

SB 737 Sampling Shows Oregon Wastewater Utilities Working to Reduce Toxics



The final round of SB 737 effluent sampling results for the 52 affected Oregon wastewater treatment plants confirmed that Oregon wastewater treatment plants, and associated pollution prevention programs, continue to effectively control discharges of Priority Persistent Pollutants to Oregon's rivers and streams.

Under SB 737, passed by the 2007 Oregon Legislature, the 52 largest treatment plants in Oregon (over 1 MGD) screened their effluent for 117 of the 118 Oregon Priority Persistent Pollutants in sampling events held in the summer of 2010 (dry weather) and the winter of 2010 (wet weather). Both sampling events had very similar results.

Overall Results

Oregon DEQ set threshold levels for each of the 118 Priority Persistent Pollutants, above which pollution prevention plans would need to be prepared. DEQ calls the thresholds Plan Initiation Levels. Exceeding a threshold in either sampling event required preparation of a pollution prevention plan.

DEQ concluded that the results show that the pollution reduction measures currently in place are working to keep the majority of persistent pollutants out of municipal wastewater effluent, and that wastewater from municipal treatment plants is not a significant source of most persistent pollutants. A DEQ fact sheet on the study results is available at <http://www.deq.state.or.us/wq/SB737/>.

Of the 52 participating treatment plants each sampling twice, only

five Oregon treatment plants must prepare pollution prevention plans – each for one pollutant. These include:

- The Cities of Klamath Falls and Ontario for arsenic, where background arsenic concentrations are elevated from volcanic soils,
- The City of Hermiston and Oak Lodge Sanitary District for beta-sitosterol, a plant-based sterol common in municipal wastewater, and
- The City of Portland (Columbia Blvd. Treatment Plant – a combined sewer system) for pyrene, a polycyclic aromatic hydrocarbon associated with combustion.

About 68% of the compounds were not detected at any of the treatment plants, even at the very low detection levels that the DEQ laboratory was using.

Chemicals that were found in wastewater effluent, but below Plan Initiation Levels included:

- Legacy pesticides including 2,4,6-Trichlorophenol, 2,4,5-Trichlorophenol, and pentachlorobenzene,
- Poly Aromatic Hydrocarbons (PAHs) - - by-products of combustion - - including benzo(a) anthracene, benzo(b)fluoranthene, chrysene and others,
- Metals including arsenic, lead, and methyl mercury,





- Legacy chemicals including PCBs,
- A consumer chemical fragrance - galaxolide and
- Flame retardants

Every treatment plant exceeded the Plan Initiation Levels for cholesterol and coprostanol, natural by-products of digestion. After further examination, DEQ staff suspended pollution prevention plan requirements for those pollutants due to limited information about toxicity, lack of feasible municipal pollution prevention activities, and lack of cost-effective treatment options.

Study of National Significance

Oregon is the first state in the nation to undertake such an extensive examination of persistent toxics in wastewater treatment facility effluent. This study is noteworthy considering the number of chemicals tested, clean sampling protocols, and the extremely low laboratory detection levels used in the analysis

The effluent results were analyzed by the Oregon DEQ Laboratory and paid for by the SB 737 affected municipalities. Each of the 52 affected wastewater treatment plants paid about \$15,000 for the sampling effort. The DEQ laboratory worked collaboratively with Oregon municipal lab managers to develop the sampling protocols, design the sampling programs, and develop the testing efforts.

Prevention Efforts Continuing for Oregon Municipalities

Although a limited number of municipalities are required to develop new SB 737 pollution prevention plans, this is not the end of pollution prevention activities for Oregon wastewater municipalities.

For instance, under the DEQ revised toxic water quality standards, most - - if not all - - Oregon wastewater treatment plants will need water quality variances for legacy chemicals such as PCBs and other pollutants. These communities will need to prepare a pollution prevention plan as part of the variance application.

Other drivers for developing pollution prevention plans might include:

- Maintaining high quality biosolids for beneficial reuse,
- Meeting Oregon water quality standards for metals and other toxics,
- Preparing to meet future water quality standards,
- Assisting in evaluation of Whole Effluent Toxicity (WET) test failures, and
- Building community partnerships to reduce the use of toxic materials, especially in households.

Example pollution prevention activities that communities might institute include:

- Working with OSU Extension, Soil and Water Conservation Districts, and local drinking water providers to organize an event to collect legacy pesticides from area ranchers and farmers,
- Supporting and promoting local household hazardous waste collection events,
- Working with schools to clean out lab chemicals, remove mercury-containing equipment, and revise procurement practices,
- Promoting eco-certified soaps and cleaners,
- Specifying that electronic devices including computers, monitors, and laptops meet environmental standards set by EPEAT (see www.epeat.net),
- Ensuring landscaping practices meet Eco-Biz standards,
- Working with local law enforcement agencies to establish a collection box for unwanted and unused drugs,
- Inspecting equipment and transformers at the treatment plant and pump stations to ensure no PCB equipment is used where it could fail into effluent, and
- Outreach and education to the public on proper use of pesticides, including herbicides.

