State of Oregon
Department of Environmental Quality Memorandum

Date: June 2, 2014

To: Environmental Quality Commission

From: Dick Pedersen, Director

Subject: Agenda item D, Informational item: Toxics Reduction Strategy and Pesticide Stewardship Partnership update
June 18-19, 2014, EQC meeting

Why this is important

DEQ staff and project partners will present information about implementing the agency's Toxics Reduction Strategy, with emphasis on Pesticide Stewardship Partnership projects along the Columbia River Gorge. The item will highlight examples of success in and near the Gorge, and the projects' connections to reducing toxics in Oregon's environment.

DEQ's toxics reduction program

In 2012, the DEQ Toxics Reduction Strategy was presented to the commission. The strategy contains short-, mid- and long-term actions designed to reduce priority toxics in Oregon's environment, as identified within the strategy's Toxics Focus List.
Pesticide Stewardship Partnerships, government product procurement initiatives and other voluntary, collaborative programs are extremely effective at preventing the release of Focus List and other toxic chemicals into Oregon's air, land and water. These actions allow DEQ to provide non-regulatory solutions, often at much lower costs and with greater environmental success than regulatory mandates or post-release treatment.

Presenters

DEQ staff:

- Kevin Masterson, Agency Toxics Coordinator
- Lori Pillsbury, Water Quality Toxics Monitoring Coordinator

Project partners:

- Ken Bailey, Orchard View Farms
- Mike Omeg, Omeg Orchards
- Kevin Scribner, Salmon-Safe
- Dianne Barton, Columbia River Inter-Tribal Fish Commission
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Attachments

A. DEQ Toxics Strategy executive summary

Report prepared by Stephanie Caldera from materials provided by the presenters

DEQ Toxics Reduction Strategy:

Summary

November 2012

This document was prepared by:

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Introduction

The Oregon Department of Environmental Quality developed, and is currently implementing, a Toxics Reduction Strategy. This strategy includes 25 actions to reduce and assess toxic pollutants in Oregon. DEQ also identified a subset of these actions as priorities for short-term implementation. This document describes the strategy's major themes and how DEQ developed the strategy. In tables at the end of this document, DEQ lists its priority toxic chemicals and the 25 recommended toxics reduction and assessment actions.

I. Overview of Toxics Reduction Strategy Development

One of DEQ's strategic directions is to "protect Oregonians from toxic pollutants." Individual DEQ programs assess and regulate certain toxic pollutants generated and released in the state. In recent years, DEQ has increased its management of these pollutants through implementation of federal and state requirements designed to protect specific environmental media (air, water, land). Given that toxic chemicals and pollutants readily move from one environmental media to another, DEQ determined that a more integrated, strategic approach was necessary to reduce toxics in the environment efficiently and effectively. In 2009, with support from the Oregon Environmental Quality Commission, DEQ began developing a Toxics Reduction Strategy to set priorities and guide the agency's future toxics reduction work.

The first task in developing the Toxics Reduction Strategy was to establish an initial "Focus List" of priority toxic chemicals to be the primary (but not sole) focus of the agency's strategy actions. DEQ developed the list (Table 1) using existing state or regional toxic chemical and pollutant priority lists for regulatory, pollution prevention or monitoring activities. DEQ selected chemicals on three or more program priority lists used by at least two DEQ divisions (i.e. air, water and land quality) to be initial Focus List chemicals and grouped them into the seven categories shown in Table 1. The list includes 51 chemicals or groups of chemicals, such as PCBs. The agency focused on toxic chemicals that most DEQ programs already considered a priority rather than developing a priority list from scratch. This list will not be static; DEQ expects chemicals to be removed and added over time. In compiling the list, DEQ collected basic information on the chemicals to support development of specific reduction actions and prospective implementation plans for those actions.

After developing this list, DEQ began compiling potential toxics reduction actions to be assessed and considered for inclusion in the Toxics Reduction Strategy, using external and internal sources. DEQ sponsored a public workshop in November 2009 to generate toxics reduction ideas that could be considered. This workshop involved over 150 participants representing a broad range of interests including industry, local and state government, community and environmental organizations, EPA, tribes and agricultural and forestry representatives.

In addition, members of the Toxics Stakeholder Group, which helped DEQ develop the strategy, provided toxics reduction options for DEQ's consideration. Other reduction ideas came from sub-groups and individuals participating in the stakeholder group for the Water Quality Human Heath Toxics

Standards Rulemaking. Within DEQ, a team from various programs guided development of the toxics strategy. This team met regularly to develop the strategy's foundation as well as review and evaluate toxics reduction options. While reviewing DEQ's existing toxics programs, team members solicited input from additional DEQ staff on toxics reduction needs and opportunities. Through this process, DEQ generated additional toxics reduction ideas.

II. Considerations for Selecting Recommended Reduction and Assessment Actions

The DEQ cross-program toxics team developed a set of considerations to use in selecting actions for inclusion in the Toxics Reduction Strategy. The Toxics Stakeholder Group reviewed these considerations, and DEQ made further refinements. The cross-program DEQ team used two initial screening considerations to narrow the list of possible reduction actions. DEQ considered the following:

How effective would the action be in reducing Focus List chemicals in the environment or in people?
This is based on: how directly the option addresses specific chemicals or families of chemicals, whether the action will address chemicals at the appropriate point in their life cycles, and the likelihood of reducing chemicals in a meaningful and measurable way.

How practically implementable is the action?
Several factors could affect whether an action can be practically implemented, including: agency expertise and infrastructure, existing regulatory authority, technological feasibility, and whether key external elements are in place (such as willing partners for a collaborative initiative).

After this initial screen, DEQ's toxics team evaluated the remaining toxics reduction and assessment options using these additional considerations:

Does the action reduce toxic pollutants at the source?
Toxics reduction actions that reduce pollution at the source – before pollution is generated – are generally more efficient and effective than those that require some type of management after the chemicals become pollutants.

Is the action cost effective?
Implementation costs for state government, businesses and the public should be considered, as well as potential long-term cost savings resulting from the action, including reduced public health costs.

Will the action lead to an overall environmental benefit? The potential movement of pollutants across air, land or water as a result of a reduction action should be taken into account. For example, it might not make sense to choose an action that would reduce toxic chemicals but increase demand for energy or water resources.

Will the action build on existing efforts?
Many effective efforts at reducing pollution are now underway, so it is often more efficient to build on such efforts.

Does the action address multiple goals or chemicals?
An action that reduces multiple priority pollutants or meets multiple environmental goals results in greater environmental gain for the cost of implementation.

Does the action address impacts to vulnerable communities or sub-populations?
Toxic chemicals or pollutants may disproportionately affect one or more communities or sub-populations in Oregon, and these impacts should be considered even if they're determined not to be statewide concerns.

How flexible is the action?
The ability to make program modifications during the implementation phase can lower costs and improve efficiencies relative to those that require long or complicated fine-tuning.

In evaluating actions to reduce toxics, DEQ didn't follow a quantitative exercise involving weighted criteria and numerical scores. Rather, it used a qualitative process. DEQ's toxics team discussed actions relative to the considerations outlined above, then attempted to reach consensus or select reduction actions that received support from the majority of team members. DEQ's Executive Management Team then reviewed and further refined the recommended actions.

III. Overarching Themes of Recommended Actions

DEQ's recommended Toxics Reduction Strategy actions are in Table 2 below; a companion document provides more specific descriptions of each of these actions. Many actions require multi-agency or multi-organization involvement to ensure effective implementation. This element of the strategy reflects recognition that one agency can't address the myriad challenges posed by toxic chemicals in the environment. Greater environmental and human health gains are achievable when multiple entities pursue common goals. In addition, sharing action implementation costs lowers the burden on any one agency or organization, thus making it more feasible and manageable.

DEQ's recommended toxics reduction actions apply to all types of chemicals. There are unique needs and opportunities for reducing specific types of Focus List chemicals, but an objective of the toxics strategy is to identify source reduction actions addressing multiple chemicals and families of chemicals. In other instances, these actions may apply to all Focus List chemicals. If necessary, DEQ will prioritize implementation plans to narrow the scope.

DEQ grouped toxics reduction and assessment actions into four categories, illustrated in Table 2:

- Improving integration and prioritization of toxics reduction activities
- Enhancing effective existing toxics reduction efforts
- Addressing identified toxics reduction needs
- Assessing and characterizing toxics in Oregon

Some actions could be placed in multiple categories but are organized by the category that is most relevant to objectives associated with the action. In addition, there are connections between some recommended actions, yet these connections do not constitute redundancy. Rather, this presents an opportunity to leverage resources to accomplish multiple objectives.

IV. 2012-13 Steps For Finalizing and Implementing Strategy

After discussing the recommended Toxics Reduction Strategy actions with the Oregon Environmental Quality Commission at the commission's December 2011 meeting, DEQ conducted public and stakeholder outreach to receive further input, in early 2012. Based on this input, DEQ modified the scope and descriptions of the toxics reduction actions. In addition, DEQ identified five high-priority actions for short-term implementation. These short-term actions were influenced by the adoption of the Governor's Executive Order 12-05, issued on April 27, 2012, as well as by the Columbia River Basin Toxics Reduction Action Plan's list of priority toxics reduction actions, developed in 2012. These five priorities also have broad-based support from multiple stakeholder groups. Oregon can achieve significant reductions in toxics through opportunities that currently exist for implementing reduction actions. DEQ began implementing its toxics reduction actions in the summer of 2012, with progress made on each action by year's end. DEQ will provide annual updates to the Environmental Quality Commission, starting in December 2012, on its progress in implementing the Toxics Reduction Strategy. DEQ will continue to seek the commission's input and support. For some actions, other agencies or organizations will initiate toxics reduction implementation plans, with DEQ providing support.

In Table 2, *Summary of Toxics Reduction Strategy Recommendations*, DEQ indicates by color in the far-left column the priority levels for short-term implementation of each recommended toxics reduction action.

- Green: High priority for short-term implementation activity, involving possible re-prioritization of resources
- Yellow: Short-term development or implementation with existing resources (i.e., no additional resources allocated)
- Red: Longer-term implementation priority

Although several of these actions seek to improve efficiencies and can be implemented with existing staffing and budget resources, DEQ recognizes that others will require additional resources that aren't currently available. Therefore, before implementation begins for certain actions, DEQ or other implementing partners will need to identify new resources. This constraint makes the implementation time frame uncertain for those actions.

Table 1: DEQ Toxics Focus List

CHEMICAL CATEGORY	CHEMICAL S				
Combustion & Petroleum By-Products:	Polycyclic Aromatic Hydrocarbons (PAHs)	Dioxins and Furans	Napthalenes		
Consumer Product Constituents:	Phthalates	Triclosan	4-Nonyphenol (and Nonyphenol Ethoxylates)	Bisphenol A	DEET
Current Use Pesticides:	Diazinon	Chlorpyrifos	Atrazine	Trifluralin	Chlorothalonil
	Malathion	Permethrin	Carbaryl	Pentachlorophenol	Diuron
	Glyphosate	Hexachlorocyclohexane (HCH), gamma- (Lindane)	2,4-D	Propoxur (Baygon)	Pendamethalin
Flame Retardants and Industrial Intermediates:	Polybrominated Diphenyl Ethers (PBDEs)	Polychlorinated Biphenyls (PCBs)	Ammonia		
Legacy Pesticides:	Dieldrin	DDT (and metabolites)	Chlordane (and metabolites)	Aldrin	Methoxychlor
	Heptachlor (& Heptachlor epoxide)	Hexachlorocyclohexane, beta- (beta-BHC)	Hexachlorobenzene	Hexachlorocyclohexane, alpha- (alpha-BHC)	
Metals:	Mercury (and methylmercury)	Copper	Cadmium	Chromium	Arsenic
	Lead	Nickel	Manganese	Silver	
Volatile Organic Compounds (VOCs):	Tetrachloroethylene	Benzene	Ethylbenzene	Trichloroethylene	Dichlorobenzene, 1,4- (Dichlorobenzene-p)
	Toluene	Formaldehyde			

Table 2: Summary of Toxics Reduction Strategy Recommendations

	IMPROVING INTEGRATION AND PRIORITIZATION OF TOXICS REDUCTION ACTIVITIES	
Short-Term Implementation Priority*	**Action**	**Chemical Category(s)**
	I-1 DEQ programs will work together to address cross-media impacts of Focus List toxics, and to coordinate and integrate program requirements that address common objectives for Focus List chemicals	All
	I-2 Integrating technical assistance across programs to advance green chemistry in two industry sectors and identify priority geographic areas for integrated toxics reduction technical assistance	All
	I-3 Use existing rural planning and resource management programs to reduce loadings of Focus List toxics into Oregon waterbodies through natural resource agency collaboration	Metals, Legacy Pesticides, Current Use Pesticides
	I-4 Prioritize and direct efforts to meet new national ambient air quality standards and greenhouse gas reduction goals to maximize reductions in Focus List chemicals	Combustion By-Products, VOCs, Metals
	ENHANCING EFFECTIVE EXISTING TOXICS REDUCTION ACTIVITIES	
Short-Term Implementation Priority*	**Action**	**Chemical Category(s)**
	E-1 Develop and implement pesticide waste collection strategy	Legacy Pesticides
	E-2 Expand and enhance Pesticides Stewardship Partnerships and related technical assistance programs to encompass more watersheds, land uses, water media (e.g., groundwater), and additional assistance and outreach tools	Current Use Pesticides
	E-3 Provide assistance to small municipalities in implementing toxics reduction activities that prevent toxic pollutants from reaching their wastewater and stormwater systems	Metals, VOCs, , petroleum and combustion by-products
	E-4 Provide incentives for toxics reduction at facilities through innovative use of existing DEQ program tools where appropriate	All

	E-5 Increase the use of, and demand for, less toxic alternative products through third party certification and recognition programs and tools	All
	E-6 Develop and implement a funding plan for customized or enhanced household and small business waste collections for Focus List chemicals or categories of chemicals	All
	E-7 Assess opportunities to improve management of Focus List chemicals through use of existing state product or chemical reporting, notification, registration, and licensing mechanisms	All
ADDRESSING IDENTIFIED TOXICS REDUCTION NEEDS		
Short-Term Implementation Priority*	**Action**	**Chemical Category(s)**
	N-1 Work with retailers and others in the supply chain to reduce Focus List chemicals in common consumer products	All**
	N-2 Develop and implement low toxicity state agency purchasing and procurement guidelines	All**
	N-3 Collaborate with other states to develop and disseminate guidance on toxic chemical alternatives assessments, and identify and pursue alternatives assessment priorities for common uses of Focus List chemicals	All**
	N-4 Develop and implement risk reduction and outreach plans in areas determined to have high potential for human health exposure to Focus List chemicals through domestic drinking water wells	All
	N-5 Increase understanding of the benefits of green chemistry among key Oregon decision-makers and gain commitment to adopt policies that foster green chemistry innovation	All**
	N-6 Create and support a green chemistry innovation "Hub" that catalyzes the use of green chemistry by Oregon businesses and fosters collaboration between public and private stakeholders	All**
	N-7 Increase information disclosure for products with Focus List constituents to allow for improved assessment and pollution prevention actions	All**
	N-8 Use the Focus List to help identify new opportunities for product stewardship initiatives	All**

ASSESSING AND CHARACTERIZING TOXICS IN OREGON		
Short-Term Implementation Priority*	**Action**	**Chemical Category(s)**
	A-1 Incorporate all Focus List chemicals into existing state environmental toxics monitoring or modeling initiatives, considering appropriate pathways	All
	A-2 Assess DEQ program data needs related to Focus List chemicals in environmental media or environmental treatment by-products	All
	A-3 Identify localized impact areas ("hot spots") that could pose higher risks to people and ecological life due to exposure to multiple chemicals from multiple sources	All
	A-4 Use all available and credible internal and external sources of data to identify potential sources of Focus List toxics for all DEQ programs, and integrate toxics databases and source modeling information when feasible	All
	A-5 Establish ecological and human health indices to assess Focus List chemicals without regulatory standards and to provide context for communication of monitoring data	All
	A-6 Develop, fund and implement human biomonitoring program to track levels of Focus List chemicals in people over time	All

* Priority level for short-term (1-2 years) implementation activity:

Green = High priority for short-term implementation activity, involving possible re-prioritization of resources

Yellow = Short-term development or implementation with existing resources (i.e., no additional resources allocated)

Red = Longer-term implementation priority

** Potentially all chemical categories could be addressed, but the primary emphasis is on Consumer Product Constituents, metals, VOCs, flame retardants, petroleum byproducts (i.e., those chemicals registered under the federal Toxics Substances Control Act)