

### Crosswalk Between Effective Human Health Criteria and Proposed Criteria

Compound Name or Class [Table 40 Name, if different]  *Criteria denoted in red indicate proposed additions to the human health criteria*	Priority Pollutant	Carcinogen	Concentration in Units Per Liter for Protection of Human Health  CURRENT		Concentration in Units Per Liter for Protection of Human Health  PROPOSED TABLE 40	
			Water and Fish Ingestion (µg/L)	Fish Consumption Only (µg/L)	Water and Fish Ingestion (µg/L)	Fish Consumption Only (µg/L)
ACENAPTHENE	Y	N	--	--	95	99
ACROLEIN	Y	N	320	780	0.88	0.93
ACRYLONITRILE	Y	Y	0.058	0.65	0.018	0.025
ALDRIN	Y	Y	0.000074	0.000079	0.0000050	0.0000050
ANTHRACENE	N	N	--	--	2900	4000
ANTIMONY	Y	N	146	45,000	5.1	64
ARSENIC	Y	Y	0.0022 (2.3)	0.0175 (2.7)	2.3	2.7
ASBESTOS	Y	Y	7,000,000 fibers/L	--	7,000,000 fibers/L	--
BARIUM	N	N	1000	--	1000	--
BENZENE [REPRESENTS RANGE]	N	Y	--	--	1.6	5.1
BENZENE	N	Y	0.66	40	0.44	1.4
BENZIDINE	N	Y	0.00012	0.00053	0.000018	0.000020

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*Criteria denoted in red indicate proposed additions to the human health criteria*						
BENZO(A) ANTHRACENE	N	Y	--	--	0.0013	0.0018
BENZO(A)PYRENE	N	Y	--	--	0.0013	0.0018
BENZO(B)FLUORANTHENE 3,4	N	Y	--	--	0.0013	0.0018
BENZO(K)FLUORANTHENE	N	Y	--	--	0.0013	0.0018
BROMOFORM	N	Y	--	--	3.3	14
BUTYLBENZYL PHTHALATE	N	N	--	--	190	190
CARBON TETRACHLORIDE	Y	Y	0.4	6.94	0.10	0.16
CHLORDANE	Y	Y	0.00046	0.00048	0.000081	0.000081
CHLORINATED BENZENES [CHLOROBENZENE]	Y	Y	488	--	74	160
CHLORODIBROMOMETHANE	N	Y	--	--	0.31	1.3
CHLOROETHYL ETHER (BIS-2)	Y	Y	0.03	1.36	0.020	0.05
CHLOROFORM	Y	Y	0.19	15.7	260	1100
CHLOROISOPROPYL ETHER (BIS-2)	Y	N	34.7	4360	1200	6500
CHLOROMETHYL ETHER (BIS)	N	Y	0.00000376	0.00184	0.000024	0.000029

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CHLORONAPHTHALENE 2	N	N	--	--	150	160
CHLOROPHENOL 2	Y	N	--	--	14	15
CHLOROPHENOXY HERBICIDES (2,4,5,-TP)	N	N	10	--	10	--
CHLOROPHENOXY HERBICIDES (2,4-D)	N	N	100	--	100	--
CHRYSENE	N	Y	--	--	0.0013	0.0018
COPPER	Y	N	1300	--	1300	--
CYANIDE	Y	N	200	--	130	130
DDT [DDT 4,4']	Y	Y	0.000024	0.000024	0.000022	0.000022
DDD 4, 4'	Y	Y	--	--	0.000031	0.000031
DDE 4, 4'	Y	Y	--	--	0.000022	0.000022
DIBENZO(A,H)ANTHRACENE	N	Y	--	--	0.0013	0.0018
DIBUTYLPHTHALATE [DI-N-BUTYL PHTHALATE]	Y	N	35,000	154,000	400	450

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DICHLOROBENZENES [DICHLOROBENZENE(O)1,2]	Y	N	400	2,600	110	130
DICHLOROBENZENE(P) 1,4	N	N	--	--	16	19
DICHLOROBENZIDINE [DICHLOROBENZIDINE 3,3']	Y	Y	0.01	0.020	0.0027	0.0028
DICHLOROBROMOMETHANE	N	Y	--	--	0.42	1.7
DICHLOROETHANE 1,2	Y	Y	0.94	243	0.35	3.7
DICHLOROETHYLENES [DICHLOROETHYLENE 1,1]	Y	Y	0.033	1.85	230	710
DICHLOROETHYLENE TRANS 1,2	N	N	--	--	120	1000
DICHLOROPHENOL 2,4	N	N	3,090	--	23	29
DICHLOROPROPANE [DICHLOROPROPANE 1,2]	Y	N	--	--	0.38	1.5
DICHLOROPROPENE [DICHLOROPROPENE 1,3]	Y	N	87	14,100	0.30	2.1
DIELDRIN	Y	Y	0.000071	0.000076	0.0000053	0.0000054

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DIETHYLPHTHALATE	Y	N	350,000	1,800,000	3800	4400
DIMETHYL PHENOL 2,4	Y	N	--	--	76	85
DIMETHYL PHTHALATE	Y	N	313,000	2,900,000	84,000	110,000
DINITROPHENOL 2,4	Y	N	--	--	62	530
DINITROPHENOLS	Y	N	--	--	62	530
DINITROTOLUENE 2,4	N	Y	0.11	9.1	0.084	0.34
DINITROTOLUENE	Y	N	70	14,300	No criteria	No criteria
DINITRO-O-CRESOL 2,4	Y	N	13.4	765	No criteria	No criteria
DIOXIN (2,3,7,8-TCDD)	Y	Y	0.000000013	0.000000014	0.00000000051	0.00000000051
DIPHENYLHYDRAZINE	Y	N	0.042	0.56	No criteria	No criteria
DIPHENYLHYDRAZINE 1,2	Y	N	--	--	0.014	0.02
DI-2-ETHYLHEXYL PHTHALATE [BIS-2-ETHYLHEXYL PHTHALATE]	Y	N	15,000	50,000	0.20	0.22
ENDOSULFAN	Y	N	74	159	8.5	8.9
ENDOSULFAN ALPHA	Y	N	--	--	8.5	8.9

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ENDOSULFAN BETA	Y	N	--	--	8.5	8.9
ENDOSULFAN SULFATE	Y	N	--	--	8.5	8.9
ENDRIN	Y	N	1	--	0.0060	0.0060
ENDRIN ALDEHYDE	Y	N	--	--	0.03	0.03
ETHYLBENZENE	Y	N	1,400	3,280	160	210
FLUORANTHENE	Y	N	42	54	14	14
FLUORENE	Y	N	--	--	390	530
HALOMETHANES	Y	Y	0.19	15.7	No criteria	No criteria
HEPTACHLOR	Y	Y	0.00028	0.00029	0.0000079	0.0000079
HEPTACHLOR EPOXIDE	Y	Y	--	--	0.0000039	0.0000039
HEXACHLOROETHANE	N	Y	1.9	8.74	0.29	0.33
HEXACHLOROBENZENE	Y	N	0.00072	0.00074	0.000029	0.000029
HEXACHLOROBUTADIENE	Y	Y	0.45	50	0.36	1.8

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HEXACHLOROCYCLOHEXANE- ALPHA [BHC ALPHA]	Y	Y	0.0092	0.031	0.00045	0.00049
HEXACHLOROCYCLOHEXANE- BETA [BHC BETA]	Y	Y	0.0163	0.0547	0.0016	0.0017
HEXACHLOROCYCLOHEXANE- GAMA [BHC GAMMA (LINDANE)]	Y	Y	0.0186	0.0625	0.17	0.18
HEXACHLOROCYCLOHEXANE- TECHNICAL	Y	Y	0.0123	0.0414	0.0014	0.0015
HEXACHLOROCYCLOPENTADIENE	Y	N	206	--	30	110
INDENO(1,2,3-CD)PYRENE	Y	Y	--	--	0.0013	0.0018
ISOPHORONE	Y	N	5,200	520,000	27	96
MANGANESE	N	N	50	100	--	100
METHOXYCHLOR	N	N	100	--	100	--
METHYL BROMIDE	Y	N	--	--	37	150

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METHYL-4,6-DINITROPHENOL 2	Y	N	--	--	9.2	28
METHYLENE CHLORIDE	Y	Y	--	--	4.3	59
METHYLMERCURY (MG/KG)	Y	N	--	--	--	0.040
MONOCHLOROBENZENE	Y	N	488	--	No criteria	No criteria
NICKEL	Y	N	13.4	100	140	170
NITRATES	N	N	10,000	--	10,000	--
NITROBENZENE	Y	N	19,800	--	14	69
NITROSAMINES	Y	Y	0.0008	1.24	0.00079	0.046
NITROSODIBUTYLAMINE N	Y	Y	0.0064	0.587	0.0050	0.02
NITROSODIETHYLAMINE N	Y	Y	0.0008	1.24	0.00079	0.046
NITROSODIMETHYLAMINE N	Y	Y	0.0014	16	0.00068	0.30
NITROSODI-N-PROPYLAMINE, N	Y	Y	--	--	0.0046	0.051
NITROSODIPHENYLAMINE N	Y	Y	4.9	16.1	0.55	0.60
NITROSOPYRROLIDINE N	Y	Y	0.016	91.9	0.016	3.4



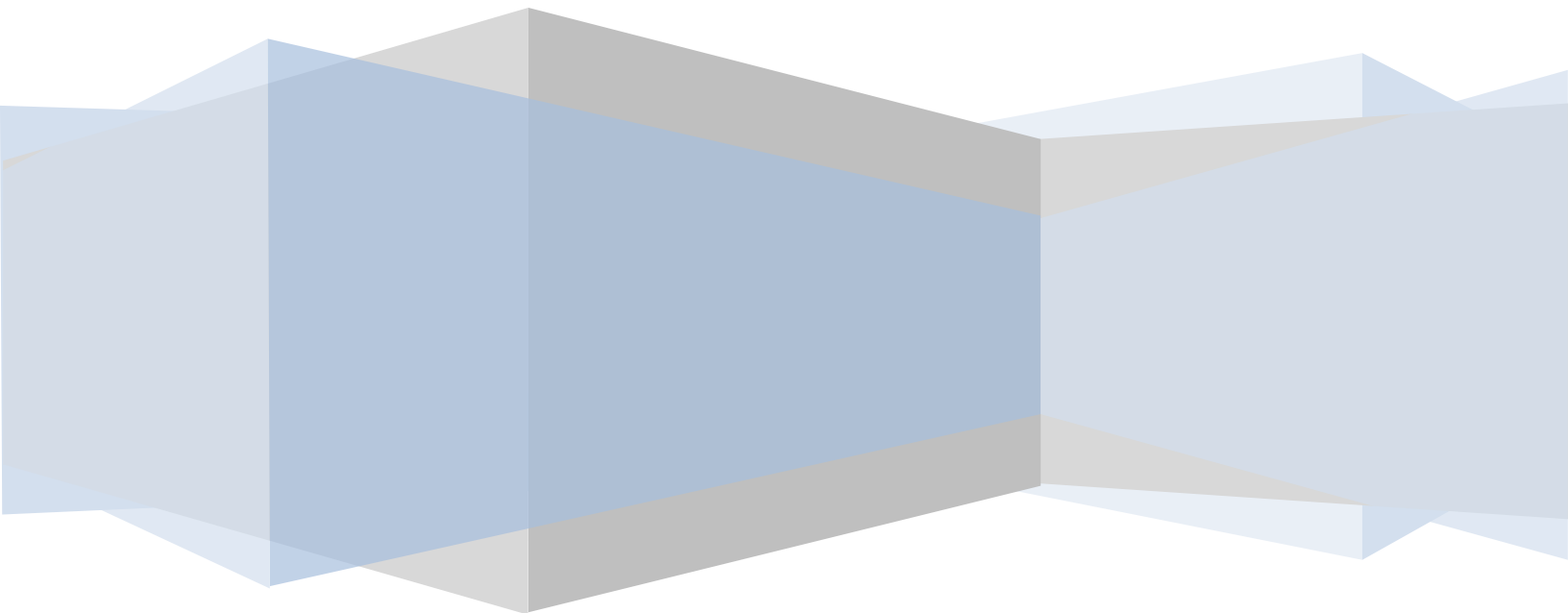
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PCBS	Y	Y	0.000079	0.000079	0.0000064	0.0000064
PENTACHLOROBENZENE	N	N	74	85	0.15	0.15
PENTACHLOROPHENOL	Y	N	1,010	--	0.15	0.30
PHENOL	Y	N	3,500	--	9,400	86,000
POLYNUCLEAR AROMATIC HYDROCARBONS	Y	Y	0.0028	0.0311	No criteria	No criteria
PYRENE	Y	N	--	--	290	400
SELENIUM	Y	N	10	--	120	420
TETRACHLOROBENZENE 1,2,4,5	Y	N	38	48	0.11	0.11
TETRACHLOROETHANE 1,1,2,2	Y	Y	0.17	10.7	0.12	0.40
TETRACHLOROETHYLENE	Y	Y	0.8	8.85	0.24	0.33
THALLIUM	Y	N	13	48	0.043	0.047
TOLUENE	Y	N	14,300	424,000	720	1500
TOXAPHENE	Y	Y	0.00071	0.00073	0.000028	0.000028
TRICHLOROBENZENE 1,2,4	Y	N	--	--	6.4	7.0

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*Criteria denoted in red indicate proposed additions to the human health criteria*						
TRICHLOROETHANE 1,1,2	Y	Y	0.6	41.8	0.44	1.6
TRICHLOROETHYLENE	Y	Y	2.7	80.7	1.4	3.0
TRICHLOROPHENOL 2,4,5	N	N	2,600	--	330	360
TRICHLOROPHENOL 2,4,6	Y	Y	1.2	3.6	0.23	0.24
VINYL CHLORIDE	Y	Y	2	525	0.02	0.24
ZINC	Y	N	--	--	2100	2600

State of Oregon Department of Environmental Quality

# Proposed Rule Language Package

Human Health Toxics Rulemaking



## ***NPDES Rulemaking Proposed Revisions: Divisions 41 and 45***

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### **1. Variance Provision (Division 41)**

DEQ proposes to replace the existing variance provision at OAR 340-041-0061 with a new provision at OAR 340-041-0059.

#### **~~OAR 340-041-0061~~**

##### **~~Other Implementation of Water Quality Criteria~~**

~~(1) A waste treatment and disposal facility may not be constructed or operated and wastes may not be discharged to public waters without a permit from the department in accordance with ORS 468B.050.~~

~~(2) Water quality variances. The commission may grant point source variances from the water quality standards in this Division where the following requirements are met:~~

~~(a) The water quality variance may apply only to the point source for which the variance is requested and only to the pollutant or pollutants specified in the variance; the underlying water quality standard otherwise remains in effect.~~

~~(b) A water quality standard variance may not be granted if:~~

~~(A) Standards will be attained by all point source dischargers implementing effluent limitations required under sections 301(b) and 306 of the federal Clean Water Act and by nonpoint sources implementing cost-effective and reasonable best management practices; or~~

~~(B) The variance would likely jeopardize the continued existence of any threatened or endangered species listed under section 4 of the Endangered Species Act or result in the destruction or adverse modification of such species' critical habitat.~~

~~(c) Before a variance is granted, the applicant must demonstrate that attaining the water quality standard is not feasible for one of the following reasons:~~

~~(A) Naturally occurring pollutant concentrations prevent the attainment of the use.~~

~~(B) Natural, ephemeral, intermittent, or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges to enable uses to be met without violating state water conservation requirements.~~

~~(C) Human-caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place.~~

~~(D) Dams, diversions, or other types of hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the water body to its original condition or to operate such modification in a way which would result in the attainment of the use.~~

~~(E) Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and unrelated to water quality preclude attainment of aquatic life protection uses.~~

~~(F) Controls more stringent than those required by sections 301(b) and 306 of the federal Clean Water Act would result in substantial and widespread economic and social impact.~~

~~(d) Procedures. An applicant for a water quality standards variance must submit a request for a variance to the department. The application must include all relevant information showing that the requirements for a variance have been satisfied. The burden is on the applicant to demonstrate that the designated use is unattainable for one of the reasons specified in subsection (c) of this section. If the department preliminarily determines that grounds exist for granting a variance, it must provide public notice of the proposed variance and an opportunity for public comment.~~

~~(A) The department may condition the variance on the performance of additional studies, monitoring, management practices, and other controls deemed necessary. These terms and conditions will be incorporated into the applicant's NPDES permit or department order.~~

~~(B) A variance may not exceed three years or the term of the NPDES permit, whichever is less. A variance may be renewed if the applicant reapplies and demonstrates that the use in question is still not attainable. Renewal of the variance may be denied if the applicant does not comply with the conditions of the original variance or otherwise does not meet the requirements of this section.~~

~~(C) DEQ approval of a variance for a point source is not effective under the federal Clean Water Act until submitted to and approved by EPA.~~

## **Proposed Revision**

**OAR 340-041-0059**

### **Variances**

(1) *Applicability.* Subject to the requirements and limitations set out in sections (2) through (7) below, a point source may request a variance. If the variance is issued, the criteria in the variance will be used in lieu of the underlying water quality standard to determine permit limits. The director of the department will determine whether to issue a variance for a source covered by an existing NPDES permit. The commission will determine whether to issue a variance for a discharger that does not have a currently effective NPDES permit.

(a) *The variance applies only to the specified point source permit and pollutant; the underlying water quality standard otherwise remains in effect.*

(b) *A variance shall not be granted if:*

*(A) The effluent limit sufficient to meet the underlying water quality standard will be attained by implementing technology-based effluent limits required under sections 301(b) and 306 of the federal Clean Water Act, and by implementing cost-effective and reasonable best management practices for nonpoint sources under the control of the discharger;*

*(B) The variance would likely jeopardize the continued existence of any threatened or endangered species listed under section 4 of the Endangered Species Act or result in the destruction or adverse modification of such species' critical habitat;*

*(C) The conditions allowed by the variance would result in an unreasonable risk to human health;*

*(D) A discharger does not have a currently effective NPDES permit, unless it meets all conditions set forth in sections (1) through (7) of this rule and it is necessary to:*

- (i) Prevent or mitigate a threat to public health or welfare;*
- (ii) Allow a water quality or habitat restoration project that may cause short term water quality standards exceedences, but that is expected to provide long term water quality or habitat improvement;*
- (iii) Provide a widespread socioeconomic benefit that is demonstrated to outweigh the environmental cost of lowering water quality. This analysis is comparable to that required under the antidegradation regulation contained in OAR-041-0004(6)(b); or*
- (iv) Remediate water contamination pursuant to the Comprehensive Environmental Response Compensation and Liability Act (CERCLA, 42 U.S.C. 9601 et seq. as amended through July 1, 2006), or the Resource Conservation and Recovery Act (RCRA, 42 U.S.C. 6901 et seq. as amended through July 1, 2006).*

*(2) Conditions to Grant a Variance. Before the commission or department may grant a variance, it must determine that:*

*(a) an existing use would not be impaired or removed as a result of granting the variance and*

*(b) attaining the water quality standard during the term of the variance is not feasible for one of the following reasons:*

*(A) Naturally occurring pollutant concentrations prevent the attainment of the use;*

*(B) Natural, ephemeral, intermittent, or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges to enable uses to be met without violating state water conservation requirements;*

*(C) Human-caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place;*

*(D) Dams, diversions, or other types of hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the water body to its original condition or to operate such modification in a way which would result in the attainment of the use;*

*(E) Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and unrelated to water quality preclude attainment of aquatic life protection uses;*

*(F) Controls more stringent than those required by sections 301(b) and 306 of the federal Clean Water Act would result in substantial and widespread economic and social impact.*

*(c) Sections (2)(b)(A) and (2)(b)(C) of this rule include, but are not limited to, circumstances in which the department determines that all the following are demonstrated to be true:*

*(A) The background concentration of the pollutant to which the variance applies exceeds the underlying water quality standard for that pollutant;*

*(B) The background concentration would exceed the underlying water quality standard without pollutant loadings from sources regulated by the NPDES permit program; and*

*(C) Enforceable controls on other pollutant sources are not likely to achieve the underlying water quality standard within the term of the variance.*

*(3) Variance Duration.*

*(a) The duration of the variance shall not exceed the term of the NPDES permit. When the duration of the variance coincides with the term of the permit, the variance will expire at the end of the permit term and the subsequent permit will require compliance with the effluent limitation sufficient to meet the underlying water quality standard or the terms of a compliance schedule unless the department approves a request to renew the variance. If the permit is administratively extended, the permit effluent limits based on the variance will continue to be in effect during the period of the administrative extension. When the duration of the variance is less than the term of the permit, the permittee must be in compliance with the effluent limitation sufficient to meet the underlying water quality standard upon the expiration of the variance.*

*(b) A variance is effective only after EPA approval. The effective date will be specified in a NPDES permit or other order.*

*(4) Variance Submittal Requirements. To request a variance, a permittee must submit the following information to the department:*

*(a) A demonstration that attaining the water quality standard for a specific pollutant is not feasible for the requested duration of the variance based on one or more of the conditions found in section (2) of this rule;*

*(b) A description of treatment or alternative options considered to meet the applicable underlying water quality standard, and a description of why these options are not technically or financially feasible in relation to the water quality benefits provided, or would result in adverse environmental or human health consequences that outweigh the water quality benefits of the treatment or alternative;*

*(c) Sufficient water quality data and analyses to characterize ambient and discharge water pollutant concentrations;*

*(d) A proposed pollutant reduction plan, including any actions to be taken by the permittee that would result in reasonable progress toward meeting the underlying water quality standard. Such actions may include proposed pollutant offsets or trading or other proposed pollutant reduction activities, and associated milestones for implementing these measures. Pollutant reduction plans will be tailored to address the specific circumstances of each facility and to the extent pollutant reduction can be achieved; and*

*(e) If the discharger is a publicly owned treatment works, a demonstration of the jurisdiction's legal authority (e.g. in a sewer use ordinance) to regulate the pollutant for which the variance is sought. The jurisdiction's legal authority must be sufficient to address potential sources of that pollutant that discharge into the jurisdiction's sewer collection system.*

*(5) Variance Permit Conditions. The department shall establish and incorporate into the discharger's NPDES permit all conditions necessary to implement the approved variance. Such conditions shall, at a minimum, include:*

*(a) A permit limit or requirement representing the best achievable effluent quality based on discharge monitoring and which is no less stringent than that achieved under the previous permit;*

*(b) A requirement to comply with any pollutant reduction actions approved as part of a pollutant reduction plan submitted in accordance with section (4)(d) above;*

*(c) Any studies, effluent monitoring, or other monitoring necessary to ensure compliance with the conditions of the variance;*

*(d) An annual progress report to the department describing the results of any required studies or monitoring during the reporting year and identifying any impediments to reaching any specific milestones stated in the variance;*

*(d) Any milestones that would be effective beyond the term of the permit in the event that a permit was administratively extended.*

*(6) Public Notification Requirements.*

*(a) If the department proposes to grant a variance, it must provide public notice of the proposal and an opportunity for public comment and hearing. The public notice may be included in the public notification of a draft NPDES permit or other draft regulatory decision that would rely on the variance;*



*(b) The department will publish a list of all variances approved as a mechanism for achieving state water quality standards that have been granted pursuant to this rule. Newly approved variances will be added to this list within 30 days of their effective date. The list will identify: the person or entity to which the variance was granted; the underlying water quality standard to which the pollutant reduction plan was developed to achieve; the water(s) to which the variance applies; the effective date and duration of the variance; the allowable pollutant limit granted under the variance; and how to obtain additional information about the variance.*

*(7) Variance Renewals. A variance may be renewed if the permittee makes a renewed demonstration pursuant to section (2) of this rule that attaining the water quality standard is not feasible, and demonstrates that all requirements of the variance and actions contained in the pollutant reduction plan are being met and meets all the other requirements of this rule. A variance renewal must be approved by either the department director or commission, and by EPA. Renewal of the variance shall be denied if the permittee is not in compliance with the conditions of the original variance, including those specified in section (5) of this rule, or otherwise does not meet the requirements of this rule.*

## **2. Background Pollutant Allowance (Division 41): New Provision**

### **OAR 340-041-0033**

- (5) An increase of 3% or less in the background pollutant concentration of a water body that approaches or exceeds an applicable human health criterion for a carcinogen does not result in a significant change in human health protection and may be allowed under the following definitions and conditions:*
- (a) For the purpose of this section, "background pollutant concentration" means the ambient water body concentration immediately upstream of the discharge, regardless of whether those pollutants are natural or result from upstream human activity.*
  - (b) For the purpose of this section, "approaches or exceeds an applicable human health criterion" means that the background pollutant concentration is equal to or greater than the applicable numeric criterion or would equal or exceed the criterion if it increased by 3%.*
  - (c) The mass of the pollutant in the discharge does not exceed the mass of the pollutant in the facility's intake water from the receiving water body and therefore, does not increase the mass load of the pollutant in the receiving water body.*
  - (d) The 3% increase above the background pollutant concentration is calculated:*
    - (A) For the Willamette and Columbia Rivers, using 25% of the harmonic mean flow of the water body.*
    - (B) For all other waters, using 100% of the harmonic mean flow of the water body.*
  - (e) The background pollutant concentration is less than 97% of the value that represents a  $1 \times 10^{-4}$  human health risk level. This value is calculated using EPA's human health criteria derivation equation for carcinogens (EPA 2000).*
  - (f) The Department may require the discharger to use any technologically and economically feasible pollutant reduction measures that are known to be available to prevent or minimize a pollutant concentration increase in the receiving water body, provided that the measures do not have adverse environmental effects that outweigh the benefits of the reduction in pollutant concentration.*

### 3. Intake Credits (Division 45): New Provision

#### OAR 340-045-XXXX

##### *I. General*

*The following provisions apply to the Consideration of Intake Pollutants in Determining Reasonable Potential Rule and the Consideration of Intake Pollutants in Establishing Water Quality Based Effluent Limits Rule.*

*(1) An “intake pollutant” is the amount of a pollutant that is present in public waters (including groundwater as provided in (4), below) at the time it is withdrawn from such waters by the discharger or other facility supplying the discharger with intake water.*

*(2) An intake pollutant is considered to be from the “same body of water” as the discharge if the Department finds that the intake pollutant would have reached the vicinity of the outfall point in the receiving water within a reasonable period had it not been removed by the permittee. This finding may be deemed established if:*

*(a) The background concentration of the pollutant in the receiving water (excluding any amount of the pollutant in the facility's discharge) is similar to that in the intake water;*

*(b) There is a direct hydrological connection between the intake and discharge points; and*

*(c) Water quality characteristics (e.g., temperature, pH, hardness) are similar in the intake and receiving waters.*

*(3) The Department may also consider other site-specific factors relevant to the transport and fate of the pollutant to make the finding in a particular case that a pollutant would or would not have reached the vicinity of the outfall point in the receiving water within a reasonable period had it not been removed by the permittee.*

*(4) An intake pollutant from groundwater may be considered to be from the “same body of water” if the permitting authority determines that the pollutant would have reached the vicinity of the outfall point in the receiving water within a reasonable period had it not been removed by the permittee, except that such a pollutant is not from the same body of water if the groundwater contains the pollutant partially or entirely due to human activity, such as industrial, commercial, or municipal operations, disposal actions, or treatment processes.*

*(5) The determinations made under Sections II and III, below, shall be made on a pollutant-by-pollutant, and outfall-by-outfall basis.*

*II. Consideration of Intake Pollutants in Determining Reasonable Potential:*

*(1) The Department may determine that there is "no reasonable potential" for the discharge of an identified intake pollutant to cause or contribute to an excursion above a narrative or numeric water quality criterion contained in Oregon's water quality standards where a discharger demonstrates to the satisfaction of the Department (based upon information provided in the permit application or other information deemed necessary by the Department) that:*

*(a) The facility withdraws 100 percent of the intake water containing the pollutant from the same body of water into which the discharge is made;*

*(b) The facility does not contribute any additional mass of the identified intake pollutant to its wastewater;*

*(c) The facility does not alter the identified intake pollutant chemically or physically in a manner that would cause adverse water quality impacts to occur that would not occur if the pollutants were left in-stream;*

*(d) The facility does not increase the identified intake pollutant concentration at the edge of the mixing zone, or at the point of discharge if a mixing zone is not allowed, as compared to the pollutant concentration in the intake water, unless the increased concentration does not cause or contribute to an excursion above an applicable water quality standard; and*

*(e) The timing and location of the discharge would not cause adverse water quality impacts to occur that would not occur if the identified intake pollutant were left in-stream.*

*(2) Upon a finding under subsection (1) of this section that a pollutant in the discharge does not cause, have the reasonable potential to cause, or contribute to an excursion above an applicable water quality standard, the Department is not required to include a water quality-based effluent limit for the identified intake pollutant in the facility's permit, provided:*

*(a) The NPDES permit evaluation report includes a determination that there is no reasonable potential for the discharge of an identified intake pollutant to cause or contribute to an excursion above an applicable numeric water quality criterion and references appropriate supporting documentation;*

*(b) The permit requires all influent, effluent, and ambient monitoring necessary to demonstrate that the conditions above in subsection (1) of this section, are maintained during the permit term; and*

*(c) The permit contains a re-opener clause authorizing modification or revocation and re-issuance of the permit if new information shows that the conditions in subsection (1) (a) through (e) of this section are not being met.*

*III. Consideration of Intake Pollutants in Establishing WQBELs*

*(1) The Department may consider pollutants in intake water as provided in this Section III when establishing water quality-based effluent limitations based on narrative or numeric criteria, provided that the discharger has that the following conditions are met:*

*(a) The facility withdraws 100 percent of the intake water containing the pollutant from the same body of water into which the discharge is made;*

*(b) The observed maximum ambient background concentration and the intake water concentration of the pollutant exceeds an applicable water quality criterion for that pollutant;*

*(c) The facility does not alter the identified intake pollutant chemically or physically in a manner that would cause adverse water quality impacts to occur that would not occur if the pollutants were left in-stream;*

*(d) The facility does not increase the identified intake pollutant concentration, as defined by the Department, at the point of discharge; and*

*(e) The timing and location of the discharge would not cause adverse water quality impacts to occur that would not occur if the identified intake pollutant were left in-stream.*

*(2) Where the conditions in subsection (1) of this section are met, the Department may establish a water quality-based effluent limitation allowing the facility to discharge a mass and concentration of the intake pollutant that are no greater than the mass and concentration found in the facility's intake water. A discharger may add mass of the pollutant to its waste stream if an equal or greater mass is removed prior to discharge, so there is no net addition of the pollutant in the discharge compared to the intake water.*

*(3) Where proper operation and maintenance of a facility's treatment system results in the removal of an intake water pollutant, the Department may establish limitations that reflect the lower mass and concentration of the pollutant achieved by such treatment.*

*(4) Where intake water for a facility is provided by a municipal water supply system and the supplier provides treatment of the raw water that removes an intake water pollutant, the concentration of the intake water pollutant shall be determined at the point where the water enters the water supplier's distribution system.*

*(5) Where a facility discharges intake pollutants from multiple sources that originate from the receiving water body and from other water bodies, the Department may derive an effluent limitation reflecting the flow-weighted amount of each source of the pollutant provided that adequate monitoring to determine compliance can be established and is included in the permit. When calculating the flow-weighted effluent*

*limitation, the pollutant from the receiving water body shall be assumed to have a concentration that is no greater than the concentration in the facility's intake water; the same pollutant from other sources shall be assumed to have a concentration that is no greater than the most stringent applicable criterion/objective.*

*(6) The permit shall specify how compliance with mass and concentration-based limitations for the intake water pollutant will be assessed. This may be done by basing the effluent limitation on background concentration data. Alternatively, the Department may determine compliance by monitoring the pollutant concentrations in the intake water and in the effluent. This monitoring may be supplemented by monitoring internal waste streams or by a Department evaluation of the use of best management practices.*

*(7) In addition to the above, effluent limitations must be established to comply with all other applicable State and Federal laws and regulations including technology-based requirements and anti-degradation policies.*

*(8) When determining whether WQBELs are necessary, information from chemical-specific whole effluent toxicity and biological assessments shall be considered independently.*

## ***Non-NPDES Rulemaking Proposed Revisions: Divisions 41 and 42***

### ***Proposed Rule Changes***

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#### **1) 340-041-0007 Statewide Narrative Criteria**

##### **Current Language**

340-041-0007(5) Logging and forest management activities must be conducted in accordance with the Oregon Forest Practices Act to minimize adverse effects on water quality.

##### **Proposed Language**

340-041-0007(5) Logging and forest management activities must be conducted in accordance with the ~~Oregon Forest Practices Act to minimize adverse effects on water quality.~~ water quality standards and implementing rules established by the Environmental Quality Commission. Nonpoint sources of pollution from forest operations on state and private forest lands are subject to best management practices and other control measures established by the Oregon Board of Forestry as provided in ORS 527.765 and 527.770. Forest operations conducted in good faith compliance with the best management practices and control measures established under the Forest Practice Act are generally deemed not to cause violations of water quality standards as provided in ORS 527.770. Forest operations may be subject to load allocations established under ORS 468B.110 and OAR 340-042, however, to the extent needed to implement the federal Clean Water Act.

#### **2) 340-041-0061 Other Implementation of Water Quality Criteria**

##### **Current Language**

340-041-0061(11) Forestry on state and private lands. For forest operations on state or private lands, water quality standards are intended to be attained and are implemented through best management practices and other control mechanisms established under the Forest Practices Act (ORS 527.610 to 527.992) and rules thereunder, administered by the Oregon Department of Forestry. Therefore, forest operations that are in compliance with the Forest Practices Act requirements are (except for the limits set out in ORS 527.770) deemed in compliance with this division. DEQ will work with the Oregon Department of Forestry to revise the Forest Practices program to attain water quality standards.

##### **Proposed Language**

340-041-0061(11) Forestry on state and private lands. Nonpoint sources of pollution from ~~For~~ forest operations on state or private lands are subject to water quality standards and are intended to be attained and are implemented through best management practices and other control measures ~~mechanisms~~ established by the

~~Oregon Department of Forestry under the Forest Practices Act (ORS 527.610 to 527.992), and rules thereunder, administered by the Oregon Department of Forestry. Therefore, fSuch forest operations, when conducted in good faith that are in compliance with the Forest Practices Act requirements are generally deemed not to cause violations of water quality standards as provided in (except for the limits set out in ORS 527.770). Forest operations on state and private lands may be subject to load allocations under ORS 468.110 and OAR 340, Division 42 to the extent necessary to implement the federal Clean Water Act.—deemed in compliance with this division. DEQ will work with the Oregon Department of Forestry to revise the Forest Practices program to attain water quality standards.~~

### 3) 340-041-0061 Other Implementation of Water Quality Criteria

#### Current Language

340-041-0061(12) Agricultural water quality management plans to reduce agricultural nonpoint source pollution are developed and implemented by the Oregon Department of Agriculture (ODA) through a cooperative agreement with the department to implement applicable provisions of ORS 568.900 to 568.933 and 561.191. If the department has reason to believe that agricultural discharges or activities are contributing to water quality problems resulting in water quality standards violations, the department may consult with the ODA. If water quality impacts are likely from agricultural sources and the department determines that a water quality management plan is necessary, the director may write a letter to the director of the ODA requesting that such a management plan be prepared and implemented to reduce pollutant loads and achieve the water quality criteria.

#### Proposed Language

340-041-0061(12) ~~In areas subject to the~~ Agricultural ~~W~~water ~~Q~~quality ~~M~~management ~~Act plans to reduce agricultural nonpoint source pollution are developed and implemented by~~ the Oregon Department of Agriculture (ODA) ~~through a cooperative agreement with the department to implement applicable provisions of under~~ ORS 568.900 to 568.933 and 561.191 ~~develops and implements agricultural water quality management area plans and rules to prevent and control water pollution from agricultural activities and soil erosion on agricultural and rural lands. Area plans and rules must be designed to achieve and maintain water quality standards. If the department has reason to believe determines that the area plan and rules are not adequate to agricultural discharges or activities are contributing to water quality problems resulting in achieve and maintain water quality standards, the department will provide ODA with comments on what would be sufficient to meet WQS or TMDL load allocations. In addition, the department may request the Environmental Quality Commission (EQC) to petition violations, the department may consult with the ODA for a review of part or all of .If water quality impacts are likely from agricultural sources and the department determines that a water quality management area plan and rules. If a landowner's activities are causing or contributing to water quality standards violations, the department will refer the activity to ODA for further evaluation and potential requirements. The department may also require remedies of landowner causing pollution or contributing to water quality standards violation if ODA does not take action. is necessary, the director may write a letter to the director of the ODA requesting that such a management plan be prepared and implemented to reduce pollutant loads and achieve the water quality criteria.~~

#### 4) 340-042-0080 Implementing a Total Maximum Daily Load

##### Current Language

340-042-0080(2) The Oregon Department of Forestry will develop and enforce implementation plans addressing state and private forestry sources as authorized by ORS 527.610 through 527.992 and according to OAR chapter 629, divisions 600 through 665. The Oregon Department of Agriculture will develop implementation plans for agricultural activities and soil erosion and enforce associated rules as authorized by ORS 568.900 through 568.933 and according to OAR chapter 603, divisions 90 and 95.

##### Proposed Language

**340-042-0080(2)** Nonpoint sources of pollution from forest operations on state or private lands are subject to best management practices and other control measures established by the Oregon Department of Forestry under will develop and enforce implementation plans addressing state and private forestry sources as authorized by ORS 527.610 through 527.992 and according to OAR chapter 629, divisions 600 through 665. Such forest operations, when conducted in good faith compliance with the Forest Practices Act requirements are generally deemed not to cause violations of water quality standards as provided in ORS 527.770. The department may also assign sector or source specific load allocations needed for nonpoint sources of pollution on state and private forestlands to implement the load allocations. In areas where a TMDL has been approved, Forest Practices Act rules may need to be revised to meet the TMDL load allocations. If the department determines that the Forest Practices Act rules are not adequate to implement the load allocation, the department may request the Environmental Quality Commission to petition the Board of Forestry for a review of part or all of Forest Practices Act rules implementing the TMDL.

**340-042-0080(3)** In areas subject to the Agricultural Water Quality Management Act the Oregon Department of Agriculture (ODA) will develop implementation plans for agricultural activities and soil erosion and enforce associated rules as authorized by under ORS 568.900 through 568.933 and according to OAR chapter 603, divisions 90 and 95 develops and implements agricultural water quality management area plans and rules to prevent and control water pollution from agricultural activities and soil erosion on agricultural and rural lands. The department may also assign sector or source specific load allocations needed for agricultural or rural residential nonpoint sources to implement the load allocations. In areas where a TMDL has been approved, agricultural water quality management area plans and rules must be sufficient to meet the TMDL load allocations. If the department determines that the plan and rules are not adequate to implement the load allocation, the department may request the Environmental Quality Commission to petition ODA for a review of part or all of water quality management area plan and rules implementing the TMDL.

#### 5) 340-42-0040 Establishing Total Maximum Daily Load

##### Current Language

340-042-0040(h) Load allocations. This element determines the portions of the receiving water's loading capacity that are allocated to existing nonpoint sources, or to background sources. Load allocations are best estimates of loading, and may range from reasonably accurate estimates to gross allotments depending on the availability of data and appropriate techniques for predicting loading. Whenever reasonably feasible, natural background and anthropogenic nonpoint source loads will be distinguished from each other.



**Proposed Language**

340-042-0040(h) Load allocations. This element determines the portions of the receiving water's loading capacity that are allocated to existing nonpoint sources, including runoff, deposition, soil contamination and groundwater discharges, or to background sources. Load allocations are best estimates of loading, and may range from reasonably accurate estimates to gross allotments depending on the availability of data and appropriate techniques for predicting loading. Whenever reasonably feasible, natural background, long-range transport and anthropogenic nonpoint source loads will be distinguished from each other.

## *Proposed Revisions to Human Health narrative Toxics Criteria Rule Provisions Redline/Strikethrough*

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**340-041-0033**

### **Toxic Substances**

(1) Toxic substances may not be introduced above natural background levels in waters of the state in amounts, concentrations, or combinations that may be harmful, may chemically change to harmful forms in the environment, or may accumulate in sediments or bioaccumulate in aquatic life or wildlife to levels that adversely affect public health, safety, or welfare or aquatic life, wildlife, or other designated beneficial uses.

(2) To establish permit or other regulatory limits for toxic substances for which criteria are not included in Tables 20, 33A, 33B, or 40 the department may use the guidance values in Table 33C, public health advisories, and other published scientific literature. The department may also require or conduct bio-assessment studies to monitor the toxicity to aquatic life of complex effluents, other suspected discharges, or chemical substances without numeric criteria.

### (3) Aquatic Life Criteria

(a) Levels of toxic substances in waters of the state may not exceed the applicable criteria listed in Tables 20, 33A, and 33B. Tables 33A and 33B, adopted on May 20, 2004, update Table 20 as described in this section.

(a) Each value for criteria in Table 20 is effective until the corresponding value in Tables 33A or 33B becomes effective.

(b) Each value in Table 33A is effective on February 15, 2005, unless EPA has disapproved the value before that date. If a value is subsequently disapproved, any corresponding value in Table 20 becomes effective immediately. Values that are the same in Tables 20 and 33A remain in effect.

(c) Each value in Table 33B is effective upon EPA approval.

(d) The department will note the effective date for each value in ~~Tables 20~~ Table 33A and 33B as described in this section.

~~(3) To establish permit or other regulatory limits for toxic substances for which criteria are not included in Tables 20, 33A, or 33B, the department may use the guidance values in Table 33C, public health advisories, and other published scientific literature. The department may also require or conduct bio-assessment studies to monitor the toxicity to aquatic life of complex effluents, other suspected discharges, or chemical substances without numeric criteria~~

### (4) Human Health Criteria

(a) Levels of toxic substances in waters of the state may not exceed the applicable criteria listed in Table 40, adopted on XXXXX.

(b) Each value in Table 40 is effective for Clean Water Act purposes upon EPA approval.

Stat. Auth.: ORS 468.020, 468B.030, 468B.035 & 468B.048

Stats. Implemented: ORS 468B.030, 468B.035 & 468B.048

Hist.: DEQ 17-2003, f. & cert. ef. 12-9-03; DEQ 3-2004, f. & cert. ef. 5-28-04

## Proposed Human Health Criteria Table

**TABLE 40: Human Health Criteria for Toxic Pollutants**

**DRAFT**

Note: The Environmental Quality Commission adopted the following criteria on XXXX. The criteria are effective for Clean Water Act purposes only after EPA approval.

### Human Health Criteria Summary

A human health criterion is the highest concentration of a pollutant in water that is not expected to pose a significant risk to human health. The concentration for each pollutant listed in Table 40 is a criterion not to be exceeded in waters of the state in order to protect human health. Values in Table 40 are applicable to all basins, and are expressed as micrograms per liter (µg/L). Pollutants are listed in alphabetical order with the corresponding Chemical Abstract Service (CAS) number, indication of whether the pollutant is categorized as a carcinogen (can cause cancer in humans), or if there is an associated aquatic life criterion (i.e. “y”= yes, “n” = no). The “water + organism” criteria refer to safe limits that have been established for the consumption of drinking water and fish, including shellfish. The “organism only” criteria refer to safe limits that have been established for the consumption of fish and shellfish only. All the human health criteria were calculated using a fish consumption rate of 175 grams per day, unless, as noted, the risk is based on drinking water maximum contaminant levels (MCLs). A fish consumption rate of 175 grams per day is approximately equal to 23 8-ounce fish meals per month. For pollutants categorized as carcinogens, values represent a cancer risk of one additional case of cancer in one million people (i.e.  $10^{-6}$ ), unless otherwise noted. Italicized pollutants represent non-priority pollutants. In addition, analyses for all pollutants are expressed as total for all forms and species, unless otherwise specified in footnotes.

No.	Pollutant	CAS No.	Carcinogen	Aquatic Life Criterion	Human Health Criteria for the Consumption of:	
					Water + Organism (µg/L)	Organism Only (µg/L)
1	Acenaphthene	83329	n	n	95	99
2	Acrolein	107028	n	n	0.88	0.93
3	Acrylonitrile	107131	y	n	0.018	0.025
4	Aldrin	309002	y	y	0.0000050	0.0000050
5	Anthracene	120127	n	n	2900	4000
6	Antimony	7440360	n	n	5.1	64

No.	Pollutant	CAS No.	Carcinogen	Aquatic Life Criterion	Human Health Criteria for the Consumption of:	
					Water + Organism (µg/L)	Organism Only (µg/L)
7	Arsenic	7440382	y	n	2.3	2.7
	<sup>A</sup> The arsenic criterion is expressed as total inorganic arsenic. The "organism only" criterion is based on a risk level of 10 <sup>-6</sup> , while the "water + organism" criterion is based on a risk level of 10 <sup>-4</sup> .					
8	Asbestos	1332214	y	n	7,000,000 fibers/L	--
	<sup>B</sup> The human health risks from asbestos are primarily from drinking water, therefore no "organism only" criterion was developed. The "water + organism" criterion is based on the Maximum Contaminant Level (MCL) established under the Safe Drinking Water Act.					
9	Barium	7440393	n	n	1000	--
	<sup>C</sup> The human health criterion for barium is the same as originally published in the 1976 EPA Red Book which predates the 1980 methodology and did not utilize the fish ingestion BCF approach. This same criterion value was also published in the 1986 EPA Gold Book. Human health risks are primarily from drinking water, therefore no "organism only" criterion was developed. The "water + organism" criterion is based on the Maximum Contaminant Level (MCL) established under the Safe Drinking Water Act.					
10	Benzene [represents range]	71432	y	n	1.6	5.1
11	Benzene	71432	y	n	0.44	1.4
12	Benzidine	92875	y	n	0.000018	0.000020
13	Benzo(a)anthracene	56553	y	n	0.0013	0.0018
14	Benzo(a)pyrene	50328	y	n	0.0013	0.0018
15	Benzo(b)fluoranthene 3,4	205992	y	n	0.0013	0.0018
16	Benzo(k)fluoranthene	207089	y	n	0.0013	0.0018
17	BHC Alpha	319846	y	n	0.00045	0.00049
18	BHC Beta	319857	y	n	0.0016	0.0017
19	BHC Gamma (Lindane)	58899	n	y	0.17	0.18
20	Bromoform	75252	y	n	3.3	14
21	Butylbenzyl Phthalate	85687	n	n	190	190
22	Carbon Tetrachloride	56235	y	n	0.10	0.16
23	Chlordane	57749	y	y	0.000081	0.000081
24	Chlorobenzene	108907	n	n	74	160
25	Chlorodibromomethane	124481	y	n	0.31	1.3
26	Chloroethyl Ether bis 2	111444	y	n	0.020	0.05
27	Chloroform	67663	y	n	260	1100
28	Chloroisopropyl Ether bis 2	108601	n	n	1200	6500
29	Chloromethyl ether, bis	542881	y	n	0.000024	0.000029
30	Chloronaphthalene 2	91587	n	n	150	160
31	Chlorophenol 2	95578	n	n	14	15
32	Chlorophenoxy Herbicide (2,4,5,-TP)	93721	n	n	10	--
	<sup>D</sup> The Chlorophenoxy Herbicide (2,4,5,-TP) criterion is the same as originally published in the 1976 EPA Red Book which predates the 1980 methodology and did not utilize the fish ingestion BCF approach. This same criterion value was also published in the 1986 EPA Gold Book. Human health risks are primarily from drinking water, therefore no "organism only" criterion was developed. The "water + organism" criterion is based on the Maximum Contaminant Level (MCL) established under the Safe Drinking Water Act.					
33	Chlorophenoxy Herbicide (2,4-D)	94757	n	n	100	--
	<sup>E</sup> The Chlorophenoxy Herbicide (2,4-D) criterion is the same as originally published in the 1976 EPA Red Book which predates the 1980 methodology and did not utilize the fish ingestion BCF approach. This same criterion value was also published in the 1986 EPA Gold Book. Human health risks are primarily from drinking water, therefore no "organism only" criterion was					

No.	Pollutant	CAS No.	Carcinogen	Aquatic Life Criterion	Human Health Criteria for the Consumption of:	
					Water + Organism (µg/L)	Organism Only (µg/L)
	developed. The “water + organism” criterion is based on the Maximum Contaminant Level (MCL) established under the Safe Drinking Water Act. A more stringent MCL has been issued by EPA under the Safe Drinking Water Act.					
34	Chrysene	218019	y	n	0.0013	0.0018
35	Copper	7440508	n	y	1300	--
	<sup>F</sup> Human health risks from copper are primarily from drinking water, therefore no “organism only” criterion was developed. The “water + organism” criterion is based on the Maximum Contaminant Level (MCL) established under the Safe Drinking Water Act.					
36	Cyanide	57125	n	y	130	130
	<sup>G</sup> The cyanide criterion is expressed as total cyanide (CN)/L.					
37	DDD 4,4'	72548	y	n	0.000031	0.000031
38	DDE 4,4'	72559	y	n	0.000022	0.000022
39	DDT 4,4'	50293	y	y	0.000022	0.000022
40	Di-2-ethylhexyl Phthalate	117817	y	n	0.20	0.22
	<sup>H</sup> Di-2-ethylhexyl Phthalate was previously known as Bis-2-ethylhexyl phthalate					
41	Dibenzo(a,h)anthracene	53703	y	n	0.0013	0.0018
42	Dichlorobenzene(m) 1,3	541731	n	N	80	96
43	Dichlorobenzene(o) 1,2	95501	n	n	110	130
44	Dichlorobenzene(p) 1,4	106467	n	n	16	19
45	Dichlorobenzidine 3,3'	91941	y	n	0.0027	0.0028
46	Dichlorobromomethane	75274	y	n	0.42	1.7
47	Dichloroethane 1,2	107062	y	n	0.35	3.7
48	Dichloroethylene 1,1	75354	n	n	230	710
49	Dichloroethylene trans 1,2	156605	n	n	120	1000
50	Dichlorophenol 2,4	120832	n	n	23	29
51	Dichloropropane 1,2	78875	y	n	0.38	1.5
52	Dichloropropene 1,3	542756	y	n	0.30	2.1
53	Dieldrin	60571	y	y	0.0000053	0.0000054
54	Diethyl Phthalate	84662	n	n	3800	4400
55	Dimethyl Phthalate	131113	n	n	84000	110000
56	Dimethylphenol 2,4	105679	n	n	76	85
57	Di-n-butyl Phthalate	84742	n	n	400	450
58	Dinitrophenol 2,4	51285	n	n	62	530
59	<i>Dinitrophenols</i>	25550587	n	n	62	530
60	Dinitrotoluene 2,4	121142	y	n	0.084	0.34
61	Dioxin (2,3,7,8-TCDD)	1746016	y	n	0.00000000051	0.00000000051
62	Diphenylhydrazine 1,2	122667	y	n	0.014	0.02
63	Endosulfan			y	8.5	8.9
	<sup>I</sup> The criteria for endosulfan are expressed as the sum of alpha, beta, and sulfate endosulfan.					
64	Endosulfan Alpha	959988	n	y	8.5	8.9
65	Endosulfan Beta	33213659	n	y	8.5	8.9
66	Endosulfan Sulfate	1031078	n	n	8.5	8.9
67	Endrin	72208	n	y	0.0060	0.0060
68	Endrin Aldehyde	7421934	n	n	0.03	0.03

No.	Pollutant	CAS No.	Carcinogen	Aquatic Life Criterion	Human Health Criteria for the Consumption of:	
					Water + Organism (µg/L)	Organism Only (µg/L)
69	Ethylbenzene	100414	n	n	160	210
70	Ethylhexyl Phthalate bis 2	117817	y	n	0.20	0.22
71	Fluoranthene	206440	n	n	14	14
72	Fluorene	86737	n	n	390	530
73	Heptachlor	76448	y	y	0.0000079	0.0000079
74	Heptachlor Epoxide	1024573	y	y	0.0000039	0.0000039
75	Hexachlorobenzene	118741	y	n	0.000029	0.000029
76	Hexachlorobutadiene	87683	y	n	0.36	1.8
77	Hexachlorocyclo-hexane-Technical	608731	y	n	0.0123	0.0414
<sup>J</sup> No BCF was available; therefore, this value is based on that published in the 1986 EPA Gold Book.						
78	Hexachlorocyclopentadiene	77474	n	n	30	110
79	Hexachloroethane	67721	y	n	0.29	0.33
80	Indeno(1,2,3-cd)pyrene	193395	y	n	0.0013	0.0018
81	Isophorone	78591	y	n	27	96
82	Manganese	7439965	n	n	--	100
	<sup>K</sup> The manganese criterion for "organism only" applies only to marine waters and is for total manganese. The criterion is EPA's recommended criterion and is based on potential human health concerns related to the consumption of marine mollusks, not on a fish ingestion calculation method or a fish consumption rate.					
83	Methoxychlor	72435	n	y	100	--
	<sup>L</sup> The human health criterion for methoxychlor is the same as originally published in the 1976 EPA Red Book which predates the 1980 methodology and did not utilize the fish ingestion BCF approach. This same criterion value was also published in the 1986 EPA Gold Book. Human health risks are primarily from drinking water, therefore no "organism only" criterion was developed. The "water + organism" criterion is based on the Maximum Contaminant Level (MCL) established under the Safe Drinking Water Act.					
84	Methyl Bromide	74839	n	n	37	150
85	Methyl-4,6-dinitrophenol 2	534521	n	n	9.2	28
86	Methylene Chloride	75092	y	n	4.3	59
87	Methylmercury (mg/kg)	22967926	n	n	--	0.040
	<sup>M</sup> This value is expressed as the fish tissue concentration of methylmercury. Contaminated fish and shellfish is the primary human route of exposure to methylmercury					
88	Nickel	7440020	n	n	140	170
89	Nitrates	14797558	n	n	10000	--
	<sup>N</sup> The human health criterion for nitrates is the same as originally published in the 1976 EPA Red Book which predates the 1980 methodology and did not utilize the fish ingestion BCF approach. This same criterion value was also published in the 1986 EPA Gold Book. Human health risks are primarily from drinking water, therefore no "organism only" criterion was developed. The "water + organism" criterion is based on the Maximum Contaminant Level (MCL) established under the Safe Drinking Water Act.					
90	Nitrobenzene	98953	n	n	14	69
91	Nitrosamines	35576911	y	n	0.0008	1.24
<sup>O</sup> No BCF was available; therefore, this value is based on that published in the 1986 EPA Gold Book.						
92	Nitrosodibutylamine, N	924163	y	n	0.0050	0.02
93	Nitrosodiethylamine, N	55185	y	n	0.0008	1.24
<sup>P</sup> No BCF was available; therefore, this value is based on that published in the 1986 EPA Gold Book.						
94	Nitrosodimethylamine, N	62759	y	n	0.00068	0.30

No.	Pollutant	CAS No.	Carcinogen	Aquatic Life Criterion	Human Health Criteria for the Consumption of:	
					Water + Organism (µg/L)	Organism Only (µg/L)
95	Nitrosodi-n-propylamine, N	621647	y	n	0.0046	0.051
96	Nitrosodiphenylamine, N	86306	y	n	0.55	0.60
97	Nitrosopyrrolidine, N	930552	y	n	0.016	3.4
98	Pentachlorobenzene	608935	n	n	0.15	0.15
99	Pentachlorophenol	87865	y	y	0.15	0.30
100	Phenol	108952	n	n	9400	86000
101	Polychlorinated Biphenyls (PCBs)	NA	y	y	0.0000064	0.0000064
	<sup>Q</sup> This criterion applies to total PCBs (e.g. the sum of all congeners or all isomers or homolog or Arochlor analyses).					
102	Pyrene	129000	n	n	290	400
103	Selenium	7782492	n	n	120	420
104	Tetrachlorobenzene, 1,2,4,5-	95943	n	n	0.11	0.11
105	Tetrachloroethane 1,1,2,2	79345	y	n	0.12	0.40
106	Tetrachloroethylene	127184	y	n	0.24	0.33
107	Thallium	7440280	n	n	0.043	0.047
108	Toluene	108883	n	n	720	1500
109	Toxaphene	8001352	y	y	0.000028	0.000028
110	Trichlorobenzene 1,2,4	120821	n	n	6.4	7.0
111	Trichloroethane 1,1,2	79005	y	y	0.44	1.6
112	Trichloroethylene	79016	y	n	1.4	3.0
113	Trichlorophenol 2,4,6	88062	y	n	0.23	0.24
114	Trichlorophenol, 2, 4, 5-	95954	n	n	330	360
115	Vinyl Chloride	75014	y	n	0.02	0.24
116	Zinc	7440666	n	n	2100	2600