State of Oregon
Department of Environmental Quality Memorandum

Date: Jan. 28, 2011

To: Environmental Quality Commission

From: Dick Pedersen, Director

Subject: Agenda item F, Rule adoption: Temporary revision of Division 045 Initiation Level Rule 340-045-0100
February 16-18, 2011, EQC meeting

Why this is important

Sampling results compiled to date reveal that Oregon's 52 largest municipal wastewater treatment plants will be required to develop Persistent Pollutant Reduction Plans addressing two pollutants for which there are no feasible municipal pollution prevention activities. In addition, there are no cost-effective treatment options and, without this temporary rule, would require an administrative process with little or no environmental benefit.

DEQ recommendation and EQC motion

DEQ recommends that the Oregon Environmental Quality Commission temporarily revise rule 340-045-0100, Initiation Level Rule, to suspend municipalities' requirement to develop Persistent Pollutant Reduction Plans for cholesterol and coprostanol, as presented in attachment A.

Background and need for rulemaking

The commission passed the Initiation Level rule in June 2010 requiring Oregon's 52 largest municipal wastewater treatment plants to develop Persistent Pollutant Reduction Plans for pollutants present above plan initiation levels. Senate Bill 737 requires that these plans be incorporated into National Pollutant Discharge Elimination System and Water Pollution Control Facilities permits on renewal.

In the first round of sampling, nearly every location exceeded the plan initiation levels for cholesterol and coprostanol. Very few other persistent pollutants exceeded the levels at any location. Cholesterol and coprostanol are naturally occurring byproducts of human digestion. DEQ's toxicity models concluded that cholesterol and coprostanol are toxic and persist in aquatic ecosystems and meet the criteria for inclusion on the Priority Persistent Pollutant List, DEQ has learned that there is limited published scientific data on toxicological effects to corroborate the model estimates. Further, there are no feasible municipal pollution prevention activities for these pollutants. In additiona, DEQ found that there are no cost-effective treatment options to reduce cholesterol or coprostanol. Based on the current program rules, 52 municipalities would be required to prepare a reduction plan for pollutants with limited information about toxicity, that have no feasible municipal pollution prevention activities and also lack cost-effective treatment options. The proposed rules would temporarily suspend that requirement. DEQ views development of Persistent Pollutant Reduction Plans for

cholesterol and coprostanol a disproportionate response for these pollutants.

Effect of rule

This proposed rule revision to the Initiation Level rule would temporarily suspend municipalities' requirement to develop Persistent Pollutant Reduction Plans for cholesterol and coprostanol, as presented in attachment A.

Commission authority

The commission has authority to take this action under ORS 468.020, 468B.141 and 183.335.

Stakeholder involvement

DEQ met with a volunteer stakeholder sounding board in October 2010 and January 2011 for discussion and input regarding options to address this issue. At the October 2010 meeting, DEQ informed sounding board members that it was considering two alternatives for addressing pollutants with no feasible municipal pollution prevention activities or treatment options. DEQ would either allow minimal reduction plans focused on maintaining or optimizing existing treatment, or it would draft a rule revision to suspend permittees' requirement to develop a reduction plan for these pollutants. DEQ offered sounding board members an informal opportunity to provide input on these two options, and evaluated input received.

In advance of the January 2011 stakeholder sounding board meeting, DEQ indicated its intent to pursue a revised rule and provided sounding board members a draft copy of this staff report and supporting materials. DEQ responded to clarifying questions at the meeting and accepted information from sounding board members that improved the documents' accuracy. A list of sounding board members who participated in these meetings is included as attachment C.

Public comment

There was no formal public comment period for this temporary rule.

Key issues

Key issues are:

1. The extent to which specific information exists regarding the potential environmental and human health threats of discharging cholesterol and coprostanol into Oregon's waters.
    - A model estimate of toxicity warranted listing these pollutants on the Priority Persistent Pollutant List. DEQ relied heavily on public comment both during list development and plan initiation level selection processes. DEQ did not receive any comments during either public comment period refuting model estimates for cholesterol and coprostanol. After detection of these two pollutants above initiation levels at nearly all facilities, DEQ evaluated available information on these pollutants, as summarized in the technical memo "Aquatic Toxicity of Sterols and Stanols." Based on the evaluation, DEQ concluded that there are few studies regarding the potential environmental and human health threats of discharging cholesterol and coprostanol into Oregon's waters, and those that do exist do not present

conclusive information about their potential harmful effects on the well-being of humans, fish or wildlife.

2. Availability of pollution prevention activities to reduce sterols and stanols.
   - Cholesterol and coprostanol are two naturally occurring byproducts of human digestion. DEQ performed an independent analysis and was not able to identify potential prevention activities for these pollutants. They are present in human waste regardless of what people eat, and therefore are not amenable to pollution prevention.

3. Availability and cost-effectiveness of treatment technologies for reducing cholesterol and coprostanol.
   - DEQ received input from stakeholders with diverse perspectives regarding the availability and cost-effectiveness of treatment technologies. DEQ reviewed relevant literature and affirmed that cost-effective treatment is not available, as outlined in the technical memo "Treatment of Sterols and Stanols."
   - These are the only two pollutants on the Priority Persistent Pollutant List for which model estimates cannot be corroborated with scientific literature; they also lack municipal pollution prevention activities or cost-effective treatment options.

4. Complying with Senate Bill 737's statutory requirements without a temporary rule.
   - DEQ considered whether minimal reduction plans could meet municipalities' requirements under Senate Bill 737. DEQ determined that incorporating brief reduction plans into National Pollutant Discharge Elimination System and Water Pollution Control Facilities permits for pollutants with no feasible reduction activities would yield a resource-intensive administrative process with little or no environmental benefit.

5. The need for permittees to prepare a reduction plan addressing cholesterol or coprostanol if DEQ fails to follow through with a timely permanent rule or a revision of the Priority Persistent Pollutant List after expiration of the temporary rule.
   - Legal counsel advised DEQ that, except under a very limited fact set, permittees would not be required to go back and prepare reduction plans addressing cholesterol or coprostanol after the expiration of the temporary rule, as detailed in the legal memo from the Department of Justice.

Next steps

If adopted, DEQ will file the temporary rule revision with the Secretary of State. DEQ will notify all affected permittees and stakeholder sounding board members via email, and other interested stakeholders via an email message posted to the Senate Bill 737 GovDelivery listserv. This temporary rulemaking will also use

education and outreach via the project website, www.deq.state.or.us/wq/SB737, to communicate DEQ's revised requirements.

Attachments

A. Proposed rule revisions (redlined version)
B. Statement of Need and Justification
C. Senate Bill 737 stakeholder sounding board member list

Available upon request

1. Compiled information about persistent pollutants detected above Plan Initiation Level (Jan. 18, 2011)
2. Technical Memo: Aquatic Toxicity of Sterols and Stanols (Oct. 25, 2010)
3. Technical Memo: Treatment of Sterols and Stanols (Dec. 20, 2010)
4. Department of Justice Legal Memo (January 2011)
5. Rule Implementation Plan

Approved:

Division: _____

Section: _____

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DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION 045
REGULATIONS PERTAINING TO NPDES AND WPCF PERMITS

Initiation Level Rule
340-045-0100

(1) **Definitions**. The definitions in ORS 468B.138 are adopted by reference. In addition, for purposes of this rule, the following definitions apply:

(a) "Persistent Pollutants" are substances that are toxic and that either persist in the environment or accumulate in the tissues of humans, fish, wildlife or plants, and are listed in Column 2 of Table A.

(b) "Permittee" means a municipality in possession of a National Pollutant Discharge Elimination System or water pollution control facility permit issued by the DEQ pursuant to ORS 468B.050 for a sewage treatment facility that has a dry weather design flow capacity of one million gallons per day or more.

(c) "Initiation level" is the concentration of a persistent pollutant in a permittee's effluent that, if exceeded, necessitates the preparation of a persistent pollutant reduction plan under ORS 468B.140.

(2) **Initiation levels**.

(a) Initiation levels for persistent pollutants are those values contained in Table A, or the analytical quantitation limit (concentration at which quantitative results can be reported with a high degree of confidence), whichever is higher.

(b) Initiation levels are not standards of quality and purity for the waters of this state for the purposes of ORS 468B.048 or the federal Clean Water Act.

(c) Except as specified in subsection (f), each permittee must measure the concentration of the persistent pollutants listed in Table A in its effluent, compare the results of these measurements to the initiation levels, determine whether any persistent pollutant exceeds its initiation level, and document this proposed determination in a report to the Department. For existing permittees, the report must be filed no later than 60 calendar days after receipt of laboratory results. For permittees that first become subject to this rule after its effective date, the report must be filed within 18 months after the permittee becomes subject to the rule.

(d) The Department will review this report to verify that the proposed determination is based on reliable information. If the Department finds that the proposed determination is not based on reliable information, the Department will make an independent determination of whether a initiation level has been exceeded.

(e) Except as specified in subsection (g), each permittee must prepare and submit to the Department a written persistent pollutant reduction plan in accordance with ORS 468B.140(1)(a) addressing persistent pollutants that exceed the initiation level. For existing permittees, the plan must be submitted no later than July 1, 2011. For permittees that first become subject to this rule after the effective date of this rule, the plan must be submitted to the Department within six months after the report is submitted, or, if the Department makes an independent determination, six months from the date of the Department's independent determination or within a timeframe established by the Department.

(f) The Department may suspend, by written order, the requirement to measure or develop a persistent pollutant reduction plan for a listed persistent pollutant if the Department determines it is not technically practicable to measure the pollutant in effluent or if the Department removes a pollutant from the Priority Persistent Pollutant List. If, based on additional monitoring done pursuant to a persistent pollutant reduction plan, the Department determines that it is unlikely that a pollutant exists in a permittee's effluent, the Department may allow the permittee to withdraw the pollutant from inclusion in the persistent pollutant reduction plan.

(g) Permittees are not required to develop a persistent pollutant reduction plan to address cholesterol or coprostanol based on the absence of municipal pollution prevention activities, as well as the absence of conclusive evidence in the scientific literature that these pollutants have documented harmful effects on the health and well-being of humans, fish or wildlife, in accordance with ORS468B.139, and the absence of cost-effective treatment options.

Table A

CASRN	Chemical Name	Initiation Level (µg/L)
120-12-7	Anthracene	0.01
7440-38-2	*Arsenic Compounds*	10
56-55-3	Benz(a)anthracene	0.02
50-32-8	*Benzo(a)pyrene*	0.2
205-99-2	Benzo(b)fluoranthene	0.5
191-24-2	Benzo(g,h,i)perylene	2
207-08-9	Benzo(k)fluoranthene	0.002
98-07-7	Benzotrichloride [trichloromethylbenzene]	0.03
82657-04-3	Bifenthrin	0.02
56-35-9	Bis (tributyltin) oxide [TBTO, hexabutyldistannoxane]	0.008
7440-43-9	*Cadmium Compounds*	5
5103-71-9	*Chlordane, cis-*	2
5103-74-2	*Chlordane, trans-*	2
143-50-0	Chlordecone [Kepone]	0.5
2921-88-2	Chlorpyrifos	0.04
57-88-5	Cholesterol	0.06
218-01-9	Chrysene [benzo(a)phenanthrene]	2
360-68-9	Coprostanol	0.04
541-02-6	Cyclopentasiloxane, decamethyl- [D5]	16
556-67-2	Cyclotetrasiloxane, octamethyl- [D4]	7
72-54-8	DDD, 4,4'-	0.1
72-55-9	DDE, 4,4'-	0.1
50-29-3	DDT, 4,4'-	0.001
434-90-2	Decafluorobiphenyl	18
52918-63-5	Deltamethrin [decamethrin]	0.0004
333-41-5	Diazinon	0.2
53-70-3	Dibenz(a,h)anthracene	0.04
115-32-2	Dicofol	6
60-57-1	Dieldrin	0.002
56-53-1	Diethylstilbestrol	87
88-85-7	*Dinoseb*	7
1746-01-6	*Dioxins/furans [as 2,3,7,8-TCDD TEQ]*	3×10^{-5}
1031-07-8	Endosulfan sulfate	0.1
72-20-8	*Endrin*	2
66230-04-4	Esfenvalerate	0.02

CASRN	Chemical Name	Initiation Level (µg/L)
13356-08-6	Fenbutatin-oxide	0.5
120068-37-3	Fipronil	15
206-44-0	Fluoranthene [benzo(j,k)fluorine]	0.04
1222-05-5	Galaxolide [HHCB]	29
76-44-8	*Heptachlor*	0.4
1024-57-3	*Heptachlor epoxide*	0.2
32241-08-0	Heptachloronaphthalene	0.4
25637-99-4	Hexabromocyclododecane [HBCD]	7
118-74-1	*Hexachlorobenzene [HCB]*	1
319-84-6	Hexachlorocyclohexane, alpha-	0.006
319-85-7	Hexachlorocyclohexane, beta-	0.04
58-89-9	*Hexachlorocyclohexane, gamma- [Lindane]*	0.2
1335-87-1	Hexachloronaphthalene	1.4
70-30-4	Hexachlorophene	2
193-39-5	Indeno(1,2,3-cd)pyrene	0.5
465-73-6	Isodrin	0.6
91465-08-6	Lambda-cyhalothrin	0.01
7439-92-1	*Lead Compounds*	15
330-55-2	Linuron	0.09
22967-92-6	Methylmercury	0.004
832-69-9	Methylphenanthrene, 1-	0.7
2381-21-7	Methylpyrene, 1-	20
2385-85-5	Mirex	0.001
15323-35-0	Musk indane	10
81-14-1	Musk ketone	30
145-39-1	Musk tibetene	4
81-15-2	Musk xylene	100
88671-89-0	Myclobutanil	200
5103-73-1	Nonachlor, cis-	2
39765-80-5	Nonachlor, trans-	2
29082-74-4	Octachlorostyrene	0.2
27304-13-8	Oxychlordane, single isomer	0.4
42874-03-3	Oxyfluorfen	1.3
5436-43-1	PBDE-047 [2,2',4,4'-Tetrabromodiphenyl ether]	0.7
60348-60-9	PBDE-099 [2,2’,4,4’,5-Pentabromodiphenyl ether]	0.7
189084-64-8	PBDE-100 [2,2’,4,4’,6-Pentabromodiphenyl ether]	0.7
68631-49-2	PBDE-153 [2,2',4,4',5,5'-hexabromodiphenyl ether]	1
1163-19-5	PBDE-209 [decabromodiphenyl ether]	0.1

CASRN	Chemical Name	Initiation Level (µg/L)
7012-37-5	*PCB-028 [2,4,4'-trichlorobiphenyl]*	0.5
35693-99-3	*PCB-052 [2,2',5,5'-tetrachlorobiphenyl]*	0.5
32598-13-3	*PCB-077 [3,3',4,4'-tetrachlorobiphenyl]*	0.5
70362-50-4	*PCB-081 [3,4,4',5-tetrachlorobiphenyl]*	0.5
37680-73-2	*PCB-101 [2,2',4,5,5'-pentachlorobiphenyl]*	0.5
32598-14-4	*PCB-105 [2,3,3',4,4'-pentachlorobiphenyl]*	0.5
74472-37-0	*PCB-114 [2,3,4,4',5-pentachlorobiphenyl]*	0.5
31508-00-6	*PCB-118 [2,3',4,4',5-pentachlorobiphenyl]*	0.5
65510-44-3	*PCB-123 [2',3,4,4',5-pentachlorobiphenyl]*	0.5
57465-28-8	*PCB-126 [3,3',4,4',5-pentachlorobiphenyl]*	0.5
35065-28-2	*PCB-138 [2,2',3,4,4',5'-hexachlorobiphenyl]*	0.5
35065-27-1	*PCB-153 [2,2',4,4',5,5'-hexachlorobiphenyl]*	0.5
38380-08-4	*PCB-156 [2,3,3',4,4',5-hexachlorobiphenyl]*	0.5
69782-90-7	*PCB-157 [2,3,3',4,4',5'-hexachlorobiphenyl]*	0.5
52663-72-6	*PCB-167 [2,3',4,4',5,5'-hexachlorobiphenyl]*	0.5
32774-16-6	*PCB-169 [3,3',4,4',5,5'-hexachlorobiphenyl]*	0.5
35065-29-3	*PCB-180 [2,2',3,4,4',5,5'-heptachlorobiphenyl]*	0.5
39635-31-9	*PCB-189 [2,3,3',4,4',5,5'-heptachlorobiphenyl]*	0.5
40487-42-1	Pendimethalin	6
1825-21-4	Pentachloroanisole [2,3,4,5,6-Pentachloroanisole]	35
608-93-5	Pentachlorobenzene	6
1321-64-8	Pentachloronaphthalene	4
82-68-8	Pentachloronitrobenzene	20
375-85-9	Perfluoroheptanoic acid [PFHpA]	300
375-95-1	Perfluorononanoic acid [PFNA]	1
754-91-6	Perfluorooctane sulfonamide [PFOSA]	0.2
1763-23-1	Perfluorooctane sulfonic acid [PFOS]	300
335-67-1	Perfluorooctanoic acid [PFOA]	24
85-01-8	Phenanthrene	0.4
2062-78-4	Pimozide	3
67747-09-5	Prochloraz	2
129-00-0	Pyrene	0.03
80214-83-1	Roxithromycin	710
7782-49-2	*Selenium Compounds]*	50
83-45-4	Sitostanol, beta- [stigmastanol]	75
83-46-5	Sitosterol, beta-	25
92-94-4	Terphenyl, p-	11
79-94-7	Tetrabromobisphenol A [TBBPA]	980
1335-88-2	Tetrachloronaphthalene	14

CASRN	Chemical Name	Initiation Level (µg/L)
1321-65-9	Trichloronaphthalene	43
95-95-4	Trichlorophenol, 2,4,5-	18
88-06-2	Trichlorophenol, 2,4,6-	2
3380-34-5	Triclosan [2,4,4'-trichloro-2'-hydroxydiphenyl ether]	70
1582-09-8	Trifluralin	1.1
732-26-3	Tris-(1,1-dimethylethyl)phenol, 2,4,6-	6

Stat. Auth.: ORS 468.020 and 468B.141.
Stats. Implemented: ORS 468B.138 through ORS 468B.144.
Hist.: New Rule; no historical reference or context.

DEPARTMENT OF ENVIRONMENTAL QUALITY
STATEMENT OF NEED AND JUSTIFICATION
A Certificate and Order for Filing Temporary Administrative Rules accompanies this form.

Department of Environmental Quality — **OAR Chapter 340**
Agency and Division — Administrative Rules Chapter Number

Rule Caption: Suspend municipalities' requirement to develop Persistent Pollutant Reduction Plans for cholesterol and coprostanol.

In the Matter of: Division 045 Initiation Level Rule 340-045-0100

Statutory Authority: ORS 468.020, 468B.141 and 183.335.

Other Authority:

Statutes Implemented: ORS 468B.138 through ORS 468B.144.

Need for the Temporary Rule(s):
EQC passed the Plan Initiation Level rule in June 2010, establishing the concentration of a pollutant in municipal wastewater treatment plant or facility effluent, which, if exceeded, creates the need for a priority persistent pollutant reduction plan. Oregon's 52 largest municipal wastewater treatment facilities then sampled effluent twice to determine whether any of 117 persistent pollutants were present above Plan Initiation Levels.

The first municipal sampling event revealed Plan Initiation Level exceedances at nearly every location for cholesterol and coprostanol, and only a handful of other Plan Initiation Level exceedances for other persistent pollutants. DEQ is currently reviewing data from a second sampling, and while the second sampling may yield different results, if the results are similar to the results of the first event it is likely that almost all of the 52 municipalities would be required to prepare a reduction plan solely to address two naturally-occurring byproducts of human digestion (cholesterol and coprostanol) alone. While toxicity models concluded that these pollutants are toxic and persistent in aquatic ecosystems, and met criteria for inclusion on the Priority Persistent Pollutants List, there information about their potential harmful effects on the well-being of humans, fish or wildlife is not conclusive. Further, there are no reasonable municipal pollution prevention activities to reduce cholesterol and coprostanol and no cost-effective treatment options to reduce these pollutants in effluent.

Reference Documents:
- Compiled Information about Persistent Pollutants Detected above Plan Initiation Level (located in DEQ's administrative record of this rulemaking)
- Technical memo: Aquatic Toxicity of Sterols and Stanols (located in DEQ's administrative record of this rulemaking)
- Technical memo: Treatment of Sterols and Stanols (located in DEQ's administrative record of this rulemaking)

Justification of Temporary Rule(s): The commission finds that failure to adopt the temporary rule will result in serious prejudice to the public interest because it will have the following consequences:

Development of Persistent Pollutant Reduction Plans for pollutants for which there are no reduction technologies or inconclusive information regarding toxicity, resulting in a disproportionate response for these types of pollutants.

Housing Cost Impacts:
DEQ has determined that this proposed rulemaking will have *no effect* on the cost of development of a 6,000 square foot parcel and the construction of a 1,200 square foot detached single family dwelling on that parcel.

_____ _____

Dick Pedersen, Director *Date signed*
(On behalf of the commission)

Senate Bill 737 Stakeholder Sounding Board
Fall / Winter 2010

Name	Organization
Bob Baumgartner	Clean Water Services
Brad Bogus	Consultant for City of Hermiston
Brett Hulstrom	City of Portland, Bureau of Environmental Services (BES)
Carol Murdock	Clackamas County, Water Environment Services (WES)
Chris Fick	League of Oregon Cities
Daniel Eisenbeis	City of Portland, Office of Government Relations
Janet Gillaspie	Oregon Association of Clean Water Agencies (ACWA)
Kim Cox	City of Portland, Bureau of Environmental Services (BES)
Lauren Goldberg	Columbia Riverkeepers
Mark Landauer	Special Districts Association of Oregon
Mark Milne	City of Pendleton
Mark Yeager	City of Albany
Myron Burr	Siltronic Corporation
Norman Eder	Representing Clackamas County WES
Ralph Saperstein	Representing Northwest Pulp and Paper
Renee Hackenmiller-Paradis	Oregon Environmental Council
Sue Marshall	Tualatin Riverkeepers
Theresa Huntsinger	Oregon Environmental Council
Tom Penpraze	City of Corvallis
Willie Tiffany	City of Hillsboro
Mike Sullivan	Association of Western Pulp and Paper Workers
Nina Bell	Northwest Environmental Associates
Rick George	Confederated Tribes of the Umatilla Indian Reservation

Oregon DEQ staff and managers

Name	
Jennifer Wigal	Manager
Cheryl Grabham	Project coordinator
Karen Whisler	Project coordinator (assignment concluded in November 2010)

Greg Geist	NW Region manager
Jess Brown	NW Region