340-246-0090

Ambient Benchmarks for Air Toxics

(1) Purpose. Ambient benchmarks are concentrations of air toxics that serve as goals in the Oregon Air Toxics Program. They are based on human health risk and hazard levels considering sensitive populations. Ambient benchmarks are not regulatory standards, but reference values by which air toxics problems can be identified, addressed and evaluated. The Department will use ambient benchmarks as indicated in these rules, to implement the Geographic, Source Category, and Safety Net Programs. Ambient benchmarks set by the procedures described in this rule apply throughout Oregon, including that area within the jurisdiction of the Lane Regional Air ~~Pollution Authority~~ Protection Agency. Ambient benchmarks are subject to public notice and comment before adoption by the Commission as administrative rules.

(2) Establishing Ambient Benchmarks

(a) The Department will consult with the ATSAC to prioritize air toxics for ambient benchmark development. Highest priority air toxics are those that pose the greatest risk to public health.

(b) To prioritize air toxics, the Department will apply the criteria described in OAR 340-246-0090(2)(c) to modeling, monitoring, and emissions inventory data.

(c) Ambient benchmark prioritization criteria will include at least the following:

(A) Toxicity or potency of a pollutant;

(B) Exposure and number of people at risk;

(C) Impact on sensitive human populations;

(D) The number and degree of predicted ambient benchmark exceedances; and

(E) Potential to cause harm through persistence and bio-accumulation.

(d) The Department will develop ambient benchmarks for proposal to the ATSAC based upon a protocol that uses reasonable estimates of plausible upper-bound exposures that neither grossly underestimate nor grossly overestimate risks.

(e) Within three months of the first meeting of the ATSAC, the Department will propose ambient benchmark concentrations for the highest priority air toxics for review by the ATSAC. The Department will propose additional and revised air toxics ambient benchmarks for review by the ATSAC based on the prioritization criteria in OAR 340-246-0090(2)(c). Once the ATSAC has completed review of each set of proposed ambient benchmarks, the Department will, within 60 days, begin the process to propose ambient benchmarks as administrative rules for adoption by the Environmental Quality Commission.

(f) If the Department is unable to propose ambient benchmarks to the ATSAC by the deadlines specified in OAR 340-246-0090(2)(e), the ATSAC will review the most current EPA ambient benchmarks. If EPA ambient benchmarks are not available, the ATSAC will review the best available information from other states and local air authorities.

(g) The ATSAC will consider proposed ambient benchmarks and evaluate their adequacy for meeting risk and hazard levels, considering human health, including sensitive human populations, scientific uncertainties, persistence, bio-accumulation, and, to the extent possible, multiple exposure pathways. The ATSAC will conduct this review consistent with the criteria in OAR 340-246-0090(2)(c) and (d). The

ATSAC will report these findings to the Department. If the ATSAC unanimously disagrees with the Department's recommendation, the Department will re-consider and re-submit its recommendation at a later date.

(h) The ATSAC will complete review of and report findings on each set of ambient benchmarks as expeditiously as possible, but no later than 12 months after the Department has proposed them. If the ATSAC is unable to complete review of ambient benchmarks within 12 months after the Department's proposal, the Department will initiate rulemaking to propose ambient benchmarks.

(i) The Department will review all ambient benchmarks at least every five years and, if necessary, propose revised or additional ambient benchmarks to the ATSAC. At its discretion, the Department may review and propose a benchmark for review by the ATSAC at any time when new information is available.

(3) Ambient Benchmarks. Benchmark concentrations are in units of micrograms of air toxic per cubic meter of ambient air, on an average annual basis. The Chemical Abstract Service Registry Number (CASRN) is shown in parentheses.

(a) The ambient benchmark for acetaldehyde (75-07-0) is 0.45 micrograms per cubic meter.

(b) The ambient benchmark for acrolein (107-02-8) is 0.02 micrograms per cubic meter.

(c) The ambient benchmark for acrylonitrile (107-13-1) is 0.01 micrograms per cubic meter.

(d) The ambient benchmark for ammonia (7664-41-7) is 200 micrograms per cubic meter.

(e) The ambient benchmark for arsenic (7440-38-2) is 0.0002 micrograms per cubic meter.

(f) The ambient benchmark for benzene (71-43-2) is 0.13 micrograms per cubic meter.

(g) The ambient benchmark for beryllium (7440-41-7) is 0.0004 micrograms per cubic meter.

(h) The ambient benchmark for 1,3-butadiene (106-99-0) is 0.03 micrograms per cubic meter.

(i) The ambient benchmark for cadmium and cadmium compounds (7440-43-9) is 0.0006 micrograms per cubic meter.

(j) The ambient benchmark for carbon disulfide (75-15-0) is 800 micrograms per cubic meter.

(k) The ambient benchmark for carbon tetrachloride (56-23-5) is 0.07 micrograms per cubic meter.

(l) The ambient benchmark for chlorine (7782-50-5) is 0.2 micrograms per cubic meter.

(m) The ambient benchmark for chloroform (67-66-3) is 98 micrograms per cubic meter.

(n) The ambient benchmark for chromium, hexavalent (18540-29-9) is 0.00008 micrograms per cubic meter.

(o) The ambient benchmark for cobalt and cobalt compounds (7440-48-4) is 0.1 micrograms per cubic meter.

(p) The ambient benchmark for 1,4-dichlorobenzene (106-46-7) is 0.09 micrograms per cubic meter.

(q) The ambient benchmark for 1,3-dichloropropene (542-75-6) is 0.25 micrograms per cubic meter.

(r) Diesel particulate matter (none) is 0.1 micrograms per cubic meter. The benchmark for diesel particulate matter applies only to such material from diesel-fueled internal combustion sources.

(s) The ambient benchmark for dioxins and furans (1746-01-6) is 0.00000003 micrograms per cubic meter. The benchmark for dioxin is for total chlorinated dioxins and furans expressed as 2,3,7,8-TCDD toxicity equivalents.

(t) The ambient benchmark for ethylene dibromide (106-93-4) is 0.002 micrograms per cubic meter.

(u) The ambient benchmark for ethylene dichloride (107-06-2) is 0.04 micrograms per cubic meter.

(v) The ambient benchmark for ethylene oxide (75-21-8) is 0.01 micrograms per cubic meter.

(w) The ambient benchmark for formaldehyde (50-00-0) is 3 micrograms per cubic meter.

(x) The ambient benchmark for n-hexane (110-54-3) is 7000 micrograms per cubic meter.

(y) The ambient benchmark for hydrogen chloride (7647-01-0) is 20 micrograms per cubic meter.

(z) The ambient benchmark for hydrogen cyanide (74-90-8) is 9 micrograms per cubic meter.

(aa) The ambient benchmark for hydrogen fluoride (7664-39-3) is 14 micrograms per cubic meter.

(bb) The ambient benchmark for lead and lead compounds (7439-92-1) is 0.5 micrograms per cubic meter.

(cc) The ambient benchmark for manganese and manganese compounds (7439-96-5) is 0.2 micrograms per cubic meter.

(dd) The ambient benchmark for mercury (7439-97-6) is 0.3 micrograms per cubic meter. The benchmark for mercury applies to all of its inorganic forms.

(ee) The ambient benchmark for methyl bromide (74-83-9) is 5 micrograms per cubic meter.

(ff) The ambient benchmark for methyl chloride (74-87-3) is 90 micrograms per cubic meter.

(gg) The ambient benchmark for methyl chloroform (71-55-6) is 1000 micrograms per cubic meter.

(hh) The ambient benchmark for methylene chloride (75-09-2) is 2.1 micrograms per cubic meter.

(ii) The ambient benchmark for naphthalene (91-20-3) is 0.03 micrograms per cubic meter.

(jj) The ambient benchmark for nickel refinery dust (7440-02-0) is 0.004 micrograms per cubic meter.

(kk) The ambient benchmark for nickel subsulfide (12035-72-2) is 0.002 micrograms per cubic meter.

(ll) The ambient benchmark for soluble nickel compounds (various) is 0.05 micrograms per cubic meter, where soluble nickel compounds may include any or all of the following: nickel acetate (373-02-4), nickel chloride (7718-54-9), nickel carbonate (3333-39-3), nickel carbonyl (13463-39-3), nickel hydroxide (12054-48-7), nickelocene (1271-28-9), and nickel sulfate (7786-81-4).

(mm) The ambient benchmark for phosphine (7803-51-2) is 0.8 micrograms per cubic meter.

(nn) The ambient benchmark for phosphoric acid (7664-38-2) is 10 micrograms per cubic meter.

(oo) The ambient benchmark for total (as the sum of congeners) polychlorinated biphenyls (1336-36-3) is 0.01 micrograms per cubic meter.

(pp) The ambient benchmark for total polycyclic aromatic hydrocarbons (none) is 0.0009 micrograms per cubic meter, where total polycyclic aromatic hydrocarbons are the sum of the toxicity equivalency factor (with respect to benzo(a)pyrene (50-32-8)) adjusted concentrations for all of the following individual polycyclic aromatic hydrocarbons: benzo(a)anthracene (56-55-3), benzo(a)pyrene (50-32-8), benzo(b)fluoranthene (205-99-2), benzo(k)fluoranthene (207-08-9), carbazole (86-74-8), chrysene (218-01-9), dibenz(a,h)acridine (226-36-8), dibenz(a,h)anthracene (226-36-8), dibenz(a,j)acridine (224-42-0),

7H-dibenzo(c,g)carbazole (194-59-2), dibenzo(a,e)pyrene (192-65-4), dibenzo(a,i)pyrene (189-55-9), dibenzo(a,l)pyrene (191-30-0), 7,12-dimethylbenz(a)anthracene (57-97-6), 1,6-dinitropyrene (42397-64-8), 1,8-dinitropyrene (42397-65-9), indeno(1,2,3-c,d)pyrene (193-39-5), 3-methylcholanthrene (56-49-5), 5-methylchrysene (3697-24-3), 1-nitropyrene (5522-43-0), 2-nitrofluorene (607-57-8), 4-nitropyrene (59865-13-3), 5-nitroacenaphthene (607-87-9) 6-nitrochrysene (7496-02-8), acenaphthene (83-32-9), acenaphthylene (208-96-8), anthracene (120-12-7), benzo(g,h,i)perylene (191-24-2), fluoranthene (206-44-0), fluorene (86-73-7), phenanthrene (85-01-8), and pyrene (129-00-0).

(qq) The ambient benchmark for tetrachloroethylene (127-18-4) is 35 micrograms per cubic meter.

(rr) The ambient benchmark for toluene (108-88-3) is 400 micrograms per cubic meter.

(ss) The ambient benchmark for 2,4- & 2,6 toluene diisocyanate, mixture (26471-62-5) is 0.07 micrograms per cubic meter.

(tt) The ambient benchmark for trichloroethylene (79-01-6) is 0.5 micrograms per cubic meter.

(uu) The ambient benchmark for vinyl chloride (75-01-4) is 0.1 micrograms per cubic meter.

(vv) The ambient benchmark for white phosphorus (7723-14-0) is 0.07 micrograms per cubic meter.

(ww) The ambient benchmark for xylenes (1330-20-7) is 700 micrograms per cubic meter.

(xx) The ambient benchmark for hydrogen sulfide (7783-06-4) is 2.0 micrograms per cubic meter.

(yy) The ambient benchmark for methanol (67-56-1) is 4000 micrograms per cubic meter.