

## Chapter NR 506

## LANDFILL OPERATIONAL CRITERIA

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**Note:** Corrections made under s. 13.93 (2m) (b) 7., Stats., Register, August, 1997, No. 500.

**NR 506.01 Purpose.** The purpose of this chapter is to help ensure that efficient, nuisance-free and environmentally acceptable solid waste management procedures are practiced in Wisconsin and to outline the requirements regarding operational criteria for solid waste landfills and surface impoundments. This chapter is adopted under ch. 289, and s. 227.11, Stats.

**History:** Cr. Register, January, 1988, No. 385, eff. 2-6-88.

**NR 506.02 Applicability. (1)** Except as otherwise provided, this chapter governs all solid waste disposal facilities as defined in s. 289.01 (35), Stats., except hazardous waste facilities as defined in s. 291.01 (8), Stats., and regulated under chs. NR 600 to 690 and metallic mining operations as defined in s. 293.01 (5), Stats., and regulated under ch. NR 182.

**(2)** This chapter does not apply to the design, construction or operation of industrial wastewater facilities, sewerage systems and waterworks treating liquid wastes approved under s. 281.41, Stats., or permitted under ch. 283, Stats., nor to facilities used solely for the disposal of liquid municipal or industrial wastewater facilities, sewerage systems and waterworks treating liquid wastes approved under s. 281.41, Stats., or permitted under ch. 283, Stats., except for facilities used for the disposal of solid waste.

**History:** Cr. Register, January, 1988, No. 385, eff. 2-6-88; correction in (1) made under s. 13.93 (2m) (b) 7., Stats., Register, May, 1992, No. 437; am. (1), Register, June, 1996, No. 486, eff. 7-1-96.

**NR 506.03 Definitions.** The terms in this chapter are defined in s. NR 500.03.

**History:** Cr. Register, January, 1988, No. 385, eff. 2-6-88.

**NR 506.04 Open burning.** The department may approve burning of brush, grubbed material and other similar material in accordance with air management, solid waste management and all other applicable regulations.

**History:** Cr. Register, January, 1988, No. 385, eff. 2-6-88; r. and recr., Register, June, 1996, No. 486, eff. 7-1-96.

**NR 506.05 Daily cover requirements. (1) MUNICIPAL SOLID WASTE.** All solid waste disposed in a municipal solid waste landfill shall be compacted and completely covered at the end of each operating day with a compacted layer of at least 6 inches of soil. Alternate daily cover materials may be approved or mandated by the department as required in s. NR 506.055. If clay soil is used for daily cover purposes, it shall be scarified or removed prior to placement of the next lift of solid waste.

**(2) INDUSTRIAL AND COMMERCIAL WASTE.** Unless otherwise specified by the department, high volume industrial waste is not subject to daily cover requirements, unless disposed of in a municipal

solid waste landfill. All other industrial waste and commercial waste shall be compacted and completely covered at the end of each operating day with a compacted layer of at least 6 inches of soil or other material approved in writing by the department.

The department may grant an exemption in writing for less frequent covering. In granting such exemptions, the department shall consider the characteristics of the solid waste, the leaching potential of the solid waste and the potential for nuisance conditions if other than daily covering is utilized.

**History:** Cr. Register, January, 1988, No. 385, eff. 2-6-88; r. and recr. (1), am. (2), Register, June, 1996, No. 486, eff. 7-1-96.

**NR 506.055 Alternate daily cover. (1) FACILITIES SEEKING APPROVAL.** An owner or operator of a solid waste landfill seeking approval from the department to use an alternate daily cover material shall submit the following information:

(a) Type of material to be used, including its chemical and physical properties as required in s. NR 506.09. A discussion of the material's successful use at other solid waste landfills in controlling vectors, windblown material and odors may be required.

(b) Method and rate of application.

(c) Conditions when alternate daily cover cannot be used, including but not limited to weather conditions, equipment breakdown, ability to obtain a sufficient quantity of alternate daily cover, maximum time alternate daily cover can be exposed, and a discussion of back-up cover materials for use when alternate cover cannot be used.

(d) Discussion of how the alternate cover material will be stored on-site prior to its use, including measures to be taken to prevent transportation of contaminants to groundwater and surface water, and prevention of windblown nuisances.

**(2) MANDATED USE OF ALTERNATE DAILY COVER.** Upon request from a person operating a foundry or a scrap dealer in the state of Wisconsin, the department shall require that a person operating a municipal solid waste landfill accept and use the requested foundry sand or shredder fluff for cover at part or all of the landfill for the period specified in the request if all of the following conditions are met:

(a) The foundry operator or scrap dealer agrees to transport the foundry sand or shredder fluff to the landfill either daily or on another schedule acceptable to the municipal solid waste landfill operator.

(b) The department approves the use of the foundry sand or shredder fluff for cover at the landfill.

(c) The landfill operator is not contractually bound to obtain cover from another source.

(d) The amount of cover to be provided by the requesting foundry operator or scrap dealer does not exceed the amount of

cover required under the plan of operation for the landfill less any cover provided by another foundry operator or scrap dealer.

**(3) GENERAL APPROVAL FOR THE USE OF ALTERNATE DAILY COVER.** The department may issue general approvals for use of specific alternate daily cover materials which have been demonstrated to control disease vectors, fires, odors, blowing litter and scavenging without presenting a threat to human health and the environment.

**History:** Cr., Register, June, 1996, No. 486, eff. 7-1-96.

**NR 506.06 Intermediate cover.** Unless otherwise approved by the department in writing, any portion of a landfill which has been used for solid waste disposal but will not receive additional solid waste for a period exceeding 6 months shall be covered with one foot of fine grained intermediate cover or other material approved by the department. A specific soil type may be specified by the department for this one foot layer. The intermediate cover shall be compacted and adequately sloped to allow storm water runoff. The slopes shall be no less than 5% and no greater than 33%. The department may require that intermediate slopes be vegetated depending on the length of time they will remain open. This section does not apply to high volume industrial waste nor does it apply to wood residue approved as a construction material or to provide protection of the liner from frost under s. NR 506.07 (3) (b), unless specifically required by the department.

**History:** Cr. Register, January, 1988, No. 385, eff. 2-6-88; am., Register, June, 1996, No. 486, eff. 7-1-96.

**NR 506.07 Operational requirements for landfills.** No person may operate or maintain a new or existing landfill except in conformance with any approved plan of operation and the following minimum requirements:

**(1) GENERAL.** (a) Daily disposal of solid waste shall be confined to as small an area as practical.

(b) Provisions shall be made to confine windblown material within the active disposal area.

(c) At the conclusion of each day of operation, all windblown material shall be collected and properly disposed of in the active area in accordance with the provisions of this section unless the operator establishes, to the satisfaction of the department, that all windblown material cannot be collected using reasonable efforts because of conditions beyond the control of the operator, and windblown material which can be collected using a reasonable effort has been collected and properly disposed and nuisance conditions do not exist.

(d) Putrescible materials such as spoiled foods and animal carcasses shall be immediately compacted and covered.

(e) Access to the landfill shall be restricted through the use of fencing, natural barriers or other methods approved in writing by the department.

(f) Effective means shall be taken to limit access to the active disposal area to minimize exposure of the public to hazards.

(g) Effective means shall be taken to control birds, flies, rodents, deer and other animals.

(h) Equipment shall be provided to control accidental fires and arrangements shall be made with the local fire protection agency to acquire its services when needed.

(i) As required in s. NR 524.05, a trained operator or certified facility manager shall be present at the landfill during all hours of operation, and a list of names of trained operators and certified facility managers shall be maintained at the landfill.

(j) A gate shall be provided at the entrance to the operation and it shall be kept locked when an attendant is not on duty.

(k) The gate area shall be policed at the beginning of each day of operation to remove any solid waste which has been indiscriminately dumped during periods when the landfill was closed.

(L) A sign, acceptable to the department, shall be posted at the entrance of any landfill operated for public use which indicates the

landfill name, license number, the hours of operation, waste types accepted, penalty for unauthorized use, necessary safety precautions and any other pertinent information.

(m) The landfill shall be surrounded with rapidly growing trees, shrubbery, fencing, berms or other appropriate means to screen it from the surrounding area and to provide a wind break.

(n) Fugitive dust shall be controlled in accordance with s. NR 415.04 from all areas of the landfill.

(o) Scavenging within the active disposal area is prohibited.

(p) Provisions shall be made for back-up equipment in the event of operating equipment breakdown.

(q) A minimum separation distance of 20 feet shall be maintained between the limits of filling and adjacent property or the perimeter of the licensed acreage, whichever is closer at nonapproved facilities as defined in s. 289.01 (24), Stats. At all other facilities, a minimum separation distance of 100 feet shall be maintained between the limits of solid waste filling and the property boundary or the perimeter of the licensed acreage, whichever is closer. The department may require additional separation distance if necessary to provide for vehicle access, drainage, monitoring, gas migration control, separation to adjacent homes or other landfill development factors.

(r) All topsoil within the landfill construction limits shall be salvaged and stored within the property boundaries for use in landfill closure. All stockpiled soil material which is not anticipated to be used within 6 months shall be seeded.

(s) All access roads to the active area of the operation shall be of all-weather construction and shall be maintained in good condition.

(t) All access roads for the use of solid waste hauling trucks shall be constructed with a maximum grade no greater than 10%. The intersection of the access road with an existing highway shall be constructed to provide sufficient sight distance and minimize interference with traffic on existing highways.

**(2) SEDIMENTATION AND EROSION CONTROL.** (a) All areas of the landfill property, including areas of temporary disturbance, with the potential for off-site migration of sediment shall be designed, constructed and maintained in accordance with the applicable requirements of s. NR 504.09 (1), and best management practices, which include the following:

1. Storm water shall be diverted away from the working area and areas already filled with solid waste.

2. Storm water from upslope areas shall be diverted around disturbed areas to minimize erosion, entrained sediment and the amount of water contacting the disturbed area.

3. The size and duration of disturbances shall be minimized, to the extent practicable, to minimize off-site sediment migration.

4. While the site is disturbed, temporary measures shall be used to trap sediment and off-site sediment migration. This could include gravel breaks or the equivalent to minimize the transport of sediments offsite.

5. Runoff channels shall be protected to prevent scour and erosion that generates sediment.

**Note:** Best management practice is detailed in "Wisconsin Construction Site Best Management Practice Handbook" published by the Wisconsin department of natural resources, management nonpoint source and land management section.

(b) Storm water drainage ditches, structures and sedimentation basins shall be cleaned and maintained such that they properly control storm water and limit entrained sediment in accordance with approved engineering designs. The department may waive this requirement on a case by case basis for existing facilities.

(c) All areas of the landfill which will not contain solid waste and are planned for vegetative cover shall be topsoiled, seeded and mulched as soon as practical, but no later than 90 days after completion of construction or by October 15, whichever is earlier and, if construction is completed after September 15, no later than June 15 of the following year. This includes, but is not limited to,

the landfill entrance, drainage ditches and surrounding areas. Erosion control measures shall be placed within 30 days after completion of construction. The seed type and amount of fertilizer applied shall be selected according to: the type and quality of topsoil, its compatibility with native vegetation and the final use. Unless otherwise approved by the department in writing, seed mixtures and applications rates shall be in accordance with section 630, Wisconsin department of transportation standard specifications for road and bridge construction.

**Note:** Copies of Wisconsin department of transportation standard specifications for road and bridge construction can be obtained from the department of natural resources, bureau of waste management, 101 s. webster street, Madison, Wisconsin 53707. Copies are also available for inspection at the offices of the revisor of statutes and the secretary of state.

**(3) WASTE PLACEMENT.** (a) Disposal of solid waste shall begin at the edge of each phase. Waste shall be pushed out over the granular blanket. Vehicles may not be driven directly on the granular blanket. Alternative operating procedures may be approved by the department if the consistency of the solid waste prevents vehicular access over a filled area.

(b) Except for portions of the sideslope greater than 10 feet above the base liner, a layer of solid waste at least 4 feet thick or an adequate amount of other frost protection material shall be placed over the granular blanket in all portions of the lined area prior to December 1st of the year following the year the clay portion of the liner was constructed. After this date, solid waste may not be placed on any portion of the base liner or lower 10 feet of the sideslope not covered with a 4-foot thick layer of solid waste or other adequate frost protection material. Those portions of the base liner or lower 10 feet of sideslope not covered with a 4-foot thick layer of solid waste or other frost protection material by this date shall be investigated for density and effects from freeze-thaw as specified by the department and shall be repaired and recertified during the next construction season if required, prior to waste placement. The requirements of this paragraph may be waived by the department.

(c) To provide for maximum compaction after the initial 4-foot lift of waste is placed, each single layer of municipal solid waste shall be spread and compacted in 2-foot layers.

**(4) GAS CONTROL.** Effective means shall be utilized to prevent the migration of explosive gases generated by the waste fill. At no time shall the concentration of explosive gases in any landfill structure, excluding the leachate collection system or gas control and recovery system components exceed 25% of the lower explosive limit for such gases. At no time shall the concentration of explosive gases in the soils outside of the limits of filling or air within 200 feet of or beyond the landfill property boundary exceed the lower explosive limit for such gases. The department may require the concentration of explosive gases not exceed detectable levels for that gas at the landfill property boundary.

**(5) LEACHATE COLLECTION SYSTEMS.** (a) Leachate shall be removed from all collection tanks, manholes, lift stations, sumps or other structures used for leachate storage as often as necessary to allow for gravity drainage of leachate from the facility at all times or as it is produced, including hours when the landfill is closed, such as overnight and weekends. Unless the facility has received approval from the department to recirculate leachate or gas condensate derived from the landfill as provided in s. NR 506.13 (2), all leachate removed from a leachate collection system shall be disposed of at a wastewater treatment facility approved by the department and capable of accepting the leachate in accordance with the requirements of its WPDES permit. The landfill owner or operator shall immediately notify the department of any change in the availability of the designated wastewater treatment facility to accept or dispose of the leachate removed from the landfill. Waste may not be accepted at the landfill unless leachate is being managed in accordance with landfill's approved plan of operation and the requirements of this section.

(b) Any liquid which comes in contact with waste or accumulates in a portion of the landfill where active waste disposal operations are occurring shall be handled as leachate and properly treated as specified in par. (a) unless otherwise approved by the department in writing.

(c) All leachate collection lines shall be cleaned with a water jet cleanout device with a maximum pressure of 10,000 pounds per square inch immediately after construction, and annually thereafter.

**(6) BORROW AREAS.** Documentation for non-commercial borrow sources which are developed for the construction, operation or closure of a specific landfill shall comply with ch. NR 509 for an initial site inspection. Documentation for all non-commercial clay borrow sources for liners or capping layers which are developed exclusively for a specific landfill shall comply with ch. NR 509 for an initial site inspection and with s. NR 512.15 for clay borrow source documentation. Documentation for commercial clay borrow sources for liners or capping layers shall identify the land owner, location by quarter - quarter section, and the current commercial use and shall comply with s. NR 512.15 (2) and (3) for clay borrow source documentation. The preceding requirements do not apply to borrow sources approved as part of the feasibility determination under ch. NR 512. All borrow areas established after February 1, 1988 shall be abandoned in accordance with section 208.3, Wisconsin department of transportation standard specifications for road and bridge construction, and s. NR 135.02 (3) (i) non-metallic mining reclamation standards.

**Note:** Copies of Wisconsin department of transportation standard specifications for road and bridge construction can be obtained from the department of natural resources, bureau of waste management, 101 s. webster street, Madison, Wisconsin 53707. Copies are also available for inspection at the offices of the revisor of statutes and the secretary of state.

**(7) PHASED CLOSURE.** For all landfills that do not have a department-approved plan for phased development and closure, by October 15th of each year, any areas that are at final grades shall be capped, topsoiled and seeded unless otherwise approved by the department.

**History:** Cr. Register, January, 1988, No. 385, eff. 2-6-88; am. (intro.), (1) (a), (c), r. (1) (d), (j), (o), renum. (1) (e) to (u) to be (1) (d) to (h), (j) to (m), (o) to (t), (2) to (6) to be (3) to (7) and am. (1) (e), (g), (k), (L), (m), (q), (r) and (t), (3) to (7), cr. (1) (i), (2), Register, June, 1996, No. 486, eff. 7-1-96; **correction in (1) (q) was made under s. 13.93 (2m) (b) 7., Stats.**

**NR 506.08 Closure requirements.** Any person who maintains or operates a landfill, or who permits use of property for such purpose shall, when the fill area or portion thereof reaches final grade, or when the department determines that closure is required, cease to accept solid waste and close the landfill or portion thereof in accordance with the plan approval issued by the department and the following minimum practices unless otherwise approved by the department in writing:

**(1) NOTIFICATION PROCEDURES.** (a) At least 120 days prior to closing the landfill, the owner or operator shall notify the department in writing of the intent to close the landfill and the expected date of closure. Prior to this date, the owner or operator shall notify all users of the landfill of the intent to close the landfill so that alternative disposal options can be arranged.

(b) Signs shall be posted at all points of access to the landfill at least 30 days prior to closure indicating the date of closure and alternative disposal facilities. Facilities which are operated by and serve only a single waste generator and are not open to the public are exempt from this provision.

(c) Notice of the upcoming closure shall be published in a local newspaper at least 30 days prior to closure and a copy of the notice shall be provided to the department within 10 days of the date of publication. Facilities which are operated by and serve only a single waste generator and are not open to the public are exempt from this provision.

(2) **GENERAL REQUIREMENTS.** Within 10 days after ceasing to accept solid waste, the owner or operator shall restrict access by the use of gates, fencing or other appropriate means to insure against further use of the landfill. If the final use allows access, such access shall be restricted until closure has been completed and approved by the department.

(3) **CLOSURE.** Closure activities shall begin within 30 days after ceasing to accept solid waste. Closure shall be accomplished in the following manner for facilities without a closure plan or plan of operation approved in writing by the department. Placement of final cover in accordance with s. NR 504.07 may be required if the department determines that this type of final cover system is necessary to prevent or abate attainment or exceedance of the groundwater standards contained in ch. NR 140. Municipal solid waste landfills that accepted greater than 100 tons of solid waste per day on an annual basis and ceased accepting municipal solid waste on or before October 8, 1993 shall have final cover placement completed by July 1, 1996. Municipal solid waste landfills that accepted 100 tons or less of solid waste per day on an annual basis and ceased accepting municipal solid waste on or before April 8, 1994 shall have final cover placement completed by July 1, 1996.

(a) The entire area previously used for disposal purposes shall be covered with at least 2 feet of compacted earth having a hydraulic conductivity of no more than  $1 \times 10^{-5}$  cm/sec or if the hydraulic conductivity of the underlying soils or any base liner system is less than  $1 \times 10^{-5}$  cm/sec, then the 2 feet of compacted earth shall have a hydraulic conductivity that is equal to or less than the underlying soils or any base liner system. The final grades shall be sloped adequately to allow storm water runoff. A specific soil type may be required by the department for this 2-foot layer. The department may require the cover layer to be more than 2 feet thick.

(b) Storm water run-on shall be diverted around all areas used for solid waste disposal to limit the potential for erosion of the cover soils and increased infiltration. Drainage swales conveying storm water runoff over previous solid waste disposal areas shall be lined with a minimum thickness of 2 feet of clay.

(c) The final slopes of the landfill shall be greater than 5%, but may not exceed 4 horizontal to one vertical unless otherwise approved by the department.

(d) The finished surface of the disposal area shall be covered with a minimum of 6 inches of topsoil.

(4) **ESTABLISHMENT OF VEGETATION.** Within 180 days after ceasing to accept solid waste, or if solid waste termination is after September 15, by June 15 of the following year, the owner or operator shall complete seeding, fertilizing and mulching of the finished surface. The seed type and amount of fertilizer applied shall be selected depending on the type and quality of topsoil and compatibility with both native vegetation and the final use. Unless otherwise approved by the department in writing, seed mixtures and applications rates shall be those specified for right-of-ways in accordance with section 630, Wisconsin department of transportation standard specifications for road and bridge construction.

**Note:** Copies of Wisconsin department of transportation standard specifications for road and bridge construction can be obtained from the department of natural resources, bureau of waste management, 101 s. webster street, Madison, Wisconsin 53707. Copies are also available for inspection at the offices of the revisor of statutes and the secretary of state.

(5) **DEED NOTATION.** Following closure of a landfill phase which accepted municipal solid waste after July 1, 1996, the owner or operator shall, within 90 days after closure, record a notation on the deed to the landfill property. The notation in the deed shall in perpetuity notify any potential purchaser of the property that the land has been used as a landfill and its use is restricted to prevent disturbing the integrity of the final cover, liner or any other components of the containment system or the function of the monitoring systems.

(6) **HAZARDOUS AIR CONTAMINANT CONTROL.** All landfills which have a design capacity of greater than 500,000 cubic yards

and have accepted municipal solid waste shall install a department approved system to efficiently collect and combust hazardous air contaminants emitted by the landfill within 18 months of February 1, 1988 unless the owner can demonstrate that the performance criteria of s. NR 504.04 (4) (f) can be achieved without implementing such a system. Control techniques other than combustion may be approved by the department.

**History:** Cr. Register, January, 1988, No. 385, eff. 2-6-88; am. (intro.), (1) (a), (b), (2), (3) (intro.), (a) to (c), (4), (6), r. and recr. (5), Register, June, 1996, No. 486, eff. 7-1-96.

**NR 506.085 Final use.** The following activities are prohibited at solid waste disposal facilities which are no longer in operation unless specifically approved by the department in writing:

(1) Use of the waste disposal area for agricultural purposes.  
(2) Establishment or construction of any buildings over the waste disposal area.

(3) Excavation of the final cover or any waste materials.

**Note:** Activities at closed solid waste disposal facilities shall be restricted in accordance with the applicable transference of responsibility provisions of s. 289.46 (2), Stats.

**History:** Cr., Register, June, 1996, No. 486, eff. 7-1-96.

**NR 506.09 Waste characterization. (1) GENERAL.** No person may dispose in a landfill prohibited items under s. NR 506.095. Wastes which are limited under ss. NR 506.10 to 506.155 may only be disposed in accordance with those sections. Solid wastes which are not prohibited or limited under ss. NR 506.095 to 506.155 and which do not constitute more than 5% of the total proposed design capacity may be disposed without additional department approval providing they do not pose a significant threat to landfill operations, leachate or landfill gas quality, or groundwater quality, and they are handled in accordance with an approved special waste management plan. The physical and chemical characteristics of any high volume industrial waste stream such as foundry process waste, papermill sludge, utility coal-ash wastes, and other non-municipal waste streams that are anticipated to individually constitute more than 5% of the total proposed design capacity shall be analyzed and described in accordance with this section.

(2) **SUBMITTAL REQUIREMENTS.** Requests for authorization to accept additional waste types shall include the following information at a minimum:

(a) Detailed physical and chemical characteristics including percent solids, material safety data sheets where appropriate and the results of the paint filter test.

(b) The volume of waste to be disposed of on a daily and yearly basis.

(c) The source of the wastes and a description of the processes which generated the waste.

(d) The duration of disposal.

(e) Special handling and disposal procedures.

(f) Based upon a preliminary review of the above information, the department may require additional information to determine the compatibility of the waste with the existing design and operation of the landfill.

**Note:** Landfill operators who wish to accept hazardous waste from small quantity generators subject to s. NR 610.07 (1) must obtain approval from the department under s. NR 181.13 (7) 1987 Wis. Adm. Code.

**History:** Cr. Register, January, 1988, No. 385, eff. 2-6-88; r. and recr. (1), am. (2) (a), Register, June, 1996, No. 486, eff. 7-1-96.

**NR 506.095 Prohibited items.** No person may dispose of the following in a landfill:

(1) Lead acid batteries.

(2) Major appliances.

(3) Waste oil or materials containing waste oil, except as provided in s. NR 506.105 and par. (a).

(a) Material containing, or otherwise contaminated with, minimal amounts of oil from which the oil has been removed to the

extent possible such that no visible signs of free flowing oil remain in or on the material, may be disposed of in a solid waste landfill, provided the material is not listed or identified as a hazardous waste.

**Note:** The department encourages the recycling of used oil including oil-soaked rags and similar materials, by use of laundering services, burning for energy recovery and other recycling methods.

**Note:** Disposal of petroleum contaminated soil and materials into solid waste disposal facilities shall be done in accordance with the applicable provisions of chs. NR 419, 590 and 722.

(b) Oil drained or removed from materials containing or otherwise contaminated with oil is subject to regulation as used oil.

**Note:** The department encourages that solid waste material from which oil is removed, such as used oil filters that have been drained in accordance with s. NR 605.05 (1) (v), be recycled. If the material cannot be recycled, it should be properly characterized and disposed of in accordance with the requirements of chs. NR 500 to 538 and 600 to 690.

(c) No person may mix oil with other material for the purpose of avoiding the prohibition of s. 287.07 (1m) (b), Stats.

(4) Yard waste.

(5) Solid waste that contains any material identified in s. 287.07 (3), Stats., that is generated in a region, as defined in s. 287.01 (8), Stats., that does not have an effective recycling program as determined under s. 287.11, Stats., and ch. NR 544, unless the material is subject to an exemption, waiver or beneficial use approval under s. 777.11 (2p), Stats. This subsection does not apply to any material identified in s. 287.07 (3), Stats., that contains infectious waste or that is from a treatment area and is mixed with infectious waste generated in the treatment area, if the container, package or material has been treated pursuant to standards established under ch. NR 526 to render the infectious waste noninfectious.

(6) A material identified in s. 287.07 (3), Stats., that is separated for recycling as part of an effective recycling program under s. 287.11, Stats., and ch. NR 544, unless the department has granted a variance under s. 777.11 (2m), Stats.

**History:** Cr., Register, June, 1996, No. 486, eff. 7-1-96; **corrections in (5) and (6) were made under s. 13.93 (2m) (b) 7., Stats.**

**NR 506.10 Asbestos.** No person may dispose of asbestos containing material at a solid waste landfill except in conformance with the following minimum requirements:

(1) **LANDFILL CRITERIA.** Only facilities meeting the following criteria may accept asbestos for disposal:

(a) Except as provided in par. (c), only approved facilities as defined in s. 289.01 (3), Stats., may accept asbestos containing material for disposal.

(b) The following asbestos containing materials may be accepted only at landfills engineered with a liner and leachate collection system which are approved to accept asbestos. The department may approve other landfills on a case by case basis.

1. Category I non-friable asbestos containing material, which is not construction and demolition material,

2. Category II non-friable asbestos containing material,

3. Friable asbestos material.

(c) Construction and demolition materials containing category I non-friable asbestos may be disposed of at construction and demolition waste landfills approved in accordance with ch. NR 503 and approved facilities as defined in s. 289.01 (3), Stats.

(2) **GENERAL REQUIREMENTS.** (a) Unless an alternative handling procedure is approved by the department, category II nonfriable asbestos containing material and friable asbestos material shall be disposed of in a trench excavated into existing refuse and shall be covered with a minimum of 3 feet of non-asbestos solid waste or soil prior to compaction.

**Note:** All applicable safety measures required by chs. NR 400 to 499, and EPA and OSHA, specifically, those requirements dealing with the safety of personnel working with the asbestos, shall be followed. U.S. EPA 40 CFR Part 61 "National Emission Standards for Hazardous Air Pollutants (NESHAP)" contains additional requirements for the disposal of asbestos containing materials.

(b) The location of category II nonfriable asbestos containing material and friable asbestos material disposal within the landfill shall be recorded by horizontal and vertical coordinates and maintained in accordance with s. NR 506.17.

(c) Category II nonfriable asbestos containing material and friable asbestos material may not be placed in previous asbestos disposal areas or areas proposed for future landfill construction, including leachate headwells and gas collection wells.

**Note:** All applicable safety measures required by chs. NR 400 to 499, and EPA and OSHA, specifically, those requirements dealing with the safety of personnel working with the asbestos, shall be followed. U.S. EPA 40 CFR Part 61 "National Emission Standards for Hazardous Air Pollutants (NESHAP)" contains additional requirements for the disposal of asbestos containing materials.

**History:** Cr. Register, January, 1988, No. 385, eff. 2-6-88; am. (intro.), (2) (a), r. and recr. (1), (2) (b), (c), Register, June, 1996, No. 486, eff. 7-1-96.

**NR 506.105 Untreated contaminated unconsolidated material.** Except as provided in s. NR 506.095 (3) and this section, untreated contaminated unconsolidated material which is the result of a remediation conducted under chs. NR 700 to 736, or a remediation conducted in another state under the laws of that state, may not be disposed at a landfill, unless the disposal is in compliance with ss. NR 419.07 and 722.09 (4), and the landfill's approved plan of operation. Untreated contaminated unconsolidated material other than untreated petroleum contaminated soil which is the result of a remediation conducted under chs. NR 700 to 736, or a remediation conducted in another state under the laws of that state, may be approved by the department for use as daily cover, in construction of soil structures within a landfill, or disposal on a case by case basis. Unconsolidated material has the meaning specified in s. NR 722.03 (2).

**Note:** "Unconsolidated material" means soil, sediment or other granular material, such as fill, not including debris.

**Note:** Absorbents used to clean up oil spills are regulated under s. NR 506.095 and ch. NR 590.

(1) **USE OF UNTREATED PETROLEUM CONTAMINATED SOIL.** (a) Untreated petroleum contaminated soil may be used as landfill daily cover if all of the following conditions are met:

1. The volume of untreated petroleum contaminated soil that is proposed to be used as daily cover does not exceed either the landfill's net daily cover needs or 12.5% of the annual volume of waste received by the landfill.

2. The use of untreated petroleum contaminated soil as daily cover will not impair operation of the landfill, cause windblown problems, ponding of storm water or other nuisance conditions. Clay soils may not be used as daily cover.

3. The landfill has a liner and leachate collection system meeting the requirements of s. NR 504.06.

4. The requirements of subs. (2) to (4) are complied with.

(b) Untreated petroleum contaminated soil may be used in the construction of soil structures within the fill area when approved for that specific use by the department.

(c) Untreated petroleum contaminated soil may be disposed in a landfill other than as daily cover or in the construction of soil structures within the landfill only if approved by the department in the plan of operation for the landfill.

(d) Except as provided in pars. (a) to (c), no person may dispose of untreated petroleum contaminated soil in a landfill other than as daily cover or in the construction of soil structures within the landfill unless the department determines, on a case by case basis, that there is no practicable treatment alternative, and the department approves the disposal in writing.

(e) Petroleum contaminated soil which has been treated such that the concentration of volatile organic compound contaminants in the soil does not exceed 250 milligrams per kilogram is not subject to this section.

**Note:** Responsible parties must comply with s. NR 722.07 (3) by completing a written evaluation of recycling or treatment technologies.

(2) **VOLUME LIMITATIONS.** (a) Except as provided in par. (b) or (c), the volume of untreated petroleum contaminated soil from a

single clean-up site or facility that is proposed for landfill disposal may not exceed 250 cubic yards as measured *in situ*.

(b) Except as provided in par. (c), untreated volumes of petroleum contaminated soil from a single clean-up site or facility that exceed 250 cubic yards may be disposed of in a licensed landfill with a department approved composite liner, or a liner that is equivalent to a composite liner in terms of environmental protection as determined by the department, if approved by the department in the plan of operation for the landfill.

(c) Volumes of untreated petroleum contaminated soil from a single clean-up site or facility that exceed 2,000 cubic yards may be disposed of in a landfill only if prior written approval of a remedial action options report is obtained in accordance with s. NR 722.13 and approved in the landfill's plan of operation.

**(3) MAXIMUM ORGANIC COMPOUND CONCENTRATION.** No person may accept for disposal in a landfill untreated petroleum contaminated soil having an average organic compound concentration exceeding 2,000 mg/kg except for soils managed in accordance with ch. NR 708. For volumes of material less than 55 gallons the department may waive this prohibition in writing if the department finds that there are no practicable treatment alternatives. The department may accept knowledge in lieu of testing for specific waste types.

**Note:** The average organic compound concentration for untreated petroleum contaminated material is generally measured by diesel range organic compounds (DRO), gasoline range organic compounds (GRO), petroleum volatile organic compounds (PVOC), or polycyclic aromatic hydrocarbon compounds (PAH), alone or in combination.

**Note:** NR 419 imposes the following limits:

For ozone nonattainment areas the concentration of volatile organic compound contaminants in the soil accepted may not exceed 250 mg/kg.

For ozone attainment areas, in all contaminated soils accepted with a volatile organic compound concentration of greater than 250 mg/kg, the total quantity of volatile organic compounds may not exceed 25 tons per year.

Material contaminated with polychlorinated biphenyls (PCBs) must be managed in accordance with the requirements of ch. NR 157 and this chapter.

**(4) RECORD KEEPING.** Except as otherwise provided in par. (b), the owner or operator of a landfill which accepts untreated contaminated unconsolidated material having an average organic compound concentration exceeding 250 mg/kg in accordance with this section shall maintain records in accordance with s. NR 506.17 and the following:

(a) Records shall be maintained of the volume of materials received, the average organic compound concentration, the average benzene concentration, and the location for each site from which untreated petroleum contaminated soil is accepted at the landfill.

(b) Records shall be maintained on an on-going basis and summarized annually of the accumulated total pounds of organic compounds and accumulated pounds of benzene accepted in untreated petroleum contaminated soils at the landfill. The department may waive this requirement if an alternative air monitoring program for VOC emissions is approved by the department in accordance with ch. NR 419.

(c) The tonnage records of untreated petroleum contaminated soil accepted annually shall be summarized and submitted with the annual tonnage certification report as required by s. NR 520.14 (4).

**History:** Cr., Register, June, 1996, No. 486, eff. 7-1-96; am. (4) (c), Register, August, 1997, No. 500, eff. 9-1-97.

**NR 506.11 Infectious waste.** No person may accept infectious waste at a solid waste disposal facility unless the requirements of s. NR 526.13 have been met.

**History:** Cr. Register, January, 1988, No. 385, eff. 2-6-88; am. Register, October, 1994, No. 466, eff. 11-1-94.

**NR 506.12 Ultra low-level radioactive waste.** No person may dispose of ultra low-level radioactive waste at a landfill except in accordance with the following:

**(1) LANDFILL CRITERIA.** Only landfills meeting the following criteria may accept ultra low-level radioactive waste for disposal:

(a) The landfill shall be a licensed and approved landfill as defined in s. 289.01 (3), Stats.

(b) The landfill shall be approved by the department in writing to accept ultra low-level radioactive waste.

**(2) GENERAL REQUIREMENTS.** The following criteria also apply to landfills proposing to accept ultra low-level radioactive waste:

(a) Sludge wastes shall meet the requirements contained in s. NR 506.13 or 506.14, as appropriate.

(b) A plan shall be submitted which addresses the control of any radon gas which may be generated by the waste.

**History:** Cr. Register, January, 1988, No. 385, eff. 2-6-88; am. (intro.), (1) (a), (b), (2) (intro.), Register, June, 1996, No. 486, eff. 7-1-96.

**NR 506.13 Free liquids wastes. (1) SMALL QUANTITY EXEMPTION.** An owner or operator of a solid waste landfill used for the disposal of municipal solid waste may not accept containers holding liquid waste unless:

(a) The container is small and similar in size to that normally found in household waste;

(b) The container is designed to hold liquids for use other than storage;

(c) It is not practicable to recycle the container or the material contained; or

(d) The waste is household waste.

**(2) MUNICIPAL SOLID WASTE DISPOSAL FACILITIES.** Solid waste landfills used for the disposal of municipal solid waste may not accept waste containing free liquids except as provided in sub. (1) or unless the landfill has received approval from the department to recirculate leachate or gas condensate derived from the landfill. Recirculation of leachate or gas condensate will be considered only for landfill phases designed with a composite liner and efficient leachate collection system.

**(3) FACILITIES THAT DO NOT ACCEPT MUNICIPAL SOLID WASTE.** An owner or operator of any landfill that does not accept municipal solid waste may accept waste containing free liquids only in accordance with plans approved by the department in writing.

**History:** Cr. Register, January, 1988, No. 385, eff. 2-6-88; am. (1), (2), (3), cr. (1) (a) to (d), Register, June, 1996, No. 486, eff. 7-1-96.

**NR 506.14 Non-free liquid solid wastes. (1) SMALL QUANTITY EXEMPTION.** An owner or operator of a solid waste landfill used for the disposal of municipal solid waste may accept sludge wastes amounting to less than 50 cubic yards per year per generator provided that the material is tested and determined to be non-hazardous, the criteria contained in sub. (2) (a) to (c) are complied with and the department is notified and provided with all testing information prior to disposal. The department may require additional information if deemed necessary.

**(2) MUNICIPAL SOLID WASTE DISPOSAL LANDFILLS.** An owner or operator of a solid waste landfill used for the disposal of municipal solid waste may not accept sludge wastes for disposal unless the small quantity exemption requirements provided in sub. (1) are met, or unless all of the following criteria are complied with:

(a) The landfill shall be a licensed and approved landfill under s. 289.01 (3), Stats.

(b) The proposed landfill shall be in compliance with all solid waste regulations and any plan of operation approval.

(c) The material has been tested and determined not to contain free liquids.

(d) A report has been submitted to and approved by the department which addresses the physical and chemical characteristics of the waste including the percent solids; the weight and volume of material produced; the frequency of waste generation; the amount of additional liquid which would be added over a specified time frame; methods for handling the additional gas generation and any proposed changes to the groundwater, surface water, unsaturated zone or leachate monitoring programs.

(e) An annual report is submitted which documents the daily mixing ratios of each sludge waste to municipal solid waste on both a weight and volume basis and any operational problems.

**(3) OTHER FACILITIES.** An owner or operator of any waste disposal facility other than a municipal solid waste landfill may accept sludge which does not contain free liquids only in accordance with plans approved by the department.

**History:** Cr. Register, January, 1988, No. 385, eff. 2-6-88; am. (1), (2) (intro.), (a), (b), (d), (e), (3), Register, June, 1996, No. 486, eff. 7-1-96.

**NR 506.15 Management of residue produced by burning municipal solid waste.** **(1) GENERAL.** No person may operate or maintain a landfill for the disposal of residue produced by the burning of municipal solid waste, except in accordance with this section and the written approval of the department.

**(2) LANDFILL CRITERIA.** Only landfills meeting the following criteria may accept municipal solid waste combustor residue for disposal:

(a) The landfill shall be a licensed and approved landfill as defined in s. 289.01 (3), Stats. The department may grant an exemption to this provision if the landfill owner or operator can demonstrate substantial compliance with the design criteria in s. NR 504.11.

(b) The landfill shall be approved by the department in writing prior to accepting residue from each municipal solid waste combustor source. The landfill may accept only residue from municipal solid waste combustors designated in the municipal solid waste combustor residue disposal plan included in the initial plan of operation approval or a modification to the original approval granted under s. NR 514.07 (5).

(c) The landfill area used for disposal shall be designed and constructed, at a minimum, as a composite lined monofill meeting the requirements of s. NR 504.11 (2) (a). Operators of medical waste combustors with a design capacity of less than 10 tons per day may apply to the department for a written exemption to this requirement. All municipal solid waste combustor residue that meets or exceeds the test limits specified in s. NR 502.13 (6) (g) or subsequent confirmation testing as specified in s. NR 502.13 (6) (h), and is not subsequently treated to below those limits, may not be disposed of in a municipal solid waste landfill and shall be managed in accordance with chs. NR 600 to 690.

(d) The landfill shall maintain a storm water control system approved by the department.

(e) The landfill shall maintain access control to the landfill.

**(3) OPERATIONAL REQUIREMENTS.** No person may operate or maintain a new or existing landfill that accepts residue produced by the burning of municipal solid waste except in conformance with all provisions of a municipal solid waste residue disposal plan approved under s. NR 514.07 (5), the applicable portions of s. NR 506.07 and the following minimum requirements:

(a) Wind blown material shall be prevented.

(b) Cover soil shall be used during filling operations to restrict the exposed residue area of disposal to as small an area as practical. In no case may the exposed residue area be larger than 50 feet by 100 feet unless otherwise approved by the department.

(c) The residue shall be covered with a minimum of 6 inches of soil at the end of daily operations for each day residue was accepted unless an alternative method is approved by the department under par. (e).

(d) Filled areas, other than the active residue disposal area, shall be covered with soil or a department approved soil substitute such as foundry sand.

(e) The department may approve alternatives to daily cover such as water or foam if it can be demonstrated that the residue will not become windblown.

(f) Equipment operators shall be provided with appropriate safety equipment, such as respirators.

(g) Only residue that has been tested in accordance with s. NR 502.14 (8) may be accepted.

**History:** Cr. Register, May, 1992, No. 437, eff. 6-1-92; am. (1), (2) (intro.), (a), (b), (3) (intro.), (e), cr. (2) (c) to (e), Register, June, 1996, No. 486, eff. 7-1-96.

**NR 506.155 Very small quantities of hazardous waste.** No person may accept hazardous waste from very small quantity generators excluded from regulation under s. NR 610.07, except in accordance with this section and the written approval of the department.

**(1) LANDFILL CRITERIA.** No person may accept hazardous waste from very small quantity generators for disposal at a landfill unless all the following criteria are met:

(a) The landfill is a licensed and approved landfill as defined in s. 289.01 (3), Stats.;

(b) The landfill is in compliance with all solid waste regulations and any plan approval; and

(c) The landfill is in compliance with the minimum design criteria specified in s. NR 504.05.

**(2) GENERAL REQUIREMENTS.** No person may accept hazardous waste from very small quantity generators for disposal in a solid waste landfill unless:

(a) The person has obtained written approval under s. NR 506.09 and complies with all conditions of the approval;

(b) The person submits annual reports to the department no later than April 1 of the following year which document the types and quantities of hazardous waste accepted during the previous year, the generators and transporters of the waste and any other information required by the department; and

(c) The person has paid the waste management fund fees specified in s. 289.62, Stats., for all hazardous waste quantities accepted.

**History:** Cr. Register, January, 1991, No. 421, eff. 2-1-91; renum. from NR 506.15, Register, May, 1992, No. 437, eff. 6-1-92; am. (intro.), (1), (2) (intro.), Register, June, 1996, No. 486, eff. 7-1-96.

**NR 506.16 Procedures for excluding the receipt of waste not specifically approved for acceptance at the landfill.** Owners and operators of landfills that accept municipal solid waste shall implement a program at the landfill for detecting and preventing the disposal of waste not specifically approved for acceptance including but not limited to liquids, sludges, regulated hazardous waste and PCB waste. The program shall include the following:

**(1) RANDOM INSPECTIONS OF INCOMING LOADS.** Random inspections shall be made of every incoming load of solid waste unless the owner or operator receives approval in writing from the department to take other steps to insure that incoming loads do not contain wastes not specifically approved for acceptance.

(a) Inspections shall be conducted on every 5,000 tons of solid waste accepted or one inspection per month, whichever is more frequent. No more than one inspection per week is required. An owner or operator of a landfill which accepts less than 10,000 tons per year of solid waste and demonstrates adequate justification for less frequent inspections may be approved by the department for a minimum of 4 inspections per year. To assure that the inspections are random, the first truckload which exceeds the accumulated total of 5,000 tons of solid waste shall be selected for inspection. Alternate methods of assuring random selection may be approved by the department.

(b) The inspection shall involve discharging the waste load and viewing its contents in an area that clearly segregates the waste from all other solid wastes and is capable of controlling any potentially hazardous waste prior to disposal of the waste.

**(2) RECORDS OF INSPECTIONS.** Records of the random load inspections shall include the following information:

(a) The date and time solid wastes were received.

(b) The names of the firm transporting the solid waste and the driver of the vehicle.

(c) The vehicle's license plate and the transporter's Wisconsin solid waste license number.

(d) The community or communities where the solid waste was generated.

(e) The type or types of waste such as commercial, industrial, residential or any combination.

(f) The name of the certified facility manager or certified site operator inspecting the load.

(g) All of the observations made by the inspector, including any actions taken to manage or return nonapproved waste or actions taken if extreme toxicity or hazard is discovered.

**(3) TRAINING OF LANDFILL PERSONNEL TO RECOGNIZE WASTE NOT APPROVED FOR ACCEPTANCE.** Landfill personnel shall be trained in accordance with ch. NR 524 to recognize waste not approved for acceptance.

**(4) NOTIFICATION IF A WASTE NOT APPROVED FOR ACCEPTANCE IS DISCOVERED AT THE LANDFILL.** The owner or operator of the facility shall notify the department's district or area solid waste management specialist in writing within 15 days if non-hazardous waste not approved for acceptance is discovered at the landfill. If waste not approved for acceptance is discovered and is suspected of being hazardous or containing PCBs at a concentration of 50 ppm or greater, the owner or operator of the facility shall notify the department's district or area solid waste and hazardous waste management specialists in writing within 2 days.

**(5) REJECTION OF WASTE NOT APPROVED FOR ACCEPTANCE.** Waste which is not approved for acceptance at the landfill shall be rejected. The waste shall be handled in accordance with all applicable regulations including but not limited to transportation, storage, treatment and disposal.

**History:** Cr., Register, June, 1996, No. 486, eff. 7-1-96.

**NR 506.17 Record keeping.** The owner or operator of a landfill that accepts municipal solid waste shall maintain a written operating record at the landfill during the operating life and 40 year long-term care period of the landfill. The department may approve an alternate location for maintaining the record. The record shall contain information on any landfill location criterion restriction, inspection records, training procedures, notification procedures, closure and post closure plans and financial responsibility, and all demonstrations, certifications, findings, monitoring, testing and analytical data required under chs. NR 500 to 536. Random load inspection records shall be maintained for a minimum of 3 years. The operating record shall be made available to the department upon request.

**History:** Cr., Register, June, 1996, No. 486, eff. 7-1-96.

**NR 506.18 Enforcement.** The department may deny, suspend or revoke the operating license of a solid waste disposal facility as provided in s. 289.31 (1), Stats., for failure to pay fees required under ss. ch. 289, Stats., or for grievous and continuous failure to comply with the approved plan of operation under s. 289.30, Stats., or, if no plan of operation exists with regard to the landfill, for grievous and continuous failure to comply with any requirement of chs. NR 500 to 538. Any failure to comply with any such requirement or condition on 5 or more days within any 30 successive calendar days and which consists of action or inaction which may cause pollution as defined in s. 281.01 (10), Stats., or which may otherwise create nuisance conditions, is a grievous and continuous failure to comply with the requirement or condition.

**History:** Cr. Register, January, 1988, No. 385, eff. 2-6-88; renum. from NR 506.15, Register, January, 1991, No. 421, eff. 2-1-91; renum. from NR 506.16 and am., Register, June, 1996, No. 486, eff. 7-1-96; am., Register, December, 1997, No. 504, eff. 1-1-98.

**NR 506.19 Landfill compliance certifications and audits. (1) COMPLIANCE CERTIFICATION.**

No later than March 31 of each year and continuing until otherwise specified by the department, the owner or operator of any licensed landfill which is in operation as of July 1, 1996, or any licensed, closed landfill with an approved total design capacity exceeding 1,000,000 cubic yards shall prepare and submit to the department a compliance certification. The certification, shall be prepared and signed by the owner or operator of the landfill, certified facility manager, solid waste manager or person most directly responsible for the landfill's day to day operation. The signer shall certify that he or she is aware of all approved plans for the landfill, all department conditions of approval, and all applicable solid waste statutory and administrative rules, and that to the best of the signer's knowledge, information and belief, the landfill is or is not in substantial compliance with all approved plans and requirements. For landfills which are in full compliance, no narrative is required beyond the certification statement. For other landfills, all known areas of noncompliance shall be clearly indicated. This subsection does not impose personal liability upon certified facility managers or certified site operators.

**(2) AUDITS.** As specified under s. 289.91, Stats., the department may perform audits of any landfill. Following a minimum 30-day advance notification, the landfill owner or operator shall ensure that during the period of the audit, a conference room or adequate office space is provided for department personnel, and that proper technical personnel representing the owner are present to respond to department inquiries regarding the landfill. The owner or operator shall also ensure that any of the information in pars. (a) to (j) or any other information specified by the department in its audit notification letter is available in an organized fashion for the department to review. The owner or operator shall provide copies of requested information for the department to take with them following the audit. If requested by the department, the owner, operator or their representatives shall present the requested information to the department during the audit and also participate in an inspection of any aspects of the landfill which the department requests. The owner or operator shall provide the department with access to all items or areas of the landfill which are related to landfill performance or to compliance with approved plans, solid waste administrative rules or statutes.

(a) One or more full-sized plan view drawings clearly annotated to show the following:

1. The portions of the landfill which currently are receiving solid waste;
2. All portions of the landfill which have been filled, but have not yet been brought to approved final grades;
3. All portions of the landfill which have been filled to approved final grade and the extent to which the final cover system has been placed;
4. All portions of the landfill which currently are undergoing development or closure;
5. All portions of the landfill which have yet to be developed; and
6. Any areas which have been filled above approved final grades or beyond the approved limits of filling.

(b) Calculations based on the most recent topographic survey which show the design capacity volume which has been filled, the remaining design capacity volume, and the estimated remaining site life. All assumptions used in the calculation of estimated remaining site life shall be provided. If the currently estimated remaining site life is one or more years less than that assumed in the latest long-term care calculations, changes shall be evaluated and proposed to the annual long-term care inpayment required to be made by owners using escrow accounts, trusts or deposits with

the department to provide proof of financial responsibility for long-term care.

(c) Plan view drawings or sketches documenting each leachate collection line cleaning and leachate transfer line pressure testing event. Separate drawings or sketches shall be submitted for each event, with each drawing using as a base the landfill's entire leachate collection and transfer piping system. If legibility is not compromised, these drawings may be 11-inch by 18-inch pull-out drawings.

(d) For landfills which have not been required to begin a formal ch. NR 140 investigation, but which have experienced over the past 3 year reporting period: an ES exceedance; more than 2 PAL exceedances for the same parameter at the same well; or results where the average of all data for a parameter at a well exceeds a PAL, a summary of all groundwater data collected to date for the well or wells which have experienced the results presented graphically using either time versus concentration graphs or box plots.

(e) An evaluation of the performance of the leachate collection and removal system which shall include graphed results of monthly leachate removal volumes from the beginning of filling at the landfill to the end of the current calendar year. Leachate volume data shall be graphed separately for each leachate collection tank or lift station. Leachate removal volumes shall also be graphed as a depth over the area of liner which has been constructed at a given point in time. Graphs shall note when each phase or portion thereof was constructed or closed. Monthly leachate data shall be annualized by multiplying by 12 and reported in units of inches per year. All leachate quality data for BOD or COD, including that regularly performed at the request of wastewater treatment facilities, shall be presented graphically. Graphs of monthly average BOD or COD in mg/l shall be presented as well as pounds of BOD or COD removed per month

from the facility. Also included shall be a tabulation of all past monthly leachate removal volumes and average BOD or COD concentrations.

(f) Graphs of leachate head conditions on the liner and trends with time shall be reported. Where lysimeters or gradient control systems are present under the liner, fluid collection quantity and quality data shall also be tabulated.

(g) Graphs and tables evaluating the performance of the gas extraction system over the previous 3 years including: the volume of gas removed and average methane concentration to be presented on a no less frequent basis than quarterly; the condition of each gas extraction well and identification of any wells which need to be replaced or that have been replaced; a summary of the hours of operation and down time of the gas recovery plant or blower; and a summary of any exceedances of the lower explosive limit of any gasses detected in gas monitoring wells located outside the limits of waste. This information shall also be presented graphically to the extent possible.

(h) An evaluation of settlement which the landfill has undergone, and any evidence of surface water ponding, poor drainage, differential settlement, erosion or other disruption of the final cover structure.

(i) An evaluation of the integrity of the vegetation on the final covered or interim-covered areas, integrity of the final cover, summary of erosion control efforts, surface stabilization efforts and any evidence of animal intrusion.

(j) Where applicable, a summary of the occurrences of liquids in secondary containment systems for leachate drain lines, condensate drain lines, manholes, collection tanks and lift stations and any corrective measures taken or proposed in response to the presence of liquids.

**History:** Cr., Register, June, 1996, No. 486, eff. 7-1-96.