ul style="list-style-type: none"> • Draws on existing state/regional prioritization approaches • Identifies 51 chemicals/groups • Not static, likely to change • Targets specific chemicals/groups for reduction | <p>Proposed Toxics Reduction Actions</p> <p>Industrial Chemicals Bromine-Flame Retardants & Intermediates Volatile Organic Compounds Current-use & Legacy Pesticides Priority Pollutant Metals Consumer Product Constituents:</p> |
| DEQ with input from stakeholder workgroup recommends reduction actions, submits draft strategy to Agency's policy and rulemaking board (Environmental Quality Commission) for endorsement (June 2012) | <p>Action selection criteria</p> <ul style="list-style-type: none"> • Practical? • Cost-effective? • Achieves Source Reduction? • Environmentally Beneficial? • Consistent with Existing Efforts? • Protects vulnerable communities? • Flexible ? | <p>Proposed Toxics Reduction Actions</p> <ul style="list-style-type: none"> • Ensure Intra- & Inter-Agency coordination • Incorporate "Focus List" chemicals into ongoing monitoring efforts • Flag regional "hot-spots" for specific reduction efforts • Provide sector/geographic-based toxics reduction technical assistance • Secure stable funding and schedule "orphan" pesticide, hazardous waste collections • Expand Pesticide Stewardship Partnerships • Work with public and retailers to reduce Focus List chemicals through elimination, substitution and source controls • Encourage collaborative reduction actions with neighboring states • Develop state agency procurement guidelines to minimize or avoid use of toxic chemicals • Educate public regarding benefits of "green chemistry" |
| Track environmental concentrations of "Focus List" chemicals over time to assess efficacy of strategy | <p>Relevant DEQ Toxics Monitoring Efforts</p> <ul style="list-style-type: none"> • Toxics Monitoring Program • Pesticide Stewardship Partnership • Senate Bill 737 | <p>Contemporaneous Data Informs Regional/Sector Specific Toxics Reduction Efforts</p> <ul style="list-style-type: none"> • Optimize relevance of DEQ collected data to protect human and environmental health • Generate comparable data sets for environmental media (air, land, water) • Target identified regional "hot-spots" for spatial/sector toxics reduction efforts • Encourage collaborative monitoring with neighboring states • Adjust toxic reduction efforts based on reliable, high-quality environmental data |

DEQ Monitoring Programs Provide Critical Feedback to Guide Refinement of Toxics Reduction Strategy and Assesses Effectiveness

| Industrial Chemicals Petroleum and by-products | Bromine-Flame Retardants & Intermediates | Volatile Organic Compounds | Current-use & Legacy Pesticides | Priority Pollutant Metals | Consumer Product Constituents: | | | | | | | | |
|--|--|-------------------------------|------------------------------------|------------------------------|-----------------------------------|----------------------|-------|--------------------------------|------------------------------|---|------|---|----------|
| | | | | | | | | | | | | | |
| <p>Toxics Monitoring Program</p> <p>Period of Record 2008 – On-going</p> <table border="1"> <thead> <tr> <th>Sampling events/year</th> <th>Media</th> </tr> </thead> <tbody> <tr> <td>3</td> <td>Water</td> </tr> <tr> <td>1</td> <td>Fish</td> </tr> <tr> <td>1</td> <td>Sediment</td> </tr> </tbody> </table> <p>Findings:(Willamette Basin) -Variety/detection frequency of toxics increased in lower watershed -- Aside from select metals, measured concentrations of toxics below aquatic life benchmarks --Mercury, legacy pesticides, TCDD/TCDF, PCBs and PBDE concentrations in fish remain elevated</p> | | | | | | Sampling events/year | Media | 3 | Water | 1 | Fish | 1 | Sediment |
| Sampling events/year | Media | | | | | | | | | | | | |
| 3 | Water | | | | | | | | | | | | |
| 1 | Fish | | | | | | | | | | | | |
| 1 | Sediment | | | | | | | | | | | | |
| <p>Pesticide Stewardship Partnerships</p> <p>Period of Record 2005 – On-going</p> <table border="1"> <thead> <tr> <th>Sampling events/year</th> <th>Media</th> </tr> </thead> <tbody> <tr> <td>6 -10 (During applications)</td> <td>Water</td> </tr> </tbody> </table> <p>Findings -Herbicides frequently detected (diuron, simazine, atrazine) -Insecticides less frequently detected (chlorpyrifos, azinphosmethyl) -Concentrations reduced through education, stakeholder collaboration, and adaptive management</p> | | | | | | Sampling events/year | Media | 6 -10 (During applications) | Water | | | | |
| Sampling events/year | Media | | | | | | | | | | | | |
| 6 -10 (During applications) | Water | | | | | | | | | | | | |
| <p>Senate Bill 737</p> <p>Period of Record 2010</p> <table border="1"> <thead> <tr> <th>Sampling events/year</th> <th>Media</th> </tr> </thead> <tbody> <tr> <td>2 (low & high flows)</td> <td>Treated Municipal Wastewater</td> </tr> </tbody> </table> <p>Findings: - Of 116 <i>mandated</i> chemicals analyzed, 33 chemicals detected in wastewater - Sterols found at all facilities - 5 facilities developing reduction plans beta-sitosterol (2) pyrene (1) arsenic (2)</p> <p>For More Detail See Poster # 25 B "Emerging Contaminants" Thursday May 3, 2:30-3:30pm</p> | | | | | | Sampling events/year | Media | 2 (low & high flows) | Treated Municipal Wastewater | | | | |
| Sampling events/year | Media | | | | | | | | | | | | |
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