

ENVIRONMENTAL QUALITY

CHAPTER 50

SOLID WASTE MANAGEMENT

Subchapter 12

Landfill Design Criteria

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Subchapter 12

Landfill Design Criteria

17.50.1201 GENERAL PROVISIONS (1) All applicants, licensees, owners, and operators of solid waste management systems and facilities shall comply with this subchapter, except as otherwise specifically provided in this subchapter. Wherever there is a requirement imposed on an owner or operator in this subchapter, the licensee also shall comply with that requirement.

(2) Whenever a person, including an applicant or owner or operator, is required by this subchapter to submit a document for department approval of an action, the person may not take that action unless the person first submits a document containing all information necessary for the department to determine whether the action complies with the requirements of this subchapter and obtains department approval.

(3) When authorized by a court order or an agreement between the department and a landowner on whose property a violation of Title 75, chapter 10, part 2, MCA, or this subchapter has occurred, the department may act, either directly or through a third party, to physically remediate a violation of Title 75, chapter 10, part 2, MCA, or this subchapter.

(4) Whenever the department determines under this subchapter that any information, submittal, plan, factor, procedure, condition, criterion, requirement, or change is necessary to protect human health or the environment, it shall mail notification of the determination to the appropriate applicant, owner, operator, or licensee. (History: 75-10-204, MCA; IMP, 75-10-204, MCA; NEW, 2010 MAR p. 317, Eff. 2/12/10.)

17.50.1202 DEFINITIONS In this subchapter, the following definitions apply:

(1) "Active life" has the meaning given in ARM 17.50.502.

(2) "Class II landfill facility" has the meaning given in ARM 17.50.504.

(3) "Class IV landfill facility" has the meaning given in ARM 17.50.504.

(4) "Closure" has the meaning given in ARM 17.50.502.

(5) "Composite liner" means a system consisting of two components. The upper component must consist of a minimum 30-mil flexible membrane liner (FML), and the lower component must consist of at least a two-foot layer of compacted soil with a hydraulic conductivity of no more than 1×10^{-7} cm/sec. FML components consisting of high density polyethylene (HDPE) must be at least 60-mil thick. The FML component must be installed in direct and uniform contact with the compacted soil component.

(6) "Department" has the meaning given in ARM 17.50.502.

(7) "Existing," when used in conjunction with "unit" or a type of unit, has the meaning given in ARM 17.50.502.

(8) "Facility" has the meaning given in ARM 17.50.502.

(9) "Ground water" has the meaning given in ARM 17.50.502.

- (10) "Landfill" has the meaning given in ARM 17.50.502.
- (11) "Lateral expansion" has the meaning given in ARM 17.50.502.
- (12) "Leachate" has the meaning given in ARM 17.50.502.
- (13) "Leachate collection system" means an engineered structure, designed to collect leachate, that is located above a liner and below the waste in a landfill unit.
- (14) "Leachate removal system" means an engineered structure that allows for the removal of leachate from a landfill unit. A leachate removal system may be, but is not necessarily, used in conjunction with a leachate collection system.
- (15) "New," when used in conjunction with "unit" or a type of unit, has the meaning given in ARM 17.50.502.
- (16) "Operator" has the meaning given in ARM 17.50.502.
- (17) "Owner" has the meaning given in ARM 17.50.502.
- (18) "Remediation" means the act of reducing contamination to a level that is protective of human health and the environment.
- (19) "Underground drinking water source" means:
 - (a) an aquifer supplying drinking water for human consumption; or
 - (b) an aquifer in which the ground water contains less than 10,000 mg/L total dissolved solids.
- (20) "Unit" has the meaning given in ARM 17.50.502. (History: 75-10-204, MCA; IMP, 75-10-204, MCA; NEW, 2010 MAR p. 317, Eff. 2/12/10.)

17.50.1203 SMALL COMMUNITY EXEMPTION (1) The owner or operator of a new Class II or Class IV landfill unit, existing Class II or Class IV landfill unit, or lateral expansion of an existing Class II or Class IV landfill unit, that disposes of less than 20 tons of municipal solid waste daily, based on an annual average, is exempt from ARM Title 17, chapter 50, subchapters 12 and 13, if there is no evidence of ground water contamination from that unit, or lateral expansion of an existing Class II or Class IV landfill unit, and the unit, or lateral expansion of an existing Class II or Class IV landfill unit, serves:

- (a) a community that experiences an annual interruption of at least three consecutive months of surface transportation that prevents access to a regional waste management facility; or
- (b) a community that has no practicable waste management alternative and the landfill unit is located in an area that annually receives no more than 25 inches of precipitation. For the purposes of this rule, the lack of a practicable waste management alternative may be demonstrated by the following:
 - (i) there is no access to a licensed Class II landfill facility within 100 miles of the community; and
 - (ii) the cost per household of using an alternative disposal method, and the cost per household of complying with the requirements for landfill design and operation, distributed over the estimated active life of the landfill, will each exceed on an annual basis 1% of the median household income for the service area.

(2) The owner or operator of a new Class II or Class IV landfill unit, existing Class II or Class IV landfill unit, or lateral expansion of an existing Class II or Class IV landfill unit, that meets the criteria in (1)(a) or (b) shall place in the operating record information demonstrating this.

(3) Within 14 days after obtaining knowledge of ground water contamination resulting from the unit for which the exemption in (1)(a) or (b) has been claimed, the owner or operator of a new Class II or Class IV landfill unit, existing Class II or Class IV landfill unit, or lateral expansion of an existing Class II or Class IV landfill unit, shall notify the department of such contamination and, thereafter, comply with ARM Title 17, chapter 50, subchapters 12 and 13.

(4) An owner or operator shall demonstrate to the department in writing that the owner or operator meets the requirements of this rule, to obtain approval for a small community exemption. (History: 75-10-204, MCA; IMP, 75-10-204, MCA; NEW, 2010 MAR p. 317, Eff. 2/12/10.)

17.50.1204 DESIGN CRITERIA - CLASS II AND CLASS IV LANDFILL

UNITS (1) An owner or operator of a new Class II or Class IV landfill unit, or a lateral expansion of an existing Class II or Class IV landfill unit, may construct it only if the owner or operator has obtained department approval of a design that either:

(a) ensures that the concentration values listed in Table 1 of this rule will not be exceeded at the relevant point of compliance, as specified by the department:

(i) for a Class II landfill unit, in the uppermost aquifer; or

(ii) for a Class IV landfill unit, in an underground drinking water source; or

(b) utilizes a composite liner and a leachate collection and removal system that is designed and constructed to maintain less than a 30-cm depth of leachate over the liner.

(2) When determining whether a design complies with (1)(a), the department shall consider at least the following factors:

(a) the hydrogeologic characteristics of the facility and surrounding land;

(b) the climatic factors of the area; and

(c) the volume and physical and chemical characteristics of the leachate.

(3) The relevant point of compliance (RPOC) specified by the department pursuant to (1)(a) may not be more than 150 meters from the waste management unit boundary and must be on land owned by the owner of the Class II or Class IV landfill unit. In determining the RPOC, the department shall consider at least the following factors:

(a) the hydrogeologic characteristics of the facility and surrounding land;

(b) the volume and physical and chemical characteristics of the leachate;

(c) the quantity, quality, and direction of flow of ground water;

(d) the proximity and withdrawal rate of the ground water users;

(e) the availability of alternative drinking water supplies;

(f) the existing quality of the ground water, including other sources of contamination and their cumulative impacts on the ground water, and whether the ground water is currently used or reasonably expected to be used for drinking water;

(g) public health, safety, and welfare effects; and

(h) practicable capability of the owner or operator.

Table 1

Chemical	MCL (mg/L)
Arsenic	0 .05
Barium	1 .0
Benzene	0 .005
Cadmium	0 .01
Carbon tetrachloride	0 .005
Chromium (hexavalent)	0 .05
2,4-Dichlorophenoxy acetic acid	0 .1
1,4-Dichlorobenzene	0 .075
1,2-Dichloroethane	0 .005
1,1-Dichloroethylene	0 .007
Endrin	0 .0002
Fluoride	4
Lindane	0 .004
Lead	0 .05
Mercury	0 .002
Methoxychlor	0 .1
Nitrate	10
Selenium	0 .01
Silver	0 .05
Toxaphene	0 .005
1,1,1-Trichloromethane	0 .2
Trichloroethylene	0 .005
2,4,5-Trichlorophenoxy acetic acid	0 .01
Vinyl Chloride	0 .002

(History: 75-10-204, MCA; IMP, 75-10-204, MCA; NEW, 2010 MAR p. 317, Eff. 2/12/10.)

17.50.1205 ADDITIONAL DESIGN CRITERIA - CLASS II AND CLASS IV LANDFILL UNITS (1) The owner or operator of a new Class II or Class IV landfill unit, or lateral expansion of an existing Class II or Class IV landfill unit, also shall comply with the following design criteria and exceptions:

(a) a leachate collection system is not required for a landfill unit that has obtained department approval of a demonstration, pursuant to ARM 17.50.1303(2), that there is no potential for migration of a constituent in Appendix I or II to 40 CFR Part 258 (July 1, 2008) pursuant to ARM Title 17, chapter 50, subchapter 13; and

(b) a liner is not required for a Class IV landfill unit located within the approved ground water monitoring network of a licensed Class II landfill facility.

(2) An owner or operator of a new Class II or Class IV landfill facility shall submit to the department for approval each landfill unit design plan, including any design specifications or applicable plans or documents developed pursuant to this chapter. The design plan must demonstrate compliance with the standards of ARM 17.50.1204(1).

(3) The owner or operator of a new Class II or Class IV landfill unit, or lateral expansion of an existing Class II or Class IV landfill unit, shall design and construct a landfill unit leachate collection and leachate removal system required under this subchapter to:

(a) provide for accurate monitoring of the leachate level, measured to within one centimeter, on the liner or base of the unit, and the leachate volume removed from the unit; and

(b) provide a minimum slope at the base of the overlying leachate collection layer equal to at least two percent.

(4) An owner or operator of a Class II landfill unit may, if it obtains department approval, recirculate leachate to that unit if the unit is constructed with a composite liner, leachate collection, and leachate removal system.

(5) At the time the owner or operator submits a design plan required in (2), the owner or operator of a Class II or Class IV landfill facility shall submit to the department for approval a construction quality control (CQC) and construction quality assurance (CQA) plan describing procedures that provide for conformance with the department-approved design plans required by (2).

(6) Within 60 days after construction of a Class II or Class IV landfill unit is completed, the owner or operator shall submit to the department for approval a final CQC and CQA report that describes, at a minimum, construction activities and deviations, and conformance with the plan required in (5).

(7) Within 60 days after construction of a Class II or Class IV landfill unit is completed, the owner or operator shall submit a certification, by an independent Montana licensed professional engineer, that the project was constructed according to the plans required in (2) and (5). (History: 75-10-204, MCA; IMP, 75-10-204, MCA; NEW, 2010 MAR p. 647, Eff. 2/12/10.)

