



ADMINISTRATIVE RULES OF MONTANA

17.8.770 ADDITIONAL REQUIREMENTS FOR INCINERATORS

- (1) An applicant for a Montana air quality permit for an incineration facility subject to 75-2-215, MCA, shall submit a human health risk assessment protocol and a human health risk assessment as part of the application. The human health risk assessment must demonstrate that the ambient concentrations of pollutants resulting from emissions from the incineration facility subject to 75-2-215, MCA, constitute no more than a negligible risk to the public health, safety, and welfare and to the environment. At a minimum, the human health risk assessment must meet the following requirements:
 - (a) The human health risk assessment must include an emissions inventory listing potential emissions of all pollutants specified in the Federal Clean Air Act Hazardous Air Pollutants List (as defined in section 112(b) of the FCAA);
 - (b) A characterization of emissions and ambient concentrations of air pollutants, including hazardous air pollutants, from any existing emitting unit at the facility must be submitted as part of the permit application;
 - (c) The human health risk assessment must address the impacts of all pollutants inventoried in (1)(a), except as provided in (1)(c)(i) and (ii). Pollutants may be excluded from the human health risk assessment if the department determines that exposure from inhalation is the only appropriate pathway to consider in the human health risk assessment and if:
 - (i) the potential to emit the pollutant is less than 1.28×10^{-13} grams per second, if the incineration facility subject to 75-2-215, MCA, has a stack height of at least two meters, a stack velocity of at least 0.645 meters per second, and a stack exit temperature of at least 800° F, and there is a distance of at least five meters from the stack to the property boundary; or
 - (ii) the ambient concentrations of the pollutants (calculated using the potential to emit; enforceable limits or controls may be considered) are less than the levels specified in Table 1 or Table 2.
 - (iii) The department shall periodically review accepted toxicity value databases to determine if the de minimis levels in (1)(c)(i) and (ii) should be updated;
 - (d) The human health risk assessment must address risks from all appropriate exposure pathways. For incineration facilities subject to 75-2-215, MCA, that do not emit or emit only minute amounts of hazardous air pollutants contained in Tables 4-1 or 4-2 of the department's health risk assessment procedures/model the application need address only impact from the inhalation exposure pathway and may use a department supplied screening model to assess human health risk;

- (e) The human health risk assessment must address the human health risk impact of all hazardous air pollutants, as described in (1)(a), from the emitting unit or units that constitutes the incineration facility subject to 75-2-215, MCA, from all other existing incineration facilities subject to 75-2-215, MCA, at the facility, and from all other new or existing emitting units solely supporting any incineration facility subject to 75-2-215, MCA, such as fugitive emissions from fuel storage;
 - (i) Emissions from existing emitting units that partially support the incineration facility, but that do not change the type or amount of emissions allowed under any existing permit in effect at the time of the permit application, need not be considered in the human health risk assessment;
 - (ii) If an existing emitting unit, wholly or partially supporting the incineration facility, increases the types or amount of its emissions, so that a permit modification is required, that portion of the emissions increase attributable to the support of the incineration facility must be considered in the human health risk assessment;
- (f) The health risk assessment must be performed in accordance with accepted human health risk assessment practices, or state or federal guidelines in effect at the time the human health risk assessment is performed, and must address impacts on sensitive populations. The human health risk must be calculated using the emitting unit's potential to emit. Enforceable limits or controls may be considered. The human health risk assessment procedures used may be modified if site-specific conditions warrant use of alternative procedures to appropriately assess human health risk;
- (g) As part of the application, the applicant shall submit to the department a human health risk assessment protocol detailing the human health risk assessment procedures. At a minimum, the human health risk assessment protocol must include:
 - (i) a description of the pollutants considered in the analysis;
 - (ii) methods used in compiling the emission inventory;
 - (iii) ambient dispersion models and modeling procedures used;
 - (iv) toxicity values for each pollutant;
 - (v) exposure pathways and assumptions;
 - (vi) any statistical analysis applied; and
 - (vii) any other information necessary for the department to review the adequacy of the human health risk assessment;
- (h) A summary of the human health risk assessment protocol must be included in the permit analysis. The summary must:
 - (i) clearly define the scope of the risk assessment;
 - (ii) describe the exposure pathways used;
 - (iii) specify any pollutants identified in the emission inventory that were not required to be included in the human health risk assessment;

- (iv) state whether, and to what extent, the impacts of existing emissions, or the synergistic effect of combined pollutants, were considered in the final human health risk level calculated to determine compliance with the negligible risk standard; and
- (v) state that environmental effects unrelated to human health were not considered in determining compliance with the negligible risk standard, but were evaluated as required by the Montana Environmental Policy Act, in determining compliance with all applicable rules or other requirements requiring protection of public health, safety, and welfare and the environment;
- (i) The department may impose additional requirements for the human health risk assessment, on a case-by-case basis, if the department reasonably believes that the type or amount of material being incinerated, the proximity to sensitive populations, short-term emissions variations, acute health impact, or the local topographical or ventilation conditions require a more detailed health risk assessment to adequately define the potential public health impact. Additional requirements for the human health risk assessment may include specific emission inventory procedures for determining emissions from the incineration facility subject to 75-2-215, MCA, use of more sophisticated air dispersion models or modeling procedures and consideration of additional exposure pathways.

TABLE 1

<u>CAS #</u>	<u>CHEMICAL</u>	<u>CANCER ANNUAL ($\mu\text{g}/\text{m}^3$)</u>
75070	Acetaldehyde	4.5455e-02
79061	Acrylamide	7.6923e-05
107131	Acrylonitrile	1.4706e-03
1332214	Asbestos	5.1546e-04
71432	Benzene	1.2048e-02
92875	Benzidine	1.4925e-06
117817	Bis(2-Ethylhexyl) Phthalate (DEHP)	4.1667e-02
542881	Bis(Chloromethyl) Ether	1.6129e-06
75252	Bromoform	9.0909e-02
106990	1,3-Butadiene	3.5714e-04
56235	Carbon Tetrachloride	6.6667e-03
57749	Chlordane	2.7027e-04
67663	Chloroform	4.3478e-03
126998	Chloroprene	7.6923e-01
132649	Dibenzofurans	2.6316e-09
96128	1,2-Dibromo-3-Chloropropane	5.0000e-05
106467	1,4-Dichlorobenzene (p)	9.0909e-03
91941	3,3-Dichlorobenzidene	2.9412e-04
111444	Dichloroethyl Ether	3.0303e-04
123911	1,4-Dioxane (1,4-Diethyleneoxide)	1.2987e-02
122667	1,2-Diphenylhydrazine	4.5455e-04
106898	Epichlorohydrin	8.3333e-02

51796	Ethyl Carbamate (Urethane)	3.4483e-04
106934	Ethylene Dibromide	4.5455e-04
107062	Ethylene Dichloride	3.8462e-03
75218	Ethylene Oxide	1.1364e-03
50000	Formaldehyde	7.6923e-03
76448	Heptachlor	7.6923e-05
118741	Hexachlorobenzene	2.1739e-04
87683	Hexachlorobutadiene	4.5455e-03
67721	Hexachloroethane	2.5000e-02
302012	Hydrazine	2.0408e-05
58899	Lindane (All Isomers)	9.0909e-05
75092	Methylene Chloride	2.1277e-01
62759	N-Nitrosodimethylamine	7.1429e-06
87865	Pentachlorophenol	2.1739e-02
1336363	Polychlorinated Biphenyls	7.1429e-05
75569	Propylene Oxide	2.7027e-02
1746016	2,3,7,8-TCDD	2.6316e-09
79345	1,1,2,2-Tetrachloroethane	1.7241e-03
127184	Tetrachloroethylene (Perch)	1.6949e-02
8001352	Toxaphene	3.1250e-04
79005	1,1,2-Trichloroethane	6.2500e-03
79016	Trichloroethylene	5.0000e-02
88062	2,4,6-Trichlorophenol	3.2258e-02
75014	Vinyl Chloride	1.2821e-03
75354	Vinylidene Chloride	2.0000e-03
	Arsenic Compounds	2.3256e-05
	Beryllium Compounds	4.1667e-05
	Cadmium Compounds	5.5556e-05
	Chromium Compounds	8.3333e-06
	Coke Oven Emissions	1.6129e-04
	Nickel Compounds	3.8462e-04
	Polycyclic Organic Matter	
56553	Benz(a)anthracene	5.8824e-05
205992	Benzo(b)fluoranthene	5.8824e-05
207089	Benzo(k)fluoranthene	5.8824e-05
50328	Benzo(a)pyrene	5.8824e-05
53703	Dibenz(a,h)anthracene	5.8824e-05
193395	Indeno(1,2,3-cd)pyrene	5.8824e-05

TABLE 2

<u>CAS #</u>	<u>CHEMICAL</u>	<u>NONCANCER CHRONIC ANNUAL ($\mu\text{g}/\text{m}^3$)</u>	<u>NONCANCER ACUTE ANNUAL ($\mu\text{g}/\text{m}^3$)</u>
75070	Acetaldehyde	9.0000e-02	
107028	Acrolein	2.2000e-04	2.5000e-02
79061	Acrylamide	7.0000e-03	
79107	Acrylic Acid	1.0000e-02	
107131	Acrylonitrile	2.0000e-02	
107051	Allyl Chloride	1.0000e-02	
62533	Aniline	1.0000e-02	
71432	Benzene	7.1000e-01	
92875	Benzidine	1.0000e-01	
100447	Benzyl Chloride	1.2000e-01	5.0000e-01
117817	Bis(2-Ethylhexyl) Phthalate (DEHP)	7.0000e-01	
75150	Carbon Disulfide	7.0000e+00	
56235	Carbon Tetrachloride	2.4000e-02	1.9000e+00
7782505	Chlorine	7.1000e-01	2.3000e-01
532274	2-Chloroacetophenone	3.0000e-04	
108907	Chlorobenzene	7.0000e-01	
67663	Chloroform	3.5000e-01	
126998	Chloroprene	1.0000e-02	
1319773	Cresols/Cresylic Acid	1.8000e+00	
95487	o-Cresol	1.8000e+00	
108394	m-Cresol	1.8000e+00	
106445	p-Cresol	1.8000e+00	
132649	Dibenzofurans	3.5000e-08	
96128	1,2-Dibromo-3-Chloropropane	2.0000e-03	
106467	1,4-Dichlorobenzene (p)	8.0000e+00	
542756	1,3-Dichloropropene	2.0000e-01	
62737	Dichlorvos	5.0000e-03	
68122	Dimethyl Formamide	3.0000e-01	
123911	1,4-Dioxane (1,4-Diethyleneoxide)	4.0000e-02	2.0000e+01
106898	Epichlorohydrin	1.0000e-02	
106887	1,2-Epoxybutane	2.0000e-01	
140885	Ethyl Acrylate	4.8000e-01	
100414	Ethyl Benzene	1.0000e+01	
75003	Ethyl Chloride (Chloroethane)	1.0000e+02	
106934	Ethylene Dibromide	4.6000e-02	
107062	Ethylene Dichloride	9.5000e-01	

75218	Ethylene Oxide	6.0000e+00	
50000	Formaldehyde	3.6000e-02	3.7000e+00
118741	Hexachlorobenzene	2.8000e-02	
77474	Hexachlorocyclopentadiene	2.4000e-03	
822060	Hexamethylene-1,6-Diisocyanate	1.0000e-04	
110543	Hexane	2.0000e+00	
302012	Hydrazine	2.4000e-03	
7647010	Hydrochloric Acid	2.0000e-01	3.0000e+01
7664393	Hydrogen Fluoride (HF Acid)	5.9000e-02	5.8000e+00
58899	Lindane (All Isomers)	1.0000e-02	
108316	Maleic Anhydride	2.4000e-02	1.0000e-01
67561	Methanol	6.2000e+00	
74839	Methyl Bromide (Bromomethane)	5.0000e-02	
71556	Methyl Chloroform	3.2000e+00	1.9000e+03
78933	Methyl Ethyl Ketone (2-Butanone)	1.0000e+01	
624839	Methyl Isocyanate	3.6000e-03	
80626	Methyl Methacrylate	9.8000e+00	
1634044	Methyl Tert Butyl Ether	3.0000e+01	
75092	Methylene Chloride	3.0000e+01	3.5000e+01
101688	Methylene Diphenyl Diisocyanate	2.0000e-04	
101779	4,4'-Methylenedianiline	1.9000e-02	
91203	Naphthalene	1.4000e-01	
98953	Nitrobenzene	1.7000e-02	
79469	2-Nitropropane	2.0000e-01	
87865	Pentachlorophenol	2.0000e-03	
108952	Phenol	4.5000e-01	
75445	Phosgene	1.2000e+00	
7803512	Phosphine	3.0000e-03	
7723140	Phosphorus	7.0000e-04	
85449	Phthalic Anhydride	7.0000e+01	
1336363	Polychlorinated Biphenyls	1.2000e-02	
78875	Propylene Dichloride	4.0000e-02	
75569	Propylene Oxide	3.0000e-01	1.0000e+01
100425	Styrene	1.0000e+01	
1746016	2,3,7,8-TCDD	3.5000e-08	
127184	Tetrachloroethylene (Perch)	3.5000e-01	6.8000e+01
108883	Toluene	4.0000e+00	
584849	2,4-Toluene Diisocyanate	7.0000e-04	
79016	Trichloroethylene	6.4000e+00	
121448	Triethylamine	7.0000e-02	
108054	Vinyl Acetate	2.0000e+00	
593602	Vinyl Bromide	3.0000e-02	

75014	Vinyl Chloride	2.6000e-01	
75354	Vinylidene Chloride	3.2000e-01	
1330207	Xylenes (Isomers and Mixture)	3.0000e+00	4.4000e+01
	Antimony Compounds	2.0000e-03	
	Arsenic Compounds	5.0000e-03	
	Beryllium Compounds	4.8000e-05	
	Cadmium Compounds	3.5000e-02	
	Chromium Compounds	2.0000e-05	
	Cyanide Compounds	7.0000e-01	3.3000e+01
	Ethyl Glycol But Ether	2.0000e-01	
	Ethyl Glycol Ethyl Ether	3.7000e+00	
	Ethyl Gly MonoBut Ether	1.5000e+01	
	Ethyl Gly MonoEthyl Ether	2.0000e+00	
	Ethyl Gly Ethyl Ether Acetate	6.4000e-01	
	Ethyl Glycol Methyl Ether	2.0000e-01	3.2000e+00
	Ethyl Gly Methyl Ether Acetate	5.7000e-01	
	Ethyl Gly MonoEthyl Ether Acetate	1.6000e+01	
	Lead Compounds	1.5000e-02	
	Manganese Compounds	5.0000e-04	
	Mercury Compounds	3.0000e-03	3.0000e-01
	Fine Mineral Fibers	2.4000e-01	
	Nickel Compounds	2.4000e-03	1.0000e-02
	Selenium Compounds	5.0000e-03	2.0000e-02

Authorizing statute(s): 75-2-111, 75-2-204, MCA

Implementing statute(s): 75-2-204, 75-2-211, 75-2-215, MCA

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