State of Oregon
Department of
Environmental
Quality

DATA SOURCES FOR DEQ AGENCY BASE LIST OF TOXICS

The basis for the draft Agency Toxics Priority List is a set of toxic pollutant priority lists developed by individual DEQ programs or inter-agency initiatives with which DEQ is involved, which are summarized in the table below. Many toxic chemicals appear on multiple program lists. In addition, some programs have grouped individual chemical cogeners (e.g., PCBs, PBDEs, PAHs), degradates and metabolites, while other have not. In general, chemical congeners, degradates and metabolites will be grouped for the Agency Toxics Priority List, unless there is a need to separate them because of the need to develop more finely focused toxics reduction actions.

LIST	TYPE	# OF CONSTITUENTS
Interim Final Persistent Pollutant Priority List for Surface Water ("P3" List)	Legislatively-mandated list	140[1]
Air Toxics Program Priority Pollutants	Reduction priority and monitoring list	20
Clean Up Program Risk Drivers	Site investigation & remediation priority List	20
Willamette Toxics Monitoring Target Analyte List	Monitoring List	64
Drinking Water Contaminants of Concern	Monitoring List	51[2]
Toxics Exceeding Oregon Water Quality Standards	State regulatory criteria	28[3]
Household Hazardous Waste Priority List	Reduction priorities	75
Oregon Water Quality Pesticides of Concern and Pesticides of Interest	Monitoring & reduction priorities	58[4]
Columbia River Toxics Priorities	Monitoring and reduction priorities	155[5]
EPA National Waste Minimization Priorities (DEQ uses for Toxics Use Reduction Program)	Reduction priorities	37

[1] This list includes individual chemical (e.g., PCBs), some of which (e.g., PCBs) will be grouped for the purposes of the Agency Toxics List

[2] The Willamette Toxics Monitoring Analyte List is inclusive of most, but not all, of the Source Drinking Waters List

[3] The toxic pollutants on this list are those on the 2004/2006 303(d) list, as well as pollutants were identified as "pollutants of concern" on the 2004/2006 Water Quality Assessment Report

[4] The Pesticides of Concern and Pesticides of Interest were designated by the Inter-Agency Water Quality Pesticide Management Team (comprised of representatives from the Oregon Departments of Agriculture, Environmental Quality, Forestry and Human Services). These lists were informed by a list developed by EPA's Office of Pesticide Programs, and focus on pesticides that pose risks to ground and surface water

[5] Individual cogeners and degradates were grouped prior to determining the total number of toxic pollutants on this list

TOTAL TOXIC CONSTITUENTS ON ALL LISTS (with duplicates eliminated):

- **Congeners, degradates, metabolites <u>grouped</u> = 300**
- **Congeners, degradates, metabolites <u>separated</u> = 382**

DERIVATION OF DEQ PROGRAM PRIORITY TOXICS LISTS

<u>Interim Final Persistent Pollutant Priority List for Surface Water ("P3" / SB 737 List)</u>

DEQ's Interim Final Priority Persistent Pollutant List (P^3 List) identifies 140 toxic pollutants, divided into three tiers, that persist in the environment and/or accumulate in animals. All of the pollutants on the list have potential to cause harm to aquatic life if they get into the water and thereby have the potential to pose a threat to Oregon's waters. To create this list, DEQ convened a Science workgroup of seven experts in the fields of fate and transport, hydrology, as well as in the fields of human health, aquatic life, and wildlife toxicology. This group provided advice as DEQ assessed the toxicity, persistence and bioaccumulation characteristics of more than 2000 chemicals with several US Environmental Protection Agency (EPA) models.

<u>Air Toxics Priority Program Pollutants</u>

Toxic air pollutants designated by the DEQ Air Quality Division as one of the top 20 causes of risk to human health from breathing ambient air. These pollutants include chemicals that are measured and modeled at significant levels in Oregon's air, are on EPA's list of regulated air toxics, and for which the Environmental Quality Commission has established by regulation ambient benchmark concentrations, or health-based clean air goals. Air toxics ambient benchmark concentrations are based on the best available toxicological information and were recommended by Oregon's Air Toxics Science Advisory Committee.

<u>Cleanup Program Risk Drivers</u>

Toxic chemical, or group of chemicals that DEQ's Cleanup and Tanks Programs recognize as a priority 'risk driver' at contaminated sites around the state. The list originates from discussions in early 2009 among DEQ's Cleanup Program toxicologists about those chemicals in specific sites' soil, surface water, sediment, and groundwater that occur most frequently and present the greatest threats to human or environmental receptors. While the selection of these chemicals/groups was somewhat subjective, the fact that all toxicologists agreed with the final list makes the list credible and technically sound.

<u>Willamette Toxics Monitoring Program Target Analytes</u>

The Willamette Toxics Monitoring target analytes were selected based on a review of relevant literature and monitoring reports for the Willamette and Lower Columbia River Basins and conversation with internal and external stakeholders. The analyte list included DEQ Drinking Water Protection Program priorities and many pesticides measured by Pesticide Stewardship Partnership Program. Tissue analytes were selected based on published research, monitoring information and fish consumption advisories for the basins. The draft monitoring plan was made available to stakeholders and posted on the DEQ Webpage for review and comment before monitoring was initiated.

<u>Drinking Water Contaminants of Concern</u>

The scope of the Drinking Water Source Monitoring Project was developed in 2007 and drew upon expertise and resources from both DEQ and the Department of Human Services—Environmental Public Health Division. The purpose of the project is to design technical assistance and pollutant reduction strategies to address the pollutants of highest concern for drinking water in Oregon. In developing the priority list of pollutants, the DEQ/DHS team used recent national USGS emerging contaminant data in drinking water source areas, an analysis of current unmonitored pollutants used in Oregon, other state source monitoring programs, and consultations

with environmental toxicologists at OSU and DHS that have public health and drinking water expertise. Data sources for prioritizing within each group of pollutant included USGS national detection data on pharmaceuticals (Dana Kolpin, USGS); cleaners, VOCs, fire retardants from the recent analysis of Oregon's highest risks from household chemicals (DEQ/HHW, 2007); pesticides used in Oregon forestry from ODF (Knotts, January 2008); pesticides used in Oregon agriculture from DEQ Willamette Valley study (DEQ, 2002); and for other areas of the state, Pesticide Stewardship Partnership data based on past DEQ monitoring in agricultural areas. After developing lists within each pollutant group, the final priorities were selected by agency toxicologists based on determinations of potential risks to public health.

Toxics Exceeding Oregon Water Quality Standards

This list includes toxic pollutants exceeding in-stream water quality standards designed to protect human health or aquatic life in Oregon. Waterbodies that exceed criteria for specific toxic pollutants (established in Oregon Administrative Rule 340-041-0033, Table 20) are placed on the Oregon 303(d) list of impaired waters. This program list also includes other "pollutants of concern" identified in the 2004/2006 Water Quality Assessment Report, as well as pollutants that were identified in a recent fish consumption rate report (SAIC, 2008) as having the potential to exceed currently effective criteria for some permitted wastewater discharge sources.

Household Hazardous Waste Program Prioritization

The Household Hazardous Waste Priority Assessment project developed a risk-based method to assess which household hazardous wastes likely pose the greatest danger to public and environmental health. A consultant designed a methodology and spreadsheet tool, compiled relevant data on hazardous products and substances, and performed the assessment. The primary evaluation criteria are *Health Impacts*, *Environment Impacts*, and *Hazard Potential.* The U.S. Environmental Protection Agency's Tool for the Reduction and Assessment of Chemical and Other Environmental Impacts (TRACI) and the National Library of Medicine's Hazardous Substances Data Bank (HSDB) as the primary data sources for the criteria of health impacts, environmental impacts, and hazard potential. TRACI was developed by the EPA to assist in impact assessment for pollution prevention initiatives, among other purposes. The HSDB is a database that focuses on the toxicology of potentially hazardous chemicals. Both data sources have undergone extensive peer review.

Oregon Water Quality Pesticides of Interest and Pesticides of Concern

Nationwide, state agencies compiled a list of 57 active ingredients or groups of active ingredients that are most likely to affect water quality. The Oregon Inter-Agency Water Quality Pesticide Management Team (WQPMT) evaluates a certain number of these "pesticides of interest" (POIs) each year, along with any others that are deemed have the potential to occur in Oregon at concentrations approaching or exceeding a federal, state or tribal health or environmental reference concentration. Based on these evaluations, the WQPMT may designate an active ingredient as a "pesticide of concern" (POC) because it approaches or exceeds an established benchmark concentration and poses a possible risk to human or ecological life. Once an ingredient receives becomes a POC, active management strategies are proposed to reduce levels in surface or groundwater.

Columbia Toxics Reduction Strategy Monitoring Priorities

A multi-stakeholder contaminant and media subgroup was tasked with identifying the toxics of highest priority for the Columbia River Toxics Reduction Workgroup. The subgroup developed a tiered list of contaminants of concern, which is meant to serve as a living list with updates made on yearly basis. The individual toxics were considered highest priority (Tier 1) based on the following factors: (a) Is it an existing problem? (b) Is it an ecological threat, a human health threat, or both? (c) Is there an implementation plan/reduction strategy in place? The subgroup also considered these factors: Trend data available, relevance to people (health), probability

that relevant data will continue to be collected, clear link to contaminants/effects of contaminants, relevance to how people use/interact with the Columbia River, ease of collecting necessary information.

EPA Waste Minimization Program's Priority Chemicals

The EPA National Waste Minimization Program's Priority Chemicals are used by the Oregon Toxics Use and Hazardous Waste Program to help focus its toxics reduction efforts. The organic chemicals included in the list of Priority Chemicals (PCs) were selected following an EPA Agency-wide expert review of scientific information available on them. EPA experts reviewed scientific information made available to the public in 1998 and scientific information received from commenters in response to the 1998 Notice of Availability. Based on its review, EPA concluded that 27 organic chemicals are persistent, bioaccumulative, and toxic (PBT). They are currently being generated in industrial waste and are found in soil, sediment, ground water, surface water, air, and plant, animal, and human tissue as a result of past and present releases. Even when released in very small amounts, they accumulate and can cause environmental problems. Many of these organics are difficult to clean up once they get into the environment, resulting in costly clean up efforts. Polychlorinated biphenyls (PCBs) were added in 2004 because of their chemical properties. Three metals are included in the list. The PC list includes cadmium, lead, and mercury. These metals and their compounds are known to occur frequently in RCRA regulated industrial wastes and often trigger RCRA's Toxicity Characteristic criteria, meaning the wastestreams they are found in must be managed under RCRA hazardous waste regulations.