

ILLINOIS POLLUTION CONTROL BOARD
August 17, 1990

IN THE MATTER OF:)
)
DEVELOPMENT, OPERATING, AND) R88-7
REPORTING REQUIREMENTS FOR) (Rulemaking)
NON-HAZARDOUS WASTE LANDFILLS)

ORDER OF THE BOARD (by J. Anderson):

The Board hereby adopts the following rules pursuant to Section 5, 21, 21.1, 22, 22.17, and 27 of the Environmental Protection Act, Ill. Rev. Stat. 1989, ch. 111½, pars. 1005, 1021, 1021.1, 1022, 1022.17, and 1027. A discussion of the adopted rules and the entire history of this proceeding appears in a separate Opinion of this same date.

The Board hereby directs the Clerk of the Board to cause a copy of the adopted rules, together with all necessary supporting documents, to be filed with the Secretary of State and published in the Illinois Register.

J. Dumelle and B. Forcade concurred.

IT IS SO ORDERED.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, do hereby certify that the above Order was adopted on the 17th day of August, 1990, by a vote of 6-0.

Dorothy M. Gunn, Clerk
Dorothy M. Gunn, Clerk
Illinois Pollution Control Board

TITLE 35: ENVIRONMENTAL PROTECTION
 SUBTITLE G: WASTE DISPOSAL
 CHAPTER I: POLLUTION CONTROL BOARD
 SUBCHAPTER i: SOLID WASTE AND SPECIAL WASTE HAULING

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AUTHORITY: Implementing Sections 5, 21.1 and 22 and authorized by Section 27 of the Environmental Protection Act (Ill. Rev. Stat. 1989, ch. 111 1/2, pars. 1005, 1021.1, 1022 and 1027).

SOURCE: Adopted as an emergency rule and filed with the Secretary of State July 27, 1973; amended at 2 Ill. Reg. 16, p. 3, effective April 10, 1978; codified at 7 Ill. Reg. 13636; recodified from Subchapter h to Subchapter i at 8 Ill. Reg. 13198; emergency amendment in R84-22A at 9 Ill. Reg. 741, effective January 3, 1985 for a maximum of 150 days; amended in R84-22B at 9 Ill. Reg. 6722, effective April 29, 1985; amended in R84-22C at 9 Ill. Reg. 18942, effective November 25, 1985; amended in R88-7 at 14 Ill. Reg. , effective

NOTE: Capitalization denotes statutory language.

SUBPART A: GENERAL PROVISIONS

Section 807.105 Relation to Other Rules

- a) Persons and facilities regulated pursuant to 35 Ill. Adm. Code 700 through 749 are not subject to the requirements of this Part or of 35 Ill. Adm. Code 811 through 815. However, if such a facility also contains one or more units used solely for the disposal of solid wastes, as defined in 35 Ill. Adm. Code 810.103, such units are subject to requirements of this Part and 35 Ill. Adm. Code 811 through 815.
- b) Persons and facilities subject to 35 Ill. Adm. Code 807, 809 or 811 through 815 may be subject to other applicable Parts of 35 Ill. Adm. Code: Chapter I based on the language of those other Parts. Specific examples of such applicability are provided as explained at 35 Ill. Adm. Code 700.102.
- c) The requirements of 35 Ill. Adm. Code 810 through 815 are intended to supersede the requirements of this Part. Persons and facilities regulated pursuant to 35 Ill. Adm. Code 810 through 815 are not subject to the requirements of this Part. This Part does not apply to new units as defined in 35 Ill. Adm. Code 810.103.

(Source: Added at 14 Ill. Reg. , effective
)

TITLE 35: ENVIRONMENTAL PROTECTION
 SUBTITLE G: WASTE DISPOSAL
 CHAPTER I: POLLUTION CONTROL BOARD
 SUBCHAPTER i: SOLID WASTE AND SPECIAL WASTE HAULING

PART 810
 SOLID WASTE DISPOSAL: GENERAL PROVISIONS

Section	
810.101	Scope and Applicability
810.102	Severability
810.103	Definitions
810.104	Incorporations by Reference

AUTHORITY: Implementing Sections 5, 21, 21.1, 22 and 22.17, and authorized by Section 27 of the Environmental Protection Act (Ill. Rev. Stat. 1989, ch. 111 1/2, pars. 1005, 1021, 1021.1, 1022, 1022.17 and 1027).

SOURCE: Adopted in R88-7 at 14 Ill. Reg. , effective

NOTE: Capitalization indicates statutory language.

Section 810.101 Scope and Applicability

This Part applies to all solid waste disposal facilities regulated pursuant to 35 Ill. Adm. Code 811 through 815. This Part does not apply to hazardous waste management facilities regulated pursuant to 35 Ill. Adm. Code 700 through 750.

Section 810.102 Severability

If any provision of this Part or of 35 Ill. Adm. Code 811 through 815 or its application to any person or under any circumstances is adjudged invalid, such adjudication shall not affect the validity of this Part or of 35 Ill. Adm. Code 811 through 815 as a whole or of any portion not adjudged invalid.

Section 810.103 Definitions

Except as stated in this Section, or unless a different meaning of a word or term is clear from the context, the definition of words or terms in this Part shall be the same as that applied to the same words or terms in the Environmental Protection Act (Act) (Ill. Rev. Stat. 1989, ch. 111 1/2, pars. 1001 et. seq.):

"Act" means the Environmental Protection Act, Ill. Rev. Stat. 1989, ch. 111 1/2, pars. 1001 et. seq.

"AGENCY" IS THE ENVIRONMENTAL PROTECTION AGENCY ESTABLISHED BY THE ENVIRONMENTAL PROTECTION ACT.

(Section 3.08 of the Act.)

"Admixtures" are chemicals added to earth materials to improve for a specific application the physical or chemical properties of the earth materials. Admixtures include, but are not limited to: lime, cement, bentonite and sodium silicate.

"Applicant" means the person, submitting an application to the Agency for a permit for a solid waste disposal facility.

"AQUIFER" MEANS SATURATED (WITH GROUNDWATER) SOILS AND GEOLOGIC MATERIALS WHICH ARE SUFFICIENTLY PERMEABLE TO READILY YIELD ECONOMICALLY USEFUL QUANTITIES OF WATER TO WELLS, SPRINGS, OR STREAMS UNDER ORDINARY HYDRAULIC GRADIENTS and whose boundaries can be identified and mapped from hydrogeologic data. (Section 3 of the Groundwater Protection Act (Ill. Rev. Stat. 1989, ch. 111 1/2, par. 7453).)

"Bedrock" means the solid rock formation immediately underlying any loose superficial material such as soil, alluvium or glacial drift.

"BOARD" IS THE POLLUTION CONTROL BOARD ESTABLISHED BY THE ACT. (Section 3.04 of the Act.)

"Borrow area" means an area from which earthen material is excavated for the purpose of constructing daily cover, final cover, a liner, a gas venting system, roadways or berms.

"Chemical waste" means a non-putrescible solid whose characteristics are such that any contaminated leachate is expected to be formed through chemical or physical processes, rather than biological processes, and no gas is expected to be formed as a result.

"Contaminated leachate" means any leachate whose constituent violate the standards of 35 Ill. Adm. Code 811.202.

"Design Period" means that length of time determined by the sum of the operating life of the solid waste landfill facility plus the postclosure care period necessary to stabilize the waste in the units.

"DISPOSAL" MEANS THE DISCHARGE, DEPOSIT, INJECTION, DUMPING, SPILLING, LEAKING OR PLACING OF ANY SOLID WASTE INTO OR ON ANY LAND OR WATER OR INTO ANY WELL SUCH THAT SOLID WASTE OR ANY CONSTITUENT OF THE SOLID

WASTE MAY ENTER THE ENVIRONMENT BY BEING EMITTED INTO THE AIR OR DISCHARGED INTO ANY WATERS, INCLUDING GROUNDWATER. (Section 3.08 of the Act.) If the solid waste is accumulated and not confined or contained to prevent its entry into the environment, or there is no certain plan for its disposal elsewhere, such accumulation shall constitute disposal.

"Disturbed areas" means those areas within a facility that have been physically altered during waste disposal operations or during the construction of any part of the facility.

"Documentation" means items, in any tangible form, whether directly legible or legible with the aid of any machine or device, including but not limited to affidavits, certificates, deeds, leases, contracts or other binding agreements, licenses, permits, photographs, audio or video recordings, maps, geographic surveys, chemical and mathematical formulas or equations, mathematical and statistical calculations and assumptions, research papers, technical reports, technical designs and design drawings, stocks, bonds and financial records, that are used to support facts or hypotheses.

"Earth liners" means structures constructed from naturally occurring soil material that has been compacted to achieve a low permeability.

"Existing facility" or "Existing unit" means a facility or unit which is not defined in this Section as a new facility or a new unit.

"Facility" means a site and all equipment and fixtures on a site used to treat, store or dispose of solid or special wastes. A facility consists of an entire solid or special waste treatment, storage or disposal operation. All structures used in connection with or to facilitate the waste disposal operation shall be considered a part of the facility. A facility may include, but is not limited to, one or more solid waste disposal units, buildings, treatment systems, processing and storage operations, and monitoring stations.

"Field capacity" means that maximum moisture content of a waste, under field conditions of temperature and pressure, above which moisture is released by gravity drainage.

"Gas collection system" means a system of wells,

trenches, pipes and other related ancillary structures such as manholes, compressor housing, and monitoring installations that collects and transports the gas produced in a putrescible waste disposal unit to one or more gas processing points. The flow of gas through such a system may be produced by naturally occurring gas pressure gradients or may be aided by an induced draft generated by mechanical means.

"Gas condensate" means the liquid formed as a landfill gas is cooled or compressed.

"Gas venting system" means a system of wells, trenches, pipes and other related structures that vents the gas produced in a putrescible waste disposal unit to the atmosphere.

"Geomembranes" means manufactured membrane liners and barriers of low permeability used to control the migration of fluids or gases.

"Geotextiles" are permeable manufactured materials used for purposes which include, but are not limited to, strengthening soil, providing a filter to prevent clogging of drains, collecting and draining liquids and gases beneath the ground surface.

"GROUNDWATER" MEANS UNDERGROUND WATER WHICH OCCURS WITHIN THE SATURATED ZONE AND WITHIN GEOLOGIC MATERIALS WHERE THE FLUID PRESSURE IN THE PORE SPACE IS EQUAL TO OR GREATER THAN ATMOSPHERIC PRESSURE. (Section 3 of the Illinois Groundwater Protection Act)

"Hydraulic barriers" means structures designed to prevent or control the seepage of water. Hydraulic barriers include, but are not limited to cutoff walls, slurry walls, grout curtains and liners.

"Inert waste" means any solid waste that will not decompose biologically, burn, serve as food for vectors, form a gas, cause an odor, or form a contaminated leachate, as determined in accordance with Section 811.202(b). Such inert wastes shall include only non-biodegradable and non-putrescible solid wastes. Inert wastes may include, but are not limited to, bricks, masonry and concrete (cured for 60 days or more).

"Land application unit" means an area where wastes are agronomically spread over or disked into land or otherwise applied so as to become incorporated into the soil surface. For the purposes of this Part and 35

Ill. Adm. Code 811 through 815, a land application unit is not a landfill; however, other Parts of 35 Ill. Adm. Code: Chapter I may apply, and may include the permitting requirements of 35 Ill. Adm. Code 309.

"Landfill" means a unit or part of a facility in or on which waste is placed and accumulated over time for disposal, and which is not a land application unit, a surface impoundment or an underground injection well. For the purposes of this Part and 35 Ill. Adm. Code 811 through 815, landfills include waste piles, as defined in this Section.

"Leachate" means liquid that has been or is in direct contact with a solid waste.

"Lift" means an accumulation of waste which is compacted into a unit and over which cover is placed.

"Malodor" means an odor caused by ONE OR MORE CONTAMINANT EMISSIONS INTO THE ATMOSPHERE FROM A FACILITY THAT IS IN SUFFICIENT QUANTITIES AND OF SUCH CHARACTERISTICS AND DURATION AS TO BE described as malodorous and which may be INJURIOUS TO HUMAN, PLANT, OR ANIMAL LIFE, TO HEALTH, OR TO PROPERTY, OR TO UNREASONABLY INTERFERE WITH THE ENJOYMENT OF LIFE OR PROPERTY. (Section 3.02 of the Act (defining "air pollution").)

"National Pollutant Discharge Elimination System" or "NPDES" means the program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits and imposing and enforcing pretreatment requirements under the Clean Water Act (33 U.S.C. 1251 et seq.), Section 12(f) of the Environmental Protection Act and 35 Ill. Adm. Code 309.Subpart A and 310. "NPDES permit" means a permit issued under the NPDES program.

"New facility" or "New unit" means a solid waste landfill facility or a unit at a facility, if one or more of the following conditions apply:

It is a landfill or unit exempt from permit requirements pursuant to Section 21(d) of the Act that has not yet accepted any waste as of the effective date of this Part;

It is a landfill or unit not exempt from permit requirements pursuant to Section 21(d) of the Act that has no development or operating permit issued by the Agency pursuant to 35 Ill. Adm. Code 807 as

of the effective date of this Part; or

It is a landfill with a unit whose maximum design capacity or lateral extent is increased after the effective date of this Part.

BOARD NOTE: A new unit located in an existing facility shall be considered a unit subject to 35 Ill. Adm. Code 814, which references applicable requirements of 35 Ill. Adm. Code 811.

"One hundred (100) year flood plain" means any land area which is subject to a one percent or greater chance of flooding in a given year from any source.

"One hundred (100) year, 24 hour precipitation event" means a precipitation event of 24 hour duration with a probable recurrence interval of once in 100 years.

"Operator" means the person responsible for the operation and maintenance of a solid waste disposal facility.

"Perched watertable " means an elevated watertable above a discontinuous saturated lens, resting on a low permeability (such as clay) layer within a high permeability (such as sand) formation.

"Permit area" means the entire horizontal and vertical region occupied by a permitted solid waste disposal facility.

"PERSON" IS ANY INDIVIDUAL, PARTNERSHIP, CO-PARTNERSHIP, FIRM, COMPANY, CORPORATION, ASSOCIATION, JOINT STOCK COMPANY, TRUST, ESTATE, POLITICAL SUBDIVISION, STATE AGENCY, OR ANY OTHER LEGAL ENTITY, OR THEIR LEGAL REPRESENTATIVE, AGENT OR ASSIGNS.
(Section 3.26 of the Act.)

"Professional engineer" means a person who has registered and obtained a seal pursuant to "The Illinois Professional Engineering Act" (Ill. Rev. Stat. 1989, ch. 111, par. 5101 et seq.).

"Professional land surveyor" means a person who has received a certificate of registration and a seal pursuant to "The Land Surveyors Act" (Ill. Rev. Stat. 1989, ch. 111, par. 3201 et seq.).

"Putrescible waste" means a solid waste that contains organic matter capable of being decomposed by microorganisms so as to cause a malodor, gases, or other offensive conditions, or which is capable of

providing food for birds and vectors. Putrescible wastes may form a contaminated leachate from microbiological degradation, chemical processes, and physical processes. Putrescible waste includes, but is not limited to, garbage, offal, dead animals, general household waste, and commercial waste. All solid wastes which do not meet the definitions of inert or chemical wastes shall be considered putrescible wastes.

"Publicly owned treatment works" or "POTW" means a treatment works that is owned by the State of Illinois or a unit of local government. This definition includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastewater. It also includes sewers, pipes and other conveyances only if they convey wastewater to a POTW treatment plant. The term also means the unit of local government which has jurisdiction over the indirect discharges to and the discharges from such a treatment works.

"Recharge zone" means an area through which water can enter an aquifer.

"Responsible charge," when used to refer to a person, means that the person is normally present at a waste disposal site; directs the day-to-day overall operation at the site; and either is the owner or operator or is employed by or under contract with the owner or operator to assure that the day-to-day operations at the site are carried out in compliance with any Part of 35 Ill. Adm. Code: Chapter I governing operations at waste disposal sites.

"Runoff" means water resulting from precipitation that flows overland before it enters a defined stream channel, any portion of such overland flow that infiltrates into the ground before it reaches the stream channel, and any precipitation that falls directly into a stream channel.

"Salvaging" means the return of waste materials to use, under the supervision of the landfill operator, so long as the activity is confined to an area remote from the operating face of the landfill, it does not interfere with or otherwise delay the operations of the landfill, and it results in the removal of all materials for salvaging from the landfill site daily or separates them by type and stores them in a manner that does not create a nuisance, harbor vectors or cause an unsightly appearance.

"Scavenging" means the removal of materials from a solid waste management facility or unit which is not salvaging.

"Seismic Slope Safety Factor" means the ratio between the resisting forces or moments in a slope and the driving forces or moments that may cause a massive slope failure during an earthquake or other seismic event such as an explosion.

"Settlement" means subsidence caused by waste loading, changes in groundwater level, chemical changes within the soil and adjacent operations involving excavation.

"Shredding" means the mechanical reduction in particle sizes of solid waste. Putrescible waste is considered shredded if 90 percent of the waste by dry weight passes a 3 inch sieve.

"Significant Modification" means a modification to an approved permit issued by the Agency in accordance with Section 39 of the Act and 35 Ill. Adm. Code 813 that is required when one or more of the following changes, considered significant when that change measured by one or more parameters whose values lie outside the expected operating range of values as specified in the permit, are planned, occur or will occur:

An increase in the capacity of the waste disposal unit over the permitted capacity;

Any change in the placement of daily, intermediate or final cover;

A decrease in performance, efficiency or longevity of the liner system;

A decrease in efficiency or performance of the leachate collection system;

A change in configuration, performance, or efficiency of the leachate management system;

A change in the final disposition of treated effluent or in the quality of the discharge from the leachate treatment or pretreatment system;

Installation of a gas management system, or a decrease in the efficiency or performance of an existing gas management system;

A change in the performance or operation of the

surface water control system;

A decrease in the quality or quantity of data from any environmental monitoring system;

A change in the applicable background concentrations or the maximum allowable predicted concentrations;

A change in the design or configuration of the regraded area after development or after final closure;

A change in the amount or type of postclosure financial assurance;

Any change in the permit boundary;

A change in the postclosure land use of the property;

A remedial action necessary to protect groundwater;

Transfer of the permit to a new operator;

Operating authorization is being sought to place into service a structure constructed pursuant to a construction quality assurance program; or

A change in any requirement set forth as a special condition in the permit.

"Sole source aquifer" means those aquifers designated pursuant to Section 1424(e) of the Safe Drinking Water Act of 1974, (42 U.S.C 300h-3).

"Solid Waste" means a waste that is defined in this Section as an inert waste, as a putrescible waste, as a chemical waste or as a special waste, and which is not also defined as a hazardous waste pursuant to 35 Ill. Adm. Code 721.

"SPECIAL WASTE" MEANS ANY INDUSTRIAL PROCESS WASTE, POLLUTION CONTROL WASTE OR HAZARDOUS WASTE, EXCEPT AS DETERMINED PURSUANT TO SECTION 22.9 OF THE ACT and 35 Ill. Adm. Code 808. (Section 3.45 of the Act.)

"Static Safety Factor" means the ratio between resisting forces or moments in a slope and the driving forces or moments that may cause a massive slope failure.

"Surface impoundment" means a natural topographic depression, a man-made excavation, or a diked area into which flowing wastes, such as liquid wastes or wastes containing free liquids, are placed. For the purposes of this Part and 35 Ill. Adm. Code 811 through 815, a surface impoundment is not a landfill. Other Parts of 35 Ill. Adm. Code: Chapter I may apply, including the permitting requirements of 35 Ill. Adm. Code 309.

"Twenty-five (25) year, 24 hour precipitation event" means a precipitation event of 24 hour duration with a probable recurrence interval of once in 25 years.

"Uppermost aquifer" means the first geologic formation above or below the bottom elevation of a constructed liner or wastes, where no liner is present, which is an aquifer, and includes any lower aquifer that is hydraulically connected with this aquifer within the facility's permit area.

"Unit" means a contiguous area used for solid waste disposal.

"Unit of local government" means a unit of local government, as defined by Article 7, Section 1 of the Illinois Constitution. A unit of local government may include, but is not limited to, a municipality, a county, or a sanitary district.

"Waste pile" means an area on which non-containerized masses of solid, non flowing wastes are placed for disposal. For the purposes of this Part and 35 Ill. Adm. Code 811 through 815, a waste pile is a landfill, unless the operator can demonstrate that the wastes are not accumulated over time for disposal. At a minimum, such demonstration shall include photographs, records or other observable or discernable information, maintained on a yearly basis, that show that within the preceding year the waste has been removed for utilization or disposed elsewhere.

"Waste stabilization" means any chemical, physical or thermal treatment of waste, either alone or in combination with biological processes, which results in a reduction of microorganisms, including viruses, and the potential for putrefaction.

"Working face" means any part of a landfill where waste is being disposed.

"Zone of attenuation" is the three dimensional region

formed by excluding the volume occupied by the waste placement from the smaller of the volumes resulting from vertical planes drawn to the bottom of the uppermost aquifer at the property boundary or 100 feet from the edge of one or more adjacent units.

Section 810.104 Incorporations by Reference

- a) The Board incorporates the following material by reference:

40 CFR 141.40 (1988).

Auditing Standards--Current Text, August 1, 1990 Edition, available through the American Institute of Certified Public Accountants, 1211 Avenue of the Americas, New York, NY 10036.

- b) This incorporation includes no later amendments or editions.

TITLE 35: ENVIRONMENTAL PROTECTION
 SUBTITLE G: WASTE DISPOSAL
 CHAPTER I: POLLUTION CONTROL BOARD
 SUBCHAPTER i: SOLID WASTE AND SPECIAL WASTE HAULING

PART 811
 STANDARDS FOR NEW SOLID WASTE LANDFILLS

SUBPART A: GENERAL STANDARDS FOR ALL LANDFILLS

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AUTHORITY: Implementing Sections 5, 21, 21.1, 22, 22.17 and 28.1 and authorized by Section 27 of the Environmental Protection Act (Ill. Rev. Stat. 1989, ch. 111 1/2, pars. 1005, 1021, 1021.1, 1022, 1022.17, 1028.1 and 1027).

SOURCE: Adopted in R88-7 at 14 Ill. Reg. , effective

NOTE: Capitalization indicates statutory language.

SUBPART A: GENERAL STANDARDS FOR ALL LANDFILLS

Section 811.101 Scope and Applicability

- a) The standards of this Part apply to all new landfills, except those regulated pursuant to 35 Ill. Adm. Code 700 through 749. Subpart A contains general standards applicable to all new landfills. Subpart B contains additional standards for new landfills which dispose of only inert wastes. Subpart C contains additional standards for new landfills which dispose of chemical and putrescible wastes.
- b) This Part shall not apply until two years after the effective date of this Part to new landfills solely receiving the following wastes generated by the following industries, provided that proposed regulations of general applicability to that industry category are filed with the Board no later than December 1, 1990: wastes generated by foundries and primary steel production facilities and coal combustion wastes generated by electric utilities. The requirements of 35 Ill. Adm. Code 807 shall apply to such landfills during the interim period of two years after the effective date of this Part. This Part shall become effective immediately after Dec. 1, 1990 if no proposal has been filed by that date.
- c) All general provisions of 35 Ill. Adm. Code 810 apply to this Part.

Section 811.102 Location Standards

- a) The facility shall meet all requirements under the Wild and Scenic Rivers Act (16 U.S.C. 1271 et seq.).
- b) The facility shall not restrict the flow of a 100-year flood, result in washout of solid waste from the 100-year flood, or reduce the temporary water storage capacity of the 100-year floodplain, unless measures are undertaken to provide alternative storage capacity, such as lagoons, holding tanks, or provision of drainage around structures at the facility.
- c) The facility shall not be located in areas where it may pose a threat of harm or destruction to the features for which an irreplaceable historic, or archaeological site was listed pursuant to the National Historic Preservation Act (16 U.S.C. 470 et seq.) or the Illinois Historic Preservation Act (Ill. Rev. Stat. 1989, ch. 127, par. 133d1 et seq.) for which a Natural Landmark was designated by the National Park Service or the Illinois State Historic Preservation Officer, or for which a natural area was designated as a Dedicated Illinois Nature Preserve pursuant to the Illinois Natural Areas Preservation Act (Ill. Rev. Stat. 1989, ch. 105 par. 701 et seq.).
- d) The facility shall not be located in areas where it may jeopardize the continued existence of any designated endangered species, result in the destruction or adverse modification of the critical habitat listed for such species, or cause or contribute to the taking of any endangered or threatened species of plant, fish or wildlife listed pursuant to the Endangered Species Act 16 U.S.C. 1531 et seq., or the Illinois Endangered Species Protection Act (Ill. Rev. Stat. 1989, ch. 8, par. 331 et seq.).
- e) The facility shall not cause a violation of Section 404 of the Clean Water Act (33 U.S.C. 1344).
- f) The facility shall not cause a violation of any requirements implementing an area-wide or statewide water quality management plan for nonpoint source pollution that has been approved under Section 208 of the Clean Water Act (33 U.S.C. 1288).

Section 811.103 Surface Water Drainage

a) Runoff From Disturbed Areas

- 1) Runoff from disturbed areas resulting from precipitation events less than or equal to the 25-year, 24-hour precipitation event that is discharged to waters of the State shall meet the requirements of 35 Ill. Adm. Code 304.
- 2) All discharges of runoff from disturbed areas to waters of the State shall be permitted by the Agency in accordance with 35 Ill. Adm. Code 309.
- 3) All treatment facilities shall be equipped with bypass outlets designed to pass the peak flow of runoff from the 100-year, 24-hour precipitation event without damage to the treatment facilities or surrounding structures.
- 4) All surface water control structures shall be operated until the final cover is placed and erosional stability is provided by the vegetative or other cover meeting the requirements of Section 811.205 or 811.322.
- 5) All discharge structures shall be designed to have flow velocities that will not cause erosion and scouring of the natural or constructed lining, i.e. the bottom and sides, of the receiving stream channel.

b) Diversion of Runoff From Undisturbed Areas.

- 1) Runoff from undisturbed areas shall be diverted around disturbed areas unless the operator shows that it is impractical based on site-specific conditions.
- 2) Diversion facilities shall be designed to prevent runoff from the 25-year, 24-hour precipitation event from entering disturbed areas.
- 3) Runoff from undisturbed areas which becomes commingled with runoff from disturbed areas shall be handled as runoff from disturbed areas and treated in accordance with subsection (a).
- 4) All diversion structures shall be designed to have flow velocities that will not cause erosion and scouring of the natural or constructed lining, i.e. the bottom and sides, of the diversion

channel and downstream channels.

- 5) All diversion structures shall be operated until the final cover is placed and erosional stability is provided by the vegetative or other cover meeting the requirements of Section 811.205 or 811.322.

Section 811.104 Survey Controls

- a) The boundaries of all waste disposal units, property boundaries, disturbed areas, and the permit area for facilities subject to the requirements of Section 21 of the Environmental Protection Act (Act) (Ill. Rev. Stat. 1989, ch. 111 1/2, par. 1021) shall be surveyed and marked by a professional land surveyor.
- b) All stakes and monuments shall be clearly marked for identification.
- c) All stakes and monuments shall be inspected annually and surveyed no less frequently than once in five years by a professional land surveyor, who shall also replace and resurvey any missing or damaged stakes and monuments discovered during an inspection.
- d) Control monuments shall be established to check vertical elevations. The control monuments shall be established and maintained by a professional land surveyor.

Section 811.105 Compaction

All wastes shall be deposited at the lowest part of the active face, and compacted to the highest achievable density necessary to minimize void space and settlement unless precluded by extreme weather conditions. The Agency may approve an alternative location for placement of wastes, if the operator demonstrates that it is required under the conditions existing at the site or for reasons of safety.

Section 811.106 Daily Cover

- a) A uniform layer of at least 0.15 meter (six inches) of clean soil material shall be placed on all exposed waste by the end of each day of operation.
- b) Alternative materials or procedures, including the removal of daily cover prior to additional waste placement, may be used, provided that the alternative materials or procedures achieve equivalent or superior performance to the requirements of subsection (a) in

the following areas:

- 1) Prevention of blowing debris;
- 2) Minimization of access to the waste by vectors;
- 3) Minimization of the threat of fires at the open face; and
- 4) Minimization of odors.

Section 811.107 Operating Standards

a) Phasing of Operations

- 1) Waste shall be placed in a manner and at such a rate that mass stability is provided during all phases of operation. Mass stability shall mean that the mass of the waste deposited will not undergo settling or slope failure that interrupts operations at the facility or causes damage to any of the various landfill operations or structures, such as the liner, leachate or drainage collection system, gas collection system or monitoring system.
- 2) The phasing of operations at the facility shall be designed in such a way as to allow the sequential construction, filling, and closure of discrete units or parts of units.
- 3) The operator shall design and sequence the waste placement operation in each discrete unit or parts of units, in conjunction with the overall operations of the facility, so as to shorten the operational phase and allow wastes to be built up to the planned final grade.

b) Size and Slope of Working Face

- 1) The working face of the unit shall be no larger than is necessary, based on the terrain and equipment used in waste placement, to conduct operations in a safe and efficient manner.
- 2) The slopes of the working face area shall be no steeper than two to one (horizontal to vertical) unless the waste is stable at steeper slopes.

c) Equipment

Equipment shall be maintained and available for use at

the facility during all hours of operation, so as to achieve and maintain compliance with the requirements of this Part.

d) Utilities

All utilities, including but not limited to heat, lights, power and communications equipment, necessary for safe operation in compliance with the requirements of this Part shall be available at the facility at all times.

e) Maintenance

The operator shall maintain and operate all systems and related appurtenances and structures in a manner that facilitates proper operations in compliance with this Part.

f) Open Burning

Open burning is prohibited except in accordance with 35 Ill. Adm. Code 200 through 245.

g) Dust Control

The operator shall implement methods for controlling dust so as to prevent wind dispersal of particulate matter.

h) Noise Control

The facility shall be designed, constructed and maintained to minimize the level of equipment noise audible outside the facility. The facility shall not cause or contribute to a violation of 35 Ill. Adm. Code 900 through 905 or of Section 24 of the Act.

i) Vector Control

The operator shall implement measures to control the population of disease and nuisance vectors.

j) Fire Protection

The operator shall institute fire protection measures including, but not limited to, maintaining a supply of water on-site and radio or telephone access to the nearest fire department.

k) Litter Control

- 1) The operator shall patrol the facility daily to check for litter accumulation. All litter shall be collected and placed in the fill or in a secure, covered container for later disposal.
- 2) The facility shall not accept solid waste from vehicles that do not utilize devices such as covers or tarpaulins to control litter, unless the nature of the solid waste load is such that it cannot cause any litter during its transportation to the facility.

1) Mud Tracking

The facility shall implement methods, such as use of wheel washing units, to prevent tracking of mud by hauling vehicles onto public roadways.

Section 811.108 Salvaging

- a) All salvaging operations shall in no way interfere with the operation of the waste disposal facility, result in a violation of any standard in this Part or of 35 Ill. Adm. Code 812 through 815, or delay the construction or interfere in the operation of the liner, leachate collection system, daily, intermediate or final cover and any monitoring devices.
- b) All salvaging operations shall be performed in a safe and sanitary manner in compliance with the requirements of this Part.
- c) Salvageable materials:
 - 1) May be accumulated on-site by a landfill operator, provided they are managed so as not to create a nuisance, harbor vectors, cause malodors, or create an unsightly appearance; and
 - 2) May not be accumulated on-site for longer than seven days, unless, pursuant to Section 39 of the Act, the Agency has issued a permit with alternative conditions for management of such materials in compliance with subsection (c)(1).

Section 811.109 Boundary Control

- a) Access to the open face area of the unit and all other areas within the boundaries of the facility shall be restricted to prevent unauthorized entry at all times.
- b) A permanent sign shall be posted at the entrance to the

facility stating that disposal of hazardous waste is prohibited and, if the landfill is approved for accepting special wastes, that special wastes must be permitted by the Agency and accompanied by a manifest and an identification record along with the following information:

- 1) Permit number, if the facility is subject to the permit requirements of Section 21 of the Act.
- 2) Hours of operation;
- 3) The penalty for unauthorized trespassing and dumping;
- 4) The name and telephone number of the appropriate emergency response agencies who shall be available to deal with emergencies and other problems, if different than the operator; and
- 5) The name, address and telephone number of the company operating the facility.

Section 811.110 Closure and Written Closure Plan

- a) The final slopes and contours shall be designed to complement and blend with the surrounding topography of the proposed final land use of the area.
- b) All drainage ways and swales shall be designed to safely pass the runoff from the 100-year, 24-hour precipitation event without scouring or erosion.
- c) The final configuration of the facility shall be designed in a manner that minimizes the need for further maintenance.
- d) Written closure plan
 - 1) The operator shall maintain a written plan describing all actions that the operator will undertake to close the unit or facility in a manner that fulfills the provisions of the Act, of this Part and of other applicable Parts of 35 Ill. Adm. Code: Chapter I. The written closure plan shall fulfill the minimum information requirements of 35 Ill. Adm. Code 812.114.
 - 2) A modification of the written closure plan shall constitute a significant modification of the permit for the purposes of 35 Ill. Adm. Code 813.Subpart B.

Section 811.111 Postclosure Maintenance

- a) The operator shall treat, remove from the site, or dispose of all wastes and waste residues within 30 days after receipt of the final volume of waste.
- b) The operator shall remove all equipment or structures not necessary for the postclosure land use, unless otherwise authorized by permit.
- c) Maintenance and Inspection of the Final Cover and Vegetation:
 - 1) Frequency of Inspections
 - A) The operator shall conduct a quarterly inspection of all vegetated surfaces for a minimum of five years after closure, and after five years, the operator may reduce the frequency of annual inspections until settling has stopped and there are no eroded or scoured areas.
 - B) For landfills, other than those used exclusively for disposing waste generated at the site, inspections shall be continued for a minimum period of 15 years after closure.
 - 2) All rills, gullies and crevices six inches or deeper identified in the inspection shall be filled. Areas identified by the operator or the Agency inspection as particularly susceptible to erosion shall be recontoured.
 - 3) All eroded and scoured drainage channels shall be repaired and lining material shall be replaced if necessary.
 - 4) All holes and depressions created by settling shall be filled and recontoured so as to prevent standing water.
 - 5) All reworked surfaces, and areas with failed or eroded vegetation in excess of 100 square feet cumulatively, shall be revegetated in accordance with the approved closure plan for the facility.

SUBPART B: INERT WASTE LANDFILLS

Section 811.201 Scope and Applicability

The standards of this Subpart, in addition to the requirements of Subpart A, shall apply to all new landfills in which only inert waste is to be placed.

Section 811.202 Determination of Contaminated Leachate

- a) Leachate shall be considered contaminated if it contains concentrations of constituents greater than the public and food processing water supply standards 35 Ill. Adm. Code 302.301, 302.304, and 302.305. The operator shall determine whether the leachate from the waste is contaminated by analyzing it for constituents for which a numerical standard has been established by the Board.
- b) A representative sample of leachate extracted from the waste by a laboratory procedure may be used to model the expected constituents and concentrations of the leachate. The laboratory test shall meet the following standards:
 - 1) The procedure shall be designed to closely reproduce expected field conditions; and
 - 2) The test shall utilize an extraction fluid representative of the physical and chemical characteristics of the liquid expected to infiltrate through the waste.
- c) Actual samples of leachate from an existing solid waste disposal unit or a test fill may be utilized under the following conditions:
 - 1) The waste in the existing unit is similar to the waste expected to be disposed;
 - 2) The conditions under which the leachate was formed are similar to those expected to be encountered; and
 - 3) Leachate is sampled so as to be representative of undiluted and unattenuated leachate emanating from the unit.

Section 811.203 Design Period

The design period for all inert waste disposal units shall be the estimated operating life of the unit plus a minimum postclosure care period of five years. For landfills, other than those used

exclusively for disposing waste generated at the site, the minimum postclosure care period, for the purposes of monitoring settling at the site, shall be 15 years.

Section 811.204 Final Cover

A minimum of 0.91 meter (three feet) of soil material that will support vegetation which prevents or minimizes erosion shall be applied over all disturbed areas. Where no vegetation is required for the intended postclosure land use, the requirements of Section 811.205(b) will not apply; however, the final surface shall still be designed to prevent or minimize erosion.

Section 811.205 Final Slope and Stabilization

- a) The waste disposal unit shall be designed and constructed to achieve a minimum static slope safety factor of 1.5 and a minimum seismic safety factor of 1.3.
- b) Standards for Vegetation
 - 1) Vegetation shall be promoted on all reconstructed surfaces to minimize wind and water erosion;
 - 2) Vegetation shall be compatible with (i.e. grow and survive under) the local climatic conditions;
 - 3) Vegetation shall require little maintenance;
 - 4) Vegetation shall consist of a diverse mix of native and introduced species consistent with the postclosure land use; and
 - 5) Temporary erosion control measures, including, but not limited to, the application, alone or in combination, of mulch, straw, netting, or chemical soil stabilizers, shall be undertaken while vegetation is being established.
- c) The landfill site shall be monitored for settling for a minimum period of 15 years after closure as specified in Section 811.203 in order to meet the requirements of this Section.

Section 811.206 Leachate Sampling

- a) All inert waste landfills shall be designed to include a monitoring system capable of collecting representative samples of leachate generated by the waste, using methods such as, but not limited to, a pressure-vacuum lysimeter, trench lysimeter or a well

point. The sampling locations shall be located so as to collect the least diluted leachate samples.

- b) Leachate samples shall be collected and analyzed at least once every six months to determine, using the statistical procedures of Section 811.320(e), whether the collected leachate is contaminated as defined in 35 Ill. Adm. Code 810.103.
- c) Once every two years, leachate samples shall be tested for the presence of organic chemicals in accordance with Section 811.319(a)(3). If the results of such testing shows the presence of organic chemicals, the operator shall notify the Agency of this finding, in writing, before the end of the business day following the finding.
- d) If the results of testing of leachate samples in accordance with subsection (b) confirm that the leachate is contaminated as defined in 35 Ill. Adm. Code 810.103, the operator shall notify the Agency of this finding, in writing, before the end of the business day following the finding. In addition, the inert waste landfill facility causing the contamination:
 - 1) shall no longer be subject to the inert waste landfill requirements of Subpart B;
 - 2) shall be subject to the requirements for Putrescible and Chemical Waste Landfills of Subpart C, including closure and remedial action.
- e) The results of the chemical analysis tests shall be included in the Quarterly Groundwater Reports submitted to the Agency in accordance with 35 Ill. Adm. Code 813.502 for permitted facilities and 35 Ill. Adm. Code 815.Subpart D for non-permitted facilities.

Section 811.207 Load Checking

- a) The operator shall not accept wastes for disposal at an inert waste landfill unless it is accompanied by documentation that such wastes are inert based on testing of the leachate from such wastes performed in accordance with the requirements of Section 811.202.
- b) The operator shall institute and conduct a random load checking program at each inert waste facility in accordance with the requirements of Section 811.323 except that this program shall also be designed:

- 1) to detect and discourage attempts to dispose non-inert wastes at the landfill;
 - 2) to require the facility's inspector examine at least one random load of solid waste delivered to the landfill on a random day each week; and
 - 3) to require the operator to test one randomly selected waste sample in accordance with Section 811.202(a) and (b) to determine if the waste is inert.
- b) The operator shall include the results of the load checking in the Annual Report submitted to the Agency in accordance with 35 Ill. Adm. Code 813.501 for permitted facilities and 35 Ill. Adm. Code 815.Subpart C for non-permitted facilities.

SUBPART C: PUTRESCIBLE AND CHEMICAL WASTE LANDFILLS

Section 811.301 Scope and Applicability

In addition to the requirements of Subpart A, the standards of this Subpart apply to all landfills in which chemical and putrescible wastes are to be placed.

Section 811.302 Facility Location

- a) No part of a unit shall be located within a setback zone established pursuant to Section 14.2 or 14.3 of the Act;
- b) No part of a unit shall be located within the recharge zone or within 366 meters (1200 feet), vertically or horizontally, of a sole-source aquifer designated by the United States Environmental Protection Agency pursuant to Section 1424(e) of the Safe Drinking Water Act (42 U.S.C. 300f et seq.) unless there is a stratum between the bottom of the waste disposal unit and the top of the aquifer that meets the following minimum requirements:
 - 1) The stratum has a minimum thickness of 15.2 meters (50 feet);
 - 2) The maximum hydraulic conductivity in both the horizontal and vertical directions is no greater than 1×10^{-7} centimeters per second, as determined by in situ borehole or equivalent tests;

- 3) There is no indication of continuous sand or silt seams, faults, fractures or cracks within the stratum that may provide paths for migration; and
 - 4) Age dating of extracted water samples from both the aquifer and the stratum indicates that the time of travel for water percolating downward through the relatively impermeable stratum is no faster than 15.2 meters (50 feet) in 100 years.
- c) A facility located within 152 meters (500 feet) of the right of way of a township or county road or state or interstate highway shall have its operations screened from view by a barrier of natural objects, fences, barricades, or plants no less than 2.44 meters (8 feet) in height.
 - d) No part of a unit shall be located closer than 152 meters (500 feet) from an occupied dwelling, school, or hospital that was occupied on the date when the operator first applied for a permit to develop the unit or the facility containing the unit, unless the owner of such dwelling, school, or hospital provides permission to the operator, in writing, for a closer distance.
 - e) The facility shall not be located closer than 1525 meters (5000 feet) of any runway used by piston type aircraft or within 3050 meters (10,000 feet) of any runway used by turbojet aircraft unless the Federal Aviation Administration provides the operator with written permission, including technical justification, for a closer distance.

Section 811.303 Design Period

- a) The design period for putrescible and chemical waste disposal units shall be the estimated operating life plus 30 years unless measures are undertaken in compliance with subsections (b) and (c) to encourage stabilization of putrescible waste.
- b) The design period for a disposal unit which accepts only putrescible waste in shredded form shall be the estimated operating life plus 20 years.
- c) The design period for a putrescible waste disposal unit that recycles leachate in accordance with Section 811.309(f) shall be the estimated operating life plus 20 years.

Section 811.304 Foundation and Mass Stability Analysis

- a) The material beneath the unit shall have sufficient strength to support the weight of the unit during all phases of construction and operation. The loads and loading rate shall not cause or contribute to the failure of the liner leachate collection system.
- b) The total settlement or swell of the foundation shall not cause or contribute to the failure of the liner leachate collection system.
- c) The solid waste disposal unit shall be designed to achieve a safety factor against bearing capacity failure of at least: 2.0 under static conditions and 1.5 under seismic loadings.
- d) The waste disposal unit shall be designed to achieve a factor of safety against slope failure of at least: 1.5 for static conditions and 1.3 under seismic conditions.
- e) In calculating factors of safety, both long term (in tens or hundreds of years) and short term (over the design period of the facility) conditions expected at the facility shall be considered.
- f) The potential for earthquake or blast induced liquefaction, and its effect on the stability and integrity of the unit shall be considered and taken into account in the design. The potential for landslides or earthquake induced liquefaction outside the unit shall be considered if such events could affect the unit.

Section 811.305 Foundation Construction

- a) If the in situ material provides insufficient strength to meet the requirements of Section 811.304, then the insufficient material shall be removed and replaced with clean materials sufficient to meet the requirements of Section 811.304.
- b) All trees, stumps, roots, boulders and debris shall be removed.
- c) All material shall be compacted to achieve the strength and density properties necessary to demonstrate compliance with this Part in conformance with a construction quality assurance plan pursuant to Subpart E.
- d) Placement of frozen soil or soil onto frozen ground is prohibited.

- e) The foundation shall be constructed and graded to provide a smooth, workable surface on which to construct the liner.

Section 811.306 Liner Systems

- a) All units shall be equipped with a leachate drainage and collection system and a compacted earth liner designed as an integrated system in compliance with the requirements of this Section and of Sections 811.307 and 811.308.
- b) The liner and leachate collection system shall be stable during all phases of construction and operation. The side slopes shall achieve a minimum static safety factor of 1.3 and a minimum seismic safety factor of 1.0 at all times.
- c) The liner shall be designed to function for the entire design period.
- d) Compacted Earth Liner Standards
 - 1) The minimum allowable thickness shall be 1.52 meters (5 feet).
 - 2) The liner shall be compacted to achieve a maximum hydraulic conductivity of 1×10^{-7} centimeters per second.
 - 3) The construction and compaction of the liner shall be carried out in accordance with the construction quality assurance procedures of Subpart E so as to reduce void spaces and allow the liner to support the loadings imposed by the waste disposal operation without settling that causes or contribute to the failure of the leachate collection system.
 - 4) The liner shall be constructed from materials whose properties are not affected by contact with the constituents of the leachate expected to be produced.
 - 5) Alternative specifications, using standard construction techniques, for hydraulic conductivity and liner thickness may be utilized under the following conditions:
 - A) The liner thickness shall be no less than

1.52 meter (5 feet) unless a composite liner consisting of a geomembrane immediately overlying a compacted earth liner is installed. The following minimum standards shall apply for a composite liner:

- i) the geomembrane shall be no less than 60 mils in thickness and meet the requirements of subsection (e); and
 - ii) the compacted earth liner shall be no less than 0.91 meter in thickness (3 feet) and meet the requirements of subsection (d)(2) through (d)(4).
- B) The modified liner shall operate in conjunction with a leachate drainage and collection system to achieve equivalent or superior performance to the requirements of this subsection. Equivalent performance shall be evaluated at maximum annual leachate flow conditions.
- e) Geomembrane Liners
- 1) Geomembranes may be used only in conjunction with a compacted earth liner system meeting the requirements of subsection (d) and a leachate drainage and collection system meeting the requirements of Sections 811.307 and 811.308.
 - 2) The geomembrane shall be supported by a compacted base free from sharp objects. The geomembrane shall be chemically compatible with the supporting soil materials.
 - 3) The geomembrane material shall be compatible with the leachate expected to be generated.
 - 4) Geomembranes shall have sufficient strength and durability to function at the site for the design period under the maximum expected loadings imposed by the waste and equipment and stresses imposed by settlement, temperature, construction and operation.
 - 5) Seams shall be made in the field according to the manufacturer's specifications. All sections shall be arranged so that the use of field seams is minimized and seams are oriented in the direction subject to the least amount of stress.

- 6) The leachate collection system shall be designed to avoid loss of leachate through openings in the geomembrane.
- f) Slurry Trenches and Cutoff Walls Used to Prevent Migration of Leachate
- 1) Slurry trenches and cutoff walls built to contain leachate migration shall be used only in conjunction with a compacted earth liner and a leachate drainage system meeting the requirements of subsection (d) and Section 811.307 or as part of a remedial action required by Section 811.319.
 - 2) Slurry trenches and cutoff walls shall extend into the bottom confining layer to a depth that will establish and maintain a continuous hydraulic connection and prevent seepage.
 - 3) Exploration borings shall be drilled along the route of the slurry trench or cutoff wall to confirm the depth to the confining layer. In situ tests shall be conducted to determine the hydraulic conductivity of the confining layer.
 - 4) Slurry trenches and cutoff walls shall be stable under all conditions during the design period of the facility. They shall not be susceptible to displacement or erosion under stress or hydraulic gradient.
 - 5) Slurry trenches and cutoff walls shall be constructed in conformance to a construction quality assurance plan, pursuant to Subpart E, that insures that all material and construction methods meet design specifications.
- g) The owner or operator may utilize liner configurations other than those specified in this Section, special construction techniques, and admixtures, provided that:
- 1) The alternative technology or material provides equivalent, or superior, performance to the requirements of this Section;
 - 2) The technology or material has been successfully utilized in at least one application similar to the proposed application; and
 - 3) Methods for manufacturing quality control and construction quality assurance can be implemented.

Section 811.307 Leachate Drainage System

- a) The leachate drainage system shall be designed and constructed to operate for the entire design period.
- b) The system shall be designed in conjunction with the leachate collection system required by Section 811.308:
 - 1) To maintain a maximum head of leachate 0.30 meter (one foot) above the liner and
 - 2) To operate during the month when the highest average monthly precipitation occurs and if the liner bottom is located within the saturated zone, under the condition that the groundwater table is at its seasonal high level. In addition, the following design assumptions shall apply:
 - A) The unit is assumed to be at field capacity, and
 - B) The final cover is in place.
- c) A drainage layer shall overlay the entire liner system. This drainage layer shall be no less than 0.30 meter (one foot) thick and shall have a hydraulic conductivity equal to or greater than 1×10^{-3} centimeters per second.
- d) The drainage layer shall be designed to maintain laminar flow throughout the drainage layer under the conditions described in subsection (b).
- e) The drainage layer shall be designed with a graded filter or geotextile as necessary to minimize clogging and prevent intrusion of fine material.
- f) Materials used in the leachate collection system shall be chemically resistant to the wastes and the leachate expected to be produced.

Section 811.308 Leachate Collection System

- a) The leachate collection system shall be designed and constructed to function for the entire design period.
- b) Collection pipes shall be designed for open channel flow to convey leachate under the conditions established in Section 811.307(b).

- c) Collection pipes shall be of a cross sectional area that allows cleaning.
- d) Materials used in the leachate collection system shall be chemically resistant to the leachate expected to be produced.
- e) The collection pipe material and bedding materials as placed shall possess structural strength to support the maximum loads imposed by the overlying materials and equipment used at the facility.
- f) Collection pipes shall be constructed within a coarse gravel envelope using a graded filter or geotextile as necessary to minimize clogging.
- g) The system shall be equipped with a sufficient number of manholes and cleanout risers to allow cleaning and maintenance of all pipes throughout the design period.
- h) Leachate shall be able to drain freely from the collection pipes. If sumps are used then pumps shall remove the collected leachate before the level of leachate in the sumps rises above the invert of the collection pipes under the conditions established in Section 811.307(b).

Section 811.309 Leachate Treatment and Disposal System

- a) Leachate shall be allowed to flow freely from the drainage and collection system. The operator is responsible for the operation of a leachate management system designed to handle all leachate as it drains from the collection system. The leachate management system shall consist of any combination of storage, treatment, pretreatment, and disposal options designed and constructed in compliance with the requirements of this Section.
- b) The leachate management system shall consist of any combination of multiple treatment and storage structures, to allow the management and disposal of leachate during routine maintenance and repairs.
- c) Standards for On-site Treatment and Pretreatment
 - 1) All on-site treatment or pretreatment systems shall be considered part of the facility.
 - 2) The on-site treatment or pretreatment system shall be designed in accordance with the expected characteristics of the leachate. The design may

include modifications to the system necessary to accommodate changing leachate characteristics.

- 3) The on-site treatment or pretreatment system shall be designed to function for the entire design period.
 - 4) All of the facility's unit operations, tanks, ponds, lagoons and basins shall be designed and constructed with liners or containment structures to control seepage to groundwater.
 - 5) All treated effluent discharged to waters of the State shall meet the requirements of 35 Ill. Adm. Code 309.
 - 6) The treatment system shall be operated by an operator certified under the requirements of 35 Ill. Adm. Code 312.
- d) Standards for Leachate Storage Systems
- 1) The leachate storage facility must be able to store a minimum of at least five days' worth of accumulated leachate at the maximum generation rate used in designing the leachate drainage system in accordance with Section 811.307. The minimum storage capacity may be built up over time and in stages, so long as the capacity for five consecutive days of accumulated leachate, during extreme precipitation conditions, is available at any time during the design period of the facility.
 - 2) All leachate storage tanks shall be equipped with secondary containment systems equivalent to the protection provided by a clay liner 0.61 meter (2 feet thick) having a permeability no greater than 10^{-7} centimeters per second.
 - 3) Leachate storage systems shall be fabricated from material compatible with the leachate expected to be generated and resistant to temperature extremes.
 - 4) The leachate storage system shall not cause or contribute to a malodor.
 - 5) The leachate drainage and collection system shall not be used for the purpose of storing leachate.
- e) Standards for Discharge to an Off-site Treatment Works

- 1) Leachate may be discharged to an off-site treatment works that meets the following requirements:
 - A) All discharges of effluent from the treatment works shall meet the requirements of 35 Ill. Adm. Code 309.
 - B) The treatment system shall be operated by an operator certified under the requirements of 35 Ill. Adm. Code 312.
 - C) No more than 50 percent of the average daily influent flow can be attributable to leachate from the solid waste disposal facility. Otherwise, the treatment works shall be considered a part of the solid waste disposal facility.
 - 2) The operator is responsible for securing permission from the off-site treatment works for authority to discharge to the treatment works.
 - 3) All discharges to a treatment works shall meet the requirements of 35 Ill. Adm. Code 310.
 - 4) Pumps, meters, valves and monitoring stations that control and monitor the flow of leachate from the unit and which are under the control of the operator shall be considered part of the facility and shall be accessible to the operator at all times.
 - 5) Leachate shall be allowed to flow into the sewerage system at all times; however, if access to the treatment works is restricted or anticipated to be restricted for longer than five days, then an alternative leachate management system shall be constructed in accordance with subsection (c).
 - 6) Where leachate is not directly discharged into a sewerage system, the operator shall provide storage capacity sufficient to transfer all leachate to an off-site treatment works. The storage system shall meet the requirements of subsection (d).
- f) Standards for Leachate Recycling Systems
- 1) Leachate recycling systems may be utilized only at permitted waste disposal units that meet the fol-

lowing requirements:

- A) The unit must have a liner designed, constructed and maintained to meet the minimum standards of Section 811.306.
 - B) The unit must have a leachate collection system in place and operating in accordance with Section 811.307.
 - C) A gas management system, equipped with a mechanical device such as a compressor to withdraw gas, must be implemented to control odors and prevent migration of methane in accordance with Section 811.311.
 - D) The topography must be such that any accidental leachate runoff can be controlled by ditches, berms or other equivalent control means.
- 2) Leachate shall not be recycled during precipitation events or in volumes large enough to cause runoff or surface seeps.
 - 3) The amount of leachate added to the unit shall not exceed the ability of the waste and cover soils to transmit leachate flow downward. All other leachate shall be considered excess leachate, and a leachate management system capable of disposing of all excess leachate must be available.
 - 4) The leachate storage and distribution system shall be designed to avoid exposure of leachate to air unless aeration or functionally equivalent devices are utilized.
 - 5) The distribution system shall be designed to allow leachate to be evenly distributed beneath the surface over the recycle area.
 - 6) Daily and intermediate cover shall be permeable to the extent necessary to prevent the accumulation of water and formation of perched watertables and gas buildup; alternatively cover shall be removed prior to additional waste placement.
 - 7) Daily and intermediate cover shall slope away from the perimeter of the site to minimize surface discharges.
- g) Leachate Monitoring

- 1) Representative samples of leachate shall be collected from each unit and tested in accordance with subsections (g)(2) and (g)(3) at a frequency of once per quarter while the leachate management system is in operation. The frequency of testing may be changed to once per year for any monitored constituent, if it is not detected in the leachate. However, if such a constituent is detected in the leachate, testing frequency shall return to a quarterly schedule.
- 2) Discharges of leachate from units that dispose of putrescible wastes shall be tested for the following constituents prior to treatment or pretreatment:
 - A) Five day biochemical oxygen demand (BOD₅);
 - B) Chemical oxygen demand;
 - C) Total Suspended Solids;
 - D) Total Iron;
 - E) pH;
 - F) Any other constituents listed in the operator's National Pollution Discharge Elimination System (NPDES) discharge permit, pursuant to 35 Ill. Adm. Code 304, or required by a publicly owned treatment works, pursuant to 35 Ill. Adm. Code 310; and
 - G) All of the indicator constituents chosen in accordance with 35 Ill. Adm. Code 811.319(a)(2)(B) and used by the operator for groundwater monitoring.
- 3) Discharges of leachate from units which dispose only chemical wastes shall be monitored for constituents determined by the characteristics of the chemical waste to be disposed of in the unit. They shall include, as a minimum:
 - A) pH;
 - B) Total Dissolved Solids;
 - C) Any other constituents listed in the operator's NPDES discharge permit, pursuant

to 35 Ill. Adm. Code 304, or required by a publicly owned treatment works, pursuant to 35 Ill. Adm. Code 310; and

- D) All of the indicator constituents chosen in accordance with 35 Ill. Adm. Code 811.319(a)(2)(B) and used by the operator for groundwater monitoring.
- h) Time of Operation of the Leachate Management System
 - 1) The operator shall collect and dispose of leachate for a minimum of five years after closure and thereafter until treatment is no longer necessary.
 - 2) Treatment is no longer necessary if the leachate constituents do not exceed the wastewater effluent standards in 35 Ill. Adm. Code 304.124, 304.125, 304.126 and do not contain a BOD₅ concentration greater than 30 mg/L for six consecutive months.

Section 811.310 Landfill Gas Monitoring

- a) This Section applies to all units that dispose putrescible wastes.
- b) Location and Design of Monitoring Wells
 - 1) Gas monitoring devices shall be placed at intervals and elevations within the waste to provide a representative sampling of the composition and buildup of gases within the unit.
 - 2) Gas monitoring devices shall be placed around the unit at locations and elevations capable of detecting migrating gas from the ground surface to the lowest elevation of the liner system or the top elevation of the groundwater, whichever is higher.
 - 3) A predictive gas flow model may be utilized to determine the optimum placement of monitoring points required for making observations and tracing the movement of gas.
 - 4) Gas monitoring devices shall be constructed from materials that will not react with or be corroded by the landfill gas.
 - 5) Gas monitoring devices shall be designed and constructed to measure pressure and allow collec-

tion of a representative sample of gas.

- 6) Gas monitoring devices shall be constructed and maintained to minimize gas leakage.
- 7) The gas monitoring system shall not interfere with the operation of the liner, leachate collection system or delay the construction of the final cover system.
- 8) At least three ambient air monitoring locations shall be chosen and samples shall be taken no higher than 0.025 meter (1 inch) above the ground and 30.49m (100 feet) downwind from the edge of the unit or at the property boundary, whichever is closer to the unit.

c) Monitoring Frequency

- 1) All gas monitoring devices, including the ambient air monitors shall be operated to obtain samples on a monthly basis for the entire operating period and for a minimum of five years after closure.
- 2) After a minimum of five years after closure, monitoring frequency may be reduced to quarterly sampling intervals.
- 3) The sampling frequency may be reduced to yearly sampling intervals upon the installation and operation of a gas collection system equipped with a mechanical device such as a compressor to withdraw gas.
- 4) After a minimum of five years or, in the case of landfills, other than those used exclusively for disposing of wastes generated at the site, a minimum of fifteen years after closure, monitoring shall be discontinued if the following conditions have been met for at least one year:
 - A) The concentration of methane is less than five percent of the lower explosive limit in air for four consecutive quarters at all monitoring points outside the unit; and
 - B) Monitoring points within the unit indicate that methane is no longer being produced in quantities that would result in migration from the unit and exceed the standards of subsection (a)(1).

- 5) The operator shall include in the permit, a list of air toxics to be monitored in accordance with subsection (d). The Agency shall determine the monitoring frequency of the listed compounds based upon their emission rates and ambient levels in the atmosphere.
- d) Parameters to be Monitored
- 1) All below ground monitoring devices shall be monitored for the following parameters at each sampling interval:
 - A) Methane;
 - B) Pressure;
 - C) Nitrogen;
 - D) Oxygen;
 - E) Carbon dioxide; and
 - F) Any compound on the list of air toxics, adopted by the Board pursuant to Section 9.5 of the Act, which is expected to be produced in the landfill unit.
 - 2) Ambient air monitors shall be sampled for methane only when the average wind velocity is less than 8 kilometers (five miles) per hour at a minimum of three downwind locations 30.49 meters (100 feet) from the edge of the unit or the property boundary, whichever is closer to the unit.
 - 3) All buildings within a facility shall be monitored for methane by utilizing continuous detection devices located at likely points where methane might enter the building.

Section 811.311 Landfill Gas Management System

- a) The operator shall install a gas management system if any one of the following conditions are met:
 - 1) A methane concentration greater than 50 percent of the lower explosive limit in air is detected below the ground surface by a monitoring device or is detected by an ambient air monitor located at or beyond the property boundary or 30.5 meters (100 feet) from the edge of the unit, whichever is less, unless the operator can demonstrate that the

detected methane concentration is not attributable to the facility;

- 2) Methane is detected at a concentration greater than 25 percent of the lower explosive limit in air in any building on or near the facility, unless the operator can demonstrate that the detected methane concentration is not attributable to the facility;
- 3) Malodors caused by the unit are detected beyond the property boundary; or
- 4) Leachate is recycled in accordance with Section 811.309(e).

b) Standards for Gas Venting System

- 1) Gas venting systems shall be utilized only as optional, temporary mitigation until the completion of an active system.
- 2) All materials shall be resistant to chemical reaction with the constituents of the gas.
- 3) The system shall be capable of venting all gas down to the water table or bottom of the liner, whichever is higher.
- 4) Gas venting systems shall be installed only outside the perimeter of the unit.

c) Standards for Gas Collection Systems

- 1) Gas collection systems may be installed either within the perimeter of the unit or outside the unit.
- 2) The operator shall design and operate the system so that the standards of subsections (a)(1), (a)(2), and (a)(3) will not be exceeded.
- 3) The gas collection system shall transport gas to a central point or points for processing for beneficial uses or disposal in accordance with the requirements of Section 811.312.
- 4) The gas collection system shall be designed to function for the entire design period. The design may include changes in the system to accommodate changing gas flow rates or compositions.

- 5) All materials and equipment used in construction of the system shall be rated by the manufacturer as safe for use in hazardous or explosive environments and shall be resistant to corrosion by constituents of the landfill gas.
- 6) The gas collection system shall be designed and constructed to withstand all landfill operating conditions, including settlement.
- 7) The gas collection system and all associated equipment including compressors, flares, monitoring installations, and manholes shall be considered part of the facility.
- 8) Provisions shall be made for collecting and draining gas condensate to a management system meeting the requirements of Section 811.309.
- 9) Under no circumstances shall the gas collection system compromise the integrity of the liner, leachate collection or cover systems.
- 10) The portion of the gas collection system, used to convey the gas collected from one or more units for processing and disposal shall be tested to be airtight to prevent the leaking of gas from the collection system or entry of air into the system.
- 11) The gas collection system shall be operated until the waste has stabilized enough to no longer produce methane in quantities that exceed the minimum allowable concentrations in subsections (a)(1), (a)(2), and (a)(3).
- 12) The gas collection system shall be equipped with a mechanical device, such as a compressor, capable of withdrawing gas, or be designed so that a mechanical device can be easily installed at a later time, if necessary, to meet the requirements of subsections (a)(1), (a)(2), and (a)(3).

Section 811.312 Landfill Gas Processing and Disposal System

- a) The processing of landfill gas for use is strongly encouraged but is not required.
- b) Except as allowed in subsection (g), the landfill gas processing and disposal system, including compressors, blowers, raw gas monitoring systems, devices used to control the flow of gas from the unit, flares, gas treatment devices, air pollution control devices and

monitoring equipment must remain under the control of the operator and shall be considered part of the waste disposal facility.

- c) No gas may be discharged directly to the atmosphere unless treated or burned on-site prior to discharge in accordance with a permit issued by the Agency pursuant to 35 Ill. Adm. Code 200 through 245.
- d) Representative flow rate measurements shall be made of gas flow into treatment or combustion devices.
- e) When used for the on-site combustion of landfill gas, flares shall meet the general control device requirements of new source performance standards adopted pursuant to Section 9.1(b) of the Act.
- f) Standards for On-site Combustion of Landfill Gas Using Devices Other Than Flares
 - 1) At a minimum, landfill gas shall be measured for flow rate, heat value, and moisture content along with combustion parameters including, but not limited to, oxygen and carbon dioxide prior to treatment or combustion. Constituents of the landfill gas and combustion byproducts shall be identified for inclusion in an Agency issued permit based on the type of waste streams that are or will be in the landfill, landfill gas analysis and potential for being emitted into the air after treatment or combustion.
 - 2) All constituents and parameters that must be measured before and after treatment or combustion shall be identified and included in a permit issued by the Agency pursuant to 35 Ill. Adm. Code 200 through 245. At a minimum, the following types of constituents must be considered for inclusion in the permit:
 - A) The six criteria air pollutants and the hazardous air pollutants subject to regulation under the Clean Air Act (42 U.S.C. 7401 et seq.);
 - B) Any list of toxic air contaminants, including carcinogens, mutagens and listed hazardous air pollutants adopted by the Board pursuant to Section 9.5 of the Act;
 - C) Volatile Organic Compounds;

- D) Constituents present in the landfill gas; and
 - E) Combustion byproducts expected to be emitted from the combustion or treatment device.
- g) Landfill gas may be transported off-site to a gas processing facility in accordance with the following requirements:
- 1) The solid waste disposal facility contributes less than 50 percent of the total volume of gas accepted by the gas processing facility. Otherwise, the processing facility must be considered a part of the solid waste management facility.
 - 2) The landfill gas shall be monitored for the parameters listed in subsection (d)(1) as well as other constituents such as, ammonia (NH_3), hydrogen sulfide (H_2S) and hydrogen (H_2) that are needed to operate the gas processing facility.
 - 3) The gas processing facility is be sized to handle the expected volume of gas.
 - 4) The transportation of gas to an off-site gas processing facility shall in no way relieve the operator of the requirements of Section 811.311(a).

Section 811.313 Intermediate Cover

- a) All waste which is not to be covered within 60 days of placement by another lift of waste or final cover in accordance with Section 811.314 shall have a cover equivalent to that provided by 0.30 meter (1 foot) of compacted clean soil material.
- b) All areas with intermediate cover shall be graded so as to facilitate drainage of runoff and minimize infiltration and standing water.
- c) The grade and thickness of intermediate cover shall be maintained until the placement of additional wastes or the final cover. All cracks, rills, gullies and depressions shall be repaired to prevent access to the solid waste by vectors, to minimize infiltration and to prevent standing water.

Section 811.314 Final Cover System

- a) The unit shall be covered by a final cover consisting of a low permeability layer overlain by a final protective layer constructed in accordance with the requirements of this Section.
- b) Standards for the Low Permeability Layer
 - 1) Not later than 60 days after placement of the final lift of solid waste, a low permeability layer shall be constructed.
 - 2) The low permeability layer shall cover the entire unit and connect with the liner system.
 - 3) The low permeability layer shall consist of any one of the following:
 - A) A compacted earth layer constructed in accordance with the following standards:
 - i) The minimum allowable thickness shall be 0.91 meter (3 feet);
 - ii) The layer shall be compacted to achieve a permeability of 1×10^{-7} centimeters per second and minimize void spaces.
 - iii) Alternative specifications may be utilized provided that the performance of the low permeability layer is equal to or superior to the performance of a layer meeting the requirements of subsections (b)(3)(A)(i) and (b)(3)(A)(ii).
 - B) A geomembrane constructed in accordance with the following standards:
 - i) The geomembrane shall provide performance equal or superior to the compacted earth layer described in subsection (b)(3)(A).
 - ii) The geomembrane shall have strength to withstand the normal stresses imposed by the waste stabilization process.
 - iii) The geomembrane shall be placed over a prepared base free from sharp objects

and other materials which may cause damage.

- C) Any other low permeability layer construction techniques or materials, provided that they provide equivalent or superior performance to the requirements of this subsection.

c) Standards for the Final Protective Layer

- 1) The final protective layer shall cover the entire low permeability layer.
- 2) The thickness of the final protective layer shall be sufficient to protect the low permeability layer from freezing and minimize root penetration of the low permeability layer, but shall not be less than 0.91 meter (3 feet).
- 3) The final protective layer shall consist of soil material capable of supporting vegetation.
- 4) The final protective layer shall be placed as soon as possible after placement of the low permeability layer to prevent desiccation, cracking, freezing or other damage to the low permeability layer.

Section 811.315 Hydrogeologic Site Investigations

a) Purpose

The operator shall conduct a hydrogeologic investigation to develop hydrogeologic information for the following uses:

- 1) Provide information to perform a groundwater impact assessment; and
- 2) Provide information to establish a groundwater monitoring system.

b) General Requirements

- 1) The investigation shall be conducted in a minimum of three phases prior to submission of any application to the Agency for a permit to develop and operate a landfill facility.
- 2) The study area shall consist of the entire area occupied by the facility and any adjacent areas, if necessary for the purposes of the hydro-

geological investigation set forth in subsection (a).

- 3) All borings shall be sampled continuously at all recognizable points of geologic variation, except that where continuous sampling is impossible or where non-continuous sampling can provide equivalent information, samples shall be obtained at intervals no greater than 1.52 meters (five feet) in homogeneous strata.

c) Minimum Requirements for a Phase I Investigation

- 1) The operator shall conduct a Phase I Investigation to develop the following information:

- A) Climatic aspects of the study area;
- B) The regional and study area geologic setting, including a description of the geomorphology and stratigraphy of the area;
- C) The regional groundwater regime including water table depths and aquifer characteristics; and
- D) Information for the purpose of designing a Phase II Hydrogeologic Investigation.

- 2) Specific Requirements

- A) The regional hydrogeologic setting of the unit shall be established by using material available from all possible sources, including, but not limited to, the Illinois Scientific Surveys, the Agency, other State and Federal organizations, water well drilling logs, and previous investigations.
- B) A minimum of one continuously sampled boring shall be drilled on the site, as close as feasible to the geographic center, to determine if the available regional hydrogeologic setting information is accurate and to characterize the site-specific hydrogeology to the extent specified by this phase of the investigation. The boring shall extend at least 15.2 meters (50 feet) below the bottom of the uppermost aquifer or through the full depth of the confining layer below the uppermost aquifer, or to bedrock, if the bedrock is below the upper most

aquifer, whichever elevation is higher. The locations of any additional borings, required under this subsection, may be chosen by the investigator, but shall be sampled continuously.

d) Minimum Requirements for a Phase II Investigation

1) Information to be developed

Using the information developed in the Phase I survey, a Phase II study shall be conducted to collect the site-specific information listed below as needed to augment data collected during the Phase I investigation and to prepare for the Phase III investigation:

- A) Structural characteristics and distribution of underlying strata including bedrock;
- B) Chemical and physical properties including, but not limited to, lithology, mineralogy, and hydraulic characteristics of underlying strata including those below the uppermost aquifer;
- C) Soil characteristics, including soil types, distribution, geochemical and geophysical characteristics;
- D) The hydraulic conductivities of the uppermost aquifer and all strata above it;
- E) The vertical extent of the uppermost aquifer;
- F) The direction and rate of groundwater flow.

2) Specific Requirements

- A) One boring shall be located as close as feasible to the topographical high point, and another shall be located as close as feasible to the topographical low point of the study area.
- B) At least one boring shall be at or near each corner of the site. Where the property is irregularly shaped the borings shall be located near the boundary in a pattern and spacing necessary to obtain data over the entire study area.

- C) Additional borings may be located at intermediate points at locations and spacings necessary to establish the continuity of the stratigraphic units.
 - D) Piezometers and groundwater monitoring wells shall be established to determine the direction and flow characteristics of the groundwater in all strata and extending down to the bottom of the uppermost aquifer. Groundwater samples taken from such monitoring wells shall be used to develop preliminary information needed for establishing background concentrations in accordance with subsection (e)(1)(G).
 - E) Other methods may be utilized to confirm or accumulate additional information. Such methods may be used only as a supplement to, not in lieu of, site-specific boring information. Other methods include, but are not limited to, geophysical well logs, geophysical surveys, aerial photography, age dating, and test pits.
- e) Minimum Standards for a Phase III Investigation
- 1) Using the information developed during the Phase I and Phase II Investigations, the operator shall conduct a Phase III Investigation. This investigation shall be conducted to collect or augment the site-specific information needed to carry out the following:
 - A) Verification and reconciliation of the information collected in the Phase I and II investigations;
 - B) Characterization of potential pathways for contaminant migration;
 - C) Correlation of stratigraphic units between borings.
 - D) Continuity of petrographic features including, but not limited to, sorting, grain size distribution, cementation and hydraulic conductivity.
 - E) Identification of zones of potentially high hydraulic conductivity.

- F) Identification of the confining layer, if present;
 - G) Concentrations of chemical constituents present in the groundwater below the unit, down to the bottom of the uppermost aquifer, using a broad range of chemical analysis and detection procedures such as, gas chromatographic and mass spectrometric scanning. However, additional measurements and procedures shall be carried out to establish background concentrations, in accordance with Section 811.320(d), for:
 - i) Any constituent for which there is a public or food processing water supply standard at 35 Ill. Adm. Code 302 established by the Board and which is expected to appear in the leachate; and
 - ii) Any other constituent for which there is no Board-established standard, but which is expected to appear in the leachate at concentrations above PQL, as defined in Section 811.319(a)(4) for that constituent.
 - H) Characterization of the seasonal and temporal, naturally and artificially induced, variations in groundwater quality and groundwater flow.
 - I) Identification of unusual or unpredicted geologic features, including: fault zones, fracture traces, facies changes, solution channels, buried stream deposits, cross cutting structures and other geologic features that may affect the ability of the operator to monitor the groundwater or predict the impact of the disposal facility on groundwater.
- 2) In addition to the specific requirements applicable to phase I and II investigations, the operator shall collect information needed to meet the minimum standards of a phase III investigation by using methods that may include, but not limited to excavation of test pits, additional borings located at intermediate points between boreholes placed during phase I and II investigations, placement of piezometers and monitoring wells, and institution of procedures for sampling and

analysis.

- f) The operator may conduct the hydrogeologic investigation in any number of alternative ways provided that the necessary information is collected in a systematic sequence consisting of at least three phases that is equal to or superior to the investigation procedures of this Section.

Section 811.316 Plugging and Sealing of Drill Holes

All drill holes, including exploration borings that are not converted into monitoring wells, monitoring wells that are no longer necessary to the operation of the site, and other holes that may cause or facilitate contamination of groundwater shall be sealed in accordance with the following standards:

- a) If not sealed or plugged immediately, the drill hole shall be covered to prevent injury to people or animals.
- b) All drill holes no longer intended for use shall be back-filled with materials that are compatible with the geochemistry of the site and with the leachate in sufficient quantities and in such a way as to prevent the creation of a pathway for contaminants to migrate.
- c) For drill holes in gravels and other permeable strata where a watertight seal is not necessary to prevent the creation of a pathway, drill cuttings and other earthen materials may be utilized as backfill.
- d) All excess drilling mud, oil, drill cuttings, and any other contaminated materials uncovered during or created by drilling shall be disposed of in accordance with the requirements of 35 Ill. Adm. Code 700 through 749, 807 and 809 through 815.
- e) The operator shall restore the area around the drill hole to its original condition.

Section 811.317 Groundwater Impact Assessment

The impacts of the seepage of leachate from the unit shall be assessed in a systematic fashion using the techniques described in this Section.

- a) Procedures for Performing the Groundwater Impact Assessment
 - 1) The operator shall estimate the amount of seepage from the unit during operations which assume:

- A) That the minimum design standards for slope configuration, cover, liner, leachate drainage and collection system apply; and
 - B) That the actual design standards planned for the unit apply. Other designs for the unit may be used if determined by the operator to be appropriate to demonstrate the impacts to groundwater, pursuant to subsection (b).
- 2) The concentration of constituents in the leachate shall be determined from actual leachate samples from the waste or similar waste, or laboratory derived extracts.
 - 3) A contaminant transport model meeting the standards of subsection (c) shall be utilized to estimate the concentrations of the leachate constituents over time and space. The Agency must review a groundwater contaminant transport model for acceptance in accordance with 35 Ill. Adm Code 813.111.
- b) Acceptable Groundwater Impact Assessment
- The groundwater contaminant transport (GCT) model results shall be used in the assessment of the groundwater impact. The groundwater impact shall be considered acceptable if the GCT model predicts that the concentrations of all the constituents of the leachate outside the zone of attenuation are less than the applicable groundwater quality standards of Section 811.320, within 100 years of closure of the unit.
- c) Standards for the Contaminant Transport Model
- 1) The model shall have supporting documentation that establishes its ability to represent groundwater flow and contaminant transport and any history of its previous applications.
 - 2) The set of equations representing groundwater movement and contaminant transport must be theoretically sound and well documented.
 - 3) The numerical solution methods must be based upon sound mathematical principles and be supported by verification and checking techniques.
 - 4) The model must be calibrated against site specific field data developed pursuant to this Part.

- 5) A sensitivity analysis shall be conducted to measure the model's response to changes in the values assigned to major parameters, specified error tolerances, and numerically assigned space and time discretizations.
- 6) Mass balance calculations on selected elements in the model shall be performed to verify physical validity. Where the model does not prescribe the amount of mass entering the system as a boundary condition, this step may be ignored.
- 7) The values of the model's parameters requiring site specific data shall be based upon actual field or laboratory measurements.
- 8) The values of the model's parameters which do not require site specific data shall be supported by laboratory test results or equivalent methods documenting the validity of the chosen parametric values.

Section 811.318 Design, Construction and Operation of
Groundwater Monitoring Systems

- a) All potential sources of discharges to groundwater within the facility, including, but not limited to, all waste disposal units and the leachate management system, shall be identified and studied through a network of monitoring wells operated during the active life of the unit and for the time after closure specified in accordance with Section 811.319. Monitoring wells designed and constructed as part of the monitoring network shall be maintained along with records that include, but are not limited to, exact well location, well size, type of well, the design and construction practice used in its installation and well and screen depths.
- b) Standards for the Location of Monitoring Points
 - 1) A network of monitoring points shall be established at sufficient locations downgradient with respect to groundwater flow and not excluding the downward direction, to detect any discharge of contaminants from any part of a potential source of discharge.
 - 2) Monitoring wells shall be located in stratigraphic horizons that could serve as contaminant migration pathways.

- 3) Monitoring wells shall be established as close to the potential source of discharge as possible without interfering with the waste disposal operations, and within half the distance from the edge of the potential source of discharge to the edge of the zone of attenuation downgradient, with respect to groundwater flow, from the source.
- 4) The network of monitoring points of several potential sources of discharge within a single facility may be combined into a single monitoring network, provided that discharges from any part of all potential sources can be detected.
- 5) A minimum of at least one monitoring well shall be established at the edge of the zone of attenuation and shall be located downgradient with respect to groundwater flow and not excluding the downward direction, from the unit. Such well or wells shall be used to monitor any statistically significant increase in the concentration of any constituent, in accordance with Section 811.320(e) and shall be used for determining compliance with an applicable groundwater quality standard of Section 811.320. An observed statistically significant increase above the applicable groundwater quality standards of Section 811.320 in a well located at or beyond the compliance boundary shall constitute a violation.

c) Maximum Allowable Predicted Concentrations

The operator shall use the same calculation methods, data, and assumptions as used in the groundwater impact assessment to predict the concentration over time and space of all constituents chosen to be monitored in accordance with Section 811.319 at all monitoring points. The predicted values shall be used to establish the maximum allowable predicted concentrations (MAPC) at each monitoring point. The MAPCs calculated in this subsection shall be applicable within the zone of attenuation.

d) Standards for Monitoring Well Design and Construction

- 1) All monitoring wells shall be cased in a manner that maintains the integrity of the bore hole. The casing material shall be inert so as not to affect the water sample. Casing requiring solvent-cement type couplings shall not be used.

- 2) Wells shall be screened to allow sampling only at the desired interval. Annular space between the borehole wall and well screen section shall be packed with gravel sized to avoid clogging by the material in the zone being monitored. The slot size of the screen shall be designed to minimize clogging. Screens shall be fabricated from material expected to be inert with respect to the constituents of the groundwater to be sampled.
 - 3) Annular space above the well screen section shall be sealed with a relatively impermeable, expandable material such as a cement/bentonite grout, which does not react with or in any way affect the sample, in order to prevent contamination of samples and groundwater and avoid interconnections. The seal shall extend to the highest known seasonal groundwater level.
 - 4) The annular space shall be back-filled with expanding cement grout from an elevation below the frost line and mounded above the surface and sloped away from the casing so as to divert surface water away.
 - 5) The annular space between the upper and lower seals and in the unsaturated zone may be back-filled with uncontaminated cuttings.
 - 6) All wells shall be covered with vented caps and equipped with devices to protect against tampering and damage.
 - 7) All wells shall be developed to allow free entry of water, minimize turbidity of the sample, and minimize clogging.
 - 8) The transmissivity of the zone surrounding all well screens shall be established by field testing techniques.
 - 9) Other sampling methods and well construction techniques may be utilized if they provide equal or superior performance to the requirements of this subsection.
- e) Standards for Sample Collection and Analysis
- 1) The groundwater monitoring program shall include consistent sampling and analysis procedures to assure that monitoring results can be relied upon to provide data representative of groundwater

quality in the zone being monitored.

- 2) The operator shall utilize procedures and techniques to insure that collected samples are representative of the zone being monitored and that prevent cross contamination of samples from other monitoring wells or from other samples. At least 95 percent of a collected sample shall consist of groundwater from the zone being monitored.
- 3) The operator shall establish a quality assurance program that provides quantitative detection limits and the degree of error for analysis of each chemical constituent.
- 4) The operator shall establish a sample preservation and shipment procedure that maintains the reliability of the sample collected for analysis.
- 5) The operator shall institute a chain of custody procedure to prevent tampering and contamination of the collected samples prior to completion of analysis.
- 6) At a minimum, the operator shall sample the following parameters at all wells at the time of sample collection and immediately before filtering and preserving samples for shipment:
 - A) The elevation of the water table
 - B) The depth of the well below ground
 - C) pH
 - D) The temperature of the sample
 - E) Specific Conductance

Section 811.319 Groundwater Monitoring Programs

a) Detection Monitoring Program

Any use of the term "maximum allowable predicted concentration" in this Section is a reference to 35 Ill. Adm. Code 811.318(c). The operator shall implement a detection monitoring program in accordance with the following requirements:

- 1) Monitoring Schedule and Frequency

- A) The monitoring period shall begin as soon as waste is placed into the unit of a new landfill or within one year of the effective date of this Part for an existing landfill. Monitoring shall continue for a minimum period of fifteen years after closure. The operator shall sample all monitoring points for all potential sources of contamination on a quarterly basis except as specified in subsection (a)(3) or may institute more frequent sampling throughout the time the source constitutes a threat to groundwater. For the purposes of this section, the source shall be considered a threat to groundwater, if the results of the monitoring indicate that the concentrations of any of the constituent monitored within the zone of attenuation are above the maximum allowable predicted concentration for that constituent.
- B) Beginning fifteen years after closure of the unit, or five years after all other potential sources of discharge no longer constitute a threat to groundwater, as defined in subsection (a)(1)(A), the monitoring frequency may change on a well by well basis to an annual schedule if either of the following conditions exist. However, monitoring shall return to a quarterly schedule at any well where a statistically significant increase is determined to have occurred in accordance with Section 811.320(e), in the concentration of any constituent with respect to the previous sample.
- i) All constituents monitored within the zone of attenuation have returned to a concentration less than or equal to ten percent of the maximum allowable predicted concentration; or
 - ii) All constituents monitored within the zone of attenuation are less than or equal to their maximum allowable predicted concentration for eight consecutive quarters.
- C) Monitoring shall be continued for a minimum period of five years after closure or, in the case of landfills, other than those used exclusively for disposing waste generated at

the site, a minimum period of fifteen years after closure. Monitoring, beyond the minimum period, may be discontinued under the following conditions:

- i) No statistically significant increase is detected in the concentration of any constituent above that measured and recorded during the immediately preceding scheduled sampling for three consecutive years, after changing to an annual monitoring frequency; or
 - ii) Immediately after contaminated leachate is no longer generated by the unit.
- 2) Criteria for Choosing Constituents to be Monitored

- A) The operator shall monitor each well for constituents that will provide a means for detecting groundwater contamination. Constituents shall be chosen for monitoring if they meet the following requirements:
 - i) The constituent appears in, or is expected to be in, the leachate; and
 - ii) The Board has established for the constituent a public or food processing water supply standard, at 35 Ill. Adm. Code 302, the Board has established a groundwater quality standard under the Illinois Groundwater Protection Act (Ill. Rev. Stat. 1989, ch. 111 1/2, par. 7451 et seq.), or the constituent may otherwise cause or contribute to groundwater contamination.
- B) One or more indicator constituents, representative of the transport processes of constituents in the leachate, may be chosen for monitoring in place of the constituents it represents. The use of such indicator constituents must be included in an Agency approved permit.

3) Organic Chemicals Monitoring

The operator shall monitor each existing well that is being used as a part of the monitoring well network at the facility within one year of the effective date of this Part, and monitor each new

well within three months of its establishment. The monitoring required by this subsection shall be for a broad range of organic chemical contaminants in accordance with the procedures described below:

- A) The analysis shall be at least as comprehensive and sensitive as the tests for;
 - i) The 51 organic chemicals in drinking water described at 40 CFR 141.40 (1988), incorporated by reference at 35 Ill. Adm. Code 810.104; and
 - ii) Any other organic chemical for which a groundwater quality standard or criterion has been adopted pursuant to Section 14.4 of the Act or Section 8 of the Illinois Groundwater Protection Act.
 - B) At least once every two years, the operator shall monitor each well in accordance with subsection (a)(1)(A).
- 4) Confirmation of Monitored Increase
- A) The confirmation procedures of this subsection shall be used only if the concentrations of the constituents monitored can be measured at or above the practical quantitation limit (PQL). The PQL is defined as the lowest concentration that can be reliably measured within specified limits of precision and accuracy, under routine laboratory operating conditions. The operator shall institute the confirmation procedures of subsection (a)(4)(B) after notifying the Agency in writing, within 10 days, of the following observed increases :
 - i) The concentration of any constituent monitored in accordance with subsection (a)(1) and (a)(2) shows a progressive increase over four consecutive quarters;
 - ii) The concentration of any constituent exceeds the maximum allowable predicted concentration at an established monitoring point within the zone of attenuation;
 - iii) The concentration of any constituent

monitored in accordance with subsection (a)(3) exceeds the preceding measured concentration at any established monitoring point; and

iv) The concentration of any constituent monitored at or beyond the zone of attenuation exceeds the applicable groundwater quality standards of Section 811.320.

B) The confirmation procedures shall include the following:

i) The operator shall verify any observed increase by taking additional samples within 45 days of the initial observation and ensure that the samples and sampling protocol used will detect any statistically significant increase in the concentration of the suspect constituent in accordance with subsection 811.320(e), so as to confirm the observed increase. The operator shall notify the Agency of any confirmed increase before the end of the next business day following the confirmation.

ii) The operator shall determine the source of any confirmed increase, which may include, but shall not be limited to, natural phenomena, sampling or analysis errors, or an off-site source.

iii) The operator shall notify the Agency in writing of any confirmed increase and state the source of the confirmed increase and provide the rationale used in such a determination within ten days of the determination.

b) Assessment Monitoring

The operator shall begin an assessment monitoring program in order to confirm that the solid waste disposal facility is the source of the contamination and to provide information needed to carry out a groundwater impact assessment in accordance with subsection (c). The assessment monitoring program shall be conducted in accordance with the following requirements:

- 1) The assessment monitoring shall be conducted to collect information to assess the nature and extent of groundwater contamination, which shall consist of, but not be limited to, the following steps:
 - A) More frequent sampling of the wells in which the observation occurred;
 - B) More frequent sampling of any surrounding wells;
 - C) The placement of additional monitoring wells to determine the source and extent of the contamination;
 - D) Monitoring of additional constituents that might indicate the source and extent of contamination; and
 - E) Any other investigative techniques that will assist in determining the nature and extent of the contamination.
- 2) The operator of the facility for which assessment monitoring is required shall file the plans for an assessment monitoring program with the Agency. If the facility is permitted by the Agency, then the plans shall be filed for review as a significant permit modification pursuant to 35 Ill. Adm. Code 813.Subpart B. The assessment monitoring program shall be implemented within 90 days of confirmation of any monitored increase in accordance with subsection (a)(4) or, in the case of permitted facilities, within 90 days of Agency approval.
- 3) If the analysis of the assessment monitoring data shows that the concentration of one or more constituents, monitored at or beyond the zone of attenuation is above the applicable groundwater quality standards of Section 811.320 and is attributable to the solid waste disposal facility, then the operator shall determine the nature and extent of the groundwater contamination including an assessment of the potential impact on the groundwater should waste continue to be accepted at the facility and shall implement remedial action in accordance with subsection (d).
- 4) If the analysis of the assessment monitoring data shows that the concentration of one or more

constituents is attributable to the solid waste disposal facility and exceeds the maximum allowable predicted concentration within the zone of attenuation, then the operator shall conduct a groundwater impact assessment in accordance with the requirements of subsection (c).

c) Assessment of Potential Groundwater Impact

An operator required to conduct a groundwater impact assessment in accordance with subsection (b)(4) shall assess the potential impacts outside the zone of attenuation that may result from confirmed increases above the maximum allowable predicted concentration within the zone of attenuation, attributable to the facility, in order to determine if there is need for remedial action. In addition to the requirements of Section 811.317, the following shall apply:

- 1) The operator shall utilize any new information developed since the initial assessment and information from the detection and assessment monitoring programs and such information may be used for the recalibration of the GCT model; and
- 2) The operator shall submit the groundwater impact assessment and any proposed remedial action plans determined necessary pursuant to subsection (d) to the Agency within 180 days of the start of the assessment monitoring program.

d) Remedial Action

- 1) The operator shall submit plans for the remedial action to the Agency. Such plans and all supporting information including data collected during the assessment monitoring shall be submitted within 90 days of determination of either of the following:
 - A) The groundwater impact assessment performed in accordance with subsection (c), indicates that remedial action is needed; or
 - B) Any confirmed increase above the applicable groundwater quality standards of Section 811.320 is determined to be attributable to the solid waste disposal facility in accordance with subsection (b).
- 2) If the facility has been issued a permit by the Agency, then the operator shall submit this

information as an application for significant modification to the permit;

- 3) The operator shall implement the plan for remedial action within 90 days of the following:
 - A) Completion of the groundwater impact assessment under subsection (c) that requires remedial action;
 - B) Establishing that a violation of an applicable groundwater quality standard of Section 811.320 is attributable to the solid waste disposal facility in accordance with subsection (b)(3); or
 - C) Agency approval of the remedial action plan, where the facility has been permitted by the Agency.
- 4) The remedial action program shall consist of one or a combination of one or more of the following solutions:
 - A) Retrofit additional groundwater protective measures within the unit;
 - B) Construct an additional hydraulic barrier, such as a cutoff wall or slurry wall system;
 - C) Pump and treat the contaminated groundwater; or
 - D) Any other equivalent technique which will prevent further contamination of groundwater.
- 5) Termination of the Remedial Action Program
 - A) The remedial action program shall continue in accordance with the plan until monitoring shows that the concentrations of all monitored constituents are below the maximum allowable predicted concentration within the zone of attenuation, and below the applicable groundwater quality standards of Section 811.320 at or beyond the zone of attenuation, over a period of 4 consecutive quarters.
 - B) The operator shall submit to the Agency all information collected under subsection (d)(5)(A). If the facility is permitted then the operator shall submit this information as

significant modification of the permit.

Section 811.320 Groundwater Quality Standards

a) Applicable Groundwater Quality Standards

- 1) Groundwater quality shall be maintained at each constituent's background concentration, at or beyond the zone of attenuation. The applicable groundwater quality standard established for any constituent shall be:
 - A) The background concentration; or
 - B) The Board established standard adjusted by the Board in accordance with the justification procedure of subsection (b).
- 2) Any statistically significant increase above an applicable groundwater quality standard established pursuant to subsection (a) that is attributable to the facility and which occurs at or beyond the zone of attenuation within 100 years after closure of the last unit accepting waste within such a facility shall constitute a violation.
- 3) For the purposes of this Part:
 - A) "Background concentration" means that concentration of a constituent that is established as the background in accordance with subsection (d); and
 - B) "Board established standard" is the concentration of a constituent adopted by the Board as a standard for public and food processing water supplies under 35 Ill. Adm. Code 302 or as a groundwater quality standard adopted by the Board pursuant to Section 14.4 of the Act or Section 8 of the Illinois Groundwater Protection Act, whichever is lower.

b) Justification for Adjusted Groundwater Quality Standards

- 1) An operator may petition the Board for an adjusted groundwater quality standard in accordance with the procedures specified in Section 28.1 of the

Act and 35 Ill. Adm. Code 106.410 through 106.416.

- 2) For groundwater which contains naturally occurring constituents which meet the requirements of 35 Ill. Adm. Code 302.301, 302.304, and 302.305, the Board will specify adjusted groundwater quality standards no greater than those of 35 Ill. Adm. Code 302.301, 302.304, and 302.305, upon a demonstration by the operator that:
 - A) The change in standards will not interfere with, or become injurious to, any present or potential beneficial uses for such waters;
 - B) The change in standards is necessary for economic or social development, by providing information including, but not limited to, the impacts of the standards on the regional economy, social disbenefits such as loss of jobs or closing of landfills, and economic analysis contrasting the health and environmental benefits with costs likely to be incurred in meeting the standards; and
 - C) All technically feasible and economically reasonable methods are being used to prevent the degradation of the groundwater quality.
- 3) For groundwater which contains naturally occurring constituents which do not meet the standards of 35 Ill. Adm. Code 302.301, 302.304, and 302.305, the Board will specify adjusted groundwater quality standards, upon a demonstration by the operator that:
 - A) The groundwater does not presently serve as a source of drinking water;
 - B) The change in standards will not interfere with, or become injurious to, any present or potential beneficial uses for such waters;
 - C) The change in standards is necessary for economic or social development, by providing information including, but not limited to, the impacts of the standards on the regional economy, social disbenefits such as loss of jobs or closing of landfills, and economic analysis contrasting the health and environmental benefits with costs likely to be incurred in meeting the standards; and

- D) The groundwater cannot presently, and will not in the future, serve as a source of drinking water because:
- i) It is impossible to remove water in usable quantities;
 - ii) The groundwater is situated at a depth or location such that recovery of water for drinking purposes is not technologically feasible or economically reasonable;
 - iii) The groundwater is so contaminated that it would be economically or technologically impractical to render that water fit for human consumption;
 - iv) The total dissolved solids content of the groundwater is more than 3,000 mg/l and that water will not be used to serve a public water supply system; or
 - v) The total dissolved solids content of the groundwater exceeds 10,000 mg/l.
- c) Determination of the Zone of Attenuation
- 1) The zone of attenuation, within which concentrations of constituents in leachate discharged from the unit may exceed the applicable groundwater quality standard of this Section, is a volume bounded by a vertical plane at the property boundary or 100 feet from the edge of the unit, whichever is less, extending from the ground surface to the bottom of the uppermost aquifer and excluding the volume occupied by the waste.
 - 2) Zones of attenuation shall not extend to the annual high water mark of navigable surface waters.
 - 3) Overlapping zones of attenuation from units within a single facility may be combined into a single zone for the purposes of establishing a monitoring network.
- d) Establishment of Background Concentrations
- 1) The initial monitoring to determine background concentrations shall commence during the hydrogeological assessment required by Section

811.315. The background concentrations for those parameters identified in Sections 811.315(e)(1)(G) and 811.319(a)(2) and (a)(3) shall be established based on quarterly sampling of wells for one year, monitored in accordance with the requirements of subsections (d)(2), (d)(3) and (d)(4), which may be adjusted during the operation of a facility. Statistical tests and procedures shall be employed, in accordance with subsection (e), depending on the number, type and frequency of samples collected from the wells, to establish the background concentrations. Adjustments to the background concentrations shall be made only if changes in the concentrations of constituents observed in upgradient wells over time are determined, in accordance with subsection (e), to be statistically significant. Background concentrations determined in accordance with this subsection shall be used for the purposes of establishing groundwater quality standards, in accordance with subsection (a). The operator shall prepare a list of the background concentrations established in accordance with this subsection. The operator shall maintain such a list at the facility, shall submit a copy of the list to the Agency for establishing standards in accordance with subsection (a), and shall provide updates to the list within ten days of any change to the list.

- 2) A network of monitoring wells shall be established upgradient from the unit, with respect to groundwater flow, in accordance with the following standards, in order to determine the background concentrations of constituents in the groundwater:
 - A) The wells shall be located at such a distance that discharges of contaminants from the unit will not be detectable;
 - B) The wells shall be sampled at the same frequency as other monitoring points to provide continuous background concentration data, throughout the monitoring period; and
 - C) The wells shall be located at several depths to provide data on the spatial variability.
- 3) A determination of background concentrations may include the sampling of wells that are not hydraulically upgradient of the waste unit where:

- A) Hydrogeologic conditions do not allow the owner or operator to determine what wells are hydraulically upgradient of the waste; and
 - B) Sampling at other wells will provide an indication of background concentrations that is representative of that which would have been provided by upgradient wells.
- 4) If background concentrations cannot be determined on site, then alternative background concentrations may be determined from actual monitoring data from the aquifer of concern, which includes, but is not limited to, data from another landfill site that overlies the same aquifer.
- e) Statistical Analysis of Groundwater Monitoring Data
- 1) Statistical tests shall be used to analyze groundwater monitoring data. One or more of the normal theory statistical tests listed in subsection (e)(4) shall be chosen first for analyzing the data set or transformations of the data set. Where such normal theory tests are demonstrated to be inappropriate, tests listed in subsection (e)(5) or a test in accordance with subsection (e)(6) shall be used. Any statistical test chosen from subsections (e)(4) or (e)(5), the level of significance (Type 1 error level) shall be no less than 0.01, for individual well comparisons, and no less than 0.05, for multiple well comparisons. The statistical analysis shall include, but not be limited to, the accounting of data below the detection limit of the analytical method used, the establishment of background concentrations and the determination of whether statistically significant changes have occurred in:
 - A) The concentration of any chemical constituent with respect to the background concentration or maximum allowable predicted concentration; and
 - B) The established background concentration of any chemical constituents over time.
 - 2) The statistical test or tests used shall be based upon the sampling and collection protocol of Sections 811.318 and 811.319.
 - 3) Monitored data that are below the level of

detection shall be reported as not detected (ND). The level of detection for each constituent shall be the minimum concentration of that constituent which can be measured and reported with 99 percent confidence that the true value is greater than zero, which is defined as the method detection limit (MDL). The following procedures shall be used to analyze such data, unless an alternative procedure in accordance with subsection (e)(6), is shown to be applicable:

- A) Where the percentage of nondetects in the data base used is less than 15 percent, the operator shall replace NDs with the MDL divided by two, then proceed with the use of one or more of the Normal Theory statistical tests listed in subsection (e)(4);
 - B) Where the percentage of nondetects in the data base or data transformations used is between 15 and 50 percent, and the data are normally distributed, the operator shall use Cohen's adjustment to the sample mean and standard deviation, followed by one or more of the tests listed in subsection (e)(4)(C). However, where data are not normally distributed, the operator shall use an applicable nonparametric test from subsection (e)(5);
 - C) Where the percentage of nondetects in the database used is above 50 percent, then the owner or operator shall use the test of proportions listed in subsection (e)(4).
- 4) Normal theory statistical tests :
- A) Student t-test including, but not limited to, Cochran's Approximation to the Behren-Fisher (CABF) t-test and Averaged Replicate (AR) t-test.
 - B) Parametric analysis of variance (ANOVA) followed by one or more of the multiple comparison procedures including, but not limited to, Fisher's Least Significant Difference (LSD), Student Newman-Kuel procedure, Duncan's New Multiple Range Test and Tukey's W procedure.
 - C) Control Charts, Prediction Intervals and Tolerance Intervals, for which the type I

error levels shall be specified by the Agency in accordance with the requirements of 35 Ill. Adm. Code 724.197(i).

- 5) Nonparametric statistical tests shall include : Mann-Whitney U-test, Kruskal-Wallis test, a nonparametric analysis of variance (ANOVA) for multiple comparisons or the Wilcoxon Rank Sum test.
- 6) Any other statistical test based on the distribution of the sampling data may be used, if it is demonstrated to meet the requirements of 35 Ill. Adm Code 724.197(i).

Section 811.321 Waste Placement

a) Phasing of Operations

- 1) Waste disposal operations shall move from the lowest portions of the unit to the highest portions. Except as provided in subsection (a)(2), the placement of waste shall begin in the lowest part of the active face of the unit, located in the part of the facility most downgradient with respect to groundwater flow.
- 2) The operator may dispose of wastes in areas other than those specified in subsection (a)(1) only under any of the following conditions:
 - A) Climatic conditions, such as wind and precipitation, are such that the placement of waste in the bottom of the unit would cause water pollution, litter or damage to any part of the liner;
 - B) The topography of the land surrounding the unit makes the procedure of subsection (a)(1) environmentally unsound, for example, because steep slopes surround the unit; or
 - C) When groundwater monitoring wells, constructed in accordance with the requirements of Section 811.319, are placed 50 feet, or less, downgradient from the filled portions of the unit.

b) Initial Waste Placement

- 1) Construction, compaction and earth moving equipment shall be prohibited from operating directly

on the leachate collection piping system until a minimum of five feet of waste has been mounded over the system.

- 2) Construction, compaction and earth moving equipment shall be prohibited from operating directly on the leachate drainage blanket. Waste disposal operations shall begin at the edge of the drainage layer by carefully pushing waste out over the drainage layer.
- 3) An initial layer of waste, a minimum of five feet thick, shall be placed over the entire drainage blanket immediately after construction, but prior to the onset of weather conditions that may cause the compacted earth liner to freeze.
- 4) Waste shall not be placed over areas that are subject to freezing conditions until the liner has been inspected, tested, and reconstructed (if necessary) to meet the requirements of Section 811.306.

Section 811.322 Final Slope and Stabilization

- a) All final slopes shall be designed and constructed to a grade capable of supporting vegetation and which minimizes erosion.
- b) All slopes shall be designed to drain runoff away from the cover and which prevents ponding. No standing water shall be allowed anywhere in or on the unit.
- c) Vegetation
 - 1) Vegetation shall be promoted on all reconstructed surfaces to minimize wind and water erosion of the final protective cover.
 - 2) Vegetation shall be compatible with the climatic conditions.
 - 3) Vegetation shall require little maintenance;
 - 4) Vegetation shall consist of a diverse mix of native and introduced species that is consistent with the postclosure land use;
 - 5) Vegetation shall be tolerant of the landfill gas expected to be generated;
 - 6) The root depth of the vegetation shall not exceed

the depth of the final protective cover system.

- 7) Temporary erosion control measures, including but not limited to mulch straw, netting and chemical soil stabilizers, shall be undertaken while vegetation is being established.
- d) Structures Constructed Over the Unit
- 1) Structures constructed over the unit must be compatible with the land use;
 - 2) Such structures shall be designed to vent gases away from the interior; and
 - 3) Such structures must in no way interfere with the operation of a cover system, gas collection system, leachate collection system or any monitoring system.

Section 811.323 Load Checking Program

- a) The operator shall implement a load checking program that meets the requirements of this Section, for detecting and discouraging attempts to dispose regulated hazardous wastes at the facility. For purposes of this Section and Section 811.406, "regulated hazardous wastes" are wastes defined as such under RCRA, at 35 Ill. Adm. Code 721, and subject to regulations under 35 Ill. Adm. Code: Subtitle G.
- b) The load checking program shall consist of, at a minimum, the following components:
 - 1) Random inspections
 - A) An inspector designated by the facility shall examine at least three random loads of solid waste delivered to the landfill on a random day each week. The drivers randomly selected by the inspector shall be directed to discharge their loads at a separate, designated location within the facility. The facility shall conduct a detailed inspection of the discharged material for any regulated hazardous or other unacceptable wastes that may be present. Cameras or other devices may be used to record the visible contents of solid waste shipments. Where such devices are employed, their use should be designated on a sign posted near the entrance to the facility.

B) If regulated hazardous wastes or other unacceptable wastes are suspected, the facility shall communicate with the generator, hauler or other party responsible for shipping the waste to the facility to determine the identity of the waste.

2) Recording inspection results

Information and observations derived from each random inspection shall be recorded in writing and retained at the facility for at least three years. The recorded information shall include, at a minimum, the date and time of the inspection; the names of the hauling firm and the driver of the vehicle; the vehicle license plate number; the source of the waste, as stated by the driver; and observations made by the inspector during the detailed inspection. The written record shall be signed by both the inspector and the driver.

3) Training

The solid waste management facility shall train designated inspectors, equipment operators, weigh station attendants, spotters at large facilities, and all other appropriate facility personnel in the identification of potential sources of regulated hazardous wastes. The training program shall emphasize familiarity with containers typically used for regulated hazardous wastes and with labels for regulated hazardous wastes, under RCRA, and for hazardous materials under the Hazardous Materials Transportation Act (49 U.S.C. 1801 et seq.).

c) Handling Regulated Hazardous Wastes

1) If any regulated hazardous wastes are identified by random load checking, or are otherwise discovered to be improperly deposited at the facility, the facility shall promptly notify the Agency, the person responsible for shipping the wastes to the landfill, and the generator of the wastes, if known. Waste loads identical to the regulated hazardous waste identified through the random load checking which have not yet been deposited in the landfill shall not be accepted. The area where the wastes are deposited shall immediately be cordoned off from public access. The solid waste management facility shall assure

the cleanup, transportation and disposal of the waste at a permitted hazardous waste management facility.

- 2) The party responsible for transporting the waste to the solid waste management facility shall be responsible for the costs of such proper cleanup, transportation and disposal.
- 3) Subsequent shipments by persons or sources found or suspected to be previously responsible for shipping regulated hazardous waste shall be subject to the following special precautionary measures prior to the solid waste management facility accepting wastes. The operator shall use precautionary measures such as questioning the driver concerning the waste contents prior to discharge and visual inspection during the discharge of the load at the working face or elsewhere.

SUBPART D: MANAGEMENT OF SPECIAL WASTES AT LANDFILLS

Section 811.401 Scope and Applicability

- a) This Subpart applies to all landfills permitted by the Agency pursuant to Section 21 of the Act, including landfills operated on-site, with or without a permit, that accept special wastes.
- b) The standards of this Subpart apply in addition to the standards of 35 Ill. Adm. Code 809.
- c) Inspection, testing or acceptance of waste by a solid waste management facility shall not relieve the generator or transporter of responsibility for compliance with the requirements of 35 Ill. Adm. Code: Subtitle G.

Section 811.402 Notice to Generators and Transporters

A prominent sign at the entrance to each solid waste management facility shall state that disposal of hazardous waste is prohibited and, if it is a facility permitted by the Agency to accept special wastes pursuant to 35 Ill. Adm. Code 807, also state that special waste will be accepted only if accompanied by an identification record and a manifest, unless such waste is exempted from the manifest requirements of this Part and 35 Ill. Adm. Code 809. Subpart E.

Section 811.403 Special Waste Manifests

- a) Each special waste accepted for disposal at a permitted solid waste management facility shall be accompanied by a manifest containing the following information, unless such special waste is disposed at an on-site facility and exempted, in accordance with 35 Ill. Adm. Code 809.211, from the manifest requirement:
- 1) The name of the generator of the special waste;
 - 2) When and where the special waste was generated;
 - 3) The name of the special waste hauler;
 - 4) The name of the solid waste management facility to which it is shipped as a final destination point;
 - 5) The date of delivery;
 - 6) The name, waste stream permit number (if applicable) and quantity of special waste delivered to the hauler;
 - 7) The signature of the person who delivered the special waste to the special waste hauler, acknowledging such delivery;
 - 8) The signature of the special waste hauler, acknowledging receipt of the special wastes; and
 - 9) The signature of the person who accepted the special waste at its final destination, acknowledging acceptance of the special waste.
- b) A permitted facility that accepts special waste must be designated on the manifest as the final destination point. Any subsequent delivery of the special waste or any portion or product thereof to a special waste hauler shall be conducted under a transportation record initiated by the permitted solid waste management facility.
- c) Distribution of Manifests After Delivery
- 1) The receiving solid waste management facility, shall accept special waste only if accompanied by three copies of the manifest from the hauler. The hauler shall retain one copy.
 - 2) The receiving solid waste management facility shall:

- A) Send one copy of the completed transportation record to the person who delivered the special waste to the special waste hauler (usually the generator, or another special waste management facility);
 - B) Send one copy of each signed manifest to the Agency in accordance with the requirements of 35 Ill. Adm. Code 809; and
 - C) Send information on rejected loads to the Agency in a quarterly report.
- d) Every person who delivers special waste to a special waste hauler, every person who accepts special waste from a special waste hauler and every special waste hauler shall retain a copy of the special waste transportation record as a record of each special waste transaction. These copies shall be retained for three years, and shall be made available at reasonable times for inspection and photocopying by the Agency pursuant to Section 4(d) of the Act.

Section 811.404 Identification Record

- a) Each special waste disposed of at a facility (including special wastes generated at the facility) shall be accompanied by a special waste profile identification sheet, from the waste generator, that certifies the following:
 - 1) The generator's name and address;
 - 2) The transporter's name and telephone number;
 - 3) The name of waste;
 - 4) The process generating the waste;
 - 5) Physical characteristics of waste (e.g., color, odor, solid or liquid, flash point);
 - 6) The chemical composition of the waste;
 - 7) The metals content of the waste;
 - 8) Hazardous characteristics (including identification of wastes deemed hazardous by the United States Environmental Protection Agency or the state);

- 9) Presence of polychlorinated biphenyls (PCB)s or 2,3,7,8-tetrachlorodibenzodioxin (2,3,7,8-TCDD); and
- 10) Any other information, such as the result of any test carried out in accordance with Section 811.202, that can be used to determine:
 - A) Whether the special waste is regulated as a hazardous waste, as defined at 35 Ill. Adm. Code 721;
 - B) Whether the special waste is of a type that is permitted for or has been classified, in accordance with 35 Ill. Adm. Code 809, for storage, treatment, or disposal at the facility; and
 - C) Whether the method of storage, treatment, or disposal, using the methods available at the facility, is appropriate for the waste.

b) Special waste recertification

Each subsequent shipment of a special waste from the same generator must be accompanied by a transportation record in accordance with 35 Ill. Adm. Code 811.403(b), a copy of the original special waste profile identification sheet, and either:

- 1) A special waste recertification by the generator describing whether there have been changes in the following:
 - A) Laboratory analysis (copies to be attached);
 - B) Raw material in the waste-generating process;
 - C) The waste-generating process itself;
 - D) The physical or hazardous characteristics of the waste; and
 - E) New information on the human health effects of exposure to the waste; or
- 2) Certification indicating that any change in the physical or hazardous characteristic of the waste is not sufficient to require a new special waste profile.

Section 811.405 Recordkeeping Requirements

The solid waste management facility operator shall retain copies of any special waste profile identification sheets, special waste recertifications, certifications of representative sample, special waste laboratory analyses, special waste analysis plans, and any waivers of requirements (prohibitions, special waste management authorization, and operating requirements) at the facility until the end of the postclosure care period.

Section 811.406 Procedures for Excluding Regulated Hazardous Wastes

The operator shall implement a load checking program that meets the requirements of Section 811.323 for detecting and discouraging attempts to dispose of regulated hazardous wastes at the facility.

SUBPART E: CONSTRUCTION QUALITY ASSURANCE PROGRAMS

Section 811.501 Scope and Applicability

All structures necessary to comply with the requirements of this Part shall be constructed according to a construction quality assurance program that, at a minimum, meets the requirement of this Subpart.

Section 811.502 Duties and Qualifications of Key Personnel

a) Duties and Qualifications of the Operator

The operator shall designate a third party contractor, a person other than the operator or an employee of the operator, as the construction quality assurance (CQA) officer.

b) Duties and Qualifications of the CQA officer

1) The CQA officer shall supervise and be responsible for all inspections, testing and other activities required to be implemented as part of the CQA program under this Subpart.

2) The CQA officer shall be a professional engineer.

Section 811.503 Inspection Activities

a) The CQA officer shall be present to provide supervision and assume responsibility for performing all inspections of the following activities:

1) Compaction of the subgrade and foundation to

design parameters;

- 2) Installation of the compacted earth liner;
 - 3) Installation of a geomembrane;
 - 4) Installation of slurry trenches or cutoff walls;
 - 5) Installation of the leachate drainage and collection system;
 - 6) Application of final cover;
 - 7) Installation of gas control facilities; and
 - 8) Construction of ponds, ditches, lagoons and berms.
- b) If the CQA officer is unable to be present to perform, as required by subsection (a), then the CQA officer shall provide, in writing, reasons for his absence, a designation of a person who shall exercise professional judgement in carrying out the duties of a CQA officer as the designated CQA officer-in-absentia, and a signed statement that the CQA officer assumes full personal responsibility for all inspections performed and reports prepared by the designated CQA officer-in-absentia during the absence of the CQA.

Section 811.504 Sampling Requirements

A sampling program shall be implemented as part of the CQA plan, for all construction activities, in order to ensure, at a minimum, that construction materials and operations meet the following requirements:

- a) The sampling program shall be designed prior to construction.
- b) The sampling program shall be based upon statistical sampling techniques and shall establish and specify criteria for acceptance or rejection of materials and operations.

Section 811.505 Documentation

- a) A daily summary report shall be prepared by the CQA officer, or under the direct supervision of the CQA officer, during each day of activity. The report shall contain, at a minimum:
 - 1) The date;

- 2) A summary of the weather conditions;
- 3) A summary of locations where construction is occurring;
- 4) Equipment and personnel on the project;
- 5) A summary of any meetings held and attendees;
- 6) A description of all materials used and references or results of testing and documentation;
- 7) The calibration and recalibration of test equipment;
- 8) The daily inspection report from each inspector.

b) Daily Inspection Reports

Each inspector shall complete a daily inspection report containing the following information:

- 1) The location;
- 2) The type of inspection;
- 3) The procedure used;
- 4) Test data;
- 5) The results of the activity;
- 6) Personnel involved in the inspection and sampling activities; and
- 7) The signature of the inspector.

c) Photographic Records

Photographs may be used as tools to document the progress and acceptability of the work and may be incorporated into the daily summary report, daily inspection report, and an acceptance report. Each photo shall be identified with the following information:

- 1) The date, time and location of photograph;
- 2) The name of photographer; and
- 3) The signature of photographer.

d) Acceptance Reports

Upon completion of the construction of each major phase, the CQA officer shall submit an acceptance report to the Agency. The acceptance report shall be submitted before the structure is placed into service and shall contain the following:

- 1) A certification by the CQA officer that the construction has been prepared and constructed in accordance with the engineering design;
- 2) As-built drawings; and
- 3) All daily summary reports.

Section 811.506 Foundations and Subbases

- a) The CQA officer shall identify and ensure that the site investigation is carried out in accordance with the plans, identify unexpected conditions and record all modifications to the plans and construction procedures on the as-built drawings.
- b) The CQA officer shall observe soil and rock surfaces for joints, fractures and depressions, document the filling of all joints and fractures and document the removal and filling of local sand deposits on the as-built drawings.
- c) The CQA officer shall ensure that there are no moisture seeps and that all soft, organic or other undesirable materials are removed.

Section 811.507 Compacted Earth Liners

a) Requirements for a Test Liner

A test fill shall be constructed before construction of the actual, full-scale compacted earth liner, in accordance with the following requirements:

- 1) The test liner shall be constructed from the same soil material, design specifications, equipment and procedures as are proposed for the full-scale liner;
- 2) The test fill shall be at least four times the width of the widest piece of equipment to be used;
- 3) The test fill shall be long enough to allow the equipment to reach normal operating speed before

reaching the test area;

- 4) At least three lifts shall be constructed;
- 5) The test fill shall be tested as described below for each of the following physical properties using tests to ensure a statistically valid sample size:
 - A) Field testing techniques shall be used to determine the hydraulic conductivity.
 - B) Samples shall also be tested in the laboratory for hydraulic conductivity. The laboratory results shall be evaluated to determine if there is a statistical correlation to the field testing results.
 - C) Other engineering parameters, including but not limited to particle size distribution, plasticity, water content, and in-place density, that are needed to evaluate the full-scale liner shall be determined.
- 6) Additional test fills shall be constructed for each time the material properties of a new borrow source changes or for each admixture or change in equipment or procedures; and
 - b) Construction of a test fill or the requirements for an additional test fill may be omitted if a full-scale liner or a test fill has been previously constructed in compliance with this subsection and documentation and is available to demonstrate that the previously constructed liner meets the requirements of subsection (a).
 - c) The CQA officer shall inspect the construction and testing of test fills to ensure that the requirements of subsection (a) are met. During construction of the actual, full-scale compacted earth liner, the CQA officer shall ensure the following:
 - 1) Use of same compaction equipment as used in test fill;
 - 2) Use of same procedures, such as number of passes and speed;
 - 3) Uniformity of coverage by compaction equipment;
 - 4) Consistent achievement of density, water content

- and permeability of each successive lift;
- 5) Use of methods to bond successive lifts together;
 - 6) Achievement of liner strength on sidewalls;
 - 7) Contemporaneous placement of protective covering to prevent drying and desiccation, where necessary;
 - 8) Prevention of the placement of frozen material or the placement of material on frozen ground;
 - 9) Prevention of damage to completed liner sections; and
 - 10) That construction proceeds only during favorable climatic conditions.

Section 811.508 Geomembranes

The CQA officer shall exercise professional judgement to certify the following:

- a) That the bedding material contains no undesirable objects;
- b) That the placement plan has been followed;
- c) That the anchor trench and back-fill are constructed to prevent damage to the geomembrane;
- d) That all tears, rips, punctures, and other damage are repaired; and
- e) That all geomembrane seams are properly constructed and tested in accordance with the manufacturer's specifications.

Section 811.509 Leachate Collection Systems

- a) The CQA officer shall exercise professional judgement to certify that pipe sizes, material, perforations, placement and pipe grades are in accordance with the design.
- b) The CQA officer shall exercise professional judgement to certify that all soil materials used for the drainage blanket and graded filters meet the required size and gradation specifications in the design plan and are placed in accordance with the design plans.

- c) The CQA officer shall inspect all prefabricated structures for conformity with design specifications and for defective manufacturing.

SUBPART G: FINANCIAL ASSURANCE

Section 811.700 Scope, Applicability and Definitions

- a) This Subpart provides procedures by which the operator of a permitted waste disposal facility provides financial assurance satisfying the requirements of Section 21.1(a) of the Act.
- b) Financial assurance may be provided, as specified in Section 811.706, by a trust agreement, a bond guaranteeing payment, a bond guaranteeing payment or performance, a letter of credit, insurance or self-insurance. The operator shall provide financial assurance to the Agency before the receipt of the waste.
- c) This Subpart does not apply to the State of Illinois, its agencies and institutions, or to any unit of local government; provided, however, that any other persons who conduct such a waste disposal operation on a site that is owned or operated by such a governmental entity shall provide financial assurance for closure and postclosure care of the site.
- d) The operator is not required to provide financial assurance pursuant to this Subpart if the operator demonstrates:
 - 1) That closure and postclosure care plans filed pursuant to 35 Ill. Adm. Code 724 or 725 will result in closure and postclosure care of the site in accordance with the requirements of this Part; and
 - 2) That the operator has provided financial assurance adequate to provide for such closure and postclosure care pursuant to 35 Ill. Adm. Code 724 or 725.
- e) Definition: "Assumed closure date" means the date during the next permit term on which the costs of premature final closure of the facility, in accordance with the standards of this Part, will be greatest.

Section 811.701 Upgrading Financial Assurance

- a) The operator shall maintain financial assurance equal to or greater than the current cost estimate calculated pursuant to Section 811.704 at all times, except as otherwise provided by subsection (b).
- b) The operator shall increase the total amount of financial assurance so as to equal the current cost estimate within 90 days after any of the following occurrences:
 - 1) An increase in the current cost estimate;
 - 2) A decrease in the value of a trust fund;
 - 3) A determination by the Agency that an operator no longer meets the gross revenue test of Section 811.715(d) or the financial test of Section 811.715(e); or,
 - 4) Notification by the operator that the operator intends to substitute alternative financial assurance, as specified in Section 811.706, for self-insurance.

Section 811.702 Release of Financial Institution

The Agency shall release a trustee, surety, insurer or other financial institution when:

- a) An operator substitutes alternative financial assurance such that the total financial assurance for the site is equal to or greater than the current cost estimate, without counting the amounts to be released; or
- b) The Agency releases the operator from the requirements of this Subpart pursuant to 35 Ill. Adm. Code 813.403(b).

Section 811.703 Application of Proceeds and Appeals

- a) The Agency may sue in any court of competent jurisdiction to enforce its rights under financial instruments. The filing of an enforcement action before the Board is not a condition precedent to such an Agency action, except when this Subpart or the terms of the instrument provide otherwise.
- b) As provided in Titles VIII and IX of the Act and 35 Ill. Adm. Code 103 and 104, the Board may order modifications in permits to change the type or amount

of financial assurance pursuant to an enforcement action or a variance petition. Also, the Board may order that an owner or operator modify a closure or postclosure care plan or order that proceeds from financial assurance be applied to the execution of a closure or postclosure care plan.

- c) The following Agency actions may be appealed to the Board as a permit denial pursuant to 35 Ill. Adm. Code 105 and Section 21.5(e) of the Act:
- 1) A refusal to accept financial assurance tendered by the operator;
 - 2) A refusal to release the operator from the requirement to maintain financial assurance;
 - 3) A refusal to release excess funds from a trust;
 - 4) A refusal to approve a reduction in the penal sum of a bond;
 - 5) A refusal to approve a reduction in the amount of a letter of credit;
 - 6) A refusal to approve a reduction in the face amount of an insurance policy; or
 - 7) A determination that an operator no longer meets the gross revenue test or financial test.

Section 811.704 Closure and Postclosure Care Cost Estimates

- a) Written cost estimate. The operator shall have a written estimate of the cost of closure of all parts of the facility where wastes have been deposited in accordance with the requirements of this Part; the written closure plan, required by Section 811.110 and 35 Ill. Adm. Code 812.114; and the cost of postclosure care and plans required by this Part and the written postclosure care plans required by 35 Ill. Adm. Code 812.115. The cost estimate is the total cost for closure and postclosure care.
- b) The operator shall revise the cost estimate whenever a change in the closure plan or postclosure care plan increases the cost estimate.
- c) The cost estimate must be based on the steps necessary for the premature final closure of the facility on the assumed closure date.

- d) The cost estimate must be based on the assumption that the Agency will contract with a third party to implement the closure plan.
- e) The cost estimate may not be reduced by allowance for the salvage value of equipment or waste, for the resale value of land, or for the sale of landfill gas.
- f) The cost estimate must, at a minimum, include all costs for all activities necessary to close the facility in accordance with all requirements of this Part.
- g) The postclosure monitoring and maintenance cost estimate must be prepared:
 - 1) On the basis of the design period for each unit at a facility, assuming operations will cease on the assumed closure date; and
 - 2) Reduced to present value, as follows:
 - A) Based on a 4 percent discount rate;
 - B) Without allowing for inflation;
 - C) Over a period including the time remaining until the assumed closure date, plus the postclosure care period;
- h) The postclosure care cost estimate must, at a minimum, be based on the following elements in the postclosure care plan:
 - 1) Groundwater monitoring, based on the number of monitoring points and parameters and the frequency of sampling specified in the permit.
 - 2) The annual Cost of Cover Placement and Stabilization, including an estimate of the annual residual settlement and erosion control and the cost of mowing.
 - 3) Alternative Landfill Gas Disposal. If landfill gas is transported to an off-site processing system, then the operator shall include in the cost estimate the costs necessary to operate an on-site gas disposal system, should access to the off-site facility become unavailable. The cost estimate must include the following information: installation, operation, maintenance and monitoring of an on-site gas disposal system.

- 4) Cost Estimates Beyond the Design Period. When a facility must extend the postclosure care period beyond the applicable design period, the cost estimate must be based upon such additional time and the care activities occurring during that time.
- i) This Section does not authorize the Agency to require the operator to perform any of the indicated activities upon which cost estimates are to be based; however, if the site permit requires a closure activity, the operator shall include the cost of that activity in the cost estimate.
- j) Once the operator has completed an activity, the operator may file an application for significant permit modification pursuant to 35 Ill. Adm. Code 813.201 indicating that the activity has been completed, and zeroing that element of the cost estimate.

Section 811.705 Revision of Cost Estimate

- a) The operator shall revise the current cost estimates for closure and postclosure care in each new application for permit renewal or where a facility modification results in an increase of the cost estimate.
- b) The operator shall review the closure and postclosure care plans prior to filing a revised cost estimate in order to determine whether they are consistent with current operations, and the requirements of this Subchapter. The operator shall either certify that the plans are consistent, or shall file an application incorporating new plans pursuant to 35 Ill. Adm. Code 813.
- c) The operator shall prepare new closure and postclosure cost estimates reflecting current prices for the items included in the estimates when submitting any new application for permit renewal. The operator shall file revised estimates even if the operator determines that there are no changes in the prices.

Section 811.706 Mechanisms for Financial Assurance

The operator of a waste disposal site may utilize any of the following mechanisms to provide financial assurance for closure and postclosure care:

- a) A trust Fund (Section 811.710);

- b) A surety Bond Guaranteeing Payment (Section 811.711);
- c) A surety Bond Guaranteeing Performance (Section 811.712);
- d) A letter of Credit (Section 811.713);
- e) Closure Insurance (Section 811.714); or
- f) Self-insurance (Section 811.715).

Section 811.707 Use of Multiple Financial Mechanisms

An operator may satisfy the requirements of this Subpart by establishing more than one financial mechanism per site. These mechanisms are limited to trust funds, surety bonds guaranteeing payment, letters of credit and insurance. The mechanisms must be as specified in 35 Ill. Adm. Code 811.710, 811.711, 811.713 and 811.714, respectively, except that it is the combination of mechanisms, rather than the single mechanism, which must provide financial assurance for an amount at least equal to the current cost estimate. The operator may use any or all of the mechanisms to provide for closure and postclosure care of the site.

Section 811.708 Use of a Financial Mechanism for Multiple Sites

An operator may use a financial assurance mechanism specified in this Subpart to meet the requirements of this Subpart for more than one site. Evidence of financial assurance submitted to the Agency must include a list showing, for each site, the name, address and the amount of funds assured by the mechanism. The amount of funds available through the mechanism must be no less than the sum of funds that would be available if a separate mechanism had been established and maintained for each site. The amount of funds available to the Agency must be sufficient to close and provide postclosure care for all of the operator's sites. In directing funds available through a single mechanism for the closure and postclosure care of any single site covered by that mechanism, the Agency shall direct only that amount of funds designated for that site, unless the operator agrees to the use of additional funds available under that mechanism.

Section 811.709 Trust Fund for Unrelated Sites

Any person may establish a trust fund for the benefit of the Agency which may receive funds from more than one operator for closure of different sites. Such a trust fund must operate like the trust fund specified in 35 Ill. Adm. Code 807.710, except as follows:

- a) The trustee shall maintain a separate account for each

site and shall evaluate such annually as of the day of creation of the trust;

- b) The trustee shall annually notify each operator and the Agency of the evaluation of each operator's account;
- c) The trustee shall release excess funds as required from the account for each site;
- d) The trustee shall reimburse the operator or other person authorized to perform closure or postclosure care only from the account for that site.
- e) The Agency may direct the trustee to withhold payments only from the account for the site for which it has determined the cost of closure and postclosure care will be greater than the value of the account for that site pursuant to Section 811.710(g)(3).

Section 811.710 Trust Fund

- a) An operator may satisfy the requirements of this Subpart by establishing a trust fund which conforms to the requirements of this Section and submitting an original signed duplicate of the trust agreement to the Agency.
- b) The trustee shall be an entity which has the authority to act as a trustee and:
 - 1) Whose trust operations are examined by the Illinois Commissioner of Banks and Trust Companies pursuant to the Illinois Banking Act (Ill. Rev. Stat. 1989, ch. 17, pars. 301 et seq.); or
 - 2) Who complies with the Corporate Fiduciary Act (Ill. Rev. Stat. 1989, ch. 17, pars. 1551-1 et seq.).
- c) The trust agreement must be on the forms specified in Appendix A, Illustration A, and the trust agreement must be accompanied by a formal certification of acknowledgment, on the form specified in Appendix A, Illustration B.
- d) Payments into the trust:
 - 1) The operator shall make a payment into the trust fund each year during the pay-in period.
 - 2) The pay-in period is the number of years remaining until the assumed closure date.

- 3) Annual payments are determined by the following formula:

$$\text{Annual payment} = (\text{CE}-\text{CV})/\text{Y}$$

where:

CE = Current cost estimate

CV = Current value of the trust fund

Y = Number of years remaining in the pay in period.

- 4) The operator shall make the first annual payment prior to the initial receipt of waste for disposal. The operator shall also, prior to such initial receipt of waste, submit to the Agency a receipt from the trustee for the first annual payment.
- 5) Subsequent annual payments must be made no later than 30 days after each anniversary of the first payment.
- 6) The operator may accelerate payments into the trust fund, or may deposit the full amount of the current cost estimate at the time the fund is established.
- 7) An operator required to provide additional financial assurance for an increase in the cost estimate because of an amendment to this Subchapter may provide such additional financial assurance pursuant to this subsection. The operator may provide the increase by contributing to a new or existing trust fund pursuant to this Section. Subsection (d)(2) notwithstanding, the pay-in period for such additional financial assurance shall be not less than three years.
- e) The trustee shall evaluate the trust fund annually, as of the day the trust was created or on such earlier date as may be provided in the agreement. The trustee shall notify the operator and the Agency of the value within 30 days after the evaluation date.
- f) Release of excess funds:
- 1) If the value of the financial assurance is greater than the total amount of the current cost estimate, the operator may submit a written request to the Agency for a release of the amount

in excess of the current cost estimate.

- 2) Within 60 days after receiving a request from the operator for a release of funds, the Agency shall instruct the trustee to the operator such funds as the Agency specifies in writing to be in excess of the current cost estimate.
- g) Reimbursement for closure and postclosure care expenses:
- 1) After initiating closure, an operator, or any other person authorized to perform closure or postclosure care, may request reimbursement for closure or postclosure care expenditures, by submitting itemized bills to the Agency.
 - 2) Within 60 days after receiving the itemized bills for closure or postclosure care activities, the Agency shall determine whether the expenditures are in accordance with the closure or postclosure care plan. The Agency shall instruct the trustee to make reimbursement in such amounts as the Agency specifies in writing as expenditures in accordance with the closure or postclosure care plan.
 - 3) If the Agency determines, based on such information as is available to it, that the cost of closure and postclosure care will be greater than the value of the trust fund, it shall withhold reimbursement of such amounts as it determines are necessary to preserve the in order to accomplish closure and postclosure care until it determines that the operator is no longer required to maintain financial assurance for closure and postclosure care. In the event the fund is inadequate to pay all claims, the Agency shall pay claims according to the following priorities:
 - A) Persons with whom the Agency has contracted to perform closure or postclosure care activities (first priority);
 - B) Persons who have completed closure or postclosure care authorized by the Agency (second priority);
 - C) Persons who have completed work which furthered the closure or postclosure care (third priority);

- D) The operator and related business entities (last priority).

Section 811.711 Surety Bond Guaranteeing Payment

- a) An operator may satisfy the requirements of this Subpart by obtaining a surety bond which conforms to the requirements of this Section and submitting the bond to the Agency.
- b) The surety company issuing the bond shall be licensed by the Illinois Department of Insurance pursuant to the Illinois Insurance Code (Ill. Rev. Stat. 1989, ch. 73, pars. 613 et seq.).
- c) The surety bond must be on the forms specified in Appendix A, Illustration C, D or H.
- d) Any payments made under the bond will be placed in the landfill closure and postclosure fund within the State Treasury.
- e) Conditions:
 - 1) The bond must guarantee that the operator will provide closure and postclosure care in accordance with the approved closure and postclosure care plans.
 - 2) The surety will become liable on the bond obligation when, during the term of the bond, the operator fails to perform as guaranteed by the bond. The operator fails to perform when the operator:
 - A) Abandons the site;
 - B) Is adjudicated bankrupt;
 - C) Fails to initiate closure of the site or postclosure care when ordered to do so by the Board pursuant to Title VII of the Act, or when ordered to do so by a court of competent jurisdiction; or
 - D) Notifies the Agency that it has initiated closure, or initiates closure, but fails to close the site or provide postclosure care in accordance with the closure and postclosure care plans.

f) Penal sum:

- 1) The penal sum of the bond must be in an amount at least equal to the current cost estimate.
- 2) The Agency shall approve a reduction in the penal sum whenever the current cost estimate decreases.

g) Term:

- 1) The bond must be issued for a term of at least five years and must not be cancelable during that term.
- 2) If the operator fails to provide substitute financial assurance prior to expiration of a bond, the term of the bond must be automatically extended for one twelve-month period starting with the date of expiration of the bond. During such extension the bond will cease to serve as financial assurance satisfying the requirements of this Part, and will not excuse the operator from the duty to provide substitute financial assurance.

h) Cure of default and refunds:

- 1) The Agency shall release the surety if, after the surety becomes liable on the bond, the operator or another person provides financial assurance for closure and postclosure care of the site, unless the Agency determines that the closure or postclosure care plan or the amount of substituted financial assurance is inadequate to provide closure and postclosure care in compliance with this Part.
- 2) After closure and postclosure care have been completed in accordance with the plans and requirements of this Part, the Agency shall refund any unspent money which was paid to the Agency by the surety.

Section 811.712 Surety Bond Guaranteeing Performance

- a) An operator may satisfy the requirements of this Subpart by obtaining a surety bond which conforms to the requirements of this Section and submitting the bond to the Agency.
- b) The surety company issuing the bond shall be licensed by the Illinois Department of Insurance pursuant to the

Illinois Insurance Code.

- c) The surety bond must be on the forms as specified in Appendix A, Illustration C, D or H.
- d) Any payments made under the bond will be placed in the landfill closure and postclosure fund within the State Treasury.
- e) Conditions:
 - 1) The bond must guarantee that the operator will provide closure and postclosure care in accordance with the closure and postclosure care plans in the permit. The surety shall have the option of providing closure and postclosure care in accordance with the closure and postclosure care plans, or of paying the penal sum.
 - 2) The surety will become liable on the bond obligation when, during the term of the bond, the operator fails to perform as guaranteed by the bond. The operator fails to perform when the operator:
 - A) Abandons the site;
 - B) Is adjudicated bankrupt;
 - C) Fails to initiate closure of the site or postclosure care when ordered to do so by the Board pursuant to Title VII of the Act, or when ordered to do so by a court of competent jurisdiction; or
 - D) Notifies the Agency that it has initiated closure, or initiates closure, but fails to close the site or provide postclosure care in accordance with the closure and postclosure care plans.
- f) Penal sum:
 - 1) The penal sum of the bond must be in an amount at least equal to the current cost estimate.
 - 2) The Agency shall approve a reduction in the penal sum whenever the current cost estimate decreases.
- g) Term:
 - 1) The bond must be issued for a term of at least

five years and must not be cancelable during that term.

- 2) If the operator fails to provide substitute financial assurance prior to expiration of a bond, the term of the bond must be automatically extended for one twelve-month period starting with the date of expiration of the bond. During such extension, the bond will cease to serve as financial assurance satisfying the requirements of this Part, and will not excuse the operator from the duty to provide substitute financial assurance.

h) Cure of default and refunds:

- 1) The Agency shall release the surety if, after the surety becomes liable on the bond, the operator or another person provides financial assurance for closure and postclosure care of the site, unless the Agency determines that the closure or postclosure care plan or the amount of substituted financial assurance is inadequate to provide closure and postclosure care in compliance with this Part.
- 2) After closure and postclosure care have been completed in accordance with the closure and postclosure care plans and the requirements of this Part, the Agency shall refund any unspent money which was paid to the Agency by the surety.

- i) The surety will not be liable for deficiencies in the performance of closure by the operator after the Agency releases the operator from the requirements of this Subpart.

Section 811.713 Letter of Credit

- a) An operator may satisfy the requirements of this Subpart by obtaining an irrevocable standby letter of credit which conforms to the requirements of this Section and submitting the letter to the Agency.
- b) The issuing institution shall be an entity which has the authority to issue letters of credit and:
 - 1) Whose letter-of-credit operations are regulated by the Illinois Commissioner of Banks and Trust Companies; or,
 - 2) Whose deposits are insured by the Federal Deposit

Insurance Corporation or the Federal Savings and Loan Insurance Corporation.

c) Forms:

- 1) The letter of credit must be on the forms specified in Appendix A, Illustration E.
- 2) The letter of credit must be accompanied by a letter from the operator, referring to the letter of credit by number, issuing institution and date, and providing the following information: name and address of the site and the amount of funds assured for closure and postclosure care of the site by the letter of credit.

d) Any amounts drawn by the Agency pursuant to the letter of credit will be deposited in the landfill closure and postclosure fund within the State Treasury.

e) Conditions on which the Agency may draw on the letter of credit:

- 1) The Agency shall draw on the letter of credit if the operator fails to perform closure or postclosure care in accordance with the closure and postclosure care plans.
- 2) The Agency shall draw on the letter of credit when the operator:
 - A) Abandons the site;
 - B) Is adjudicated bankrupt;
 - C) Fails to initiate closure of the site or postclosure care when ordered to do so by the Board pursuant to Title VII of the Act, or when ordered to do so by a court of competent jurisdiction; or
 - D) Notifies the Agency that it has initiated closure, or initiates closure, but fails to provide closure and postclosure care in accordance with the closure and postclosure care plans.

f) Amount:

- 1) The letter of credit must be issued in an amount at least equal to the current cost estimate.

- 2) The Agency shall approve a reduction in the amount whenever the current cost estimate decreases.
- g) Term:
- 1) The letter of credit must be issued for a term of at least five years and must be irrevocable during that term.
 - 2) If the operator fails to substitute alternative financial assurance prior to expiration of a letter of credit, the term of the letter of credit must be automatically extended for one twelve-month period starting with the date of expiration. During such extension, the letter of credit will cease to serve as financial assurance satisfying the requirements of this Part, and will not excuse the operator from the duty to provide substitute financial assurance.
- h) Cure of default and refunds:
- 1) The Agency shall release the financial institution if, after the Agency is allowed to draw on the letter of credit, the operator or another person provides financial assurance for closure and postclosure care of the site, unless the Agency determines that a plan or the amount of substituted financial assurance is inadequate to provide closure and postclosure care as required by this Part.
 - 2) After closure and postclosure care have been completed in accordance with the closure and postclosure care plans and the requirements of this Part, the Agency shall refund any unspent money which was paid to the Agency by the financial institution.

Section 811.714 Closure Insurance

- a) An operator may satisfy the requirements of this Subpart by obtaining closure and postclosure care insurance which conforms to the requirements of this Section and submitting an executed duplicate original of such insurance policy to the Agency.
- b) The insurer shall be licensed to transact the business of insurance by the Illinois Department of Insurance pursuant to the Illinois Insurance Code.
- c) The policy must be on forms approved by the Illinois

Department of Insurance pursuant to the Illinois Insurance Code.

- d) Face amount:
- 1) The closure and postclosure care insurance policy must be issued for a face amount at least equal to the current cost estimate. The term "face amount" means the total amount the insurer is obligated to pay under the policy. Actual payments by the insurer will not change the face amount, although the insurer's future liability will be lowered by the amount of the payments.
 - 2) The Agency shall approve a reduction in the amount of the policy whenever the current cost estimate decreases.
- e) The closure and postclosure care insurance policy must guarantee that funds will be available to close the site and to provide postclosure care thereafter. The policy must also guarantee that, once closure begins, the insurer will be responsible for paying out funds, up to an amount equal to the face amount of the policy, upon the direction of the Agency to such party or parties as the Agency specifies. The insurer will be liable when:
- 1) The operator abandons the site;
 - 2) The operator is adjudicated bankrupt;
 - 3) The Board, pursuant to Title VIII of the Act, or a court of competent jurisdiction orders the site closed;
 - 4) The operator notifies the Agency that it is initiating closure; or
 - 5) Any person initiates closure with approval of the Agency.
- f) Reimbursement for closure and postclosure care expenses:
- 1) After initiating closure, an operator or any other person authorized to perform closure or postclosure care may request reimbursement for closure and postclosure care expenditures by submitting itemized bills to the Agency.
 - 2) Within 60 days after receiving bills for closure

or postclosure care activities, the Agency shall determine whether the expenditures are in accordance with the closure or postclosure care plan. The Agency shall direct the insurer to make reimbursement in such amounts as the Agency specifies in writing as expenditures in accordance with the closure and postclosure care plans.

- 3) If the Agency determines based on such information as is available to it that the cost of closure and postclosure care will be greater than the face amount of the policy, it shall withhold reimbursement of such amounts as it deems prudent until it determines that the operator is no longer required to maintain financial assurance. In the event the face amount of the policy is inadequate to pay all claims, the Agency shall pay claims according to the following priorities:
 - A) Persons with whom the Agency has contracted to perform closure or postclosure care activities (first priority);
 - B) Persons who have completed closure or postclosure care authorized by the Agency (second priority);
 - C) Persons who have completed work which furthered the closure or postclosure care (third priority);
 - D) The operator and related business entities (last priority).

g) Cancellation:

- 1) The operator shall maintain the policy in full force and effect until the Agency releases the insurer pursuant to Section 811.702.
- 2) The policy must provide that the insurer may not cancel, terminate or fail to renew the policy, except for failure to pay the premium. The automatic renewal of the policy must, at a minimum, provide the insured with the option of renewal at the face amount of the expiring policy. If there is a failure to pay the premium, the insurer may elect to cancel, terminate or fail to renew the policy by sending notice by certified mail to the operator and the Agency. Cancellation, termination or failure to renew may not occur, however, during the 120 days beginning

with the date of receipt of the notice by both the Agency and the operator, as evidenced by the return receipts. Cancellation, termination or failure to renew may not occur and the policy will remain in full force and effect in the event that on or before the date of expiration the premium due is paid.

- h) Each policy must contain a provision allowing assignment of the policy to a successor operator. Such assignment may be conditional upon consent of the insurer, provided such consent is not unreasonably refused.

Section 811.715 Self-Insurance for Non-commercial Sites

- a) Definitions. The following definitions are intended to assist in the understanding of this Part and are not intended to limit the meanings of terms in any way that conflicts with generally accepted accounting principles:

"Assets" means all existing and all probable future economic benefits obtained or controlled by a particular entity.

"Current assets" means cash or other assets or resources commonly identified as those which are reasonably expected to be realized in cash or sold or consumed during the normal operating cycle of the business.

"Current liabilities" means obligations whose liquidation is reasonably expected to require the use of existing resources properly classifiable as current assets or the creation of other current liabilities.

"Generally accepted accounting principles" means Auditing Standards--Current Text, incorporated by reference at 35 Ill. Adm Code 810.104.

"Gross Revenue" means total receipts less returns and allowances.

"Independently audited" refers to an audit performed by an independent certified public accountant in accordance with generally accepted auditing standards.

"Liabilities" means probable future sacrifices of economic benefits arising from present obligations

to transfer assets or provide services to other entities in the future as a result of past transactions or events.

"Net working capital" means current assets minus current liabilities.

"Net worth" means total assets minus total liabilities and is equivalent to owner's equity.

"Tangible net worth" means tangible assets less liabilities; tangible assets do not include intangibles such as goodwill and rights to patents or royalties.

b) Information to be Filed

An operator may satisfy the financial assurance requirements of this Part by providing the following:

- 1) Bond without surety promising to pay the cost estimate (subsection (c)).
- 2) Proof that the operator meets the gross revenue test (subsection (d)).
- 3) Proof that the operator meets the financial test (subsection (e)).

c) Bond Without Surety. An operator utilizing self-insurance shall provide a bond without surety on the forms specified in Appendix A, Illustration G. The operator shall promise to pay the current cost estimate to the Agency unless the operator provides closure and postclosure care in accordance with the closure and postclosure care plans.

d) Gross Revenue Test. The operator shall demonstrate that less than one-half of its gross revenues are derived from waste disposal operations. Revenue is "from waste disposal operations" if it would stop upon cessation of the operator's waste disposal operations.

e) Financial Test

- 1) To pass the financial test, the operator shall meet the criteria of either subsection (e)(1)(A) or (e)(1)(B):

A) The operator shall have:

- i) Two of the following three ratios: a

ratio of total liabilities to net worth of less than 2.0; a ratio of the sum of net income plus depreciation, depletion and amortization to total liabilities of greater than 0.1; or a ratio of current assets to current liabilities of greater than 1.5; and

- ii) Net working capital and tangible net worth each at least six times the current cost estimate; and
- iii) Tangible net worth of at least \$10 million; and
- iv) Assets in the United States amounting to at least 90 percent of the operator's total assets and at least six times the current cost estimate.

B) The operator shall have:

- i) A current rating of AAA, AA, A or BBB for its most recent bond issuance as issued by Standard and Poor, or a rating of Aaa, Aa, A or Baa, as issued by Moody; and
- ii) Tangible net worth at least six times the current cost estimate; and
- iii) Tangible net worth of at least \$10 million; and
- iv) Assets located in the United States amounting to at least 90 percent of its total assets or at least six times the current cost estimate.

2) To demonstrate that it meets this test, the operator shall submit the following items to the Agency:

- A) A letter signed by the operator's chief financial officer and worded as specified in Appendix A, Illustration I; and
- B) A copy of the independent certified public accountant's report on examination of the operator's financial statements for the latest completed fiscal year; and

- C) A special report from the operator's independent certified public accountant to the operator stating that:
 - i) The accountant has compared the data which the letter from the chief financial officer specifies as having been derived from the independently audited, year-end financial statements for the latest fiscal year with the amounts in such financial statements; and
 - ii) In connection with that procedure, no matters came to the accountant's attention which caused the accountant to believe that the specified data should be adjusted.
- f) Updated Information.
 - 1) After the initial submission of items specified in subsections (d) and (e), the operator shall send updated information to the Agency within 90 days after the close of each succeeding fiscal year.
 - 2) If the operator no longer meets the requirements of subsections (d) and (e), the operator shall send notice to the Agency of intent to establish alternative financial assurance. The notice must be sent by certified mail within 90 days after the end of the fiscal year for which the year-end financial data show that the operator no longer meets the requirements.
- g) Qualified Opinions. If the opinion required by subsections (e)(2)(B) and (e)(2)(C) includes an adverse opinion or a disclaimer of opinion, the Agency shall disallow the use of self-insurance. If the opinion includes other qualifications, the Agency shall disallow the use of self-insurance if:
 - 1) The qualifications relate to the numbers which are used in the gross revenue test or the financial test; and,
 - 2) In light of the qualifications, the operator has failed to demonstrate that it meets the gross revenue test or financial test.
- h) Parent Corporation. An operator may satisfy the financial assurance requirements of this Part by

demonstrating that a corporation which owns an interest in the operator meets the gross revenue and financial tests. The operator shall also provide a bond with the parent as surety (Appendix A, Illustration H).

Section 811.Appendix A Financial Assurance Forms
Illustration A Trust Agreement

TRUST AGREEMENT

Trust Fund Number _____

Trust Agreement, the "Agreement," entered into as of the _____
day of _____, by and between _____,
_____, a _____,
the "Grantor," and _____,
_____, the "Trustee."

Whereas, Section 21.1 of the Environmental Protection Act, "Act", prohibits any person from conducting any waste disposal operation unless such person has posted with the Illinois Environmental Protection Agency, "IEPA", a performance bond or other security for the purpose of insuring closure of the site and postclosure care in accordance with the Act and Illinois Pollution Control Board, "IPCB", rules.

Whereas, the IPCB has established certain regulations applicable to the Grantor, requiring that an operator of a waste disposal site provide assurance that funds will be available when needed for closure and/or postclosure care of the site.

Whereas, the Grantor has elected to establish a trust to provide all or part of such financial assurance for the sites identified in this agreement.

Whereas, the Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this agreement, and the Trustee is willing to act as trustee.

Whereas, Trustee is an entity which has authority to act as a trustee and whose trust operations are regulated by the Illinois Commissioner of Banks & Trust Companies or who complies with the Corporate Fiduciary Act (Ill. Rev. Stat. 1989, ch. 17, par. 1551-1 et seq.). (Line through any condition which does not apply.)

Now, Therefore, the Grantor and the Trustee agree as follows:

Section 1. Definitions. As used in this Agreement:

- a) The term "Grantor" means the operator who enters into this Agreement and any successors or assigns of the operator.
- b) The term "Trustee" means the Trustee who enters into this Agreement and any successor Trustee.

Section 2. Identification of Sites and Cost Estimates. This Agreement pertains to the sites and cost estimates identified on

attached Schedule A (on Schedule A, list the name and address and initial cost estimate of each site for which financial assurance is demonstrated by this agreement).

Section 3. Establishment of Fund. The Grantor and the Trustee hereby establish a trust fund, the "Fund," for the benefit of the IEPA. The Grantor and the Trustee intend that no other third party have access to the Fund except as provided in this agreement. The Fund is established initially as consisting of the property, which is acceptable to the Trustee, described in Schedule B attached to this agreement. Such property and any other property subsequently transferred to the Trustee is referred to as the Fund, together with all earnings and profits on the Fund, less any payments or distributions made by the Trustee pursuant to this agreement. The Fund shall be held by the Trustee, in trust, as provided in this agreement. The Trustee shall not be responsible nor shall it undertake any responsibility for the amount or adequacy of, nor any duty to collect from the Grantor, any payments necessary to discharge any liabilities of the Grantor.

Section 4. Payment for Closure and Postclosure Care. The Trustee shall make payments from the Fund as the IEPA shall direct, in writing, to provide for the payment of the costs of closure and/or postclosure care of the sites covered by this agreement. The Trustee shall reimburse the Grantor or other persons as specified by the IEPA from the Fund for closure and postclosure expenditures in such amounts as the IEPA shall direct in writing. In addition, the Trustee shall refund to the Grantor such amounts as the IEPA specifies in writing. Upon refund, such funds shall no longer constitute part of the Fund.

Section 5. Payments Comprising the Fund. Payments made to the Trustee for the Fund shall consist of cash or securities acceptable to the Trustee.

Section 6. Trust Management. The Trustee shall invest and reinvest the principal and income of the Fund and keep the Fund invested as a single fund, without distinction between principal and income, in accordance with general investment policies and guidelines which the Grantor may communicate in writing to the Trustee from time to time, subject, however, to the provisions of this Section. In investing, reinvesting, exchanging, selling and managing the Fund, the Trustee shall discharge his duties with respect to the trust fund solely in the interest of the beneficiary and with the care, skill, prudence and diligence under the circumstances then prevailing which persons of prudence, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of a like character and with like aims; except that:

- a) Securities or other obligations of the Grantor, or any other

owner or operator of the site, or any of their affiliates as defined in Section 80a-2(a) of the Investment Company Act of 1940, as amended (15 U.S.C. 80a-2(a)) shall not be acquired or held, unless they are securities or other obligations of the Federal government or the State of Illinois;

- b) The Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent insured by the Federal Deposit Insurance Corporation.
- c) The Trustee is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest thereon.

Section 7. Commingling and Investment. The Trustee is expressly authorized in its discretion:

- a) To transfer from time to time any or all of the assets of the Fund to any common, commingled or collective trust fund created by the Trustee in which the Fund is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and
- b) To purchase shares in any investment company registered under the Investment Company Act of 1940 (15 U.S.C. 80a-1 et seq.) including one which may be created, managed, underwritten or to which investment advice is rendered or the shares of which are sold by the Trustee. The Trustee may vote such shares in its discretion.

Section 8. Express Powers of Trustee. Without in any way limiting the powers and discretions conferred upon the Trustee by the other provisions of this agreement or by law, the Trustee is expressly authorized and empowered:

- a) To sell, exchange, convey, transfer or otherwise dispose of any property held by it, by public or private sale. No person dealing with the Trustee shall be bound to see to the application of the purchase money or to inquire into the validity or expedience of any such sale or other disposition;
- b) To make, execute, acknowledge and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers granted in this agreement;
- c) To register any securities held in the Fund in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same

issue held by the Trustee in other fiduciary capacities, or to deposit or arrange for the deposit of such securities in a qualified central depository even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee of such depository with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the United States Government, or any agency or instrumentality thereof, with a Federal Reserve Bank, but the books and records of the Trustee shall at all times show that all such securities are part of the Fund.

- d) To deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by the Federal Deposit Insurance Corporation; and
- e) To compromise or otherwise adjust all claims in favor of or against the Fund.

Section 9. Taxes and Expenses. All taxes of any kind that may be assessed or levied against or in respect of the Fund and all brokerage commissions incurred by the Fund shall be paid from the Fund. All other expenses incurred by the Trustee, to the extent not paid directly by the Grantor, and all other proper charges and disbursements of the Trustee shall be paid from the Fund.

Section 10. Annual Valuation. The Trustee shall annually furnish to the Grantor and to the IEPA a statement confirming the value of the Trust. The evaluation day shall be each year on the _____ day of _____. Any securities in the Fund shall be valued at market value as of the evaluation day. The Trustee shall mail the evaluation statement to the Grantor and the IEPA within 30 days after the evaluation day. The failure of the Grantor to object in writing to the Trustee within 90 days after the statement has been furnished to the Grantor and the IEPA shall constitute a conclusively binding assent by the Grantor, barring the Grantor from asserting any claim or liability against the Trustee with respect to matters disclosed in the statement.

Section 11. Advice of counsel. The Trustee may from time to time consult with counsel, who may be counsel to the Grantor, with respect to any question arising as to the construction of this agreement or any action to be taken hereunder. The Trustee shall be fully protected, to the extent permitted by law, in acting upon the advice of counsel.

Section 12. Trustee Compensation. The Trustee shall be entitled to reasonable compensation for its services as agreed

upon in writing from time to time with the Grantor.

Section 13. Successor Trustee. The Trustee may resign or the Grantor may replace the Trustee, but such resignation or replacement shall not be effective until the Grantor has appointed a successor trustee and the successor accepts the appointment. The successor trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor trustee's acceptance of the appointment, the Trustee shall assign, transfer and pay over to the successor trustee the funds and properties then constituting the Fund. If for any reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Trustee may apply to a court of competent jurisdiction for the appointment of a successor trustee or for instructions. The successor trustee shall specify the date on which it assumes administration of the trust in a writing sent to the Grantor, the IEPA and the present Trustee by certified mail ten days before such change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this Section shall be paid as provided in Section 9.

Section 14. Instructions to the Trustee. All orders, requests and instructions by the Grantor to the Trustee shall be in writing, signed by such persons as are designated in the attached Exhibit A or such other designees as the Grantor may designate by amendment to Exhibit A. The Trustee shall be fully protected in acting without inquiry in accordance with the Grantor's orders, requests and instructions. All orders, requests and instructions by the IEPA to the Trustee shall be in writing, signed by the IEPA Director or his designees, and the Trustee shall act and shall be fully protected in acting in accordance with such orders, requests and instructions. The Trustee shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority of any person to act on behalf of the Grantor or IEPA hereunder has occurred. The Trustee shall have no duty to act in the absence of such orders, requests and instructions from the Grantor and/or IEPA, except as provided in this agreement.

Section 15. Notice of Nonpayment. The Trustee shall notify the Grantor and the IEPA, by certified mail within ten days following the expiration of the 30-day period after the anniversary of the establishment of the Trust, if no payment is received from the Grantor during that period. After the pay-in period is completed, the Trustee shall not be required to send a notice of nonpayment.

Section 16. Amendment of Agreement. This Agreement may be amended by an instrument in writing executed by the Grantor, the Trustee and the IEPA Director, or by the Trustee and the IEPA Director if the Grantor ceases to exist.

Section 17. Irrevocability and Termination. Subject to the right of the parties to amend this Agreement as provided in Section 16, this Trust shall be irrevocable and shall continue until terminated at the written agreement of the Grantor, the Trustee and the IEPA Director, or by the Trustee and the IEPA, if the Grantor ceases to exist. Upon termination of the Trust, all remaining trust property, less final trust administration expenses, shall be delivered to the Grantor.

Section 18. Immunity and Indemnification. The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this Trust, or in carrying out any directions by the Grantor or the IEPA Director issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantor or from the Trust Fund, or both, from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct in its official capacity, including all expenses reasonably incurred in its defense in the event the Grantor fails to provide such defense.

Section 19. Choice of Law. This Agreement shall be administered, construed and enforced according to the laws of the State of Illinois.

Section 20. Interpretation. As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each Section of this Agreement shall not affect the interpretation or the legal efficacy of this Agreement.

In Witness Whereof the parties have caused this Agreement to be executed by their respective officers duly authorized and their corporate seals to be hereunto affixed and attested as of the date first above written.

Attest: Signature of Grantor _____
Typed Name _____
Title _____

Seal

Attest: Signature of Trustee _____
Typed Name _____
Title _____

Seal

Section 811. Appendix A Financial Assurance Forms
Illustration B Certificate of Acknowledgment

CERTIFICATE OF ACKNOWLEDGMENT

State of _____)
County of _____) SS

On this _____ day of _____, _____ before me personally came _____ (operator) to me known, who, being by me duly sworn, did depose and say that she/he resides at _____ (address), that she/he is _____ (title) of _____ (corporation), the corporation described in and which executed the above instrument; that she/he knows the seal of said corporation; that the seal affixed to such instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation, and that she/he signed her/his name thereto by like order.

_____ Notary Public
My Commission Expires _____

Section 811. Appendix A Financial Assurance Forms
Illustration C Forfeiture Bond

FORFEITURE BOND

Date bond executed: _____

Effective date: _____

Principal: _____

Type of organization: _____

State of incorporation: _____

Surety: _____

Sites:

Name _____

Address _____

City _____

Amount guaranteed by this bond: \$ _____

Name _____

Address _____

City _____

Amount guaranteed by this bond: \$ _____

Please attach a separate page if more space is needed for all sites.

Total penal sum of bond: \$ _____

Surety's bond number: _____

The Principal and the Surety promise to pay the Illinois Environmental Protection Agency ("IEPA") the above penal sum unless the Principal provides closure and postclosure care for each site in accordance with the closure and postclosure care plans for that site. To the payment of this obligation the Principal and Surety jointly and severally bind themselves, their heirs, executors, administrators, successors and assigns.

Whereas the Principal is required, under Section 21(d) of the Environmental Protection Act (Ill. Rev. Stat. 1989, ch. 111 1/2,

par. 1021(d)) to have a permit to conduct a waste disposal operation;

Whereas the Principal is required, under Section 21.1 of the Environmental Protection Act to provide financial assurance for closure and postclosure care; and

Whereas the Surety is licensed by the Illinois Department of Insurance;

Whereas the Principal and Surety agree that this bond shall be governed by the laws of the State of Illinois;

The Surety shall pay the penal sum to the IEPA if, during the term of the bond, the Principal fails to provide closure and postclosure care for any site in accordance with the closure and postclosure care plans for that site as guaranteed by this bond. The Principal fails to so provide when the Principal:

- a) Abandons the site;
- b) Is adjudicated bankrupt;
- c) Fails to initiate closure of the site or postclosure care when ordered to do so by the Board or a court of competent jurisdiction; or
- d) Notifies the Agency that it has initiated closure, or initiates closure, but fails to close the site or provide postclosure care in accordance with the closure and postclosure care plans.

The Surety shall pay the penal sum of the bond to the IEPA within 30 days after the IEPA mails notice to the Surety that the Principal has failed to so provide closure and postclosure care. Payment shall be made by check or draft payable to the State of Illinois, Landfill Closure and Postclosure Fund.

The liability of the Surety shall not be discharged by any payment or succession of payments unless and until such payment or payments shall amount in the aggregate to the penal sum of the bond. In no event shall the obligation of the Surety exceed the amount of the penal sum.

This bond shall expire on the _____ day of _____, _____; provided, however, that if the Principal fails to provide substitute financial assurance prior to the expiration date, and the IEPA mails notice of such failure to the Surety within 30 days after such date, the term of this bond shall be automatically extended for one twelve-month period starting with the date of expiration of the bond.

The Principal may terminate this bond by sending written notice to the Surety; provided, however, that no such notice shall become effective until the Surety receives written authorization for termination of the bond from the IEPA.

In Witness Whereof, the Principal and Surety have executed this Forfeiture Bond and have affixed their seals on the date set forth above.

The persons whose signatures appear below certify that they are authorized to execute this surety bond on behalf of the Principal and Surety.

Principal Corporate Surety _____

Signature Name _____

Typed Name _____

Address _____

Title _____

State of Incorporation _____

Date _____

Signature _____

Typed Name _____

Title _____

Corporate seal

Corporate seal

Bond premium: \$ _____

Section 811. Appendix A Financial Assurance Forms
Illustration D Performance Bond

PERFORMANCE BOND

Date bond executed: _____

Effective date: _____

Principal: _____

Type of organization: _____

State of incorporation: _____

Surety: _____

Sites:

Name _____

Address _____

City _____

Amount guaranteed by this bond: \$ _____

Name _____

Address _____

City _____

Amount guaranteed by this bond: \$ _____

Please attach a separate page if more space is needed for all sites.

Total penal sum of bond: \$ _____

Surety's bond number: _____

The Principal and the Surety promise to pay the Illinois Environmental Protection Agency ("IEPA") the above penal sum unless the Principal or Surety provides closure and postclosure care for each site in accordance with the closure and postclosure care plans for that site. To the payment of this obligation the Principal and Surety jointly and severally bind themselves, their heirs, executors, administrators, successors and assigns.

Whereas the Principal is required, under Section 21(d) of the Environmental Protection Act (Ill. Rev. Stat. 1989, ch. 111 1/2,

par. 1021(d)) to have a permit to conduct a waste disposal operation;

Whereas the Principal is required, under Section 21.1 of the Environmental Protection Act, to provide financial assurance for closure and postclosure care; and

Whereas the Surety is licensed by the Illinois Department of Insurance;

Whereas the Principal and Surety agree that this bond shall be governed by the laws of the State of Illinois;

The Surety shall pay the penal sum to the IEPA or provide closure and postclosure care in accordance with the closure and postclosure care plans for the site if, during the term of the bond, the Principal fails to provide closure and postclosure care for any site in accordance with the closure and postclosure care plans for that site as guaranteed by this bond. The Principal fails to so provide when the Principal:

- a) Abandons the site;
- b) Is adjudicated bankrupt;
- c) Fails to initiate closure of the site or postclosure care when ordered to do so by the Board or a court of competent jurisdiction; or
- d) Notifies the Agency that it has initiated closure, or initiates closure, but fails to close the site or provide postclosure care in accordance with the closure and postclosure care plans.

The Surety shall pay the penal sum of the bond to the IEPA or notify the IEPA that it intends to provide closure and postclosure care in accordance with the closure and postclosure care plans for the site within 30 days after the IEPA mails notice to the Surety that the Principal has failed to so provide closure and postclosure care. Payment shall be made by check or draft payable to the State of Illinois, Landfill Closure and Postclosure Fund.

If the Surety notifies the Agency that it intends to provide closure and postclosure care, then the Surety must initiate closure and postclosure care within 60 days after the IEPA mailed notice to the Surety that the Principal failed to provide closure and postclosure care. The Surety must complete closure and postclosure care in accordance with the closure and postclosure care plans, or pay the penal sum.

The liability of the Surety shall not be discharged by any

payment or succession of payments unless and until such payment or payments shall amount in the aggregate to the penal sum of the bond. In no event shall the obligation of the Surety exceed the amount of the penal sum.

This bond shall expire on the _____ day of _____, _____; provided, however, that if the Principal fails to provide substitute financial assurance prior to the expiration date, and the IEPA mails notice of such failure to the Surety within 30 days after such date, the term of this bond shall be automatically extended for one twelve-month period starting with the date of expiration of the bond.

The Principal may terminate this bond by sending written notice to the Surety; provided, however, that no such notice shall become effective until the Surety receives written authorization for termination of the bond from the IEPA.

In Witness Whereof, the Principal and Surety have executed this Forfeiture Bond and have affixed their seals on the date set forth above.

The persons whose signatures appear below certify that they are authorized to execute this surety bond on behalf of the Principal and Surety.

Principal Corporate Surety _____

Signature _____

Name _____

Typed Name _____

Address _____

Title _____

State of Incorporation _____

Date Signature _____

Typed Name _____

Title _____

Corporate seal

Corporate seal

Bond premium: \$ _____

Section 811. Appendix A Financial Assurance Forms
 Illustration E Irrevocable Standby Letter of Credit

IRREVOCABLE STANDBY LETTER OF CREDIT

Director
 Illinois Environmental Protection Agency
 2200 Churchill Road
 Springfield, Illinois 62706

Dear Sir or Madam:

We have authority to issue letters of credit. Our letter-of-credit operations are regulated by the Illinois Commissioner of Banks and Trusts or our deposits are insured by the Federal Deposit Insurance Corporation. (Omit language which does not apply)

We hereby establish our Irrevocable Standby Letter of Credit No. _____ in your favor, at the request and for the account of _____ up to the aggregate amount of _____ U. S. dollars (\$ _____), available upon presentation of

1. your sight draft, bearing reference to this letter of credit No. _____; and,
2. your signed statement reading as follows: "I certify that the amount of the draft is payable pursuant to regulations issued under authority of the Environmental Protection Act (Ill. Rev. Stat. 1989, ch. 111 1/2, par. 1001 et seq.) and 35 Ill. Adm. Code 811.713(e).

This letter of credit is effective as of _____ and shall expire on _____; but, such expiration date shall be automatically extended for one period of twelve months starting with the expiration date if the operator fails to substitute alternative financial assurance prior to the expiration of this letter of credit and you notify us of such failure within 30 days after the above expiration date.

Whenever this letter of credit is drawn on under and in compliance with the terms of this credit, we shall duly honor such draft upon presentation to us, and we shall deposit the amount of the draft directly into the State of Illinois landfill closure and postclosure fund in accordance with your instructions.

This letter of credit is governed by the Uniform Commercial Code (Ill. Rev. Stat. 1989, ch. 26, pars. 1-101 et seq.).

Signature _____

Typed Name _____

Title _____

Date _____

Name and address of issuing institution _____

This credit is subject to _____

Section 811. Appendix A Financial Assurance Forms
Illustration F Certificate of Insurance for Closure and/or
Postclosure Care

CERTIFICATE OF INSURANCE FOR CLOSURE AND/OR POSTCLOSURE CARE

Name and Address of Insurer ("Insurer"): _____

Name and Address of Insured ("Insured"): _____

Sites Covered:

Name _____

Address _____

City _____

Amount insured for this site: \$ _____

Name _____

Address _____

City _____

Amount insured for this site: \$ _____

Please attach a separate page if more space is needed for all sites.

Face Amount _____

Policy Number _____

Effective Date _____

The Insurer hereby certifies that it is licensed to transact the business of insurance by the Illinois Department of Insurance.

The insurer hereby certifies that it has issued to the Insured the policy of insurance identified above to provide financial assurance for closure and postclosure care for the sites identified above. The Insurer further warrants that such policy conforms in all respects with the requirements of 35 Ill. Adm. Code 811.714, as applicable and as such regulations were constituted on the date shown immediately below. It is agreed that any provision of the policy inconsistent with such

regulations is hereby amended to eliminate such inconsistency.

Name (Authorized signature for Insurer) _____

Typed Name _____

Title _____

Date _____

Section 811. Appendix A Financial Assurance Forms
Illustration G Operator's Bond Without Surety

OPERATOR'S BOND WITHOUT SURETY

Date bond executed: _____

Effective date: _____

Operator: _____

Operator's address: _____

Site: _____

Site address: _____

Penal sum: \$ _____

The operator promises to pay the penal sum to the Illinois Environmental Protection Agency unless the Operator provides closure and postclosure care of the site in accordance with the closure and postclosure care plans for the site.

Operator _____

Signature _____

Typed Name _____

Title _____

Date _____

Corporate seal

Section 811. Appendix A Financial Assurance Forms
Illustration H Operator's Bond With Parent Surety

OPERATOR'S BOND WITH PARENT SURETY

Date bond executed: _____

Effective Date: _____

Surety: _____

Surety's address: _____

Operator: _____

Operator's address: _____

Site: _____

Site address: _____

Penal sum: \$ _____

The Operator and Surety promise to pay the above penal sum to the Illinois Environmental Protection Agency ("IEPA") unless the Operator provides closure and postclosure care of the site in accordance with the closure and postclosure care plans for the site. To the payment of this obligation the Operator and Surety jointly and severally bind themselves, their heirs, executors, administrators, successors and assigns.

Whereas the Operator is required under the Environmental Protection Act (Ill. Rev. Stat. 1989, ch. 111 1/2, par. 1021(d)) to have a permit to conduct a waste disposal operation; and

Whereas the Operator is required under Section 21.1 of the Environmental Protection Act to provide financial assurance for closure and postclosure care; and

Whereas the Operator and Surety agree that this bond shall be governed by the laws of the State of Illinois; and

Whereas the Surety is a corporation which owns an interest in the Operator;

The Surety shall pay the penal sum to the IEPA if, during the term of the bond, the Operator fails to provide closure and postclosure care for any site in accordance with the closure and postclosure care plans for that site as guaranteed by this bond. The Operator fails to so provide when the Operator:

- a) Abandons the site;

- b) Is adjudicated bankrupt;
- c) Fails to initiate closure of the site or postclosure care when ordered to do so by the Board or a court of competent jurisdiction; or
- d) Notifies the Agency that it has initiated closure, or initiates closure, but fails to close the site or provide postclosure care in accordance with the closure and postclosure care plans.

The Surety shall pay the penal sum of the bond to the IEPA within 30 days after the IEPA mails notice to the Surety that the Operator has failed to so provide closure and postclosure care. Payment shall be made by check or draft payable to the State of Illinois, Landfill Closure and Postclosure Fund.

In Witness Whereof, the Operator and Surety have executed this bond and have affixed their seals on the date set forth above.

The persons whose signatures appear below certify that they are authorized to execute this surety bond on behalf of the Operator and Surety.

Operator _____

Surety _____

Signature _____

Name _____

Typed Name _____

Address _____

Title _____

State of Incorporation _____

Date _____

Signature _____

Typed Name _____

Title _____

Corporate seal

Corporate seal

Section 811. Appendix A Financial Assurance Forms
Illustration I Letter From Chief Financial Officer

LETTER FROM CHIEF FINANCIAL OFFICER

Director
Illinois Environmental Protection Agency
2200 Churchill Road
Springfield, Illinois 62706

Dear Sir or Madam:

I am the chief financial officer of _____.

This letter is in support of this firm's use of the gross revenue test and financial test to demonstrate financial assurance pursuant to 35 Ill. Adm. Code 811.715.

This letter is to demonstrate financial assurance for the following sites:

Operator: _____

Name: _____

Address: _____

City: _____

Current cost estimate: \$ _____

Operator: _____

Name: _____

Address: _____

City: _____

Current cost estimate: \$ _____

Please attach a separate page if more space is needed for all facilities.

Attached is an Operator's Bond without Surety or an Operator's Bond with Parent Surety for the current cost estimate for each site. (Strike inapplicable language.)

Gross Revenue Test

1. Gross revenue of the firm \$ _____

2. Gross revenue from waste disposal operations \$ _____
3. Line 2 divided by line 3 _____

Financial Test
Alternative I

1. Sum of current cost estimates (total of all cost estimates shown in paragraphs above) \$ _____
2. Total liabilities (if any portion of the cost estimates is included in total liabilities, you may deduct the amount of that portion from this line and add that amount to lines 3 and 4) \$ _____
3. Tangible net worth \$ _____
4. Net worth \$ _____
5. Current assets \$ _____
6. Current liabilities \$ _____
7. Net working capital (line 5 minus line 6) \$ _____
8. The sum of net income plus depreciation, depletion, and amortization \$ _____
9. Total assets in U.S. (required only if less than 90 percent of firm's assets are located in the U.S. \$ _____

Yes

No

10. Is line 3 at least \$10 million? _____
11. Is line 3 at least 6 times line 1? _____
12. Is line 7 at least 6 times line 1? _____
13. Are at least 90 percent of firm's assets located in the U.S.? If not, complete line 14. _____
14. Is line 9 at least 6 times line 1? _____
15. Is line 2 divided by line 4 less than 2.0? _____
16. Is line 8 divided by line 2 greater than 0.1? _____
17. Is line 5 divided by line 6 greater than 1.5? _____

Signature _____

Typed Name _____

Title _____

Date _____

Financial Test
Alternative II

1. Sum of current cost estimates (total of all cost estimates shown in paragraphs above) \$ _____
 2. Current bond rating of most recent issuance of this firm and name of rating service _____
 3. Date of issuance of bond _____
 4. Date of maturity of bond _____
 5. Tangible net worth (if any portion of the closure and postclosure cost estimates is included in "total liabilities" on your firm's financial statements, you may add the amount of that portion to this line) \$ _____
 6. Total assets in U.S. (required only if less than 90 percent of firm's assets are located in the U.S.) \$ _____
- | | |
|-----|----|
| Yes | No |
|-----|----|
7. Is line 5 at least \$10 million? _____
 8. Is line 5 at least 6 times line 1? _____
 9. Are at least 90 percent of firm's assets located in the U.S.? If not complete line 10. _____
 10. Is line 6 at least 6 times line 1? _____

Signature _____

Typed name _____

Title _____

Date _____

TITLE 35: ENVIRONMENTAL PROTECTION
 SUBTITLE G: WASTE DISPOSAL
 CHAPTER I: POLLUTION CONTROL BOARD
 SUBCHAPTER i: SOLID WASTE AND SPECIAL WASTE HAULING

PART 812
 INFORMATION TO BE SUBMITTED IN A PERMIT APPLICATION

SUBPART A: GENERAL INFORMATION REQUIRED FOR ALL LANDFILLS

Section	
812.101	Scope and Applicability
812.102	Certification by Professional Engineer
812.103	Application Fees
812.104	Required Signatures
812.105	Approval by Unit of Local Government
812.106	Site Location Map
812.107	Site Plan Map
812.108	Narrative Description of the Facility
812.109	Location Standards
812.110	Surface Water Control
812.111	Daily Cover
812.112	Legal Description
812.113	Proof of Property Ownership and Certification
812.114	Closure Plans
812.115	Postclosure Care Plans
812.116	Closure and Postclosure Cost Estimates

SUBPART B: ADDITIONAL INFORMATION REQUIRED FOR INERT WASTE
 LANDFILLS

Section	
812.201	Scope and Applicability
812.202	Waste Stream Test Results
812.203	Final Cover
812.204	Closure Requirements

SUBPART C: ADDITIONAL INFORMATION REQUIRED FOR PUTRESCIBLE AND
 CHEMICAL WASTE LANDFILLS

Section	
812.301	Scope and Applicability
812.302	Waste Analysis
812.303	Site Location
812.304	Waste Shredding
812.305	Foundation Analysis and Design
812.306	Design of the Liner System
812.307	Leachate Drainage and Collection Systems
812.308	Leachate Management System
812.309	Landfill Gas Monitoring Systems
812.310	Gas Collection Systems
812.311	Landfill Gas Disposal
812.312	Intermediate Cover
812.313	Design of the Final Cover System
812.314	Description of the Hydrogeology

- 812.315 Plugging and Sealing of Drill Holes
- 812.316 Results of the Groundwater Impact Assessment
- 812.317 Groundwater Monitoring Program
- 812.318 Operating Plans

AUTHORITY: Implementing Sections 5, 21, 21.1, 22, 22.17 and 28.1, and authorized by Section 27 of the Environmental Protection Act (Ill. Rev. Stat. 1989, ch. 111 1/2, pars. 1005, 1021, 1021.1, 1022, 1022.17, 1028.1 and 1027).

SOURCE: Adopted in R88-7 at 14 Ill. Reg. , effective

NOTE: Capitalization indicates statutory language.

SUBPART A: GENERAL INFORMATION REQUIRED FOR ALL LANDFILLS

Section 812.101 Scope and Applicability

- a) All persons, except those specifically exempted by Section 21(d) of the Environmental Protection Act (Act) (Ill. Rev. Stat. 1989, ch. 111 1/2, par. 1021(d)) shall submit to the Agency an application for a permit to develop and operate a landfill. The application must contain the information required by this Subpart and by Section 39(a) of the Act.
- b) Subpart A contains general standards applicable to all landfills. Subpart B contains additional standards applicable to landfills which accept only inert waste. Subpart C contains additional standards applicable to landfills which accept chemical and putrescible waste.
- c) All general provisions of 35 Ill. Adm. Code 810 apply to this Part.

Section 812.102 Certification by Professional Engineer

All designs shall be prepared by, or under the supervision of, a professional engineer. The professional engineer shall affix the name of the engineer, date of preparation, registration number, a statement attesting to the accuracy of the information and design, and a professional seal to all designs.

Section 812.103 Application Fees

The permit application must be accompanied by all filing fees required pursuant to Section 5(f) of the Act.

Section 812.104 Required Signatures

- a) All permit applications shall contain the name, address, and telephone number of a duly authorized agent of the operator and the property owner to whom all inquiries and correspondence shall be addressed.
- b) All permit applications shall be signed by a duly authorized agent of the operator and the property owner, shall be accompanied by an oath or affidavit attesting to the agent's authority to sign the application and shall be notarized. The following persons are considered duly authorized agents of the operator and the property owner:
 - 1) For Corporations, a principal executive officer of at least the level of vice president
 - 2) For a sole proprietorship or partnership, a proprietor or general partner, respectively;
 - 3) For a municipality, state, federal or other public agency, by the head of the agency or ranking elected official.

Section 812.105 Approval by Unit of Local Government

The applicant shall state whether the facility is a new regional pollution control facility, as defined in Section 3.32 of the Act, which is subject to the site location suitability approval requirements of Sections 39(c) and 39.2 of the Act. If such approval by a unit of local government is required, the application shall identify the unit of local government with jurisdiction. The application shall contain any approval issued by that unit of local government. If no approval has been granted, the application shall describe the status of the approval request.

Section 812.106 Site Location Map

All permit applications shall contain a site location map on the most recent United States Geological Survey (USGS) quadrangle of the area from the 7½ minute series (topographic), or on such other map whose scale clearly shows the following information:

- a) The permit area and all adjacent property, extending at least 1000 meters (3300 feet) beyond the boundary of the facility;
- b) All surface waters;
- c) The prevailing wind direction;

- d) All rivers designated for protection under the Wild and Scenic Rivers Act (16 U.S.C. 1271 et seq.);
- e) The limits of all 100-year floodplains;
- f) All natural areas designated as a Dedicated Illinois Nature Preserve pursuant to the Illinois Natural Areas Preservation Act (Ill. Rev. Stat. 1989, ch. 105, par. 701 et seq.);
- g) All historic and archaeological sites designated by the National Historic Preservation Act (16 U.S.C. 470 et seq.) and the Illinois Historic Areas Preservation Act (Ill. Rev. Stat. 1989 ch. 127, par. 133d1 et seq.);
- h) All areas identified as critical habitat pursuant to the Endangered Species Act (16 U.S.C. 1531 et seq.) and the Illinois Endangered Species Protection Act (Ill. Rev. Stat. 1989, ch. 8, par. 331 et seq.); and
- i) All main service corridors, transportation routes, and access roads to the facility.

Section 812.107 Site Plan Map

The application shall contain maps, including cross sectional maps of the site boundaries, showing the location of the facility on a scale no smaller than one inch equals 200 feet containing a two-foot contour interval. The following information shall be shown:

- a) The entire permit area;
- b) The boundaries, both above and below ground level, of the facility and all units included in the facility;
- c) Location of borrow areas;
- d) Boundaries of all areas to be disturbed;
- e) The proposed phasing of the facility, including a delineation of the approximate area to be disturbed each year and areas expected to be closed each year in compliance with 35 Ill. Adm. Code 811.107(a);
- f) All roads in and around the facility;
- g) Devices for controlling access to the facility;
- h) Devices for controlling litter;

- i) Fire protection facilities; and
- j) Utilities.

Section 812.108 Narrative Description of the Facility

The permit application shall contain a written description of the facility with supporting documentation describing the procedures and plans that will be used at the facility to comply with the requirements of 35 Ill. Adm. Code 811 and any other applicable Parts of 35 Ill. Adm. Code: Chapter I. Such descriptions shall include, but not be limited to the following information:

- a) The type of waste disposal units and the types of wastes expected in each unit;
- b) An estimate of the maximum capacity of each unit and the rate at which waste is to be placed;
- c) The manner in which waste will be placed and compacted to comply with 35 Ill. Adm. Code 811.105;
- d) The estimated unit weight of the waste;
- e) The length of time each unit will receive waste;
- f) The design period to be used for each unit;
- g) Size of the open face area, including all information showing that slopes steeper than two to one will be stable and in compliance with 35 Ill. Adm. Code 811.107(b);
- h) A description of how units will be developed to allow contemporaneous closure and stabilization pursuant to 35 Ill. Adm. Code 811.110, 811.111, 811.204, 811.205 or 811.322;
- i) A description of all equipment to be used at the facility for complying with 35 Ill. Adm. Code 807.304;
- j) A litter control plan for complying with 35 Ill. Adm. Code 811.107(k);
- k) A salvaging plan including a description of all salvage facilities and a plan for complying with 35 Ill. Adm. Code 811.108;
- l) A description of all utilities for operation in compliance with 35 Ill. Adm. Code 811.107(d);
- m) A boundary control plan describing how the operator

will comply with the requirements of 35 Ill. Adm. Code 811.109;

- n) A maintenance plan describing how the operator will comply with 35 Ill. Adm. Code 811.107(c) and (e);
- o) An air quality plan describing the methods to be used to comply with the open burning requirements of 35 Ill. Adm. Code 811.107(f) and for controlling dust in compliance with 35 Ill. Adm. Code 811.107(g);
- p) A noise control plan describing how the operator will control noise in compliance with 35 Ill. Adm. Code 811.107(h);
- q) An odor control plan;
- r) A vector control plan to comply with 35 Ill. Adm. Code 811.107(i);
- s) A firefighting and fire safety plan; and
- t) A transportation plan that includes all existing and planned roads in the facility that will be used during the operation of the landfill facility; the size and type of such roads and the frequency with which they will be used.

Section 812.109 Location Standards

The permit application shall contain:

- a) Documentation that the facility will operate in compliance with 35 Ill. Adm. Code 811.102(a).
- b) A floodplain determination containing:
 - 1) Documentation that the facility is not located within the floodplain of the 100-year flood event; or
 - 2) Documentation that the facility meets the requirements of 35 Ill. Adm. Code 811.102(b).
- c) Documentation from the State Historic Preservation Officer that the facility will be in compliance with 35 Ill. Adm. Code 811.102(c).
- d) Documentation from the Illinois Nature Preserves Commission that the facility will be in compliance with 811.102(c) as it relates to Dedicated Illinois Nature Preserves.

- e) Documentation that the facility will be in compliance with 35 Ill. Adm. Code 811.102(d).
- f) Documentation that a facility located within a wetland is in compliance with Section 404 of the Clean Water Act (35 U.S.C. 1344).
- g) Documentation that the facility is in compliance with 35 Ill. Adm. Code 811.102(f).

Section 812.110 Surface Water Control

The permit application shall contain a plan for controlling surface water which demonstrates compliance with 35 Ill. Adm. Code 811.103, and which shall include at least the following:

- a) A copy of the approved National Pollutant Discharge Elimination System (NPDES) permit issued pursuant to 35 Ill. Adm. Code 309 or, if a permit is pending, a copy of the NPDES permit application to discharge runoff from all disturbed areas;
- b) A map showing the location of all structures affected by the surface water runoff from disturbed areas on the facility;
- c) Detailed designs of all structures to be constructed during development of the facility and during the first five year operating period; and
- d) Estimated construction dates of all structures to be constructed beyond the first five year operating period.

Section 812.111 Daily Cover

The application shall contain a description of the material to be used as daily cover:

- a) A description of the soil to be used, including its classification and approximate hydraulic conductivity; or
- b) Documentation that any proposed alternative materials or procedures to substitute for daily cover meet the minimum requirements of 35 Ill. Adm. Code 811.106(b).

Section 812.112 Legal Description

The permit application shall contain a legal description of the facility boundary and the boundaries of all units included in the

facility. This legal description shall identify the nature and location of all stakes and monuments required by Section 811.104 and shall be prepared by or under the supervision of a professional surveyor, who shall affix a professional seal to the work.

Section 812.113 Proof of Property Ownership and Certification

The permit application shall contain a certificate of ownership of the permit area or a copy of the lease. The lease shall clearly specify that the owner authorizes the construction of a waste disposal facility on the leased premises, and the duration of the lease will be at least as long as the design period of the landfill. Any prior conduct certifications issued to the owner or operator shall be included in the permit application. The owner and operator shall certify that the Agency will be notified within seven days of any changes in ownership or conditions in the lease affecting the permit area.

Section 812.114 Closure Plans

The permit application shall contain a written closure plan which contains, at a minimum, the following:

- a) A map showing the configuration of the facility after closure of all units, with the following:
 - 1) A contour map showing the proposed final topography (after placement of the final cover) of all disturbed areas on a 1" = 200' scale and a contour interval of two feet; and
 - 2) The location of all facility-related structures to remain as permanent features after closure.
- b) Steps necessary for the premature final closure of the site at the assumed closure date, as defined in 35 Ill. Adm. Code 811.700(e);
- c) Steps necessary for the final closure of the site at the end of its intended operating life;
- d) Steps necessary to prevent damage to the environment during temporary suspension of waste acceptance if the operator wants a permit which would allow temporary suspension of waste acceptance at the site without initiating final closure;
- e) A description of the steps necessary to decontaminate equipment during closure;
- f) An estimate of the expected year of closure;

- g) Schedules for the premature and final closure, which shall include, at a minimum:
 - 1) Total time required to close the site; and
 - 2) Time required for closure activities which will allow tracking of the progress of closure; and
- h) A description of methods for compliance with all closure requirements of 35 Ill. Adm. Code 811.

Section 812.115 Postclosure Care Plans

The application shall contain a postclosure care plan which includes a written description of the measures to be taken during the postclosure care period in compliance with the requirements of 35 Ill. Adm. Code 811.

Section 812.116 Closure and Postclosure Cost Estimates

The application shall contain an estimate of the costs of closure and postclosure care and maintenance in accordance with the requirements of 35 Ill. Adm Code 811.Subpart G.

SUBPART B: ADDITIONAL INFORMATION REQUIRED FOR INERT WASTE LANDFILLS

Section 812.201 Scope and Applicability

In addition to the information required by Subpart A, an application for a permit to develop an inert waste disposal unit shall contain the information required by this Subpart.

Section 812.202 Waste Stream Test Results

The application shall contain information describing the waste and results of tests conducted on the waste pursuant to 35 Ill. Adm. Code 811.202 demonstrating that all waste entering the unit meet the definition of an inert waste.

Section 812.203 Final Cover

The permit application shall contain a description of the material to be used as the final cover, application and spreading techniques, and the types of vegetation to be planted pursuant to 35 Ill. Adm. Code 811.204.

Section 812.204 Closure Requirements

The permit application shall contain a description of how the applicant will comply with 35 Ill. Adm. Code 811.205(a) and (b).

SUBPART C: ADDITIONAL INFORMATION REQUIRED FOR PUTRESCIBLE AND CHEMICAL WASTE LANDFILLS

Section 812.301 Scope and Applicability

In addition to the information required by Subpart A, an application for a permit to develop a putrescible or chemical waste landfill shall contain the information required by this Subpart.

Section 812.302 Waste Analysis

An application for a landfill that accepts only chemical wastes shall include the results of a waste analysis showing that the wastes to be accepted at the facility meet the definition of a chemical waste. The analysis shall show that all wastes entering the unit will be compatible and will not react to form a hazardous substance or gaseous products.

Section 812.303 Site Location

- a) The permit application shall contain a site location map showing the location of the following structures or areas located within one mile of the facility:
 - 1) All water supply wells in use for drinking water;
 - 2) All setback zones established pursuant to Section 14.2 or 14.3 of the Act;
 - 3) Any sole source aquifer, or that an impervious strata exists between the facility and the aquifer that meets the minimum requirements of 35 Ill. Adm. Code 811.302(b);
 - 4) Units located within a setback zone established pursuant to Section 14.2 or 14.3 of the Act showing that the location still meets the minimum requirements of 35 Ill. Adm. Code 811.302(b);
 - 5) All state and federal parks and recreational areas;
 - 6) All state, federal or interstate highways and the location of any barriers necessary to comply with 35 Ill. Adm. Code 811.302(c);

- 7) All occupied dwellings, hospitals and schools; and
 - 8) All airports.
- b) If any areas or structures included in a site location map, in accordance with subsection (a), requires a demonstration or showing, then documentation of the demonstration or showing must accompany the site location map.

Section 812.304 Waste Shredding

If waste shredding is planned for the facility operation, including the landfilling of shredded waste, then the application shall contain documentation to demonstrate compliance with 35 Ill. Adm Code 811.303(b), including a description of the mechanical shredder proposed for use.

Section 812.305 Foundation Analysis and Design

- a) The permit application shall contain a foundation study and analysis showing that the unit demonstrates compliance with 35 Ill. Adm. Code 811.304 and 811.305.
- b) The study shall be performed by or under the supervision of a registered professional engineer.
- c) The following information shall be included in the permit application:
 - 1) Results of tests performed on foundation materials;
 - 2) Estimated settlement of the unit;
 - 3) Diagrams and cross sections of any proposed sub-base or foundation construction;
 - 4) Specifications for soil to be used for foundation construction shall include, but not be limited to, soil classification, permeability, moisture content, moisture-density relationship, plasticity, and strength; and
 - 5) A construction quality assurance program for proper implementation of the foundation pursuant to 35 Ill. Adm. Code 811.Subpart E.

Section 812.306 Design of the Liner System

The application shall contain information to show that the design of the liner system meets the minimum requirements of 35 Ill. Adm. Code 811.306, including the following information:

- a) For Compacted Clay Liners:
 - 1) Cross sections and plan views of the liner system;
 - 2) Results of any field or laboratory tests demonstrating that the liner material complies with 35 Ill. Adm. Code 811.306(d);
 - 3) A description of the test liner, including:
 - A) Diagrams and any supporting documentation showing that the test liner will be constructed and evaluated in accordance with 35 Ill. Adm. Code 811.507(a); or
 - B) A detailed description of the results of the test liner constructed in accordance with 35 Ill. Adm. Code 811.507(a), if constructed prior to permit application;
 - 4) A description of construction methods and equipment to be utilized; and
 - 5) A construction quality assurance plan pursuant to 35 Ill. Adm. Code 811.Subpart E.
- b) For geomembranes:
 - 1) A description of the physical properties of the geomembrane;
 - 2) Documentation showing that the design of the geomembrane meets the minimum requirements of 35 Ill. Adm. Code 811.306(e);
 - 3) A description of the methods to seam the geomembrane in the field in compliance with 35 Ill. Adm. Code 811.306(e)(5);
 - 4) A plan showing the proposed layout of the individual panels and the locations of all openings through the geomembrane;
 - 5) A cross section and description of how openings in the membrane will be constructed to minimize leaks; and

- 6) A construction quality assurance program pursuant to 35 Ill. Adm. Code 811.Subpart E for proper construction, seaming and inspection of the geomembrane.
- c) For Slurry Trenches and Cutoff Walls:
 - 1) A description of the slurry trench or cutoff wall, including documentation of cross sections, material specifications and methods of construction to demonstrate compliance with 35 Ill. Adm. Code 811.306(f);
 - 2) Location and descriptions of the boreholes, including the results of any testing; and
 - 3) A construction quality assurance plan, pursuant to 35 Ill. Adm. Code 811.Subpart E.
- d) For Alternative Liner Technology:

A complete description of the technology, including documentation demonstrating that the technology will perform as required by 35 Ill. Adm. Code 811.306(f).

Section 812.307 Leachate Drainage and Collection Systems

The permit application shall contain information to demonstrate that the proposed leachate drainage and collection system will be in compliance with 35 Ill. Adm. Code 811.307 and 811.308, including:

- a) A plan view of the leachate collection system, showing pipe locations, cleanouts, manholes, sumps, leachate storage structures and other related information;
- b) Cross sections and descriptions of manholes, sumps, cleanouts, connections and other appurtenances;
- c) The locations of all leachate level monitoring locations;
- d) A stability analysis showing that the side slopes will maintain the necessary static and seismic safety factors during all phases of operation;
- e) All calculations, assumptions and information used to design the leachate collection and drainage system;
- f) A description of the methods to be used to clean and otherwise maintain the leachate collection and drainage

system, including the number and location of access and cleanout points; and

- g) A construction quality assurance program to insure proper construction of the systems pursuant to 35 Ill. Adm. Code 811.Subpart E.

Section 812.308 Leachate Management System

- a) The application shall contain information to show how the applicant will comply with 35 Ill. Adm. Code 811.309, including the following information:
 - 1) Leachate disposal methods, including:
 - A) The approved NPDES permit or, if the permit is pending, the NPDES permit application;
 - B) Documentation to demonstrate that the off-site treatment works meets the requirements of 35 Ill. Adm. Code 811.309(e)(1); or
 - C) Pretreatment authorization, if necessary from the off-site publicly owned treatment works pursuant to 35 Ill. Adm. Code 310.
 - 2) Design of tanks, lagoons, and all other treatment or storage units;
 - 3) A map showing the location of all units, piping and monitoring stations; and
 - 4) A description of the leachate monitoring system, including all parameters to be monitored and the location of the sampling points.
- b) The operator may include in the application a request for authorization to recycle leachate, if desired. The request shall be supported by information to demonstrate compliance with 35 Ill. Adm. Code 811.309(f), including:
 - 1) A demonstration that the unit satisfies the criteria of 35 Ill. Adm. Code 811.309(f)(1);
 - 2) Estimates of the expected volume of excess leachate, as defined in 35 Ill. Adm. Code 811.309(f)(3);
 - 3) A plan for the disposal of excess leachate, as defined in 35 Ill. Adm. Code 811.309(f)(3);

- 4) Layout and design of the leachate distribution system; and
- 5) Pursuant to 35 Ill. Adm. Code 811.309(f)(6), a demonstration that the daily and intermediate cover is permeable, or a plan to remove daily and intermediate cover prior to additional waste disposal.

Section 812.309 Landfill Gas Monitoring Systems

The permit application shall contain a plan to monitor the buildup and composition of landfill gas in compliance with 35 Ill. Adm. Code 811.310, including:

- a) A description of the most likely paths of migration of landfill gas expected to be generated by the unit, supported by the results of any predictive modeling study of gas flow through the strata surrounding the facility used, pursuant to 35 Ill. Adm. Code 811.310(b)(2);
- b) The location and design of sampling points; and
- c) Support for the items under subsections (a) and (b) must be provided and shall include the results of the predictive modeling study of the gas flow in accordance with 35 Ill. Adm. Code 811.310(b)(3).

Section 812.310 Gas Collection Systems

The permit application shall contain, when a gas collection system is required pursuant to 35 Ill. Adm. Code 811.311(a), a plan for collecting landfill gas from the unit. The plan shall contain information to demonstrate compliance with 35 Ill. Adm. Code 811.311, including:

- a) Location of the collection points;
- b) Layout and design of the collection system;
- c) A description of and specifications for all machinery, compressors, flares, piping and other appurtenances necessary to the system; and
- d) A gas condensate disposal plan.

Section 812.311 Landfill Gas Disposal

When a permit application contains a plan for a gas collection system, then a plan for landfill gas disposal shall be submitted. The plan shall contain information to demonstrate compliance with

35 Ill. Adm. Code 811.312, including:

- a) The approved air discharge permit or, if the permit is pending, a copy of the air discharge permit application required pursuant to 35 Ill. Adm. Code 200 through 245;
- b) A map showing the location of the gas processing facility;
- c) Designs for the disposal system;
- d) A gas processing plan which includes a description of the beneficial uses to be derived for the gas and the design of the processing system; and
- e) Where an off-site processing plant is utilized, the application shall contain documentation showing that the plant meets all requirements of 35 Ill. Adm. Code 811.312(g).

Section 812.312 Intermediate Cover

The application shall contain a description of the material to be used as intermediate cover in accordance with 35 Ill. Adm. Code 811.313, including:

- a) A description of the soil to be used, including its classification and approximate hydraulic conductivity; or
- b) A demonstration that any proposed alternative materials or procedures to substitute for intermediate cover meet the minimum requirements of 35 Ill. Adm. Code 811.313.

Section 812.313 Design of the Final Cover System

The permit application shall contain documentation for the final cover system to demonstrate compliance with 35 Ill. Adm. Code 811.314, including:

- a) Material specifications;
- b) Placement techniques;
- c) Estimates of settling;
- d) A description of final protective cover, including a description of the soil and the depth necessary to maintain the proposed land use of the area;
- e) A description showing how the low permeability layer will tie into the liner system; and

- f) A construction quality assurance program, pursuant to 35 Ill. Adm. Code 811.Subpart E, which provides that the cover is constructed in compliance with all applicable requirements of 35 Ill. Adm. Code 811.

Section 812.314 Description of the Hydrogeology

The permit application shall contain a description of the local hydrogeologic system, which shall include the results of the investigation conducted in accordance with 35 Ill. Adm. Code 811.315 and which includes the following information:

- a) A narrative description of the regional setting;
- b) A narrative description characterizing the hydrogeological conditions within the permit area;
- c) Geological cross sections of the permit area showing all water bearing strata, water elevations and all geological units;
- d) Location of all bore holes and test pits;
- e) All well and bore logs;
- f) Laboratory and field testing data;
- g) A detailed description of each geological unit found within the study area, including physical and geochemical properties; and
- h) A description of all water bearing strata under the facility, including a potentiometric map, groundwater flow velocities and directions and a description of the water quality.

Section 812.315 Plugging and Sealing of Drill Holes

The application shall contain a plan describing the techniques and materials to be utilized to plug and seal drill holes in accordance with 35 Ill. Adm. Code 811.316.

Section 812.316 Results of the Groundwater Impact Assessment

The application shall contain the results of a groundwater impact assessment showing that the proposed unit will not violate the requirements of 35 Ill. Adm. Code 811.317. The assessment shall contain, at a minimum, the following information:

- a) Documentation of the contaminant transport model used for the assessment;

- b) All data, including values of the model's parameters and site-specific hydrogeologic information used in the modeling and analysis of the groundwater impact;
- c) A sensitivity analysis of the effects of changes in the model's parameters on the model's predictions;
- d) Predicted concentration versus time profiles for several points within the zone of attenuation over a predicted time period of 100 years;
- e) Predicted concentration versus distance profiles taken at five year increments for 100 years;
- f) Documentation showing reliability of the model;
- g) Documentation demonstrating validity of all model parameters and assumptions; and
- h) A written evaluation and analysis, using the information from the groundwater impact assessment, showing the results of the groundwater impacts expected at the facility, such as the type and geographical extent of contamination present or expected, or the rate of movement of contaminants, to demonstrate that the groundwater impact is acceptable in accordance with 35 Ill. Adm. Code 811.317(b).

Section 812.317 Groundwater Monitoring Program

The permit application shall contain a groundwater monitoring plan which demonstrates compliance with 35 Ill. Adm. Code 811.318 and 811.319 and which includes the following information:

- a) A site plan map showing all zones of attenuation;
- b) Distance from the ground surface to the bottom of the uppermost aquifer;
- c) The location and depth of all groundwater monitoring points;
- d) The design of the groundwater monitoring wells, with a description of the materials to be used in constructing each well;
- e) A list of the parameters to be tested at each monitoring point;
- f) A concentration versus time profile for each monitoring point, showing the maximum allowable concentration at

that monitoring point for the 100 years after the closure of the unit;

- g) A description of the sampling procedure to be followed;
- h) A description of the preservation techniques to be utilized;
- i) A description of the chain of custody, packing and transportation plans for all samples to meet the requirements of 35 Ill. Adm. Code 811.318(e);
- j) A description of the laboratory analysis, including laboratory procedures, quality control, and error detection;
- k) A description of the statistical analysis techniques to be used for evaluating the monitoring data;
- l) A description of the groundwater quality standards applicable at the facility pursuant to 35 Ill. Adm. Code 811.320, including a specific numerical value for each constituent and including an evaluation of the background concentrations of each constituent to be monitored; and
- m) A description of the statistical method to be utilized when evaluating groundwater data.

Section 812.318 Operating Plans

- a) The application shall contain all information necessary to demonstrate compliance with 35 Ill. Adm. Code 811.321(a).
- b) The application shall contain a narrative description of the initial waste placement plan, to demonstrate compliance with 35 Ill. Adm. Code 811.321(b).

TITLE 35: ENVIRONMENTAL PROTECTION
SUBTITLE G: WASTE DISPOSAL
CHAPTER I: POLLUTION CONTROL BOARD
SUBCHAPTER i: SOLID WASTE AND SPECIAL WASTE HAULING

PART 813
PROCEDURAL REQUIREMENTS FOR PERMITTED LANDFILLS

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AUTHORITY: Implementing Sections 5, 21, 21.1, 22, 22.17 and 28.1 and authorized by Section 27 of the Environmental Protection Act (Ill. Rev. Stat. 1989, ch. 111 1/2, pars. 1005, 1021, 1021.1, 1022, 1022.17, 1028.1 and 1027).

SOURCE: Adopted in R88-7 at 14 Ill. Reg. , effective

NOTE: Capitalization indicates statutory language.

SUBPART A: GENERAL PROCEDURES

Section 813.101 Scope and Applicability

- a) This Subpart contains the procedures to be followed by all applicants and the Agency for applications for permits required pursuant to Section 21(d) of the Environmental Protection Act (Act) (Ill. Rev. Stat. 1989, ch. 111 1/2, par. 1021(d)) and 35 Ill. Adm. Code 811, 812, and 814. The procedures in this Part apply to applications to issue a permit to develop and operate a landfill, to modify a permit, to renew an expired permit, and to conduct an experimental practice.
- b) All general provisions of 35 Ill. Adm. Code 810 apply to this Part.

Section 813.102 Delivery of Permit Application

All permit applications shall be made on such forms as are prescribed by the Agency, and shall be mailed or delivered to the address designated by the Agency on the forms. The Agency shall provide a dated, signed receipt upon request. The Agency's record of the date of filing shall be deemed conclusive unless a contrary date is proven by a dated, signed receipt.

Section 813.103 Agency Decision Deadlines

- a) IF THERE IS NO FINAL ACTION BY THE AGENCY WITHIN 90 DAYS AFTER THE FILING OF THE APPLICATION FOR PERMIT, THE APPLICANT MAY DEEM THE PERMIT ISSUED; EXCEPT THAT THIS TIME PERIOD SHALL BE EXTENDED TO 180 DAYS WHEN:
 - 1) NOTICE AND OPPORTUNITY FOR PUBLIC HEARING ARE REQUIRED BY STATE OR FEDERAL LAW OR REGULATION, OR

- 2) THE APPLICATION WHICH WAS FILED IS FOR ANY PERMIT TO DEVELOP A LANDFILL. (Section 39 of the Act)
- b) An application for permit pursuant to this Subpart shall not be deemed to be filed until the Agency has received all information and documentation in the form and with the content required by this Part and 35 Ill. Adm. Code 811, 812, and 814. However, if, pursuant to the standards of Section 813.105, the Agency fails to notify the applicant within 30 days after the filing of a purported application that the application is incomplete and the reason the Agency deems it incomplete, the application shall be deemed to have been filed as of the date of such purported filing as calculated pursuant to Section 813.102. The applicant may treat the Agency's notification that an application is incomplete as a denial of the application for the purposes of review pursuant to Section 813.106.
- c) The applicant may waive the right to a final decision in writing prior to the applicable deadline in subsection (a).
- d) The applicant may modify a permit application at any time prior to the Agency decision deadline date. Any modification of a permit application that would otherwise be considered a significant modification of an approved permit shall constitute a new application for the purposes of calculating the Agency decision deadline date.
- e) The Agency shall mail all notices of final action by registered or certified mail, post marked with a date stamp and with return receipt requested. Final action shall be deemed to have taken place on the post marked date that such notice is mailed.

Section 813.104 Standards for Issuance of a Permit

- a) THE AGENCY SHALL ISSUE A PERMIT UPON PROOF THAT THE FACILITY, UNIT, OR EQUIPMENT WILL NOT CAUSE A VIOLATION OF THIS ACT OR OF BOARD REGULATIONS SET FORTH IN 35 ILL. ADM. CODE: CHAPTER I.
- b) IN GRANTING PERMITS, THE AGENCY SHALL IMPOSE SUCH CONDITIONS AS MAY BE NECESSARY TO ACCOMPLISH THE PURPOSES OF THIS ACT, AND AS ARE NOT INCONSISTENT WITH BOARD REGULATIONS SET FORTH IN 35 ILL. ADM. CODE: CHAPTER I.
- c) EXCEPT FOR THOSE FACILITIES OWNED OR OPERATED BY SANITARY DISTRICTS ORGANIZED UNDER "AN ACT TO CREATE

SANITARY DISTRICTS AND TO REMOVE OBSTRUCTIONS IN THE DES PLAINES AND ILLINOIS RIVERS", APPROVED MAY 29, 1889, AS NOW OR HEREAFTER AMENDED (Ill. Rev. Stat. 1989, ch. 42, par. 320 et seq.), NO PERMIT FOR THE DEVELOPMENT OR CONSTRUCTION OF A NEW REGIONAL POLLUTION CONTROL FACILITY MAY BE GRANTED BY THE AGENCY UNLESS THE APPLICANT SUBMITS PROOF TO THE AGENCY THAT THE LOCATION OF SAID FACILITY HAS BEEN APPROVED BY THE COUNTY BOARD OF THE COUNTY IF IN AN UNINCORPORATED AREA, OR THE GOVERNING BODY OF THE MUNICIPALITY WHEN IN AN INCORPORATED AREA IN WHICH THE FACILITY IS TO BE LOCATED IN ACCORDANCE WITH SECTION 39.2 OF THE ACT.

- d) NO PERMIT SHALL BE ISSUED BY THE AGENCY FOR DEVELOPMENT OR OPERATION OF ANY FACILITY OR SITE LOCATED WITHIN THE BOUNDARIES OF ANY SETBACK ZONE ESTABLISHED PURSUANT TO THE ACT IN WHICH SUCH DEVELOPMENT OR OPERATION IS PROHIBITED. (Section 39 of the Act)

Section 813.105 Standards for Denial of a Permit

IF THE AGENCY DENIES ANY PERMIT UNDER THIS SECTION, THE AGENCY SHALL TRANSMIT TO THE APPLICANT WITHIN THE TIME LIMITATIONS OF SECTION 813.103 SPECIFIC, DETAILED STATEMENTS AS TO THE REASONS THE PERMIT APPLICATION WAS DENIED. SUCH A STATEMENT SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:

- a) THE SECTIONS OF THE ACT WHICH MAY BE VIOLATED IF THE PERMIT WERE GRANTED;
- b) THE PROVISION OF THE REGULATIONS SET FORTH IN 35 ILL. ADM. CODE: CHAPTER I PROMULGATED UNDER THE ACT, WHICH MAY BE VIOLATED IF THE PERMIT WERE GRANTED;
- c) THE SPECIFIC TYPE OF INFORMATION, IF ANY, WHICH THE AGENCY DEEMS THE APPLICANT DID NOT PROVIDE THE AGENCY; AND
- d) A STATEMENT OF SPECIFIC REASONS WHY THE ACT AND BOARD REGULATIONS SET FORTH IN 35 ILL. ADM. CODE: CHAPTER I MIGHT NOT BE MET IF THE PERMIT WERE GRANTED. (Section 39 of the Act)

Section 813.106 Permit Appeals

- a) IF THE AGENCY REFUSES TO GRANT OR GRANTS WITH CONDITIONS A PERMIT THE APPLICANT MAY, WITHIN 35 DAYS, PETITION FOR A HEARING BEFORE THE BOARD TO CONTEST THE DECISION OF THE AGENCY. (Section 40(a)(1) of the Act) The petition shall be filed, and the proceeding conducted, pursuant to the procedures of Section 40 of the Act and 35 Ill. Adm. Code 105.

- b) Any Agency action to deny a permit or to grant a permit with conditions will not be deemed final for the purposes of appeal if the applicant has requested Agency reconsideration of that action prior to the filing of a petition pursuant to this Section.

Section 813.107 Permit No Defense

The issuance and possession of a permit shall not constitute a defense to a violation of the Act or any Board regulations set forth in 35 Ill. Adm. Code: Chapter I except for the development and operation of a landfill without a permit.

Section 813.108 Term of Permit

- a) No permit issued pursuant to this Part shall have a term of more than five years.
- b) A DEVELOPMENT PERMIT ISSUED UNDER SUBSECTION (A) OF SECTION 39 FOR ANY FACILITY OR SITE WHICH IS REQUIRED TO HAVE A PERMIT UNDER SUBSECTION (D) OF SECTION 21 SHALL EXPIRE AT THE END OF TWO CALENDAR YEARS FROM THE DATE UPON WHICH IT WAS ISSUED, UNLESS WITHIN THAT PERIOD THE APPLICANT HAS TAKEN ACTION TO DEVELOP THE FACILITY OR THE SITE. IN THE EVENT THAT REVIEW OF THE CONDITIONS OF THE DEVELOPMENT PERMIT IS SOUGHT PURSUANT TO SECTIONS 40 OR 41, OR THE PERMITTEE IS PREVENTED FROM COMMENCING DEVELOPMENT OF THE FACILITY OR SITE BY ANY OTHER LITIGATION BEYOND THE PERMITTEE'S CONTROL, SUCH TWO-YEAR PERIOD SHALL BE DEEMED TO BEGIN ON THE DATE UPON WHICH SUCH REVIEW PROCESS OR LITIGATION IS CONCLUDED. (Section 39(c) of the Act)

Section 813.109 Transfer of Permits

No permit is transferable from one person to another except as approved by the Agency. Approval shall be granted only if a new operator seeking transfer of a permit can demonstrate the ability to comply with all applicable financial requirements of Section 21.1 of the Act and 35 Ill. Adm. Code 811.Subpart G.

Section 813.110 Adjusted Standards to Engage in Experimental Practices

- a) Experimental practices are design, construction, and operation methods and techniques which are not expressly authorized by, and whose employment cannot be demonstrated by the applicant to be in compliance with, 35 Ill. Adm. Code 811, 812, and 814. Experimental practices may be implemented only at permitted landfills.

- b) Pursuant to Section 28.1 of the Act and 35 Ill. Adm. Code 106.Subpart G, any person may, at any time, petition the Board for an adjusted standard to any standard in 35 Ill. Adm. Code 811, 812, or 814 in order to engage in an experimental practice at a permitted landfill in accordance with the requirements of this Section.
- c) The petition for adjusted standard shall contain the following information in addition to that required by 35 Ill. Adm. Code 106.Subpart G. However, if the applicant believes that any of the information required by this Section is inapplicable, the applicant may so state provided that the petition contains an explanation of the inapplicability.
- 1) A narrative description of the experiment, describing the necessity of this experiment and an assessment of the expected outcome of this experiment;
 - 2) A list of all standards in 35 Ill. Adm. Code 811 that must be adjusted in order to conduct the experiment and a reason why each standard must be adjusted;
 - 3) A description of the monitoring program (see 35 Ill. Adm. Code 811) to be implemented during the experiment;
 - 4) Criteria for evaluating the experimental practice. The criteria shall be specific enough to allow the Agency to evaluate the performance of the experimental practice from the monitoring results pursuant to subsection (f)(1);
 - 5) A description of the methods to be implemented and the total costs to restore the facility to compliance with all standards in 35 Ill. Adm. Code 811, 812, or 814 if the experiment is determined to be a failure. The methods must be feasible with existing methods in use; and
 - 6) The time period requested in which to conduct the experiment and documentation to show that this is the shortest practical time period in which success or failure can be determined.
- d) The Board will review all petitions to conduct experimental practices submitted in accordance with subsection (b), Section 28.1 of the Act, or 35 Ill.

Adm. Code 106.Subpart G and an Agency recommendation regarding the experimental practice under the following assumptions:

- 1) There is no way in which to conduct the experiment in compliance with all requirements of 35 Ill. Adm. Code 811, 812 or 814;
- 2) The experiment will be conducted in as short a time as possible if the information submitted in the petition and the Agency recommendation are not in conflict;
- 3) A monitoring plan to evaluate the experiment will be implemented; and
- 4) The site of the experiment will be restored to meet all requirements of 35 Ill. Adm. Code 811, 812 or 814 should the experiment fail.

e) Implementation of the Experimental Practice

Upon approval of the experimental practice pursuant to subsection (d) by the Board, the operator shall file an application for significant modification of the permit with the Agency pursuant to Section 813.Subpart B. The application shall contain the following information:

- 1) Detailed designs of all items to be constructed for use during the experiment;
- 2) The monitoring plan to be implemented during the experiment;
- 3) A plan for decommissioning and closing the experiment;
- 4) A time schedule for constructing the necessary items and closing, removing and stabilizing the area upon completion of the experiment;
- 5) An emergency cleanup plan describing the methods to be used to restore the facility to compliance with all standards in 35 Ill. Adm. Code 811 if the experiment is unsuccessful;
- 6) Cost estimates and financial assurance (see 35 Ill. Adm. Code 811.Subpart G) in an amount equal to the costs necessary to restore the facility to compliance with 35 Ill. Adm. Code: Chapter I.

f) Evaluation of Experimental Practice

- 1) After completion of the experiment all monitoring data shall be submitted to the Agency for evaluation of the experimental practice in accordance with the evaluation criteria included in the adjusted standard petition in accordance with subsection (c)(4). The Agency shall determine if the experimental practice is acceptable for implementation pursuant to Section 39 of the Act, and the following additional criteria:
 - A) An experimental practice shall be considered acceptable for implementation if the monitoring results meet or exceed the evaluation criteria included in the adjusted standard petition in accordance with subsection (c)(4); and
 - B) If the experiment does not cause or contribute to a violation of the Act or 35 Ill. Adm. Code: Chapter I.
- 2) Upon completion of the experiment and an Agency determination that the experimental practice is acceptable for implementation, the Agency shall return the financial assurance instrument to the operator and, shall approve permit modifications allowing the operation of the experimental practice. If the experimental practice is determined to be unacceptable for implementation, then the Agency shall return the financial assurance instrument when the facility has been restored to comply with 35 Ill. Adm. Code: Chapter I.

Section 813.111 Agency Review of Contaminant Transport Models

- a) At the request of any person, consistent with any resource limitations, the Agency may review a groundwater contaminant transport (GCT) model for acceptance. The person shall demonstrate that the model meets the minimum requirements of 35 Ill. Adm. Code 811.317(c)(1),(2) and (3).
- b) The Agency may designate GCT models as acceptable for use by the applicant for a groundwater impact assessment. Such Agency designations shall be accompanied by limitations or conditions under which the model can or cannot be used. The applicant shall be relieved from demonstrating compliance with 35 Ill. Adm. Code 811.317(c)(1),(2) and (3) in a permit

application if a model accepted by the Agency has been used.

- c) An applicant using a model accepted by the Agency shall submit documentation in a permit application showing that the model used in the groundwater impact assessment was the same model previously reviewed and accepted by the Agency and shall demonstrate that the model is acceptable for use in the site specific hydrogeology of the proposed facility.
- d) The requirements of this Section shall in no way require an applicant to utilize a model accepted by the Agency. If a model is utilized that has not been reviewed and accepted by the Agency then the applicant shall include in the permit application all of the documentation necessary to demonstrate compliance with 35 Ill. Adm. Code 811.317(c)(1),(2), and (3).

**SUBPART B: ADDITIONAL PROCEDURES FOR MODIFICATION AND
SIGNIFICANT MODIFICATION OF PERMITS**

**Section 813.201 Initiation of a Modification or Significant
Modification**

a) Operator Initiated Modification

A modification or significant modification to an approved permit shall be initiated at the request of an operator at any time after the permit is approved. The operator initiates a modification or significant modification by application to the Agency.

b) Agency Initiated Modification

- 1) The Agency may modify a permit under the following conditions:
 - A) Discovery of a typographical or calculation error;
 - B) Discovery that a determination or condition was based upon false or misleading information;
 - C) An order of the Board issued in an action brought pursuant to Title VIII, IX or X of the Act; or
 - D) Promulgation of new statutes or regulations affecting the permit.

- 2) Modifications initiated by the Agency shall not become effective until after 45 days of receipt by the operator, unless stayed during the pendency of an appeal to the Board. All other time periods and procedures in 813.203 shall apply. The operator may request the Agency to reconsider the modification, or may file a petition with the Board pursuant to Section 813.106. All other time periods and procedures in 813.203 shall apply.

Section 813.202 Information Required for a Significant Modification of an Approved Permit

The applicant shall submit all information required by 35 Ill. Adm. Code 812 that will be changed from that in the original or most recent approved permit.

Section 813.203 Specific Information Required for a Significant Modification to Obtain Operating Authorization

Prior to placing into service any structure constructed at a landfill, pursuant to a construction quality assurance program in accordance with 35 Ill. Adm. Code 811.Subpart E., the applicant shall submit an acceptance report prepared in accordance with the requirements of 35 Ill. Adm. Code 811.505(d) in order to obtain an operating authorization issued by the Agency. The Agency shall issue operating authorizations as a permit condition pursuant to Section 39 of the Act and this Part.

Section 813.204 Procedures for a Significant Modification of an Approved Permit

Applications for significant modifications shall be subject to all requirements and time schedules in Subpart A.

SUBPART C: ADDITIONAL PROCEDURES FOR THE RENEWAL OF PERMITS

Section 813.301 Time of Filing

An application for renewal of a permit shall be filed with the Agency at least 90 or 180 days, depending upon which Agency final action deadline applies pursuant to Section 39(a) of the Act, prior to the expiration date of the existing permit.

Section 813.302 Effect of Timely Filing

WHEN A PERMITTEE HAS MADE TIMELY AND SUFFICIENT APPLICATION FOR THE RENEWAL OF A PERMIT, THE EXISTING PERMIT SHALL CONTINUE IN FULL FORCE AND EFFECT UNTIL THE FINAL AGENCY DECISION ON THE

APPLICATION HAS BEEN MADE AND ANY FINAL BOARD DECISION ON ANY APPEAL PURSUANT TO SECTION 40 HAS BEEN MADE UNLESS A LATER DATE IS FIXED BY ORDER OF A REVIEWING COURT. (Section 16(b) of the Illinois Administrative Procedure Act (Ill. Rev. Stat. 1989, ch. 127, par. 1016(b))

Section 813.303 Information Required for a Permit Renewal

- a) The operator shall submit only that information required by 35 Ill. Adm. Code 812 that has changed since the last permit review by the Agency.
- b) The operator shall update the groundwater impact assessment in accordance with Section 813.304; and
- c) The operator shall provide a new cost estimate for closure and postclosure care pursuant to 35 Ill. Adm. Code 811.Subpart F based upon the operations expected to occur in the next permit term.

Section 813.304 Updated Groundwater Impact Assessment

- a) The applicant shall conduct a new groundwater impact assessment in accordance with 35 Ill. Adm. Code 811.317 if any of the following changes in the facility or its operation will result in an increase in the probability of exceeding a groundwater standard beyond the zone of attenuation:
 - 1) New or changed operating conditions;
 - 2) Changes in the design and operation of the liner and leachate collection system;
 - 3) Changes due to more accurate geological data;
 - 4) Changes due to modified groundwater conditions due to off-site activity;
 - 5) Changes due to leachate characteristics.
- b) If the operator certifies that the conditions applicable to the original assessment have not changed in such a way as to result in violation of groundwater standards pursuant to 35 Ill. Adm. Code 811.320, outside the zone of attenuation and no monitoring well shows concentrations of constituents in groundwater greater than such groundwater standards, then a new groundwater impact assessment need not be performed.

Section 813.305 Procedures for Permit Renewal

Applications for permit renewal shall be subject to all requirements and time schedules in Subpart A.

SUBPART D: ADDITIONAL PROCEDURES FOR INITIATION AND TERMINATION OF TEMPORARY AND PERMANENT CLOSURE AND POSTCLOSURE CARE

Section 813.401 Agency Notification Requirements

- a) The operator shall send to the Agency a notice of closure within 30 days after the date the final volume of waste is received.
- b) The operator shall notify the Agency within 30 days after any temporary suspension of waste acceptance. The operator must comply with the requirements included in a permitted closure plan in accordance with 35 Ill. Adm. Code 812.114(d) that are applicable during any such period.
- c) Until closure has been completed, the operator shall maintain a copy of the closure plan at the site or at a definite location, specified in the permit, so as to be available during inspection of the site.

BOARD NOTE: 35 Ill. Adm. Code 807.Subpart E includes requirements for closure and temporary suspension and for closure and temporary suspension plans.

Section 813.402 Certification of Closure

- a) When closure of a unit is completed, the operator shall submit to the Agency:
 - 1) Documentation concerning closure of the closed unit including plans or diagrams of the unit as closed and date closure was completed.
 - 2) An affidavit by the operator and the seal of a professional engineer that the unit has been closed in accordance with the closure plan and all requirements of 35 Ill. Adm. Code 811.
- b) When the Agency determines, pursuant to the information received pursuant to subsection (a) and any Agency site inspection, that the unit has been closed in accordance with the specifications of the closure plan, and the closure requirements of this Part, the Agency shall:
 - 1) Issue a certificate of closure; and

- 2) Specify the date the postclosure care period begins, based on the date that closure was completed.

Section 813.403 Termination of the Permit

- a) At the end of the postclosure care period the operator and a professional engineer shall certify that postclosure care is no longer necessary. The certification shall include the affidavit of the operator, the seal of a professional engineer and documentation demonstrating that, due to compliance with the requirements of 35 Ill. Adm. Code 811, 812 and 814:
 - 1) Leachate removal is no longer necessary;
 - 2) Landfill gas collection is no longer necessary;
 - 3) Gas monitoring is no longer necessary;
 - 4) Groundwater monitoring is no longer necessary;
 - 5) The surface has stabilized sufficiently with respect to settling and erosion so that further stabilization measures, pursuant to the postclosure care plan, are no longer necessary;
 - 6) The facility does not constitute a threat of pollution to surface water; and
 - 7) The operator has completed all requirements of the postclosure plan.
- b) Within 90 days after receiving the certification required by subsection (a), the Agency shall notify the operator in writing that it is no longer required to maintain financial assurance for postclosure care of the site, unless the Agency determines, pursuant to the information received pursuant to subsection (a) and any Agency site inspection, that continued postclosure care is required pursuant to the postclosure care plan and this Part.
- c) If the operator is not required to give financial assurance, then within 90 days after receiving the certification required by subsection (a), the Agency shall notify the operator in writing that the permit is terminated, unless the Agency determines, pursuant to the information received pursuant to subsection (a) and any Agency site inspection, that continued postclosure

care is required pursuant to the postclosure care plan and this Part.

- d) The operator may deem the Agency action pursuant to this Section as a denial or grant of permit with conditions for purposes of appeal pursuant to Section 40(d) of the Act and Subpart A.

SUBPART E: REPORTS TO BE FILED WITH THE AGENCY

Section 813.501 Annual Reports

- a) All permitted landfills shall submit annual reports to the Agency during operation and for the entire postclosure monitoring period. Such annual reports shall be filled each year by the first day of the month chosen and specified by the Agency in the permit.
- b) Agency Review of the Report
- 1) The Agency shall conduct a review of the annual report to determine compliance with the requirements of subsection (c) and either accept the contents as complete or request additional information within 45 days of receipt of the report.
 - 2) If the Agency fails to respond within the required time period then the report shall be considered acceptable.
 - 3) The operator shall return the additional information to the Agency within 45 days of receipt of the request for additional information.
 - 4) The operator may deem any Agency request for information pursuant to this Section as a permit denial for purposes of appeal pursuant to Section 40 of the Act.
- c) All annual reports shall contain the following information:
- 1) A waste volume summary which includes:
 - A) Total volume of solid waste accepted at the facility in cubic meter (cubic yards) as measured at the gate;
 - B) Remaining solid waste capacity in each unit in cubic meter (cubic yard) as measured at

the gate; and

- C) A copy of all identification reports required under 35 Ill. Adm. Code 811.404.
- 2) Monitoring data from the leachate collection system, groundwater monitoring network, gas monitoring system, and any other monitoring data which was specified in the operator's permit, including:
 - A) Graphical results of monitoring efforts;
 - B) Statistical summaries and analysis of trends;
 - C) Changes to the monitoring program; and
 - D) Discussion of error analysis, detection limits, and observed trends.
 - 3) Proposed activities for the year
 - A) Amount of Waste expected in the next year;
 - B) Structures to be built within the next year; and
 - C) New monitoring stations to be installed within the next year.
 - 4) Any modification or significant modification affecting the operation of a facility shall be included.
 - 5) Signature of the operator or duly authorized agent as specified in 35 Ill. Adm. Code 815.102.

Section 813.502 Quarterly Groundwater Reports

All groundwater monitoring data shall be submitted to the Agency on a quarterly basis, in a form prescribed by the Agency, and in accordance with a schedule approved in the permit.

Section 813.503 Information to be Retained at or near the Waste Disposal Facility

Information developed by the operator but not yet forwarded to the Agency in a quarterly or annual report shall be kept at or near the facility for inspection by the Agency upon request during normal working hours. If there is no active office for maintenance of records at the facility during the postclosure care period, then an alternate active operation site in the

state, owned or operated by the same facility operator, may be specified. The Agency must be notified of the address and telephone number of the operator at the alternative facility where the information will be retained.

TITLE 35: ENVIRONMENTAL PROTECTION
 SUBTITLE G: WASTE DISPOSAL
 CHAPTER I: POLLUTION CONTROL BOARD
 SUBCHAPTER i: SOLID WASTE AND SPECIAL WASTE HAULING

PART 814
 STANDARDS FOR EXISTING LANDFILLS AND UNITS

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814.202	Applicable Standards

SUBPART C: STANDARDS FOR EXISTING UNITS ACCEPTING CHEMICAL AND
 PUTRESCIBLE WASTES THAT MAY REMAIN OPEN FOR MORE THAN SEVEN YEARS

Section	
814.301	Scope and Applicability
814.302	Applicable Standards

SUBPART D: STANDARDS FOR EXISTING UNITS ACCEPTING CHEMICAL AND
 PUTRESCIBLE WASTES THAT MUST INITIATE CLOSURE WITHIN SEVEN YEARS

Section	
814.401	Scope and Applicability
814.402	Applicable Standards

SUBPART E: STANDARDS FOR EXISTING UNITS ACCEPTING INERT WASTE
 ONLY, OR ACCEPTING CHEMICAL AND PUTRESCIBLE WASTES THAT MUST
 INITIATE CLOSURE WITHIN TWO YEARS

Section	
814.501	Scope and Applicability
814.502	Standards for Operation and Closure

AUTHORITY: Implementing Sections 5, 21, 21.1, 22, 22.17 and 28.1, and authorized by Section 27 of the Environmental Protection Act (Ill. Rev. Stat. 1989, ch. 111 1/2, pars. 1005, 1021, 1021.1, 1022, 1022.17, 1028.1 and 1027).

SOURCE: Adopted in R88-7 at 14 Ill. Reg. , effective

NOTE: Capitalization indicates statutory language.

SUBPART A: GENERAL REQUIREMENTS

Section 814.101 Scope and Applicability

- a) This Part establishes the standards applicable to all existing landfill facilities, which includes facilities that are not considered to be new as defined at 35 Ill. Adm. Code 810.103. This Part establishes requirements for both new and existing disposal units within such existing landfill facilities. Landfill operators are required to determine the date on which their facilities must begin closure, which is dependent upon the ability of existing units to meet the design and performance standards contained in this Part.
- b) The requirements of Sections 814.104, 814.105 and 814.106 of this Subpart apply only to those landfill facilities identified as existing facilities in subsection (a) and which require an Agency issued permit.
- c) All general provisions of 35 Ill. Adm. Code 810 apply to this Part.

Section 814.102 Compliance Date

Unless otherwise expressly provided in Section 814.105, all landfills with existing units shall comply with the requirements of this Part within six months of the effective date of this Part.

Section 814.103 Notification to Agency

No later than six months after the effective date of this Part, all operators shall send notification to the Agency describing the facility, estimated date of closure of existing units, and whether the facility is subject to the requirements of Subpart B, Subpart C, Subpart D, or Subpart E.

Section 814.104 Applications for Significant Modification of Permits

- a) All operators of landfills permitted pursuant to Section 21(d) of the Environmental Protection Act (Act) (Ill. Rev. Stat. 1989, ch. 111 1/2, par 1021(d)) shall file an application for a significant modification to their permits for existing units, unless the units will be closed pursuant to Subpart E within two years of the effective date of this Part.

- b) The operator of an existing unit shall submit information required by 35 Ill. Adm. Code 812 to demonstrate compliance with Subpart B, Subpart C or Subpart D, whichever is applicable.
- c) The application shall be filed within 48 months of the effective date of this Part, or at such earlier time as the Agency shall specify in writing pursuant to 35 Ill. Adm. Code 807.209 or 813.201(b).
- d) The application shall be made pursuant to the procedures of 35 Ill. Adm. Code 813.

Section 814.105 Effect of Timely Filing of Notification and Application for Significant Modification

- a) Permits issued pursuant to 35 Ill. Adm. Code 807 prior to the effective date of this Part remain in full force and effect until superseded by a permit issued pursuant to this Part or until revoked as a result of an enforcement action brought pursuant to Title VIII of the Act.
- b) An operator who has timely filed a notification pursuant to Section 814.103 and an application for significant permit modification pursuant to Section 814.104 shall continue operation under the terms of its existing permits until final determination by the Agency on its application and any subsequent appeal to the Board pursuant to Section 40 of the Act. During this time, the operator will be deemed to be in compliance with all requirements of this Part.

Section 814.106 Agency Action on Applications for Significant Modifications to Existing Permits

The Agency shall review applications for significant modifications to existing permits in accordance with the requirements and procedures of 35 Ill. Adm. Code 813.

SUBPART B: STANDARDS FOR UNITS ACCEPTING INERT WASTE

Section 814.201 Scope and Applicability

- a) The standards in this Subpart are applicable to all existing units of landfills, including those exempt from permit requirements in accordance with Section 21(d) of the Act, that have accepted or accept only inert waste. Based on an evaluation of the information submitted pursuant to Subpart A and any Agency site inspection, units that meet the requirements of this

Subpart may remain open for an indefinite period of time after the effective date of this Part.

- b) Based on an evaluation of the information submitted pursuant to Subpart A and any Agency site inspection, units which are unable to comply with the requirements of this Subpart are subject to the requirements of Subpart D.

Section 814.202 Applicable Standards

Units which accept only inert waste shall be subject to all of the requirements of 35 Ill. Adm. Code 811.Subparts A and B.

SUBPART C: STANDARDS FOR EXISTING UNITS ACCEPTING CHEMICAL AND PUTRESCIBLE WASTES THAT MAY REMAIN OPEN FOR MORE THAN SEVEN YEARS

Section 814.301 Scope and Applicability

- a) The standards in this Subpart are applicable to all existing units of landfills, including those exempt from permit requirements in accordance with Section 21 (d) of the Act, that have accepted or accept chemical and putrescible wastes. Based on an evaluation of the information submitted pursuant to Subpart A and any Agency site inspection, units that meet the requirements of this Subpart may remain open for an indefinite period of time beyond seven years after the effective date of this Part.
- b) Based on an evaluation of the information submitted pursuant to Subpart A and any Agency site inspection, units which are unable to comply with the requirements of this Subpart are subject to the requirements of Subpart D or Subpart E.

Section 814.302 Applicable Standards

- a) All of the requirements for new units described in 35 Ill. Adm. Code 811 shall apply to units regulated under this Subpart except the following:
 - 1) The location standards in 35 Ill. Adm. Code 811.302(a), (d), and (e);
 - 2) The foundation and mass stability analysis standards in 35 Ill. Adm. Code 811.304 and 811.305;
 - 3) The final cover requirements of 35 Ill. Adm Code 811.314 shall not apply to units or parts of units

closed, covered and vegetated prior to the effective date of this Part.

- 4) The liner and leachate drainage and collection requirements of 35 Ill. Adm. Code 811.306, 811.307, and 811.308; and
 - 5) The hydrogeological site investigation requirements of 35 Ill. Adm. Code 811.315, except that information shall be collected to implement a groundwater monitoring program in accordance with 35 Ill. Adm. Code 811.318 and 811.319 and establish background concentrations for the purpose of establishing water quality standards pursuant to 35 Ill. Adm. Code 811.320; and
- b) Units regulated under this Subpart shall be subject to the following standards:
- 1) The unit must be equipped with a system which will effectively drain and collect leachate and transport it to a leachate management system.
 - 2) The operator shall provide a long-term static safety factor of at least 1.5 to protect a completed unit against slope failure;
 - 3) Calculation of the Design Period

For the purposes of calculating financial assurance the design period shall be calculated as follows:

- A) The design period shall be no less than the operating life of the landfill plus fifteen years of postclosure care;
- B) The postclosure care period shall be extended by three years for each year the unit is expected to be in operation up to the applicable design period required by 35 Ill. Adm. Code 811 (For example, an existing unit with expected operating lives of three, seven or 12 years after the effective date of this Part would be required to provide financial assurance during operation and for a postclosure care period of either 15 years since $3 \times 3 = 9$ years is less than the 15 year minimum specified in subsection (b)(3)(A); 21 years since $3 \times 7 = 21$ years; or 30 years since $3 \times 13 = 39$ years is greater than the 30 years specified in

Section 811.303(a), respectively); and

- C) The design period may not be reduced as allowed by 35 Ill. Adm. Code 811.303(b) and (c).

SUBPART D: STANDARDS FOR EXISTING UNITS ACCEPTING CHEMICAL AND PUTRESCIBLE WASTES THAT MUST INITIATE CLOSURE WITHIN SEVEN YEARS

Section 814.401 Scope and Applicability

- a) The standards in this Subpart are applicable to all existing units of landfills, including those exempt from permit requirements in accordance with Section 21(d) of the Act, that have accepted or accept chemical and putrescible wastes. Based on an evaluation of the information submitted pursuant to Subpart A and any Agency site inspection, units that meet the requirements of this Subpart shall initiate closure between two and seven years after the effective date of this Part.
- b) Based on an evaluation of the information submitted pursuant to Subpart A and any Agency site inspection, units which are unable to comply with the requirements of this Section are subject to the requirements of Subpart E.

Section 814.402 Applicable Standards

- a) All of the requirements for new units described in 35 Ill. Adm. Code 811 shall apply to units regulated under this Subpart except the following:
- 1) The location standards in 35 Ill. Adm. Code 811.302(a), (c), (d), and (e);
 - 2) The foundation and mass stability analysis standards in 35 Ill. Adm. Code 811.304 and 811.305;
 - 3) The liner and leachate drainage and collection requirements of 35 Ill. Adm. Code 811.306, 811.307, and 811.308;
 - 4) The final cover requirements of 35 Ill. Adm. Code 811.314 shall not apply to units or parts of units closed, covered and vegetated prior to the effective date of this Part;
 - 5) The hydrogeological site investigation require-

ments of 35 Ill. Adm. Code 811.315;

- 6) The groundwater impact assessment standards of 35 Ill. Adm. Code 811.317;
 - 7) The groundwater monitoring program requirements of 35 Ill. Adm. Code 811.318(c); and
 - 8) The groundwater quality standards of 35 Ill. Adm. Code 811.320(a), (b) and (c).
- b) The following standards shall apply to units regulated under this Subpart:

- 1) No new units shall be opened and an existing unit may not expand beyond the area included in a permit prior to the effective date of this Part or, in the case of permit exempt facilities, beyond the area needed for landfilling to continue until closure is initiated;
- 2) After the effective date of this Part, the unit may not apply for supplemental wastestream permits to accept new special wastes. However, the unit may continue to accept special waste under permits existing prior to the effective date of this Part and may renew those permits as necessary.
- 3) Groundwater Standards

A unit shall not contaminate a source of drinking water at the compliance boundary, defined as any point on the edge of the unit at or below the ground surface. At any point on the compliance boundary, the concentration of constituents shall not exceed the water quality standards specified in 35 Ill. Adm. Code 302.301, 302.303, 302.304, and 302.305. The Board may provide for a zone of attenuation and adjust the compliance boundary in accordance with Section 28.1 of the Act and the procedures of 35 Ill. Adm. Code 106.Subpart G upon petition demonstration by the operator that the alternative compliance boundary will not result in contamination of groundwater which may be needed or used for human consumption. In reviewing such petitions, the Board will consider the following factors:

- A) The hydrogeological characteristics of the unit and surrounding land, including any natural attenuation and dilution characteristics of the aquifer;

- B) The volume and physical and chemical characteristics of the leachate;
 - C) The quantity, quality, and direction of flow of groundwater underlying the facility;
 - D) The proximity and withdrawal rates of groundwater users;
 - E) The availability of alternative drinking water supplies;
 - F) The existing quality of the groundwater, including other sources of contamination and their cumulative impacts on the groundwater;
 - G) Public health, safety, and welfare effects; and
 - H) In no case shall the zone of compliance extend beyond the facility property line or beyond the annual high water mark of any navigable surface water.
- 4) Calculation of the Design Period

For the purposes of calculating financial assurance the design period shall be calculated as follows:

- A) The design period shall be no less than five years; and
- B) The postclosure care period shall be extended by three years for each year the unit is expected to be in operation up to the applicable design period required by 35 Ill. Adm. Code 811. (For example, an existing unit with an expected life of three years after the effective date of this Part would be required to provide financial assurance for nine years of postclosure care, $9 = 3 \times 3$.)
- C) The design period may not be reduced as allowed by 35 Ill. Adm. Code 811.303(b) and (c).

SUBPART E: STANDARDS FOR EXISTING UNITS ACCEPTING INERT WASTE ONLY, OR ACCEPTING CHEMICAL AND PUTRESCIBLE WASTES THAT MUST INITIATE CLOSURE WITHIN TWO YEARS

Section 814.501 Scope and Applicability

- a) The standards in this Subpart are applicable to all existing units of landfills, including those exempt from permit requirements in accordance with Section 21(d) of the Act, that accept inert waste only, or which accept chemical and putrescible wastes.
- b) All units that cannot demonstrate compliance with the requirements of Subpart B or Subpart C or are scheduled to begin closure within two years of the effective date of this Part must begin closure within two years of the effective date of this Part.
- c) A new permit shall not be required for any facility at which all units will close within two years of the effective date of this Part.

Section 814.502 Standards for Operation and Closure

- a) All units regulated in this Subpart are subject to all requirements in 35 Ill. Adm. Code 807.
- b) All units regulated under this Subpart are subject to all conditions of the existing permit.

TITLE 35: ENVIRONMENTAL PROTECTION
SUBTITLE G: WASTE DISPOSAL
CHAPTER I: POLLUTION CONTROL BOARD
SUBCHAPTER i: SOLID WASTE AND SPECIAL WASTE HAULING

PART 815
PROCEDURAL REQUIREMENTS FOR ALL LANDFILLS EXEMPT FROM PERMITS

SUBPART A: GENERAL REQUIREMENTS

Section
815.101 Scope and Applicability
815.102 Required Signatures

SUBPART B: INITIAL FACILITY REPORT

Section
815.201 Scope and Applicability
815.202 Filing Deadline
815.203 Information to be Filed
815.204 Required Signatures

SUBPART C: ANNUAL REPORTS

Section
815.301 Scope and Applicability
815.302 Reporting Period
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SUBPART D: QUARTERLY GROUNDWATER REPORTS

Section
815.401 Scope and Applicability
815.402 Filing Schedule

SUBPART E: INFORMATION TO BE RETAINED ON-SITE

Section
815.501 Scope and Applicability
815.502 Acceptance Reports
815.503 Other Information

AUTHORITY: Implementing Sections 5, 21, 21.1, 22, 22.17, 28.1, and authorized by Section 27 of the Environmental Protection Act (Ill. Rev. Stat. 1989, ch. 111 1/2, pars. 1005, 1021, 1021.1, 1022, 1022.17, 1028.1 and 1027).

SOURCE: Adopted in R88-7 at 14 Ill. Reg. , effective

SUBPART A: GENERAL REQUIREMENTS

Section 815.101 Scope and Applicability

- a) The requirements of this Part are applicable to all landfills exempt from permits pursuant to Section 21(d)

of the Environmental Protection Act (Act) (Ill. Rev. Stat. 1989, ch. 111 1/2, par. 1021(d)). All reports and information required under this Part shall be filed with the Agency or retained on site in accordance with the requirements set forth in each Subpart.

- b) All general provisions in 35 Ill. Adm. Code 810 apply to this Part.

Section 815.102 Required Signatures

All reports shall be signed by a duly authorized agent. The following persons are considered duly authorized agents:

- a) For Corporations, a principal executive officer of at least the level of vice president;
- b) For a sole proprietorship or partnership, a proprietor or general partner, respectively;
- c) For a municipality, state, federal or other public agency, by the head of the agency or ranking elected official.

SUBPART B: INITIAL FACILITY REPORT

Section 815.201 Scope and Applicability

All landfills regulated under this Part shall file an initial facility report with the Agency as specified in this Subpart to provide information concerning location and disposal practices of the facility.

Section 815.202 Filing Deadline

- a) Existing Facilities

The initial facility report shall be filed with the Agency within two years of the effective date of this Part.

- b) New Facilities

The initial facility report shall be filed with the Agency before any waste is accepted.

Section 815.203 Information to be Filed

a) New Units

All of the information required by 35 Ill. Adm. Code 812 except 35 Ill. Adm. Code 812.101, 812.103, 812.104, 812.105, and 812.116 shall be filed with the Agency.

b) Existing Units

All of the information required by 35 Ill. Adm. Code 812, except 35 Ill. Adm. Code 812.101, 812.103, 812.104, 812.105, and 812.116, that is applicable to an existing unit, as described in 35 Ill. Adm. Code 814, shall be filed with the Agency.

Section 815.204 Required Signatures

a) All initial facility reports shall contain the name, address, and telephone number of a duly authorized agent to whom all inquiries and correspondence shall be addressed.

b) All initial facility reports shall be signed by a duly authorized agent and shall be accompanied by evidence of authority to sign the report and shall be notarized.

SUBPART C: ANNUAL REPORTS

Section 815.301 Scope and Applicability

All landfills regulated under this Part shall file an annual report with the Agency. The first annual report shall be filed on the first of January that follows the year in which the initial facility report is filed, unless the Agency specifies in writing an alternative filing date no later than one year after the initial facility report has been filed.

Section 815.302 Reporting Period

Annual reports shall be filed during operation of the facility and for the entire postclosure monitoring period.

Section 815.303 Information to be Submitted

All annual reports shall contain the following information:

a) A waste volume summary which includes:

1) Total amount of solid waste accepted at the

- facility;
 - 2) Remaining capacity in each unit; and
 - 3) A copy of all identification reports required under 35 Ill. Adm. Code 811.404.
- b) All raw monitoring data collected at the facility from the leachate collection system, groundwater monitoring network, and gas monitoring system, and in addition shall include:
- 1) Graphical results of monitoring efforts;
 - 2) Statistical summaries and analysis of trends in the collected data;
 - 3) Changes to the monitoring program; and
 - 4) Discussion of error analysis, detection limits, observed trends.
- c) Proposed activities for the year
- 1) Amount of waste expected in the next year;
 - 2) Structures to be built within the next year; and
 - 3) New monitoring stations to be installed within the next year.
- d) A summary of all modifications including significant modifications made to the operations during the course of the year.
- e) Signature of the operator or duly authorized agent.

SUBPART D: QUARTERLY GROUNDWATER REPORTS

Section 815.401 Scope and Applicability

All landfills regulated under this Part shall file all groundwater monitoring data with the Agency in accordance with the filing schedule of this Subpart, and file modifications, since the last quarterly report, to any list of background concentrations prepared in accordance with 35 Ill. Adm. Code 811.320(d)(1).

Section 815.402 Filing Schedule

The reports shall be submitted to the Agency on a quarterly basis, in accordance with the following schedule:

- a) May 15 for activities in January, February and March;
- b) August 15 for activities during April, May and June;
- c) November 15 for activities during July, August and September; and
- d) February 15 for activities during October, November and December.

SUBPART E: INFORMATION TO BE RETAINED ON-SITE

Section 815.501 Scope and Applicability

All facilities exempt from permits pursuant to Section 21(d) of the Act shall retain, for Agency inspection, the information required to be collected by the operator pursuant to this Subpart, at the facility for the entire postclosure care period. If there is no active office for maintenance of records at the facility during the postclosure care period, then an alternate active operation site in the state, owned or operated by the same facility operator, may be specified. The Agency must be notified of the address and telephone number of the operator at the alternative facility where the information will be retained.

Section 815.502 Acceptance Reports

At the end of each major phase of construction, as determined by the operator, and prior to placing a structure into use, the construction quality assurance officer shall prepare an acceptance report in accordance with the requirements of 35 Ill. Adm. Code 811.505(d). All acceptance reports shall be retained at the site in accordance with this Subpart.

Section 815.503 Other Information

Information developed by the operator but not yet filed with the Agency in a quarterly or annual report shall be kept at or near the facility for inspection by the Agency upon request during normal working hours.