

HAWAII ADMINISTRATIVE RULES

TITLE 11

DEPARTMENT OF HEALTH

CHAPTER 58.1

SOLID WASTE MANAGEMENT CONTROL

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Historical Note: Chapter 11-58.1, Hawaii Administrative Rules, is based substantially on Chapter 11-58, Hawaii Administrative Rules. [Eff 11/27/81; R]

SUBCHAPTER 1 -- GENERAL

§11-58.1-01 Purpose. The purpose of this chapter is to establish minimum standards governing the design, construction, installation, operation, and maintenance of solid waste disposal, recycling, reclamation, and transfer systems. Such standards are intended to:

- (1) Prevent pollution of the drinking water supply or waters of the State;
- (2) Prevent air pollution;
- (3) Prevent the spread of disease and the creation of nuisances;
- (4) Protect the public health and safety;
- (5) Conserve natural resources; and
- (6) Preserve and enhance the beauty and quality of the environment. [Eff JAN 13 1994] (Auth: HRS §§321-11, 342G-3, 342G-13, 342H-2, 342H-3, 342H-18, 342N-3)

§11-58.1-02 Applicability. These rules are applicable to all persons as defined in this chapter who propose, own, operate, or maintain a solid waste recycling, reclamation, salvage, transfer, or disposal facility; and are applicable to medical waste treatment, foreign waste treatment, used oil transport and recycling, hazardous waste, infectious waste, and radioactive waste. [Eff JAN 13 1994] (Auth: HRS §§321-11, 342G-3, 342G-13, 342H-2, 342H-3, 342H-18, 342H-53, 342N-3)

§11-58.1-03 Definitions. When used in this chapter, the following terms have the meanings given below:

"Active life" means the period of operation beginning with the initial receipt of solid waste and ending at completion of closure activities in accordance with section 11-58.1-17(a).

"Active portion" means that part of a facility or unit that has received or is receiving wastes and that has not been closed in accordance with section 11-58.1-17(a).

"Agricultural waste" means wastes resulting from the production of agricultural products including but not limited to manures, and carcasses of dead animals.

"Airport" means a public-use airport open to the public without prior permission and without restrictions within the physical capacities of available facilities.

"Appendix I" means Appendix I as it appears in 40 CFR 258.

"Appendix II" means Appendix II as it appears in 40 CFR 258.

"Aquifer" means a geological formation, group of formations, or part of a formation capable of yielding a significant quantity of ground water to wells or springs.

"Areas susceptible to mass movement" means those areas of influence (i.e., areas characterized as having an active or substantial possibility of mass movement) where the movement of earth material at, beneath, or adjacent to the municipal solid waste landfill unit, because of natural or artificial events, results in the downslope transport of soil and rock material by means of gravitational influence. Areas of mass movement include, but are not limited to, landslides, avalanches, debris slides and flows, soil fluctuation, block sliding, and rock fall.

"Ashes" means the residue including any air pollution flue dusts or bottom ash from combustion or incineration of material including solid wastes.

"Best practicable technology" means current state of the art methods and/or procedures which consider the economic capabilities of the owner and/or operator.

"Bird hazard" means an increase in the likelihood of aircraft collisions with birds that may cause damage to the aircraft or injury to its occupants.

"Bioconversion" means the processing of the organic fraction of the waste stream through biological or chemical means to perform composting or generate products including, but not limited to, fertilizers, feeds, methane, alcohols, tars, and other products. This term includes, but is not limited to, biogasification, acid hydrolysis, pyrolysis, and fermentation. This term does not include any form of incineration or methane gas extraction from a municipal waste landfill.

"Buffer zone" means that part of a facility that lies between the active area and the property boundary.

"Bulky waste" means large items of refuse, such as appliances, furniture, and other oversize wastes which would typically not fit into reusable or disposable containers.

"CFR" means Code of Federal Regulations.

"Clean Air Act" means the federal Clean Air Act, 42 U.S.C. sections 7401 to 7671q.

"Clean Water Act" means the federal Clean Water Act, 33 U.S.C. sections 1251 to 1387.

"Clear and grub material" means material consisting of any rock, coral, sand, gravel, and soil in conjunction with a maximum of twenty per cent vegetation which includes trees, timber shrubbery, and plants dislodged or uprooted from the ground.

"Closure" means those actions taken by the owner or operator of a solid waste site or facility to cease disposal operations and to ensure that all such facilities are closed in conformance with applicable rules at the time of such closures and to prepare the site for the post-closure period.

"Commercial solid waste" means all types of solid waste generated by stores, offices, restaurants, warehouses, and other nonmanufacturing activities, excluding residential and industrial wastes.

"Common water pollutants" means those industrial discharges that are point sources subject to permits under 33 U.S.C. section 1342.

"Compliance schedule" means a written schedule of required measures in a permit including an enforceable sequence leading to compliance with these rules.

"Composting" means a process in which organic solid wastes, such as biosolids (sewage sludge), green or yard waste materials, manures, and non-treated wood chips and shavings, are biologically decomposed and stabilized under controlled conditions to produce a stable humus-like mulch or soil amendment. This term includes the processing of organic and non-treated wood waste materials for the generation of wood chips or other materials that can be used as soil amendment, planting mixes, mulches for horticultural and agricultural applications, landfill cover, and land reclamation. The process of composting under methods approved by the department is a recycling activity. Land application of uncomposted organic

solid waste shall not be considered an approved solid waste management activity except as a portion of the United States Department of Agriculture-Soil Conservation Service approved Land Improvement, Soil Stabilization or Reclamation Plan.

"Construction and demolition waste" means solid waste, largely inert waste, resulting from the demolition or razing of buildings, of roads, or other structures, such as concrete, rock, brick, bituminous concrete, wood, and masonry, composition roofing and roofing paper, steel, plaster, and minor amounts of other metals, such as copper. Construction and demolition waste does not include cleanup materials contaminated with hazardous substances, friable asbestos, waste paints, solvents, sealers, adhesives, or similar materials.

"Container" means a device used for the collection, storage, or transportation of solid waste, including but not limited to, reusable containers, disposable containers, detachable containers, and tanks, whether fixed or detachable.

"Contaminate" means to allow to discharge a substance into ground water that would cause the concentration of that substance in the ground water to exceed the maximum contaminant level.

"Convenience center" means waste handling facilities performing limited transfer station operation located at convenient areas receiving less than forty tons per day of only household or residential solid waste.

"Cover material" means soil or other suitable material that has been approved by the department as cover for wastes.

"Department" means the state department of health.

"Director" means the director of health or the director's authorized representative.

"Disease vectors" means any rodents, flies, mosquitoes, or other animals, including insects, capable of transmitting disease to humans.

"Displacement" means the relative movement of any two sides of a fault measured in any direction.

"Disposal" means the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste onto any land or water so that such solid waste, or any constituent thereof, may enter the environment, be emitted into the air, or discharged into any water, including ground waters.

"Disposal facility" means a solid waste management facility or part of one at which solid waste is intentionally placed into or on any land or water, and at which solid waste will remain after closure.

"Disposal site" means the location where any final treatment, utilization, processing, or deposition of solid waste occurs.

"Energy recovery" means the recovery of energy in a useable form from mass burning or refuse derived fuel incineration, pyrolysis, or any other means of using the heat of combustion or solid waste that involves high temperature (over twelve hundred degrees Fahrenheit) processing.

"Existing facility" means a facility which is owned or leased, and in operation, or for which construction has begun, on or before the effective date of this chapter and the owner or operator has obtained permits or approvals necessary under federal, state, and local statutes, regulations, rules, and ordinances. This term does not include existing MSWLF units.

"Existing MSWLF unit" means any municipal solid waste landfill unit that is receiving solid waste as of October 9, 1993. Waste placement in existing units must be consistent with past operating practices or modified practices to ensure good management.

"Facility" means all contiguous land including buffer zones and structures, other appurtenances, and improvements on the land used for the handling of solid waste.

"Facility structures" means, but is not limited to, buildings, sheds, utility lines, and drainage pipes on the facility.

"Fault" means a fracture or a zone of fractures in any material along which strata on one side have been displaced with respect to that on the other side.

"Floodplain" means the lowland and relatively flat areas adjoining inland and coastal waters, including flood-prone areas of offshore islands, that are inundated by the one hundred-year flood.

"Foreign waste" means garbage generated by carriers which left foreign ports and their first port of entry to the U.S. is

Hawaii.

"Free liquids" means liquids from any solid waste which produces measurable liquids as defined by the Paint Filter Liquids Test, Method 9095 of EPA Publication Number SW-846.

"Garbage" means, but is not limited to, putrescible solid waste including animal and vegetable wastes resulting from the handling, storage, sale, preparation, cooking, or serving of food. Garbage originates primarily in home kitchens, stores, markets, restaurants, and other places where food is stored, prepared, or served.

"Gas condensate" means the liquid generated as a result of gas recovery processes at the MSWLF unit.

"Green waste" means solid waste that includes leaves, grass clippings, garden and yard wastes, tree trunks, holiday trees, tree trimmings, and/or prunings.

"Ground water or "ground-water" means water below the land surface in a zone of saturation.

"Hazardous waste" means regulated hazardous waste as defined in 40 CFR 261 or the State of Hawaii's rules or statutes, whichever is more stringent.

"Holocene" means the most recent epoch of the Quaternary period, extending from the end of the Pleistocene Epoch to the present.

"Household waste" means any solid waste, including garbage and trash, and sanitary waste in septic tanks derived from households, including single and multiple residences, hotels and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use recreation areas.

"Incineration" means the destruction of solid waste by burning in a furnace designed for that purpose where solid waste is essentially reduced to ash, carbon dioxide, and water vapor.

"Industrial solid waste" means solid waste generated by manufacturing or industrial processes that is not a hazardous waste regulated under subtitle C of RCRA. The waste may include, but is not limited to, waste resulting from the following manufacturing processes: electric power generation; fertilizer or agricultural chemicals; food and related products or by-products; inorganic chemicals; iron and steel manufacturing; leather and

leather products; nonferrous metals manufacturing or foundries; organic chemicals; plastics and resins manufacturing; pulp and paper industry; rubber and miscellaneous plastic products; stone, glass, clay, and concrete products; textile manufacturing; transportation equipment; and water treatment. This term does not include mining waste or oil and gas waste.

"Inert wastes" means wastes which are limited to earth and earth-like products, concrete, cured asphalt, rock, bricks, and material which will not cause a leachate of environmental concern.

"Infectious waste" means any waste which may contain pathogens capable of causing an infectious disease and shall include, but not be limited to, wastes categorized in section 11-104-4 of the Hawaii Administrative Rules.

"Karst terranes" means areas where karst topography, with its characteristic surface and subterranean features, are developed as the result of dissolution of limestone, dolomite, or other soluble rock. Characteristic physiographic features present in karst terranes include, but are not limited to, sinkholes, sinking streams, caves, large springs, and blind valleys.

"Landfill" means a disposal facility or part of a facility at which solid waste is permanently placed in or on land and which is not a landspreading facility.

"Landspreading facility" means a facility that applies sludges or other solid wastes onto or incorporates solid waste into the soil surface at greater than vegetative utilization and soil conditioner and/or immobilization rates.

"Lateral expansion" means a horizontal expansion of the waste boundaries of an existing MSWLF unit.

"Leachate" means water or other liquid that has percolated or passed through or emerged from solid waste and contains dissolved, soluble, suspended, or miscible materials removed from the waste or due to contact with solid waste or gases therefrom.

"Lift" means a compacted layer of solid waste and its overlying earth cover in a landfill.

"Limited purpose landfill" means a landfill that receives solid waste of limited types, known and consistent composition, other than woodwastes, garbage, inert waste, and demolition waste.

"Liquid" means a substance that flows readily and assumes the form of its container but retains its independent volume.

"Liquid waste" means any waste material that is determined to contain "free liquids" as defined by Method 9095 (Paint Filter Liquids Test), as described in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods" (EPA Pub. No. SW-846).

"Lithified earth material" means all rock, including all naturally occurring and naturally formed aggregates or masses of minerals or small particles of older rock that formed by crystallization of magma or by induration of loose sediments. This term does not include artificial materials, such as fill, concrete, and asphalt, or unconsolidated earth materials, soil, or regolith lying at or near the earth surface.

"Lower explosive limit" means the lowest per cent by volume of a mixture of explosive gases in air that will propagate a flame at twenty-five degrees centigrade and atmospheric pressure.

"Maximum horizontal acceleration in lithified earth material" means the maximum expected horizontal acceleration depicted on a seismic hazard map, with a ninety per cent or greater probability that the acceleration will not be exceeded in two hundred fifty years, or the maximum expected horizontal acceleration based on a site-specific seismic risk assessment.

"Medical waste" means all the infectious and injurious waste originating from a medical, veterinary, or intermediate care facility.

"Monofill" means a landfill which accepts only one type of solid waste.

"Municipal solid waste landfill unit" or "MSWLF unit" means a discrete area of land or an excavation that receives household waste, and that is not a land application unit, surface impoundment, injection well, or waste pile, as those terms are defined under 40 CFR section 257.2. A MSWLF unit also may receive other types of RCRA subtitle D wastes, such as commercial solid waste, nonhazardous sludge, conditionally exempt small quantity generator waste, and industrial solid waste. The landfill may be publicly or privately owned. A MSWLF unit may be a new MSWLF unit, an existing MSWLF unit, or a lateral expansion.

"New MSWLF unit" means any municipal solid waste landfill unit that has not received waste before October 9, 1993.

"Nuisance" consists of an act or an omission of an act which annoys, injures, or endangers the comfort, health, or safety of others, offends decency, or unlawfully interferes with, obstructs

or tends to obstruct, any public park, square, street, or highway; or in any way renders other persons insecure in life, or in the use of property.

"One hundred-year flood" means a flood that has a one per cent or greater chance of recurring in any given year or a flood occurring of a magnitude equalled or exceeded once in one hundred years on the average over a significantly long period.

"Open burning" means the combustion of solid waste without:

- (1) Control of combustion air to maintain adequate temperature for efficient combustion;
- (2) Containment of the combustion reaction in an enclosed device to provide sufficient residence time and mixing for complete combustion; and
- (3) Control of the emission of the combustion products.

"Operator" means the person(s) responsible for the overall operation of a facility or part of a facility.

"Owner" means the person(s) who has legal title to a facility or part of a facility.

"Performance standard" means the criteria for the performance of solid waste handling facilities.

"Permeability" means the ease with which a porous material allows liquid or gaseous fluids to flow through it. For water, this is usually expressed in units of centimeters per second and termed hydraulic conductivity. Soils and synthetic liners with a permeability for water of 1×10^{-7} cm/sec or less may be considered impermeable.

"Permit" means written authorization from the director to construct, modify, and operate any solid waste disposal system or any component of any solid waste disposal system. A permit authorizes the grantee to construct, modify, and operate any solid waste disposal system in a manner or amount, not forbidden by this chapter, or by rules adopted pursuant to HRS 342 but requiring review by the department.

"Permit by rule" means an abbreviated procedure by which "limited impact" solid waste facilities may begin operations in accordance with section 11-58.1-04(i).

"Person" means an individual, firm, association,

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co-partnership, political subdivision, government agency, municipality, industry, public or private corporation, or any other entity whatsoever.

"Petroleum" means a regulated substance which includes crude oil or any fraction thereof which is liquid at standard temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute.)

"Pile" means any noncontainerized accumulation of solid waste that is used for treatment or storage.

"Plan of operation" means the written plan developed by an owner or operator of a facility detailing how a facility is to be operated during its active life and during closure and post-closure.

"Poor foundation conditions" means those areas where features exist which indicate that a natural or artificial event may result in inadequate foundation support for the structural components of an MSWLF unit.

"Post-closure" means the requirements placed upon landfill disposal sites after closure to ensure their environmental safety for a thirty-year period.

"Premises" means a tract or parcel of land with or without habitable buildings.

"Processing" means an operation to convert solid waste into a useful product or to prepare it for disposal.

"Putrescible waste" means solid waste which contains material capable of being decomposed by micro-organisms.

"Pyrolysis" means the process in which solid waste is heated in an enclosed device in the absence of oxygen to vaporize, producing a hydrocarbon-rich gas capable of being burned for recovery of energy.

"Qualified ground-water scientist" means a scientist or engineer who has received a baccalaureate or post-graduate degree in the natural sciences or engineering and who has sufficient training and experience in ground-water hydrology and related fields as may be demonstrated by state registration, professional certifications, or completion of accredited university programs that enable that individual to make sound professional judgments regarding ground-water monitoring, contaminant fate and transport,

and corrective action.

"RCRA" means the federal Resource Conservation and Recovery Act, 42 U.S.C. sections 6901 to 6992k.

"Reclamation facility" means a location used for the handling, processing, or storage of recoverable material, including but not limited to composting and remediation facilities.

"Recoverable material" means material that can be diverted from disposal for recycling or bioconversion. This term does not include those materials that are generated and normally used on-site for manufacturing purposes.

"Recycling" means the collection, separation, recovery, and sale or reuse of secondary resources that would otherwise be disposed of as municipal solid waste, and is an integral part of a manufacturing process aimed at producing a marketable product made of postconsumer material.

"Recycling drop-off facility" means a structure or site designated for collection and small scale (low technology) segregation of recyclable materials. The manned or unmanned site will receive and temporarily store recyclables "dropped-off" and no payment is made to the participants depositing recyclables.

"Recycling processing or materials recovery facility" means a facility which collects and bales, shreds, crushes, melts, sorts, or otherwise treats, temporarily stores, and brokers, or transports recyclable materials for reuse or re-manufacture.

"Refuse" means anything putrescible or non-putrescible that is discarded or rejected.

"Regulated hazardous waste" means a solid waste that is a hazardous waste, as defined in 40 CFR section 261.3, that is not excluded from regulation as a hazardous waste under 40 CFR section 261.4(b) or was not generated by a conditionally exempt small quantity generator as defined in 40 CFR section 261.5.

"Remediation" means a process utilizing physical, chemical, or biological conversion to mitigate or eliminate undesirable or unsafe constituents within the waste material.

"Reserved" means a section having no requirements and which is set aside for future possible rulemaking as a note to the regulated community.

"Run-off" means any rainwater, leachate, or other liquid that

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drains over land from any part of a facility.

"Run-on" means any rainwater, leachate, or other liquid that drains over land onto any part of a facility.

"Salvage" means the incidental removal of solid waste for reuse under the control of the facility owner or operator.

"Saturated zone" means that part of the earth's crust in which all voids are filled with water.

"Scavenging" means the removal of materials at a disposal site, or interim solid waste handling site without the approval of the owner or operator and the department of health.

"Secondary Resources" means postconsumer material collected and processed for feedstock in a manufacturing process.

"Seismic impact zone" means an area with a ten per cent or greater probability that the maximum horizontal acceleration in lithified earth material, expressed as a per cent of the earth's gravitational pull(g), will exceed 0.10g in two hundred fifty years.

"Sludge" means any solid, semi-solid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, industrial process, or air pollution control facility exclusive of the treated effluent from a wastewater treatment plant.

"Sole source aquifer" means an aquifer designated by the Environmental Protection Agency pursuant to section 1424e of the Safe Drinking Water Act (P.L. 93-523).

"Solid waste" or "waste" means garbage, refuse, and other discarded materials, including solid, liquid, semi-solid, or contained gaseous materials resulting from industrial, commercial, mining, and agricultural operations, sludge from waste treatment plants and water supply treatment plants, and residues from air pollution control facilities and community activities, but does not include solid or dissolved materials in domestic sewage or other substances in water sources such as silt, dissolved or suspended solids in industrial waste water effluents, dissolved materials in irrigation return flows, or other common water pollutants, or source, special nuclear, or by-product material as defined by the federal Atomic Energy Act of 1954, as amended (68 Stat. 923).

"Solid waste disposal facility" means any facility which receives solid waste for ultimate disposal through landfilling or incineration. This term does not include facilities utilized for transfer, storage, processing, or remanufacturing for recycling or reuse, or bioconversion.

"Solid waste handling" means the management, storage, collection, transportation, treatment, utilization, processing, or final disposal of solid wastes, including the recovery and recycling of materials from solid wastes, the recovery of energy resources from such wastes, or the conversion of the energy in such wastes to more useful forms or combinations thereof.

"Solid waste management" means the systematic administration of activities which provide for the collection, source separation, storage, transportation, transfer, processing, treatment, and disposal of solid waste.

"Source separation" means dividing solid waste into some or all of its component parts at the point of generation.

"Special wastes" means any solid waste which, because of its source or physical, chemical, or biological characteristics, require special consideration for its proper processing or disposal, or both. This term includes, but is not limited to, asbestos, used oil, lead acid batteries, municipal waste combustion ash, sewage sludge that is non-hazardous, medical wastes, tires, white goods, and derelict vehicles.

"Storage" means the holding of solid waste materials for a temporary period.

"Stream" means the point at which any confined freshwater body of surface water reaches a mean annual flow rate of twenty cubic feet per second.

"Structural components" means liners, leachate collection systems, final covers, run-on or run-off systems, and any other component used in the construction and operation of the MSWLF that is necessary for protection of human health and the environment.

"Surface impoundment" means a facility or part of a facility which is a natural topographic depression, man-made excavation, or diked area formed primarily of earthen material (although it may be lined with man-made materials), and which is designed to hold an accumulation of liquids or sludges. The term includes holding, storage, settling, and aeration pits, ponds, or lagoons, but does not include injection wells.

"Surface water" means all lakes, rivers, ponds, streams, inland waters, salt waters, and all other water and water courses within the jurisdiction of the State of Hawaii.

"Table 1" means Table 1 as it appears in 40 CFR 258.

"Transfer station" means a permanent, fixed, supplemental collection and transportation facility, used by persons and route collection vehicles to deposit collected solid waste from off-site into a larger transfer vehicle for transport to a solid waste handling facility. Transfer stations may also include recycling activities.

"Treatment" means the physical, chemical, or biological processing of solid waste to make such solid wastes safer for storage or disposal, amenable for energy or material resource recovery, or reduced in volume.

"Twenty-five year storm" means a storm of a particular duration and of such intensity that it has a four per cent probability of being equalled or exceeded in any year.

"Twenty-four hour, twenty-five year storm" means a twenty-five year storm of twenty-four hours duration.

"Unstable area" means a location that is susceptible to natural or artificial events or forces capable of impairing the integrity of some or all of the landfill structural components responsible for preventing releases from a landfill. Unstable areas can include poor foundation conditions, areas susceptible to mass movements, and Karst terranes.

"Uppermost aquifer" means the geologic formation nearest the natural ground surface that is an aquifer, as well as lower aquifers that are hydraulically interconnected with this aquifer within the facility's property boundary.

"Used oil transporter" means a person who transports more than five hundred gallons of used oil annually, except a person who transports used oil obtained solely from sources owned and operated by the person to a storage facility owned and operated by the same person.

"Washout" means the carrying away of solid waste by waters of the base flood.

"Waste management unit boundary" means a vertical surface located at the hydraulically downgradient limit of the unit. This vertical surface extends down into the uppermost aquifer.

"Waste recycling" means reusing waste materials and extracting materials from a waste stream.

"Waste reduction" means reducing the amount or type of waste generated.

"Water quality standard" means a standard set for maximum allowable contamination in surface waters.

"Wetlands" means those areas that are defined in 40 CFR section 232.2(r). It includes those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include swamps, marshes, bogs, estuaries, and similar areas.

"White goods" means electrical and mechanical appliances made primarily of metal parts such as refrigerators, clothes washers, and dryers. Appliances of less than three cubic feet in volume before crushing shall not be included in this definition. [Eff JAN 13 1994] (Auth: HRS §§321-11, 342G-3, 342G-13, 342H-2, 342H-3, 342H-18)

§11-58.1-04 Permit systems. (a) Requirement. It shall be unlawful for any person to establish, modify, or operate any solid waste management facility or a part thereof or any extension or addition thereto without a permit issued in accordance with this chapter, Hawaii Revised Statutes, chapter 342H, and the integrated solid waste management plan for the State of Hawaii.

- (b) Exemptions. The following are exempted from the requirements of subsection (a). But these exemptions do not apply to facilities regulated by 40 CFR 258.
- (1) A single family or duplex residential property reusing by composting only green or vegetative solid wastes generated on its premises.
 - (2) A solid waste disposal facility on which the agricultural solid waste from the operation or from its products processing facility is disposed. This exemption does not include equipment and materials such as pesticides and fertilizers used in the operation of the farm. It also excludes land not used for agricultural purposes.
 - (3) A landfill site which is used only by the owner or

person in control of the premises to landfill less than one hundred fifty tons per year of soil, rock, concrete, or other nondecomposable and/or uncontaminated inert materials generated on the site.

- (4) Incinerator facilities having a total rated capacity of less than one ton per hour.
- (5) Minor sources as determined by the director.
- (c) Application for permit.
- (1) Application for a permit shall be completed on forms furnished by the director and shall be accompanied by the following for approval:
 - (A) Detailed plans and specifications for the facility.
 - (B) Certification of compliance with local ordinances and zoning requirements including the recording of its disposal facility with the bureau of conveyances.
 - (C) An operations report detailing the proposed method of operation, population, and area to be served, the characteristics, quantity, and source of material to be processed, the use and distribution of processed materials, method of processed residue disposal, emergency operating procedures, and the type and amount of equipment to be provided and the proposed ultimate use of the land.
 - (D) Other specific requirements as stated for each facility.
- (2) Each application shall contain the original signature of the owner and applicant and shall constitute an acknowledgement that the applicant will assume responsibility for the construction or modification and operation of the facility in accordance with these rules and regulations. If the applicant is a partnership or group other than a corporation or a county, the application shall be made by one individual who is a member of the group. If the applicant is a corporation or a county, the application shall be made by an officer of the corporation, general manager of the facility, or an authorized representative of the county.
- (3) The failure of the director to act on a complete

application for the issuance of a permit or an application by a permit holder for the modification or renewal thereof within one hundred eighty days of the receipt of such application, except for all federally delegated permit programs and federally approved programs, shall be deemed a grant of such application; provided that the applicant acts consistently with the application and all plans, specifications, and other information submitted as a part thereof and shall notify the department a minimum of fifteen days before the start up of operation.

- (4) The director shall evaluate the applicant's response to the department's request for more information and shall notify the applicant in writing of the director's final approval or intent to deny the application. No application for a permit shall be denied unless the applicant has had an opportunity for a hearing by the director in accordance with chapter 91, Hawaii Revised Statutes.
- (5) The director shall approve an application for a permit if the application and the supporting information clearly show that the issuance thereof is in the public interest and that the solid waste facility is designed, built, and equipped in accordance with the best practicable technology so as to operate without causing a violation of applicable rules and regulations.
- (6) The director issues a permit conditioned upon compliance with established requirements.
 - (A) Commencement of work under such an authority by the applicant shall be deemed as acceptance of all conditions so specified.
 - (B) The director may require the applicant to provide such facilities as are necessary for sampling and testing to determine the degree of pollution from the solid waste facility.

(d) Modification, suspension, or revocation. The director may, on the director's own motion or the application of any person, modify, suspend, or revoke a permit if, after affording the applicant a hearing in accordance with chapter 91, Hawaii Revised Statutes, the director determines that any condition of the permit has been violated or any rule of the department has been violated or any provision of chapter 342H, Hawaii Revised Statutes, has been violated or that such is in the public interest. Modification, suspension, or revocation of a permit

shall become final ten days after service of notice of the final decision to modify, suspend, or revoke, on the holder of the permit.

(e) Duration, transfer and termination.

(1) Duration of permit. The director may grant a permit for any term, not exceeding five years, and upon application may renew a permit from time to time for a term not exceeding five years if such is in the public interest.

(2) Transfer of permit. A permit shall not be transferrable without the written approval of the director.

(3) Reporting termination. Within ninety days of the permanent termination of the operation of a solid waste facility, the facility's permittee shall notify the director in writing of the facility's termination of operation.

(f) Posting. A permittee shall at all times post its permit in a conspicuous place at or near the solid waste disposal facility for which the permit was issued.

(g) Falsifying or altering permit. A person shall not willfully deface, alter, forge, counterfeit, or falsify a permit.

(h) Filing fees:

(1) Every applicant for a permit shall pay a filing fee in accordance with the following fee schedule:

(A) Solid waste disposal facilities

(i) Landfills

Greater than twenty tons/day.....\$1,000

Less than twenty tons/day..... 250

(ii) Incinerators

Greater than twenty tons/day..... 1,000

Less than twenty tons/day..... 250

(B) Solid waste storage, handling and processing facilities

(i) Transfer stations

Less than one hundred tons/day..... 100

Over one hundred tons/day..... 250

(ii) Recycling and materials recovery

facilities.....	50
(iii)Salvage facilities.....	50
(C) Solid waste reclamation facilities	
(i) Composting.....	50
(ii) Remediation.....	250
(D) Special wastes	
(i) Special wastes.....	500
(ii) Medical wastes.....	100
(iii)Foreign wastes.....	100
(iv) Other non-specific technology.....	300
(E) Others	
(i) Permit by rule.....	25
(To be submitted with the letter of notification)	

This filing fee shall be submitted with the application and shall not be refunded nor applied to any subsequent application following final action of cancellation or denial of an application.

- (2) Fees shall be made payable to the State of Hawaii.
- (3) A request for a duplicate permit shall be made in writing to the director within ten days after the destruction, loss, or defacement of a permit. A fee of \$50 shall be charged and submitted with the request.
 - (i) Permit by rule for certain solid waste handling and disposal facilities of limited impact.
 - (1) Permit by rule: Notwithstanding any other provision of these rules, the convenience centers, composting facilities handling not more than three thousand tons per year of green wastes, clearing and grubbing landfills, certain agricultural landfills, and recycling drop-off facilities shall be deemed to have a solid waste handling and disposal permit if the following conditions are met:
 - (A) Notification. At least thirty days prior to commencing solid waste handling activities which are covered under a permit by rule, written

notification of such activity must be made to the director. Written notification shall be made on such forms as are provided by the director. Persons failing to notify the director of such activities shall be deemed to be operating without a permit.

(B) General conditions of every facility.

- (i) No regulated hazardous waste in accordance with 40 CFR Part 261 may be collected, transported, or disposed at any of the facilities.
- (ii) Nuisance control. Suitable means shall be employed to prevent solid wastes from scattering; control of litter, odors and vectors such as rodents and insects.
- (iii) Suitable means shall be provided to prevent and control fires, including an emergency response plan when appropriate.
- (iv) It is the responsibility of the owner and/or operator to comply with all the local rules, regulations, and ordinances, and the director may add additional conditions deemed appropriate.
- (v) Each facility shall be supervised, secured, and have a permanent sign identifying the facility, hours and days of operation, materials accepted or not accepted, the owner and/or operator, a person to contact, and other pertinent information.
- (vi) An annual report shall be prepared and submitted to the director.

(C) Convenience centers.

- (i) Only household and/or residential solid waste will be accepted.
- (ii) Car batteries and waste oil may be collected at the convenience centers but must be collected and stored in a safe and orderly manner.

- (D) Green wastes (landscape waste) composting facilities.
 - (i) Composting facilities accepting only green waste, less than three thousand tons per year, are permitted by rule unless exempted.
 - (ii) The finished compost must be sufficiently stable that it can be stored or applied on land without producing a nuisance.
 - (iii) An annual report shall be prepared and submitted to the department, reporting the tonnage of green waste accepted, the composted tonnage produced, and residual disposed.
 - (iv) The department reserves the right to add additional requirements.
- (E) Land clearing, grubbing, and certain agricultural landfills and inert waste landfills.
 - (i) All persons exempted under section 11-58.1-4(b)(3) and landfilling more than one hundred and fifty tons per year shall be permitted by rule.
 - (ii) Only waste that will not or is not likely to produce leachate of environmental concerns shall be disposed of in the landfill. Acceptable materials for disposal in the land clearing, grubbing, and certain agricultural landfill are earth and earth-like products, and land clearing debris such as stumps, limbs and leaves. Acceptable materials for disposal in the inert waste landfill are earth and earth-like products, concrete, cured asphalt, rocks, and bricks.
 - (iii) Materials placed in the landfill shall be generated on site and spread in layers and compacted to the smallest practicable volume.
 - (iv) Public access to the landfills shall be limited to authorized entrances which shall be closed when the site is not in operation.
 - (v) The final cover shall consist of eighteen inches of earthen material to minimize

infiltration and six inches of earthen material to minimize erosion or as approved by the director. A vegetative cover shall be placed over the final lift, not later than one month following final placement of waste within that lift. The vegetative cover must be maintained a minimum of a year after the closure of the landfill.

- (vi) A written notice of final closure must be provided to the director within one hundred eighty days of receiving the final load of material. Any site not receiving waste for in excess of one hundred eighty days shall be deemed abandoned and in violation of these rules unless properly closed. Notice of closure must include the date of final material receipt and an accurate legal description of the boundaries of the landfill.
 - (vii) A permanent notation of the landfill location shall be added at the bureau of conveyances to the facility property and on any other instrument that would normally be examined during the title search and note any land use restrictions from the closure plans. The notation shall notify any potential purchaser of the property that the area has been used for land clearing and grubbing and agricultural solid waste landfills.
 - (viii) All other applicable federal, state, and local laws, rules, and ordinances, including erosion and sediment control, and any applicable federal wetlands permits, must be fully complied with prior to commencement of landfilling operations.
- (F) Recycling drop-off and processing facilities.
- (i) An annual report shall be prepared and submitted to the department, reporting the amounts and types of recyclable materials or scrap metals received and distributed by weight. The report is due on July 31 of each year for the preceding fiscal year.
 - (ii) Scavenging at the facility by the general public is prohibited.

- (iii) Recycling processing facilities utilizing single source separated material for reuse. The single source separated items are, but not limited to: cardboard, newspaper print, office paper, glass, aluminum containers, plastics, tires, and non-ferrous scrap metals. [Eff JAN 13 1994] (Auth: HRS §§342G-28, 342H-3, 342H-4, 342H-13, 342H-55, 342N-3, 342N-12, 342N-31)

§11-58.1-05 Inspections. The director, in accordance with the law may enter and inspect the facility for the purpose of investigating an actual or suspected source of solid waste, or other pollution; ascertaining compliance or non-compliance with any rule, or standard promulgated by the department; and making reasonable tests in connection therewith. [Eff JAN 13 1994] (Auth: HRS §§342H-6, 342N-5)

§11-58.1-06 Variances. Variance and variance applications shall comply with Hawaii Revised Statutes, section 342H-5. [Eff JAN 13 1994] (Auth: HRS §§342H-3, 342H-5) (Imp: HRS §§342H-3, 342H-5 342H-52)

§§11-58.1-07 to 10 (Reserved)

SUBCHAPTER 2 -- SOLID WASTE DISPOSAL FACILITIES

§11-58.1-11 Municipal solid waste landfills -- purpose, scope, and applicability. (a) The purpose of sections 11-58.1-11 through 11-58.1-18 is to establish minimum state criteria for all municipal solid waste landfill (MSWLF) units including municipal solid waste landfills that are used to dispose of sewage sludge. These minimum state criteria ensure the protection of human health and the environment.

(b) These criteria apply to owners and operators of new MSWLF units, existing MSWLF units, and lateral expansions, except

as otherwise specifically provided in sections 11-58.1-11 through 11-58.1-18.

(c) These criteria do not apply to MSWLF units that did not receive waste after October 9, 1991.

(d) MSWLF units that receive waste after October 9, 1991, but stop receiving waste before October 9, 1993, are exempt from all the requirements of sections 11-58.1-11 through 11-58.1-18, except for the final cover requirement specified in section 11-58.1-17(a)(1). The final cover must be installed within six months of the last receipt of wastes. Owners or operators of MSWLF units described in this subsection that fail to complete cover installation within this six-month period will be subject to all the requirements of sections 11-58.1-11 through 11-58.1-18, unless otherwise specified.

(e) All MSWLF units that receive waste on or after October 9, 1993, must comply with all requirements of sections 11-58.1-11 through 11-58.1-18, unless otherwise specified.

(f) Owners or operators of new MSWLF units, existing MSWLF units, and lateral expansions that dispose of less than twenty tons of municipal solid waste daily, based on an annual average, are exempt from sections 11-58.1-14 and 11-58.1-16, so long as:

- (1) There is no evidence of existing ground-water contamination from the MSWLF unit;
- (2) The MSWLF unit serves either:
 - (A) A community that experiences an annual interruption of at least three consecutive months of surface transportation that prevents access to a regional waste management facility; or
 - (B) A community that has no practicable waste management alternative and is located in an area that annually receives less than or equal to twenty-five inches of precipitation; and
- (3) The owners or operators place in the operating record information demonstrating that the requirements of this subsection are met.

(g) If the owner or operator of a new MSWLF unit, existing MSWLF unit, or lateral expansion has knowledge of ground-water contamination resulting from the unit that has asserted the exemption in subsection (f), the owner or operator must notify the

director of the contamination and shall thereafter comply with sections 11-58.1-14 and 11-58.1-16.

(h) MSWLF units failing to satisfy these criteria are considered open dumps for purposes of state solid waste management planning under RCRA.

(i) MSWLF units failing to satisfy these criteria constitute open dumps, which are prohibited under section 4005 of RCRA.

(j) MSWLF units containing sewage sludge and failing to satisfy these criteria violate sections 309 and 405(e) of the Clean Water Act.

(k) The effective date of sections 11-58.1-11 through 11-58.1-17 is October 9, 1993. Section 11-58.1-18 is effective April 9, 1994.

(l) The owner or operator of a MSWLF unit must comply with any other applicable state or federal rules, laws, regulations, or other requirements.

(m) Extensions of the effective dates in 40 CFR 258 and this chapter may be approved on a case-by-case basis only following rule changes to 40 CFR 258 promulgated by the EPA authorizing such extensions or under statutory authority granted by the U.S. Congress. [Eff JAN 13 1994] (Auth: HRS §§342H-53, 342H-55)

§11-58.1-12 Municipal solid waste landfills -- permit requirements. (a) All municipal solid waste landfills (MSWLF) require a permit and shall comply with the requirements of section 11-58.1-04.

(b) Permit notification. The director shall ensure that the public receives notice of each application for a new municipal solid waste landfill permit or any application for modification or renewal of an existing permit through the public notification process. Procedures for the circulation of public notices shall include at least the following:

- (1) Notice shall be circulated within the geographical areas of the proposed disposal or other proposed activity; such circulation shall include publishing in local newspapers and periodicals, or, if appropriate, in a daily newspaper of general circulation.
- (2) Notice shall be mailed to any person or group upon

request.

- (3) The director shall add the name of any person or group upon request to a mailing list to receive copies of notices for all variance applications within the State or within a certain geographical area.
- (4) The director shall provide a period of not less than thirty days following the date of the public notice during which time interested persons may submit their written reviews with respect to the application and the tentative determinations of the department, if any. The period for comment may be extended at the discretion of the director.
- (5) The contents of public notice shall include at least the following:
 - (A) Name, address, and phone number of agency issuing the public notice;
 - (B) Name and address of each applicant;
 - (C) Brief description of each applicant's activities or operations which result in the disposal or other activity described in the application;
 - (D) A short description of the location of each disposal or activity indicating whether such disposal or activity is new or existing;
 - (E) A brief description of the procedures for the formulation of final determinations, including the thirty-day comment period required by paragraph (4) and any other means by which interested persons may influence or comment upon those determinations; and
 - (F) Address and phone number of state agency premises at which interested persons may obtain further information and inspect a copy of the variance applications and supporting and related documents.
- (6) Public hearings. The director may hold a public hearing if, after reviewing the comments submitted under paragraph (4), the director determines that a public hearing is warranted. Any hearing brought pursuant to this subsection shall be held in the geographical area of the proposed disposal or other proposed activity, or other appropriate area, at the discretion of the

director. [Eff JAN 13 1994] (Auth: HRS §§342H-53, 342H-54, 342H-55)

§11-58.1-13 Municipal solid waste landfills -- site analysis. (a) Airport safety.

- (1) Owners or operators of new MSWLF units, existing MSWLF units, and lateral expansions that are located within ten thousand feet (3,048 meters) of any airport runway end used by turbojet aircraft or within five thousand feet (1,524 meters) of any airport runway end used by only piston-type aircraft must demonstrate that the units are designed and operated so that the MSWLF unit does not pose a bird hazard to aircraft.
- (2) Owners or operators proposing to site new MSWLF units and lateral expansions located within a five-mile radius of any airport runway end used by turbojet or piston-type aircraft must notify the affected airport and the Federal Aviation Administration (FAA).

- (3) The owner or operator must place the demonstration in paragraph (1) in the operating record and notify the director that it has been placed in the operating record.

(b) Floodplains. Owners or operators of new MSWLF units, existing MSWLF units, and lateral expansions located in one hundred-year floodplains must demonstrate that the unit will not restrict the flow of the one hundred-year flood, reduce the temporary water storage capacity of the floodplain, or result in washout of solid waste so as to pose a hazard to human health and the environment. The owner or operator must place the demonstration in the operating record and notify the director that it has been placed in the operating record.

(c) Wetlands. New MSWLF units and lateral expansions shall not be located in wetlands, unless the owner or operator can make the following demonstrations to the director:

- (1) Where applicable under section 404 of the Clean Water Act or applicable state wetlands laws, the presumption that a practicable alternative to the proposed landfill is available which does not involve wetlands is clearly rebutted;
- (2) The construction and operation of the MSWLF unit will not:

- (A) Cause or contribute to violations of any applicable state water quality standard;
 - (B) Violate any applicable toxic effluent standard or prohibition under section 307 of the Clean Water Act;
 - (C) Jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of a critical habitat, protected under the Endangered Species Act of 1973; and
 - (D) Violate any requirement under the Marine Protection, Research, and Sanctuaries Act of 1972, for the protection of a marine sanctuary;
- (3) The MSWLF unit will not cause or contribute to significant degradation of wetlands. The owner or operator must demonstrate the integrity of the MSWLF unit and its ability to protect ecological resources by addressing the following factors:
- (A) Erosion, stability, and migration potential of native wetland soils, muds, and deposits used to support the MSWLF unit;
 - (B) Erosion, stability, and migration potential of dredged and fill materials used to support the MSWLF unit;
 - (C) The volume and chemical nature of the waste managed in the MSWLF unit;
 - (D) Impacts on fish, wildlife, and other aquatic resources and their habitat from release of the solid waste;
 - (E) The potential effects of catastrophic release of waste to the wetland and the resulting impacts on the environment; and
 - (F) Any additional factors, as necessary, to demonstrate that ecological resources in the wetland are sufficiently protected;
- (4) To the extent required under section 404 of the Clean Water Act or applicable state wetlands laws, steps have

been taken to attempt to achieve no net loss of wetlands (as defined by acreage and function) by first avoiding impacts to wetlands to the maximum extent practicable as required by paragraph (1), then minimizing unavoidable impacts to the maximum extent practicable, and finally offsetting remaining unavoidable wetland impacts through all appropriate and practicable compensatory mitigation actions (e.g., restoration of existing degraded wetlands or creation of man-made wetlands); and

- (5) Sufficient information is available to make a reasonable determination with respect to these demonstrations.

(d) Fault areas. New MSWLF units and lateral expansions shall not be located within two hundred feet (sixty meters) of a fault that has had displacement in Holocene time unless the owner or operator demonstrates to the director that an alternative setback distance of less than two hundred feet (sixty meters) will prevent damage to the structural integrity of the MSWLF unit and will be protective of human health and the environment.

(e) Seismic impact zone. New MSWLF units and lateral expansions shall not be located in seismic impact zones, unless the owner or operator demonstrates to the director that all containment structures, including liners, leachate collection systems, and surface water control systems, are designed to resist the maximum horizontal acceleration in lithified earth material for the site. The owner or operator must place the demonstration in the operating record and notify the director that it has been placed in the operating record.

(f) Unstable areas. Owners or operators of new MSWLF units, existing MSWLF units, and lateral expansions located in an unstable area must demonstrate that engineering measures have been incorporated into the MSWLF unit's design to ensure that the integrity of the structural components of the MSWLF unit will not be disrupted. The owner or operator must place the demonstration in the operating record and notify the director that it has been placed in the operating record. The owner or operator must consider the following factors, at a minimum, when determining whether an area is unstable:

- (1) On-site or local soil conditions that may result in significant differential settling;
- (2) On-site or local geologic or geomorphologic features; and
- (3) On-site or local artificial features or events (both

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surface and subsurface).

(g) Tidal wave (tsunami) zone. New MSWLFs and lateral expansions shall not be located in possible tsunami inundation areas.

(1) Tsunami inundation areas on the islands of Oahu, Hawaii, Maui, and Kauai are those areas delineated in a report entitled "Hawaii Tsunami Inundation Evacuation Map Project" by George D. Curtis, University of Hawaii Joint Institute for Marine and Atmospheric Research, dated April 19, 1991.

(2) Tsunami inundation areas on other islands shall be determined by the director.

(h) Closure of existing MSWLF units.

(1) Existing MSWLF units that cannot make the demonstration specified in subsection (a)(1) pertaining to airports, subsection (b) pertaining to floodplains, or subsection (f) pertaining to unstable areas, must close by October 9, 1996, in accordance with section 11-58.1-17(a) and conduct post-closure activities in accordance with section 11-58.1-17(b).

(2) The deadline for closure required by paragraph (1) may be extended up to two years if the owner or operator demonstrates to the director that:

(A) There is no available alternative disposal capacity; and

(B) There is no immediate threat to human health and the environment.

(i) Consistency with local zoning ordinance. The owner or operator of a MSWLF must comply with any applicable local zoning ordinances or other applicable local ordinances. [Eff JAN 13 1994 Auth: HRS §§342H-53, 342H-55)

§11-58.1-14 Municipal solid waste landfills -- design criteria. (a) The design of new MSWLF units and lateral expansions shall be approved by the director before commencement of construction.

(b) The design shall either:

- (1) Ensure that the concentration values listed in Table 1, which is incorporated by reference, or Hawaii Administrative Rules, title 11, chapter 20, whichever is more stringent, will not be exceeded in the uppermost aquifer at the relevant point of compliance, as specified by the director under subsection (e); or
- (2) Include a composite liner as described in subsection (c) and a leachate collection system that is designed and constructed to maintain less than a thirty-centimeter depth of leachate over the liner.
- (c) A composite liner shall consist of two components:
 - (1) An upper component that must consist of a minimum 30-mil flexible membrane liner (FML) with a hydraulic conductivity of 1×10^{-7} cm/sec. (FML components consisting of High Density Polyethylene (HDPE) shall be at least 60-mil thick. The FML component must be installed in direct and uniform contact with the compacted soil component.)
 - (2) A lower component that must consist of at least a two-foot layer of compacted soil with a hydraulic conductivity of no more than 1×10^{-7} cm/sec.
- (d) When approving a design that complies with subsection (b)(1), the director shall consider at least the following factors:
 - (1) The hydrogeologic characteristics of the facility and surrounding land;
 - (2) The climatic factors of the area; and
 - (3) The volume and physical and chemical characteristics of the leachate.
- (e) The relevant point of compliance specified by the director shall be no more than one hundred fifty meters from the waste management unit boundary and shall be located on land owned by the owner of the MSWLF unit. In determining the relevant point of compliance, the director shall consider at least the following factors:
 - (1) The hydrogeologic characteristics of the facility and surrounding land;
 - (2) The volume and physical and chemical characteristics of the leachate;

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- (3) The quantity, quality, and direction of flow of ground water;
- (4) The proximity and withdrawal rate of the ground-water users;
- (5) The availability of alternative drinking water supplies;
- (6) The existing quality of the ground water, including other sources of contamination and their cumulative impacts on the ground water and whether ground water is currently used or reasonably expected to be used for drinking water;
- (7) Public health, safety, and welfare effects; and
- (8) Practicable capability of the owner or operator.
[Eff JAN 13 1994] (Auth: HRS §§342H-53, 342H-55)

§11-58.1-15 Municipal solid waste landfills -- operating criteria. (a) Procedures for excluding the receipt of hazardous waste. Owners or operators of all MSWLF units must implement a program at the facility for detecting and preventing the disposal of regulated hazardous wastes as defined in 40 CFR Part 261 and polychlorinated biphenyls (PCB) wastes as defined in 40 CFR Part 761. This program must include, at a minimum:

- (1) Random inspections of incoming loads unless the owner or operator takes other steps to ensure that incoming loads do not contain regulated hazardous wastes or PCB wastes;
 - (2) Records of inspections;
 - (3) Training of facility personnel to recognize regulated hazardous waste and PCB wastes; and
 - (4) Notification to the director if a regulated hazardous waste or PCB waste is discovered at the facility.
- (b) Cover material requirements.
- (1) Except as provided in paragraph (2), the owners or operators of all MSWLF units must cover disposed solid waste with six inches of earthen material at the end of each operating day, or at more frequent intervals if

necessary, to control disease vectors, fires, odors, blowing litter, and scavenging.

- (2) Alternative materials of an alternative thickness (other than at least six inches of earthen material) may be approved by the director if the owner or operator demonstrates that the alternative material and thickness control disease vectors, fires, odors, blowing litter, and scavenging without presenting a threat to human health and the environment.
- (3) The director may grant a temporary waiver from the requirement of paragraphs (1) and (2) if the owner or operator demonstrates that there are extreme seasonal climatic conditions that make meeting the requirements impractical.

(c) Disease vector control. Owners or operators of all MSWLF units must prevent or control on-site populations of disease vectors using techniques appropriate for the protection of human health and the environment.

(d) Explosive gases control.

- (1) Owners or operators of all MSWLF units must ensure that:
 - (A) The concentration of methane gas generated by the facility does not exceed twenty-five per cent of the lower explosive limit for methane in facility structures (excluding gas control or recovery system components); and
 - (B) The concentration of methane gas does not exceed the lower explosive limit for methane at the facility property boundary.
- (2) Owners or operators of all MSWLF units must implement a routine methane monitoring program to ensure that the standards of paragraph (1) are met.
 - (A) The type and frequency of monitoring must be determined based on the following factors:
 - (i) Soil conditions;
 - (ii) The hydrogeologic conditions surrounding the facility;

- (iii) The hydraulic conditions surrounding the facility; and
 - (iv) The location of facility structures and property boundaries.
- (B) The minimum frequency of monitoring shall be quarterly.
- (3) If methane gas levels exceeding the limits specified in paragraph (1) are detected, the owner or operator must:
 - (A) Immediately take all necessary steps to ensure protection of human health and notify the director;
 - (B) Within seven days of detection, place in the operating record the methane gas levels detected and a description of the steps taken to protect human health; and
 - (C) Within sixty days of detection, implement a remediation plan for the methane gas releases, place a copy of the plan in the operating record, and notify the director that the plan has been implemented. The plan shall describe the nature and extent of the problem and the proposed remedy.
 - (D) The director may establish alternative schedules for demonstrating compliance with subparagraphs (B) and (C).
- (e) Air criteria.
 - (1) Owners or operators of all MSWLFs must ensure that the units do not violate any applicable requirements developed under the Hawaii State Implementation Plan (SIP) approved by the U.S. EPA Administrator pursuant to section 110 of the Clean Air Act, as amended.
 - (2) Open burning of solid waste, except for debris from emergency cleanup operations, is prohibited at all MSWLF units.
 - (f) Access requirements. Owners or operators of all MSWLF units must control public access and prevent unauthorized

vehicular traffic and illegal dumping of wastes by using artificial barriers, natural barriers, or both, as appropriate to protect human health and the environment.

- (g) Run-on or run-off control systems.
 - (1) Owners or operators of all MSWLF units must design, construct, and maintain:
 - (A) A run-on control system to prevent flow onto the active portion of the landfill during the peak discharge from a twenty-five-year storm;
 - (B) A run-off control system from the active portion of the landfill to collect and control at least the water volume resulting from a twenty-four-hour, twenty-five-year storm.
 - (2) Run-off from the active portion of the landfill unit must be handled in accordance with subsection (h)(1).
- (h) Surface water requirements. MSWLF units shall not:
 - (1) Cause a discharge of pollutants into waters of the United States, including wetlands, that violates any requirements of the Clean Water Act, including, but not limited to, the National Pollutant Discharge Elimination System (NPDES) requirements, pursuant to section 402.
 - (2) Cause the discharge of a nonpoint source of pollution to waters of the United States, including wetlands, that violates any requirement of an area-wide or state-wide water quality management plan that has been approved under sections 208 or 319 of the Clean Water Act, as amended.
- (i) Liquids restrictions.
 - (1) Bulk or noncontainerized liquid waste may not be placed in MSWLF units unless:
 - (A) The waste is household waste other than septic waste; or
 - (B) The waste is leachate or gas condensate derived from the MSWLF unit and the MSWLF unit, whether it is a new or existing MSWLF or lateral expansion, is

designed with a composite liner and leachate collection system as described in section 11-58.1-14(b)(2). The owner or operator must place the demonstration in the operating record and notify the director that it has been placed in the operating record.

- (2) Containers holding liquid waste may not be placed in a MSWLF unit unless:
 - (A) The container is a small container similar in size to that normally found in household waste;
 - (B) The container is designed to hold liquids for use other than storage;
 - (C) The waste is household waste; or
 - (D) The oil filters are drained for at least twenty-four hours or crushed and are not a regulated hazardous waste.

- (j) Recordkeeping requirements.

- (1) The owner or operator of a MSWLF unit must record and retain near the facility in an operating record or in an alternative location approved by the director the following information as it becomes available:
 - (A) Any location restriction demonstration required under section 11-58.1-13;
 - (B) Inspection records, training procedures, and notification procedures required in subsection (a);
 - (C) Gas monitoring results from monitoring and any remediation plans required by subsection (d);
 - (D) Any MSWLF unit design documentation for placement of leachate or gas condensate in a MSWLF unit as required under subsection (i)(1)(B);
 - (E) Any demonstration, certification, finding, monitoring, testing, or analytical data required by section 11-58.1-16;
 - (F) Closure and post-closure care plans and any monitoring, testing, or analytical data as required

- by section 11-58.1-17(a) and (b);
- (G) Any cost estimates and financial assurance documentation required by section 11-58.1-18; and
 - (H) Any information demonstrating compliance with the small community exemption as required by section 11-58.1-11(f)(3).
- (2) The owner or operator must notify the director when the documents from paragraph (1) have been placed or added to the operating record, and all information contained in the operating record must be furnished upon request to the director or be made available at all reasonable times for inspection by the director.
 - (3) The director can set alternative schedules for recordkeeping and notification requirements as specified in paragraphs (1) and (2), except for the notification requirements in sections 11-58.1-13(a)(2) and 11-58.1-16(e)(7)(A)(iii).

(k) Public health, safety, and welfare. The director shall require an owner or operator to fulfill any other requirements that the director believes necessary to protect the public health, safety, and welfare. [Eff JAN 13 1994] (Auth: HRS §§342H-53, 342H-55)

§11-58.1-16 Municipal solid waste landfills -- ground water protection. (a) Applicability.

- (1) The requirements in sections 11-58.1-11 through 11-58.1-18 apply to MSWLF units, except as provided in paragraph (2).
- (2) Ground water monitoring requirements under subsections (b) through (e) may be suspended by the director for a MSWLF unit if the owner or operator can demonstrate that there is no potential for migration of hazardous constituents from that MSWLF unit to the uppermost aquifer (as defined in section 11-58.1-03) during the active life of the unit and the post-closure care period. This demonstration must be certified by a qualified ground water scientist and approved by the director, and must be based upon:
 - (A) Site-specific field collected measurements, sampling, and analysis of physical, chemical, and biological processes affecting contaminant fate and

transport; and

- (B) Contaminant fate and transport predictions that maximize contaminant migration and consider impacts on human health and environment.
- (3) Owners and operators of MSWLF units must comply with the ground-water monitoring requirements of sections 11-58.1-11 through 11-58.1-18 according to the following schedule unless an alternative schedule is specified under paragraph (4):
- (A) Existing MSWLF units and lateral expansions less than one mile from a drinking water intake (surface or subsurface) must be in compliance with the ground-water monitoring requirements specified in subsections (b) through (e) by October 9, 1994;
 - (B) Existing MSWLF units and lateral expansions greater than one mile but less than two miles from a drinking water intake (surface or subsurface) must be in compliance with the ground-water monitoring requirements specified in subsections (b) through (e) by October 9, 1995;
 - (C) Existing MSWLF units and lateral expansions greater than two miles from a drinking water intake (surface or subsurface) must be in compliance with the ground-water monitoring requirements specified in subsections (b) through (e) by October 9, 1996;
 - (D) New MSWLF units must be in compliance with the ground-water monitoring requirements specified in subsections (b) through (e) before waste can be placed in the unit.
- (4) The director may specify an alternative schedule for the owners or operators of existing MSWLF units and lateral expansions to comply with the ground-water monitoring requirements specified in subsections (b) through (e). This schedule must ensure that fifty per cent of all existing MSWLF units are in compliance by October 9, 1994 and that all existing MSWLF units are in compliance by October 9, 1996. In setting the compliance schedule, the director must consider potential risks posed by the unit to human health and the environment. The following factors should be considered in determining potential risk:
- (A) Proximity of human and environmental receptors;

- (B) Design of the MSWLF unit;
 - (C) Age of the MSWLF unit;
 - (D) The size of the MSWLF unit;
 - (E) Types and quantities of wastes disposed including sewage sludge; and
 - (F) Resource value of the underlying aquifer, including:
 - (i) Current and future uses;
 - (ii) Proximity and withdrawal rate of users; and
 - (iii) Ground-water quality and quantity.
- (5) Once established at a MSWLF unit, ground-water monitoring shall be conducted throughout the active life and post-closure care period of that MSWLF unit as specified in section 11-58.1-17(b).
- (6) The director may establish alternative schedules for demonstrating compliance with subsection (b)(4)(B), pertaining to notification of placement of certification in operating record; subsection (d)(3)(A), pertaining to notification that statistically significant increase (SSI) notice is in operating record; subsection (d)(3)(B) and (C), pertaining to an assessment monitoring program; subsection (e)(2), pertaining to sampling and analyzing Appendix II constituents; subsection (e)(4)(A), pertaining to placement of notice (Appendix II constituents detected) in record and notification of notice in record; subsection (e)(4)(B), pertaining to sampling for Appendix I and II; subsection (e)(7), pertaining to notification (and placement of notice in record) of SSI above ground-water protection standard; subsections (e)(7)(A)(iv) and (f)(1), pertaining to assessment of corrective measures; subsection (g)(1), pertaining to selection of remedy and notification of placement in record; subsection (h)(3)(D), pertaining to notification of placement in record (alternative corrective action measures); and subsection (h)(6), pertaining to notification of placement in record (certification of remedy completed).
- (b) Ground-water monitoring systems.

- (1) A ground-water monitoring system must be installed that consists of a sufficient number of wells, installed at appropriate locations and depths, to yield ground-water samples from the uppermost aquifer (as defined in section 11-58.1-03) that:
 - (A) Represent the quality of background ground water that has not been affected by leakage from a unit. A determination of background quality may include sampling of wells that are not hydraulically upgradient of the waste management area where:
 - (i) Hydrogeologic conditions do not allow the owner or operator to determine what wells are hydraulically upgradient; or
 - (ii) Sampling at other wells will provide an indication of background ground-water quality that is as representative as or more representative than that provided by the upgradient wells; and
 - (B) Represent the quality of ground water passing the relevant point of compliance specified by the director under section 11-58.1-14(e). The downgradient monitoring system must be installed at the relevant point of compliance specified by the director under section 11-58.1-14(e) that ensures detection of ground-water contamination in the uppermost aquifer. When physical obstacles preclude installation of ground-water monitoring wells at the relevant point of compliance at existing units, the down-gradient monitoring system may be installed at the closest practicable distance hydraulically down-gradient from the relevant point of compliance specified by the director under section 11-58.1-14 that ensures detection of ground-water contamination in the uppermost aquifer.
- (2) The director may approve a multi-unit ground-water monitoring system instead of separate ground-water monitoring systems for each MSWLF unit when the facility has several units, if the multi-unit ground-water monitoring system meets the requirement of paragraph (1) and will be as protective of human health and the environment as individual monitoring systems for each MSWLF unit, based on the following factors:

- (A) Number, spacing, and orientation of the MSWLF units;
 - (B) Hydrogeologic setting;
 - (C) Site history;
 - (D) Engineering design of the MSWLF units, and
 - (E) Type of waste accepted at the MSWLF units.
- (3) Monitoring wells must be cased in a manner that maintains the integrity of the monitoring well bore hole. This casing must be screened or perforated and packed with gravel or sand, where necessary, to enable collection of representative ground-water samples. The annular space (i.e., the space between the bore hole and well casing) above the sampling depth must be sealed to prevent contamination of samples and the ground water.
- (A) The owner or operator must notify the director that the design, installation, development, and decommission of any monitoring wells, piezometers and other measurement, sampling, and analytical devices documentation has been placed in the operating record; and
 - (B) The monitoring wells, piezometers, and other measurement, sampling, and analytical devices must be operated and maintained so that they perform to design specifications throughout the life of the monitoring program.
- (4) The number, spacing, and depths of monitoring systems shall be:
- (A) Determined based upon site-specific technical information that must include thorough characterization of:
 - (i) Aquifer thickness, ground-water flow rate, ground-water flow direction including seasonal and temporal fluctuations in ground-water flow; and
 - (ii) Saturated and unsaturated geologic units and fill materials overlying the uppermost aquifer, materials comprising the uppermost aquifer, and materials comprising the confining unit defining the lower boundary of

the uppermost aquifer; including, but not limited to: thicknesses, stratigraphy, lithology, hydraulic conductivities, porosities, and effective porosities.

- (B) Certified by a qualified ground-water scientist or approved by the director. Within fourteen days of this certification, the owner or operator must notify the director that the certification has been placed in the operating record.
- (c) Ground-water sampling and analysis requirements.
 - (1) The ground-water monitoring program must include consistent sampling and analysis procedures that are designed to ensure monitoring results that provide an accurate representation of ground-water quality at the background and downgradient wells installed in compliance with subsection (b)(1). The owner or operator must notify the director that the sampling and analysis program documentation has been placed in the operating record and the program must include procedures and techniques for:
 - (A) Sample collection;
 - (B) Sample preservation and shipment;
 - (C) Analytical procedures;
 - (D) Chain of custody control; and
 - (E) Quality assurance and quality control.
 - (2) The ground-water monitoring program must include sampling and analytical methods that are appropriate for ground-water sampling and that accurately measure hazardous constituents and other monitoring parameters in ground-water samples. Ground-water samples shall not be field-filtered before laboratory analysis.
 - (3) The sampling procedures and frequency must be protective of human health and the environment.
 - (4) Ground-water elevations must be measured in each well immediately before purging, each time ground water is sampled. The owner or operator must determine the rate and direction of ground-water flow each time ground water is sampled. Ground-water elevations in wells

which monitor the same waste management area must be measured within a period of time short enough to avoid temporal variations in ground-water flow which could preclude accurate determination of ground-water flow rate and direction.

- (5) The owner or operator must establish background ground-water quality in a hydraulically upgradient or background well(s) for each of the monitoring parameters or constituents required in the particular ground-water monitoring program that applies to the MSWLF unit, as determined under subsections (d)(1) or (e)(1). Background ground-water quality may be established at wells that are not located hydraulically upgradient from the MSWLF unit if it meets the requirements of subsection (b)(1)(A).
- (6) The number of samples collected to establish ground-water quality data must be consistent with the appropriate statistical procedures determined pursuant to paragraph (7). The sampling procedures shall be those specified under subsection (d)(2) for detection monitoring, subsections (e)(2) and (e)(4) for assessment monitoring, and subsection (f)(2) for corrective action.
- (7) The owner or operator must specify in the operating record one of the following statistical methods to be used in evaluating ground-water monitoring data for each hazardous constituent. The statistical test chosen shall be conducted separately for each hazardous constituent in each well.
 - (A) A parametric analysis of variance (ANOVA) followed by multiple comparisons procedures to identify statistically significant evidence of contamination. The method must include estimation and testing of the contrasts between each compliance well's mean and the background mean levels for each constituent.
 - (B) An ANOVA based on ranks followed by multiple comparisons procedures to identify statistically significant evidence of contamination. The method must include estimation and testing of the contrasts between each compliance well's median and the background median levels for each constituent.
 - (C) A tolerance or prediction interval procedure in which an interval for each constituent is

established from the distribution of the background data, and the level of each constituent in each compliance well is compared to the upper tolerance or prediction limit.

- (D) A control chart approach that gives control limits for each constituent.
 - (E) Another statistical test method that meets the performance standards of paragraph (8). The owner or operator must place a justification for this alternative in the operating record and notify the director of the use of this alternative test. The justification must demonstrate that the alternative method meets the performance standards of paragraph (8).
- (8) Any statistical method chosen under paragraph (7) shall comply with the following performance standards, as appropriate:
- (A) The statistical method used to evaluate ground-water monitoring data shall be appropriate for the distribution of chemical parameters or hazardous constituents. If the distribution of the chemical parameters or hazardous constituents is shown by the owner or operator to be inappropriate for a normal theory test, then the data should be transformed or a distribution-free theory test should be used. If the distributions for the constituents differ, more than one statistical method may be needed.
 - (B) If an individual well comparison procedure is used to compare an individual compliance well constituent concentration with background constituent concentrations or a ground-water protection standard, the test shall be done at a Type I error level no less than 0.01 for each testing period. If a multiple comparisons procedure is used, the Type I experiment wise error rate for each testing period shall be no less than 0.05; however, the Type I error of no less than 0.01 for individual well comparisons must be maintained. This performance standard does not apply to tolerance intervals, prediction intervals, or control charts.
 - (C) If a control chart approach is used to evaluate ground-water monitoring data, the specific type of

control chart and its associated parameter values shall be protective of human health and the environment. The parameters shall be determined after considering the number of samples in the background data base, the data distribution, and the range of the concentration values for each constituent of concern.

- (D) If a tolerance interval or a predictional interval is used to evaluate ground-water monitoring data, the levels of confidence and, for tolerance intervals, the per cent of the population that the interval must contain, shall be protective of human health and the environment. These parameters shall be determined after considering the number of samples in the background data base, the data distribution, and the range of the concentration values for each constituent of concern.
 - (E) The statistical method shall account for data below the limit of detection with one or more statistical procedures that are protective of human health and the environment. Any practical quantitation limit (pql) that is used in the statistical method shall be the lowest concentration level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions that are available to the facility.
 - (F) If necessary, the statistical method shall include procedures to control or correct for seasonal and spatial variability as well as temporal correlation in the data.
- (9) The owner or operator must determine whether or not there is a statistically significant increase over background values for each parameter or constituent required in the particular ground-water monitoring program that applies to the MSWLF unit, as determined under subsections (d)(1) or (e)(1).
- (A) In determining whether a statistically significant increase has occurred, the owner or operator must compare the ground-water quality of each parameter or constituent at each monitoring well designated pursuant to subsection (b)(1)(B) to the background value of that constituent, according to the statistical procedures and performance standards

specified under paragraphs (7) and (8).

- (B) Within a reasonable period of time after completing sampling and analysis, the owner or operator must determine whether there has been a statistically significant increase over background at each monitoring well.
- (d) Detection monitoring program.
 - (1) Detection monitoring is required at MSWLF units at all ground-water monitoring wells defined under subsections (b)(1)(A) and (B). At a minimum, a detection monitoring program must include monitoring for the constituents listed in Appendix I.
 - (A) The director may delete any of the Appendix I monitoring parameters for a MSWLF unit if it can be shown that the removed constituents are not reasonably expected to be contained in or derived from the waste contained in the unit.
 - (B) The director may establish an alternative list of inorganic indicator parameters for a MSWLF unit, in lieu of some or all of the heavy metals (constituents 1 through 15 of Appendix I), if the alternative parameters provide a reliable indication of inorganic releases from the MSWLF unit to the ground water. In determining alternative parameters, the director shall consider the following factors:
 - (i) The types, quantities, and concentrations of constituents in wastes managed at the MSWLF unit;
 - (ii) The mobility, stability, and persistence of waste constituents or their reaction products in the unsaturated zone beneath the MSWLF unit;
 - (iii) The detectability of indicator parameters, waste constituents, and reaction products in the ground water; and
 - (iv) The concentration or values and coefficients of variation of monitoring parameters or constituents in the ground-water background.
 - (2) The monitoring frequency for all constituents listed in

Appendix I, or in the alternative list approved in accordance with paragraph (1)(B), shall be at least semiannual during the active life of the facility (including closure) and the post-closure period. A minimum of four independent samples from each well (background and downgradient) must be collected and analyzed for Appendix I which is incorporated by reference, or the alternative list approved in accordance with paragraph (1)(B), during the first semiannual sampling event. At least one sample from each well (background and downgradient) must be collected and analyzed during subsequent semi-annual sampling events. The director may specify an appropriate alternative frequency for repeated sampling and analysis for Appendix I constituents, or the alternative list approved in accordance with paragraph (1)(B), during the active life (including closure) and the post-closure care period. The alternative frequency during the active life (including closure) shall be no less than annual. The alternative frequency shall be based on consideration of the following factors:

- (A) Lithology of the aquifer and unsaturated zone;
 - (B) Hydraulic conductivity of the aquifer and unsaturated zone;
 - (C) Ground-water flow rates;
 - (D) Minimum distance between upgradient edge of the MSWLF unit and downgradient monitoring well screen (minimum distance of travel); and
 - (E) Resource value of the aquifer.
- (3) If the owner or operator determines, pursuant to subsection (c)(7), that there is a statistically significant increase over background for one or more of the constituents listed in Appendix I or in the alternative list approved in accordance with paragraph (1)(B), at any monitoring well at the boundary specified under subsection (b)(1)(B), the owner or operator:
- (A) Must, within twenty-four hours of this finding, place a notice in the operating record indicating which constituents have shown statistically significant changes from background levels, and notify the director that this notice was placed in the operating record; and

- (B) Must establish an assessment monitoring program meeting the requirements of subsection (e) within ninety days except as provided for in subparagraph (C).
- (C) The owner or operator may demonstrate that a source other than a MSWLF unit caused the contamination or that the statistically significant increase resulted from error in

sampling, analysis, statistical evaluation, or natural variation in ground water quality. A report documenting this demonstration must be certified by a qualified ground water scientist or approved by the director and be placed in the operating record. If a successful demonstration is made and documented, the owner or operator may continue detection monitoring as specified in this section. If, after ninety days, a successful demonstration is not made, the owner or operator must initiate an assessment monitoring program as required in subsection (e).

- (e) Assessment monitoring.
 - (1) Assessment monitoring is required whenever a statistically significant increase over background has been detected for one or more of the constituents listed in Appendix I or in the alternative list approved in accordance with subsection (d)(1)(B).
 - (2) Within ninety days of triggering an assessment monitoring program, and annually thereafter, the owner or operator must sample and analyze the ground water for all constituents identified in Appendix II. A minimum of one sample from each downgradient well must be collected and analyzed during each sampling event. For any constituent detected in the downgradient wells as the result of the complete Appendix II analysis, a minimum of four independent samples from each well (background and downgradient) must be collected and analyzed to establish background for the constituents. The director may specify an appropriate subset of wells to be sampled and analyzed for Appendix II constituents during assessment monitoring. The director may delete any of the Appendix II monitoring parameters for a MSWLF unit if it can be shown that the removed constituents are not reasonably expected to be in or derived from the

waste contained in the unit.

- (3) The director may specify an appropriate alternate frequency for repeated sampling and analysis for the full set of Appendix II constituents required by paragraph (2), during the active life (including closure) and post-closure care of the unit considering the following factors:
 - (A) Lithology of the aquifer and unsaturated zone;
 - (B) Hydraulic conductivity of the aquifer and unsaturated zone;
 - (C) Ground water flow rates;
 - (D) Minimum distance between the upgradient edge of the MSWLF unit and the downgradient monitoring well screen (minimum distance of travel);
 - (E) Resource value of the aquifer; and
 - (F) Nature (fate and transport) of any constituents detected in response to this section.
- (4) After obtaining the results from the initial or subsequent sampling events required in paragraph (2), the owner or operator must:
 - (A) Within twenty-four hours, place a notice in the operating record identifying the Appendix II constituents that have been detected and notify the director that this notice has been placed in the operating record;
 - (B) Within ninety days, and on at least a semiannual basis thereafter, resample all wells specified by subsection (b)(1), conduct analyses for all constituents in Appendix I or in the alternative list approved in accordance with subsection (d)(1)(B), and for those constituents in Appendix II that are detected in response to paragraph (2), and record their concentrations in the facility operating record. At least one sample from each well (background and downgradient) must be collected and analyzed during these sampling events. The director may specify an alternative monitoring frequency during the active life

(including closure) and the post-closure period for the constituents referred to in this paragraph. The alternative frequency for Appendix I constituents, or the alternative list approved in accordance with subsection (d)(1)(B), during the active life (including closure) shall be no less than annual. The alternative frequency shall be based on consideration of the factors specified in paragraph (3);

- (C) Establish background concentrations for any constituents detected pursuant to paragraph (2) or (4)(B); and
 - (D) Establish ground water protection standards for all constituents detected pursuant to paragraph (2) or (4). The ground water protection standards shall be established in accordance with paragraph (8) or (9).
- (5) If the concentrations of all Appendix II constituents are shown to be at or below background values, using the statistical procedures in subsection (c)(7), for two consecutive sampling events, the owner or operator must notify the director of this finding and may return to detection monitoring.
- (6) If the concentrations of any Appendix II constituents are above background values, but all concentrations are below the ground water protection standard established under paragraph (8) or (9), using the statistical procedures in subsection (c)(7), the owner or operator must continue assessment monitoring in accordance with this section.
- (7) If one or more Appendix II constituents are detected at statistically significant levels above the ground water protection standard established under paragraph (8) or (9) in any sampling event, the owner or operator must, within fourteen days of this finding, place a notice in the operating record identifying the Appendix II constituents that have exceeded the ground water protection standard and notify the director and all appropriate local government officials that the notice has been placed in the operating record. The owner or

operator also:

- (A) (i) Must characterize the nature and extent of the release by installing additional monitoring wells as necessary;
 - (ii) Must install at least one additional monitoring well at the facility boundary in the direction of contaminant migration and sample this well in accordance with paragraph (4)(B);
 - (iii) Must notify all persons who own the land or reside on the land that directly overlies any part of the plume of contamination if contaminants have migrated off-site as indicated by sampling of wells in accordance with paragraph (7)(A); and
 - (iv) Must initiate an assessment of corrective measures as required by subsection (f) within ninety days; or
 - (B) May demonstrate that a source other than a MSWLF unit caused the contamination, or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in ground water quality. A report documenting this demonstration must be certified by a qualified ground-water scientist or approved by the director and placed in the operating record. If a successful demonstration is made, the owner or operator must continue monitoring in accordance with the assessment monitoring program pursuant to this subsection, and may return to detection monitoring if the Appendix II constituents are at or below background as specified in paragraph (5). Until a successful demonstration is made, the owner or operator must comply with paragraph (7) including initiating an assessment of corrective measures.
- (8) The owner or operator must establish a ground water protection standard for each Appendix II constituent detected in the ground water. The ground water protection standard shall be:
- (A) For constituents for which a maximum contaminant

level (MCL) has been promulgated under section 1412 of the Safe Drinking Water Act (codified) under 40 CFR part 141, the MCL for that constituent;

- (B) For constituents for which MCLs have not been promulgated, the background concentration for the constituent established from wells in accordance with subsection (b)(1)(A); or
 - (C) For constituents for which the background level is higher than the MCL identified under subparagraph (A) or health-based levels identified under paragraph (9)(A), the background concentration.
- (9) The director may establish an alternative ground water protection standard for constituents for which MCLs have not been established. These ground water protection standards shall be appropriate health-based levels that satisfy the following criteria:
- (A) The level is derived in a manner consistent with U.S. Environmental Protection Agency (EPA) guidelines for assessing the health risks of environmental pollutants (51 Fed. Reg. 33992, 34006, 34014, 34028, September 24, 1986);
 - (B) The level is based on scientifically valid studies conducted in accordance with the Toxic Substances Control Act Good Laboratory Practice Standards (40 CFR part 792) or equivalent;
 - (C) For carcinogens, the level represents a concentration associated with an excess lifetime cancer risk level (due to continuous lifetime exposure) with the 1×10^{-4} to 1×10^{-6} range; and
 - (D) For systemic toxicants, the level represents a concentration to which the human population (including sensitive subgroups) could be exposed to on a daily basis that is likely to be without appreciable risk of deleterious effects during a lifetime. For purposes of this section, systemic toxicants include toxic chemicals that cause effects other than cancer or mutation.
- (10) In establishing ground water protection standards under paragraph (9), the director may consider the following:

- (A) Multiple contaminants in the ground water;
 - (B) Exposure threats to sensitive environmental receptors; and
 - (C) Other site-specific exposure or potential exposure to ground water.
- (f) Assessment of corrective measures
- (1) Within ninety days of finding that any of the constituents listed in Appendix II have been detected at a statistically significant level exceeding the
- ground water protection standards defined under subsection (e)(8) or (e)(9), the owner or operator must initiate an assessment of corrective measures. The assessment must be completed within a reasonable period of time.
- (2) The owner or operator must continue to monitor in accordance with the assessment monitoring program as specified in subsection (e).
- (3) The assessment shall include an analysis of the effectiveness of potential corrective measures in meeting all of the requirements and objectives of the remedy as described under subsection (g), addressing at least the following:
- (A) The performance, reliability, ease of implementation, and potential impacts of appropriate potential remedies, including safety impacts, cross-media impacts, and control of exposure to any residual contamination;
 - (B) The time required to begin and complete the remedy;
 - (C) The costs of remedy implementation; and
 - (D) The institutional requirements such as state or local permit requirements or other environmental or public health requirements that may substantially affect implementation of the remedy(s).
- (4) The owner or operator must discuss the results of the

corrective measures assessment, before the selection of remedy, in a public meeting with interested and affected parties.

- (g) Selection of remedy
 - (1) Based on the results of the corrective measures assessment conducted under subsection (f), the owner or operator must select a remedy that, at a minimum, meets the standards listed in paragraph (2). The owner or operator must notify the director, within fourteen days of selecting a remedy, a report describing the selected remedy has been placed in the operating record and how it meets the standards in paragraph (2).
 - (2) Remedies must:
 - (A) Be protective of human health and the environment;
 - (B) Attain the ground water protection standard as specified pursuant to subsection (e)(8) or (9);
 - (C) Control the source(s) of releases so as to reduce or eliminate, to the maximum extent practicable, further releases of Appendix II constituents into the environment that may pose a threat to human health or the environment; and
 - (D) Comply with standards for management of wastes as specified in subsection (h)(4).
 - (3) In selecting a remedy that meets the standards of paragraph (2), the owner or operator shall consider the following evaluation factors:
 - (A) The long- and short-term effectiveness and protectiveness of the potential remedy(s), along with the degree of certainty that the remedy will prove successful based on consideration of the following:
 - (i) Magnitude of reduction of existing risks;
 - (ii) Magnitude of residual risks in terms of likelihood of further releases due to waste remaining following implementation of a remedy;
 - (iii) The type and degree of long-term management required, including monitoring, operation, and

maintenance;

- (iv) Short-term risks that might be posed to the community, workers, or the environment during implementation of such a remedy, including potential threats to human health and the environment associated with excavation, transportation, and redisposal or containment;
 - (v) Time until full protection is achieved;
 - (vi) Potential for exposure of humans and environmental receptors to remaining wastes, considering the potential threat to human health and the environment associated with excavation, transportation, redisposal, or containment;
 - (vii) Long-term reliability of the engineering and institutional controls; and
 - (viii) Potential need for replacement of the remedy.
- (B) The effectiveness of the remedy in controlling the source to reduce further releases based on consideration of the following factors:
- (i) The extent to which containment practices will reduce further releases;
 - (ii) The extent to which treatment technologies may be used.
- (C) The ease or difficulty of implementing a potential remedy(s) based on consideration of the following types of factors:
- (i) Degree of difficulty associated with constructing the technology;
 - (ii) Expected operational reliability of the technology;
 - (iii) Need to coordinate with and obtain necessary approvals and permits from other agencies;
 - (iv) Availability of necessary equipment and specialists; and

- (v) Available capacity and location of needed treatment, storage, and disposal services.
 - (D) Practicable capability of the owner or operator, including a consideration of the technical and economic capability.
 - (E) The degree to which community concerns are addressed by a potential remedy(s).
- (4) The owner or operator shall specify as part of the selected remedy a schedule(s) for initiating and completing remedial activities. Such a schedule must require the initiation of remedial activities within a reasonable period of time taking into consideration the factors set forth in subparagraphs (A) through (H). The owner or operator must consider the following factors in determining the schedule of remedial activities:
- (A) Extent and nature of contamination;
 - (B) Practical capabilities of remedial technologies in achieving compliance with ground water protection standards established under subsection (e)(7) or (8) and other objectives of the remedy;
 - (C) Availability of treatment or disposal capacity for wastes managed during implementation of the remedy;
 - (D) Desirability of utilizing technologies that are not currently available, but which may offer significant advantages over already available technologies in terms of effectiveness, reliability, safety, or ability to achieve remedial objectives;
 - (E) Potential risks to human health and the environment from exposure to contamination before completion of the remedy;
 - (F) Resource value of the aquifer including:
 - (i) Current and future uses;
 - (ii) Proximity and withdrawal rate of users;
 - (iii) Ground water quantity and quality;
 - (iv) The potential damage to wildlife, crops, vegetation, and physical structures caused by

- exposure to waste constituents;
- (v) The hydrogeologic characteristic of the facility and surrounding land;
 - (vi) Ground water removal and treatment costs; and
 - (vii) The cost and availability of alternative water supplies;
- (G) Practicable capability of the owner or operator; and
- (H) Other relevant factors.
- (5) The director may determine that remediation of a release of an Appendix II constituent from a MSWLF unit is not necessary if the owner or operator demonstrates to the satisfaction of the director that:
- (A) The ground water is additionally contaminated by substances that have originated from a source other than a MSWLF unit and that those substances are present in concentrations such that cleanup of the release from the MSWLF unit would provide no significant reduction in risk to actual or potential receptors; or
 - (B) The constituent(s) is present in ground water that:
 - (i) Is not currently or reasonably expected to be a source of drinking water; and
 - (ii) Is not hydraulically connected with waters to which the hazardous constituents are migrating or are likely to migrate in a concentration(s) that would exceed the ground-water protection standards established under subsection (e)(8) or (9); or
 - (C) Remediation of the release(s) is technically impracticable; or
 - (D) Remediation results in unacceptable cross-media impacts.
- (6) A determination by the director pursuant to subsection (g)(5) shall not affect the authority of the State to require the owner or operator to undertake source

control measures or other measures that may be necessary to eliminate or minimize further releases to the ground-water, to prevent exposure to the ground-water, or to remediate the ground water to concentrations that are technically practicable and significantly reduce threats to human health or the environment.

- (h) Implementation of the corrective action program
- (1) Based on the schedule established under subsection (g)(4) for initiation and completion of remedial activities the owner or operator must:
 - (A) Establish and implement a corrective action ground water monitoring program that:
 - (i) At a minimum, meets the requirements of an assessment monitoring program under subsection (e);
 - (ii) Indicates the effectiveness of the corrective action remedy; and
 - (iii) Demonstrates compliance with ground water protection standard pursuant to paragraph (5);
 - (B) Implement the corrective action remedy selected under subsection (g); and
 - (C) Take any interim measures necessary to ensure the protection of human health and the environment. Interim measures should, to the greatest extent practicable, be consistent with the objectives of and contribute to the performance of any remedy that may be required pursuant to subsection (g). The following factors must be considered by an owner or operator in determining whether interim measures are necessary:
 - (i) Time required to develop and implement a final remedy;
 - (ii) Actual or potential exposure of nearby populations or environmental receptors to hazardous constituents;
 - (iii) Actual or potential contamination of drinking water supplies or sensitive ecosystems;

- (iv) Further degradation of the ground water that may occur if remedial action is not initiated expeditiously;
 - (v) Weather conditions that may cause hazardous constituents to migrate or be released;
 - (vi) Risks of fire or explosion, or potential for exposure to hazardous constituents as a result of an accident or failure of a container or handling system; and
 - (vii) Other situations that may pose threats to human health and the environment.
- (2) An owner or operator may determine, based on information developed after implementation of the remedy has begun or other information, that compliance with requirements of subsection (g)(2) are not being achieved through the remedy selected. In these cases, the owner or operator must implement other methods or techniques that could practicably achieve compliance with the requirements, unless the owner or operator makes the determination under paragraph (3).
- (3) If the owner or operator determines that compliance with requirements under subsection (g)(2) cannot be practically achieved with any currently available methods, the owner or operator must:
- (A) Obtain certification of a qualified ground water scientist or approval by the director that compliance with the requirements under subsection (g)(2) cannot be practically achieved with any currently available methods;
 - (B) Implement alternate measures to control exposure of humans or the environment to residual contamination, as necessary to protect human health and the environment; and
 - (C) Implement alternate measures for control of the sources of contamination, or for removal or decontamination of equipment, units, devices, or structures that are:
 - (i) Technically practicable; and

- (ii) Consistent with the overall objective of the remedy.
 - (D) Notify the director within fourteen days that a report justifying the alternative measures before implementing the alternative measures has been placed in the operating record.
- (4) All solid wastes that are managed pursuant to a remedy required under subsection (g), or an interim measure required under paragraph (1)(C), shall be managed in a manner:
- (A) That is protective of human health and the environment; and
 - (B) That complies with applicable RCRA requirements.
- (5) Remedies selected pursuant to subsection (g) shall be considered complete when:
- (A) The owner or operator complies with the ground-water protection standards established under subsection (e)(8) or (9) at all points within the plume of contamination that lie beyond the ground water monitoring well system established under subsection (b)(1).
 - (B) Compliance with the ground water protection standards established under subsection (e)(8) or (9) has been achieved by demonstrating that concentrations of Appendix II constituents have not exceeded the ground water protection standard(s) for a period of three consecutive years using the statistical procedures and performance standards in subsection (c)(7) and (c)(8). The director may specify an alternative length of time during which the owner or operator must demonstrate that concentrations of Appendix II constituents have not exceeded the ground water protection standard(s) taking into consideration:
 - (i) Extent and concentration of the release(s);
 - (ii) Behavior characteristics of the hazardous constituents in the ground water;
 - (iii) Accuracy of monitoring or modeling techniques, including any seasonal, meteorological, or

other environmental variabilities that may affect the accuracy; and

- (iv) Characteristics of the ground water.
- (C) All actions required to complete the remedy have been satisfied.
- (6) Upon completion of the remedy, the owner or operator must notify the director within fourteen days that a certification that the remedy has been completed in compliance with the requirements of paragraph (5) has been placed in the operating record. The certification must be signed by the owner or operator and by a qualified ground water scientist or approved by the director.
- (7) When, upon completion of the certification, the owner or operator determines that the corrective action remedy has been completed in accordance with the requirements under paragraph (5), the owner or operator shall be released from the requirements for financial assurance for corrective action under section 11-58.1-18(d). [Eff JAN 13 1994] (Auth: HRS §§342H-53, 342H-55)

§11-58.1-17 Municipal solid waste landfills -- closure and post-closure care. (a) Closure criteria.

- (1) Owners or operators of all MSWLF units must install a final cover system that is designed to minimize infiltration and erosion. The final cover system must be comprised of an erosion layer underlain by an infiltration layer as follows:
 - (A) Have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present, or a permeability no greater than 1×10^{-5} cm/sec, whichever is less, and
 - (B) Minimize infiltration through the closed MSWLF by the use of an infiltration layer that contains a minimum eighteen inches of earthen material, and
 - (C) Minimize erosion of the final cover by the use of an erosion layer that contains a minimum six inches of earthen material that is capable of sustaining native plant growth.

- (2) The director may approve an alternative final cover design that includes:
 - (A) An infiltration layer that achieves an equivalent reduction in infiltration as the infiltration layer specified in paragraph (1)(A) and (1)(B); and
 - (B) An erosion layer that provides equivalent protection from wind and water erosion as the erosion layer specified in paragraph (1)(C).
- (3) The owner or operator must prepare a written closure plan that describes the steps necessary to close all MSWLF units at any point during its active life in accordance with the cover design requirements in paragraph (1) or (2), as applicable. The closure plan, at a minimum, must include the following information:
 - (A) A description of the final cover, designed in accordance with paragraph (1) and the methods and procedures to be used to install the cover;
 - (B) An estimate of the largest area of the MSWLF unit ever requiring a final cover as required under paragraph (1) at any time during the active life;
 - (C) An estimate of the maximum inventory of wastes ever on-site over the active life of the landfill facility; and
 - (D) A schedule for completing all activities necessary to satisfy the closure criteria in this subsection.
- (4) The owner or operator must notify the director that a closure plan has been prepared and placed in the operating record by October 9, 1993, or by the initial receipt of waste, whichever is later.
- (5) Before beginning closure of each MSWLF unit as specified in paragraph (6), an owner or operator must notify the director that a notice of intent to close the unit has been placed in the operating record.
- (6) The owner or operator must begin closure activities of each MSWLF unit within thirty days after the date on which the MSWLF unit receives the known final receipt of wastes or, if the MSWLF unit has remaining capacity and there is a reasonable likelihood that the MSWLF unit will receive additional wastes, within one year after

the most recent receipt of wastes. Extensions beyond the one-year deadline for beginning closure may be granted by the director if the owner or operator demonstrates that the MSWLF unit has the capacity to receive additional wastes and the owner or operator has taken and will continue to take all steps necessary to prevent threats to human health and the environment from the unclosed MSWLF unit.

- (7) The owner or operator of all MSWLF units must complete closure activities of each MSWLF unit in accordance with the closure plan within one hundred eighty days following the beginning of closure as specified in paragraph (6). Extensions of the closure period may be granted by the director if the owner or operator demonstrates that closure will, of necessity, take longer than one hundred eighty days and the owner or operator has taken and will continue to take all steps to prevent threats to human health and the environment from the unclosed MSWLF unit.
- (8) Following closure of each MSWLF unit, the owner or operator must notify the director that a certification, signed by an independent registered professional engineer or approved by the director, verifying that closure has been completed in accordance with the closure plan, has been placed in the operating record.
- (9) (A) Following closure of all MSWLF units, the owner or operator must record a notation on the deed to the landfill facility property, or some other instrument that is normally examined during title search, and notify the director that the notation has been recorded and a copy has been placed in the operating record.
 - (B) The notation on the deed must in perpetuity notify any potential purchaser of the property that:
 - (i) The land has been used as a landfill facility; and
 - (ii) Its use is restricted under subsection (b)(3)(C).
- (10) The owner or operator may request permission from the director to remove the notation from the deed if all wastes are removed from the facility.

- (b) Post-closure care requirements.
 - (1) Following closure of each MSWLF unit, the owner or operator must conduct post-closure care. Post-closure care must be conducted for thirty years, except as provided under paragraph (2), and consist of at least the following:
 - (A) Maintaining the integrity and effectiveness of any final cover, including making repairs to the cover as necessary to correct the effects of settlement, subsidence, erosion, or other events, and preventing run-on and run-off from eroding or otherwise damaging the final cover;
 - (B) Maintaining and operating the leachate collection system in accordance with the requirements in section 11-58.1-14, if applicable. The director may allow the owner or operator to stop managing leachate if the owner or operator demonstrates that leachate no longer poses a threat to human health and the environment;
 - (C) Monitoring the ground water in accordance with the requirements of section 11-58.1-16 and maintaining the ground-water monitoring system, if applicable; and
 - (D) Maintaining and operating the gas monitoring system in accordance with the requirements of section 11-58.1-15(d).
 - (2) The length of the post-closure care period may be:
 - (A) Decreased by the director if the owner or operator demonstrates that the reduced period is sufficient to protect human health and the environment and this demonstration is approved by the director; or
 - (B) Increased by the director if the director determines that the lengthened period is necessary to protect human health and the environment.
 - (3) The owner or operator of all MSWLF units must prepare a written post-closure plan that includes, at a minimum, the following information:
 - (A) A description of the monitoring and maintenance activities required in paragraph (1) for each MSWLF

unit, and the frequency at which these activities will be performed;

- (B) Name, address, and telephone number of the person or office to contact about the facility during the post-closure period; and
 - (C) A description of the planned uses of the property during the post-closure period. Post-closure use of the property shall not disturb the integrity of the final cover, liner(s), or any other components of the containment system, or the function of the monitoring systems unless necessary to comply with the requirements in sections 11-58.1-11 through 11-58.1-18. The director may approve any other disturbance if the owner or operator demonstrates that disturbance of the final cover, liner, or other component of the containment system, including any removal of waste, will not increase the potential threat to human health or the environment.
- (4) The owner or operator must notify the director that a post-closure plan has been prepared and placed in the operating record no later than the effective date of this Subchapter, October 9, 1993, or by the initial receipt of waste, whichever is later.
 - (5) Following completion of the post-closure care period for each MSWLF unit, the owner or operator must notify the director that a certification, signed by an independent registered professional engineer or approved by the director, verifying that post-closure care has been completed in accordance with the post-closure plan, has been placed in the operating record. [Eff JAN 13 1994] (Auth: HRS §§342H-53, 342H-55)

§11-58.1-18 Municipal solid waste landfills -- financial assurance. (a) Applicability and effective date.

- (1) The requirements of this section apply to owners and operators of all MSWLF units, except owners or operators who are state or federal government entities whose debts and liabilities are the debts and liabilities of a state or the United States.
- (2) The requirements of this section are effective April 9, 1994.

- (b) Financial assurance for closure.
 - (1) The owner or operator must have a detailed written estimate, in current dollars, of the cost of hiring a third party to close the largest area of all MSWLF units ever requiring a final cover as required under section 11-58.1-17(a) at any time during the active life in accordance with the closure plan. The owner or operator must notify the director that the estimate has been placed in the operating record.
 - (A) The cost estimate must equal the cost of closing the largest area of all MSWLF units ever requiring a final cover at any time during the active life when the extent and manner of its operation would make closure the most expensive, as indicated by its closure plan (see section 11-58.1-17(a)(3)(B)).
 - (B) During the active life of the MSWLF unit, the owner or operator must annually adjust the closure cost estimate for inflation.
 - (C) The owner or operator must increase the closure cost estimate and the amount of financial assurance required under paragraph (2) if changes to the closure plan or MSWLF unit conditions increase the maximum cost of closure at any time during the remaining active life.
 - (D) The owner or operator may reduce the closure cost estimate and the amount of financial assurance required under paragraph (2) if the cost estimate exceeds the maximum cost of closure at any time during the remaining life of the MSWLF unit. The owner or operator must notify the director that the justification for the reduction of the closure cost estimate and the amount of financial assurance has been placed in the operating record.
 - (2) The owner or operator of each MSWLF unit must establish financial assurance for closure of the MSWLF unit in compliance with subsection (e). The owner or operator must provide continuous coverage for closure until released from financial assurance requirements by demonstrating compliance with section 11-58.1-17(a)(8) and (a)(9).

- (c) Financial assurance for post-closure care.
 - (1) The owner or operator must have a detailed written estimate, in current dollars, of the cost of hiring a third party to conduct post-closure care for the MSWLF unit in compliance with the post-closure plan developed under section 11-58.1-17(b). The post-closure cost estimate used to demonstrate financial assurance in paragraph (2) must account for the total costs of conducting post-closure care, including annual and periodic costs as described in the post-closure plan over the entire post-closure care period. The owner or operator must notify the director that the estimate has been placed in the operating record.
 - (A) The cost estimate for post-closure care must be based on the most expensive costs of post-closure care during the post-closure care period.
 - (B) During the active life of the MSWLF unit and during the post-closure care period, the owner or operator must annually adjust the post-closure cost estimate for inflation.
 - (C) The owner or operator must increase the post-closure care cost estimate and the amount of financial assurance required under paragraph (2) if changes in the post-closure plan or MSWLF unit conditions increase the maximum costs of post-closure care.
 - (D) The owner or operator may reduce the post-closure cost estimate and the amount of financial assurance required under paragraph (2) if the cost estimate exceeds the maximum costs of post-closure care remaining over the post-closure care period. The owner or operator must notify the director that the justification for the reduction of the post-closure cost estimate and the amount of financial assurance has been placed in the operating record.
 - (2) The owner or operator of each MSWLF unit must establish, in a manner in accordance with subsection (e), financial assurance for the costs of post-closure care as required under section 11-58.1-17(b). The owner or operator must provide continuous coverage for post-closure care until released from financial assurance requirements for post-closure care by demonstrating compliance with section 11-58.1-17(b)(5).

- (d) Financial assurance for corrective action.
- (1) An owner or operator of a MSWLF unit required to undertake a corrective action program under section 11-58.1-16(h) must have a detailed written estimate, in current dollars, of the cost of hiring a third party to perform the corrective action in accordance with the program required under section 11-58.1-16(h). The corrective action cost estimate must account for the total costs of corrective action activities as described in the corrective action plan for the entire corrective action period. The owner or operator must notify the director that the estimate has been placed in the operating record.
 - (A) The owner or operator must annually adjust the estimate for inflation until the corrective action program is completed in accordance with section 11-58.1-16(h)(6).
 - (B) The owner or operator must increase the corrective action cost estimate and the amount of financial assurance required under paragraph (2) if changes in the corrective action program or MSWLF unit conditions increase the maximum costs of corrective action.
 - (C) The owner or operator may reduce the amount of the corrective action cost estimate and the amount of financial assurance required under paragraph (2) if the cost estimate exceeds the maximum remaining costs of corrective action. The owner or operator must notify the director that the justification for the reduction of the corrective action cost estimate and the amount of financial assurance has been placed in the operating record.
- (2) The owner or operator of each MSWLF unit required to undertake a corrective action program under section 11-58.1-16(h) must establish, in a manner in accordance with subsection (e), financial assurance for the most recent corrective action program. The owner or operator must provide continuous coverage for corrective action until released from financial assurance requirements for corrective action by demonstrating compliance with section 11-58.1-16(h)(6) and (h)(7).
- (e) Allowable mechanisms. The mechanisms used to

demonstrate financial assurance under this subsection must ensure that the funds necessary to meet the costs of closure, post-closure care, and corrective action for known releases will be available whenever they are needed. Owners and operators must choose from the options specified in paragraphs (1) through (10).

(1) Trust fund.

- (A) An owner or operator may satisfy the requirements of this subsection by establishing a trust fund which conforms to the requirements of this paragraph. The trustee must be an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a federal or state agency. A copy of the trust agreement must be placed in the facility's operating record.
- (B) Payments into the trust fund must be made annually by the owner or operator over the term of the initial permit or over the remaining life of the MSWLF unit, whichever is shorter, in the case of a trust fund for closure or post-closure care, or over one-half of the estimated length of the corrective action program in the case of corrective action for known releases. This period is referred to as the pay-in period.
- (C) For a trust fund used to demonstrate financial assurance for closure and post-closure care, the first payment into the fund must be at least equal to the current cost estimate for closure or post-closure care, except as provided in paragraph (10), divided by the number of years in the pay-in period as defined in subparagraph (B). The amount of subsequent payments must be determined by the following formula:

$$\text{Next Payment} = \frac{\text{CE}-\text{CV}}{\text{Y}}$$

where CE is the current cost estimate for closure or post-closure care (updated for inflation or other changes), CV is the current value of the trust fund, and Y is the number of years remaining in the pay-in period.

- (D) For a trust fund used to demonstrate financial assurance for corrective action, the first payment into the trust fund must be at least equal to

one-half of the current cost estimate for corrective action, except as provided in paragraph (10), divided by the number of years in the corrective action pay-in period as defined in subparagraph (B). The amount of subsequent payments must be determined by the following formula:

$$\text{Next Payment} = \frac{\text{RB}-\text{CV}}{\text{Y}}$$

where RB is the most recent estimate of the required trust fund balance for corrective action (i.e., the total costs that will be incurred during the second half of the corrective action period), CV is the current value of the trust fund, and Y is the number of years remaining on the pay-in period.

- (E) The initial payment into the trust fund must be made before the initial receipt of waste or before the effective date of this section (April 9, 1994), whichever is later, in the case of closure and post-closure care, or within one hundred twenty days after the corrective action remedy has been selected in accordance with the requirements of section 11-58.1-16(h).
- (F) If the owner or operator establishes a trust fund after having used one or more alternate mechanisms specified in this subsection, the initial payment into the trust fund must be at least the amount that the fund would contain if the trust fund were established initially and annual payments made according to the specifications of this paragraph.
- (G) The owner or operator, or other person authorized to conduct closure, post-closure care, or corrective action activities may request reimbursement from the trustee for these expenditures. Requests for reimbursement will be granted by the trustee only if sufficient funds are remaining in the trust fund to cover the remaining costs of closure, post-closure care, or corrective action, and if justification and documentation of the cost is placed in the operating record. The owner or operator must notify the director that documentation of the justification for reimbursement has been placed in the operating record and that reimbursement has been received.

- (H) The trust fund may be terminated by the owner or operator only if the owner or operator substitutes alternate financial assurance as specified in this subsection or if the owner or operator is no longer required to demonstrate financial responsibility in accordance with the requirements of subsection (b)(2), (c)(2), or (d)(2).
- (2) Surety bond guaranteeing payment or performance.
- (A) An owner or operator may demonstrate financial assurance for closure or post-closure care by obtaining a payment or performance surety bond which conforms to the requirements of this paragraph. An owner or operator may demonstrate financial assurance for corrective action by obtaining a performance bond which conforms to the requirements of this paragraph. The bond must be effective before the initial receipt of waste or before the effective date of this section (April 9, 1994), whichever is later, in the case of closure and post-closure care, or within one hundred twenty days after the corrective action remedy has been selected in accordance with the requirements of section 11-58.1-16(h). The owner or operator must notify the director that a copy of the bond has been placed in the operating record. The surety company issuing the bond must, at a minimum, be among those listed as acceptable sureties on federal bonds in Circular 570 of the U.S. Department of the Treasury.
 - (B) The penal sum of the bond must be in an amount at least equal to the current closure, post-closure care, or corrective action cost estimate, whichever applies, except as provided in paragraph (1).
 - (C) Under the terms of the bond, the surety will become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond.
 - (D) The owner or operator must establish a standby trust fund. The standby trust fund must meet the requirements of paragraph (1) except the requirements for initial payment and subsequent annual payments specified in paragraph (1)(B) through (E).

- (E) Payments made under the terms of the bond will be deposited by the surety directly into the standby trust fund. Payments from the trust fund must be approved by the trustee.
 - (F) Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner and operator and to the director one hundred twenty days in advance of cancellation. If the surety cancels the bond, the owner or operator must obtain alternate financial assurance as specified in this section.
 - (G) The owner or operator may cancel the bond only if alternate financial assurance is substituted as specified in this subsection or if the owner or operator is no longer required to demonstrate financial responsibility in accordance with subsection (b)(2), (c)(2), or (d)(2).
- (3) Letter of credit.
- (A) An owner or operator may satisfy the requirements of this subsection by obtaining an irrevocable standby letter of credit which conforms to the requirements of this paragraph. The letter of credit must be effective before the initial receipt of waste or before the effective date of this section (April 9, 1994), whichever is later, in the case of closure and post-closure care, or within one hundred twenty days after the corrective action remedy has been selected in accordance with the requirements of section 11-58.1-16(h). The owner or operator must notify the director that a copy of the letter of credit has been placed in the operating record. The issuing institution must be an entity which has the authority to issue letters of credit and whose letter-of-credit operations are regulated and examined by a federal or state agency.
 - (B) A letter from the owner or operator referring to the letter of credit by number, issuing institution, and date, and providing the following information: name, address of the facility, and the amount of funds assured, must be included with the letter of credit in the operating record.
 - (C) The letter of credit must be irrevocable and issued

for a period of at least one year in an amount at least equal to the current cost estimate for closure, post-closure care or corrective action, whichever applies, except as provided in paragraph (1). The letter of credit must provide that the expiration date will be automatically extended for a period of at least one year unless the issuing institution has cancelled the letter of credit by sending notice of cancellation by certified mail to the owner and operator and to the director one hundred twenty days in advance of cancellation. If the letter of credit is canceled by the issuing institution, the owner or operator must obtain alternate financial assurance.

- (D) The owner or operator may cancel the letter of credit only if alternate financial assurance is substituted as specified in this subsection or if the owner or operator is released from the requirements of this subsection in accordance with subsection (b)(2), (c)(2), or (d)(2).

(4) Insurance.

- (A) An owner or operator may demonstrate financial assurance for closure and post-closure care by obtaining insurance which conforms to the requirements of this paragraph. The insurance must be effective before the initial receipt of waste or before the effective date of this section (April 9, 1994), whichever is later. At a minimum, the insurer must be licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more states. The owner or operator must notify the director that a copy of the insurance policy has been placed in the operating record.
- (B) The closure or post-closure care insurance policy must guarantee that funds will be available to close the MSWLF unit whenever final closure occurs or to provide post-closure care for the MSWLF unit whenever the post-closure care period begins, whichever applies. The policy must also guarantee that once closure or post-closure care begins, the insurer will be responsible for the paying out of funds to the owner or operator or other person authorized to conduct closure or post-closure care, up to an amount equal to the face amount of the

policy.

- (C) The insurance policy must be issued for a face amount at least equal to the current cost estimate for closure or post-closure care, whichever applies, except as provided in paragraph (1). 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.
- (D) An owner or operator, or any other person authorized to conduct closure or post-closure care, may receive reimbursements for closure or post-closure expenditures, whichever applies. Requests for reimbursement will be granted by the insurer only if the remaining value of the policy is sufficient to cover the remaining costs of closure or post-closure care, and if justification and documentation of the cost is placed in the operating record. The owner or operator must notify the director that the documentation of the justification for reimbursement has been placed in the operating record and that reimbursement has been received.
- (E) Each policy must contain a provision allowing assignment of the policy to a successor owner or operator. The assignment may be conditional upon consent of the insurer, if the consent is not unreasonably refused.
- (F) The insurance 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 cancel the policy by sending notice of cancellation by certified mail to the owner and operator and to the director one hundred twenty days in advance of cancellation. If the insurer cancels the policy, the owner or operator must obtain alternate financial assurance as specified in this subsection.

- (G) For insurance policies providing coverage for post-closure care, commencing on the date that liability to make payments pursuant to the policy accrues, the insurer will thereafter annually increase the face amount of the policy. The increase must be equivalent to the face amount of the policy, less any payments made, multiplied by an amount equivalent to eighty-five per cent of the most recent investment rate or of the equivalent coupon-issue yield announced by the U.S. Treasury for twenty-six week Treasury securities.
 - (H) The owner or operator may cancel the insurance policy only if alternate financial assurance is substituted as specified in this subsection or if the owner or operator is no longer required to demonstrate financial responsibility in accordance with the requirements of subsection (b)(2), (c)(2), or (d)(2).
- (5) Corporate financial test.
[Reserved]
 - (6) Local government financial test.
[Reserved]
 - (7) Corporate guarantee.
[Reserved]
 - (8) Local government guarantee.
[Reserved]
 - (9) State-approved mechanism. An owner or operator may satisfy the requirements of this subsection by obtaining any other mechanism that meets the criteria specified in paragraph (12), and that is approved by the director.
 - (10) State assumption of responsibility. If the director either assumes legal responsibility for an owner or operator's compliance with the closure, post-closure care and/or corrective action requirements of sections 11-58.1-11 through 11-58.1-18, or assures that the funds will be available from state sources to cover the requirements, the owner or operator will be in compliance with the requirements of this subsection.

Any state assumption of responsibility must meet the criteria specified in paragraph (12).

(11) Use of multiple financial mechanisms. An owner or operator may satisfy the requirements of this subsection by establishing more than one financial mechanism per facility. The mechanisms must be as specified in paragraphs (1) through (10), 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 for closure, post-closure care, or corrective action, whichever applies. The financial test and a guarantee provided by a corporate parent, sibling, or grandparent may not be combined if the financial statements of the two firms are consolidated.

(12) The language of the mechanisms listed in paragraphs (1) through (10) must ensure that the instruments satisfy the following criteria:

- (A) The financial assurance mechanisms must ensure that the amount of funds assured is sufficient to cover the costs of closure, post-closure care, and corrective action for known releases when needed;
- (B) The financial assurance mechanisms must ensure that funds will be available in a timely fashion when needed;
- (C) The financial assurance mechanisms must be obtained by the owner or operator by the effective date of this section or prior to the initial receipt of solid waste, whichever is later, in the case of closure and post-closure care, and within one hundred twenty days after the corrective action remedy has been selected in accordance with the requirements of section 11-58.1-16(h), until the owner or operator is released from the financial assurance requirements under subsections (b), (c), and (d).
- (D) The financial assurance mechanisms must be legally valid, binding, and enforceable under Hawaii and federal law. [Eff JAN 13 1994] (Auth: HRS §§342H-53, 342H-55)

§11-58.1-19 Construction and demolition solid waste landfill. (a) Applicability. This section is applicable to

the landfilling of all construction and demolition solid wastes. The landfill shall be designed, constructed, and operated to properly dispose of construction and demolition wastes. "Construction and demolition waste" is solid waste resulting from the construction, repair, demolition, or razing of buildings, of roads, and other structures. It includes the land clearing debris from the clearing of land for construction. Construction and demolition wastes typically consist of concrete, hollow tile, bituminous concrete, asphaltic pavement, wood, glass, masonry, roofing, siding, plaster, alone or in combinations. Land clearing debris typically consist of dirt, rock, stumps, boulders, brush, and other similar material. Demolition and construction waste does not include cleanup materials contaminated with hazardous wastes, asbestos, waste paints, solvents, sealers, adhesives, or similar materials.

(b) Permit requirements.

- (1) All construction and demolition solid waste landfills require a permit and must comply with sections 11-58.1-4 and 11-58.1-12(a), unless exempted.
- (2) The application shall contain an engineering report and an operation plan. The engineering report shall include a leachate management plan, site description, utilization, solid waste characteristics and volume, user population, and a controlled access to the landfill. In addition to the requirements in section 11-58.1-12(a), the operation plan shall include methods to control insects, birds, rodents, other disease vectors, nuisance conditions, drainage, and develop an emergency fire plan.

(c) Design requirements.

- (1) Landfills shall not be located in areas susceptible to flooding, in wetlands, close to potable water supplies, near fault areas, or any other unstable locations.
- (2) The permeability of the underlying soil liner will be

dependent on the hydrogeological condition of the area. It will consist of a minimum of two feet thick layer of soil, with a maximum permeability of 1×10^{-5} cm per sec. or an alternative design, with approval on a case specific basis.

- (3) When required, ground water monitoring systems will include a minimum of three monitoring wells, located to provide adequate data of ground water movement and quality. Additional wells may be required by the director.
- (d) Operating requirements.
 - (1) Implement the operation in accordance with the procedures in the operation plan.
 - (2) The landfills shall not accept the following items:
 - (A) Hazardous waste as defined in these rules.
 - (B) Electrical transformers with oil or polychlorinated biphenyls (PCB) or when generated from other than demolition projects.
 - (C) Pesticide containers, unless they meet the requirements of 40 CFR 261.7 and 261.4(b) household waste.
 - (D) Liquids, as defined in these rules.
 - (3) The owner and/or operator shall record at the bureau of conveyances the landfill location on the property and on any other instrument that would normally be examined during the title search and note any land use restrictions from the closure plans. The notation shall notify any potential purchaser of the property that the area has been used for construction and demolition solid waste landfill.
 - (4) The application of interim cover of earthen material will be on a case-specific basis and will be a minimum of six-inches. Final cover shall be two feet of earthen material or as approved in the closure plan.
 - (5) The facility shall maintain daily operating records. At a minimum, it should include weights (or volumes), number of vehicles entering, source and type of solid waste being disposed. Major deviation from the operations plan (fires and explosions) should be noted on the daily operating record.
 - (6) Landfills may accept friable asbestos containing

material complying to the latest 40 CFR Part 61, National Emission Standards for Hazardous Air Pollutants (NESHAP) Regulations.

- (7) Petroleum contaminated soils may be accepted at the landfill if the contaminated soil complies with the landfill's special permit conditions.
- (e) Ground water protection.
- (1) Ground water protection and monitoring plans are required unless the applicant can justify their omission.

The monitoring plan shall include:

- (A) Location of the monitoring wells;
 - (B) Detailed description of the monitoring well construction;
 - (C) A monitoring well head protection or security plan; and
 - (D) Boring log of each monitoring well.
- (2) Prior to starting operations, the ground water monitoring wells will be sampled and tested by the applicant to establish baseline data for the landfill. The chemicals to be tested shall include, but not be limited to the following:

<u>Heavy Metals</u>	<u>Volatile Organic Compound (VOC)</u>
Arsenic	Chemical Oxygen Demand (COD)
Barium	Total Organic Carbon (TOC)
Cadmium	Total Petroleum Hydrocarbon
Chromium	(TPH) for diesel, oil, and grease
Lead	
Mercury	<u>Others</u>
Selenium	Cyanide
Silver	

- (3) A sampling plan including tests to be performed, methods to be used, and frequency of sampling must be

submitted for approval. The method used for testing should be equivalent to EPA-SW-846 Test Methods for Evaluating Solid Waste, Third Edition.

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(4) Corrective actions shall be submitted should the results of testing be deficient. The results of the testing must be submitted to the director for evaluation.

(f) Closure and post-closure requirements. The owner and/or operator shall develop a closure plan in accordance with section 11-58.1-17 as part of the application for a permit.

(g) Financial assurance. The owner and/or operator shall develop a financial assurance plan in accordance with section 11-58.1-18.

(h) Reporting requirement. At a minimum, an annual report shall be submitted to the department no later than thirty days after June 30 of each year. The annual report shall detail the volume or weight of solid waste received at the facility, the origin and transporter of the solid waste. [Eff JAN 13 1994] (Auth: HRS §342H-3, 342H-4, 342H-31, 342H-32)

§11-58.1-20 Solid waste incinerator and refuse-derived fuel processing facility. (a) Applicability. This section regulates facilities designed to reduce volume of solid waste by the use of an enclosed device using controlled combustion. Solid waste used for incineration must not include materials contaminated with hazardous waste as defined in these rules. In addition, those facilities handling and disposing infectious waste must comply with the applicable provisions of chapter 104 of this title. Regulations governing construction and operation of solid waste incinerators for purposes of air pollution control are set forth in chapter 60 of this title.

(b) Exemption. Exemption for a permit is contained in section 11-58.1-4(b).

(c) Permit requirements.

(1) All solid waste incinerators or refuse derived fuel processing facilities require a permit and must comply with section 11-58.1-04, unless otherwise exempted. Other permit requirements are listed in section 11-58.1-12(a).

(2) Site analysis. A site plan and analysis shall be

submitted with the application. The analysis shall include a brief description of the area, the location of

any equipment and machinery, surrounding land uses, public access, and where determined by the director, a description of mitigative measures taken to reduce the impact of facility upon neighboring properties.

- (d) Design requirements.
 - (1) An engineering report which addresses a general description of the overall process, design criteria, anticipated performance and a process flow diagram.
 - (2) Equipment. A description of the overall operation and a functional description of all processing equipment to be used in the remediation process and the personnel trained to operate them.
 - (3) Adequate drainage. Adequate drainage to prevent standing water and to control "run-on" and "run-off" of rainwater shall be provided.
 - (4) Nuisance, health, and safety control. Design methods to control litter, insects, odors, and vectors. Develop a fire plan to prevent and minimize fire hazards. The facility shall maintain a neat and orderly appearance and must be screened and buffered to minimize nuisances to neighboring properties.
 - (5) A description of the ash residue system, the ash removal procedures and the landfill or landfills that will receive the ash residue.
 - (6) Operation plan. The operation plan shall include a description of the process and the equipment necessary, by-products produced, and the means for their disposal.
 - (7) Design the energy recovery facilities and solid waste incinerators in compliance with state air pollution control authority emission and operating requirements.
 - (8) Provide equipment and space for the storage and charge areas and elsewhere to allow periodic cleaning and temporary upsets as may be required in order to maintain the plant in a vector free, sanitary, and clean condition.
- (e) Operating requirements.
 - (1) Each owner or operator shall operate their facility in

accordance with the operation plan submitted and approved during the application for a permit. The operation plan should be used in the operation of the disposal facility. The operation plan shall address alternative storage and/or disposal plans for all breakdowns that would result in overfilling of the storage facility. The plan shall also include effective methods to control liquids, insects, birds, rodents, emergency fire explosions, and other disease vectors and nuisance conditions at the facility.

- (2) All solid waste received at the facility and ash residues must be weighed and recorded and the results must be incorporated in the annual report.
- (3) Ash residue generated by energy recovery facilities or solid waste incinerators shall be handled as special waste unless determined to be otherwise and shall be disposed in an ash monofill or as determined by the director.
- (4) Reporting. The owner or operator must submit to the director an annual report by the end of July for the previous fiscal year (July 1 - June 30). The report shall cover the facility's activities during previous fiscal year.
- (5) The facility shall maintain daily operating records. At a minimum, it should include weights (or volumes), number of vehicles entering, source and type of solid waste being disposed. Major deviation from the operations plan (fires and explosions) should be noted on the daily operation record.
- (6) The incinerator shall not accept the following items:
 - (A) Hazardous waste as defined in these rules.
 - (B) Electrical transformers with oil or polychlorinated biphenyls (PCB) or when generated from other than demolition projects.
 - (C) Pesticide containers, unless they meet the requirements of 40 CFR 261.7 and 261.4(b) household waste.
 - (D) Liquids, as defined in these rules.

(f) Sampling and testing. The owner or operator must test the ash residue within one month following the date in which the solid waste incinerator begins operating and must continually test semi-annually thereafter, or as determined by the director. The ash residue must contain less than ten percent organic matter by weight. The frequency of testing for organic matter will be determined by the director. A representative sample of solid waste and ash residue shall be tested for the following: arsenic, barium, cadmium, chromium (total and hexavalent), lead, mercury, selenium, silver, and any other parameters determined by the director to be necessary or should be eliminated. The test methods used shall be EPA documented (SW-846, Test Methods for Evaluating Solid Waste, Third Edition) or its equivalent. [Eff JAN 13 1994] (Auth: HRS §§342H-3, 342H-4, 342H-6, 342H-31)

§§11-58.1-21 to 11-58.1-30 (Reserved)

**SUBCHAPTER 3--SOLID WASTE STORAGE, HANDLING, AND
PROCESSING
FACILITIES**

§11-58.1-31 Transfer stations. (a) Applicability. All solid waste transfer stations are subject to the requirements set forth in this subchapter.

(b) Permit requirements. In order to obtain a permit to construct and operate, each transfer station shall submit the following:

- (1) Site analysis. A site plan and analysis of the facility which illustrates the location of all structures including storage areas on the site; offices, maintenance areas, planned areas for expansion, and property boundaries. Included in the analysis will be a description of neighboring land uses and measures taken to mitigate interference with those existing or anticipated uses.
- (2) Design requirements.
 - (A) Adequate drainage. Adequate drainage to prevent standing water and to control "run-on" and "run-off" of rainwater shall be provided.
 - (B) Machinery and equipment. A description of

- machinery and equipment to be used at the facility.
- (C) Nuisance, health, and safety control. Design methods to control litter, insects, odors, and vectors. Develop a fire plan to prevent and minimize fire hazards. The transfer station shall maintain a neat and orderly appearance and must be screened and buffered to minimize nuisances to neighboring properties.
 - (D) Facility sign. Provide a posted sign which displays owner or operators of the facility, the hours of operation and a contact in case of emergency. The sign shall clearly state which wastes are or are not acceptable at the site.
- (3) Operation plan. An operation plan shall be submitted with the permit application which includes the following:
- (A) General operations. A description of its purpose, the facility's general operating plan including origin, composition, and expected volume of solid waste to be handled at the site.
 - (B) Acceptable wastes. Only household waste and commercial waste shall be accepted at the facility. No industrial waste, infectious waste, construction and demolition waste or regulated hazardous waste shall be accepted unless specifically approved by the director.
 - (C) Ultimate disposal of waste. All solid waste passing through this facility shall be collected, treated, recycled, or disposed of at a solid waste disposal facility authorized by the department.
 - (D) Transfer route. Provide a plan for the transfer of the solid waste including route, frequency, haulers, and alternative transfer routes.
- (4) Closure plan. As part of the application for a permit, the owner or operator shall develop a closure plan to ensure no adverse environmental impacts.
- (c) Reporting requirements.
- (1) Operational records. Operational records shall be maintained and shall include a daily log of the volume of solid waste received, transported, and disposal site

of the solid waste.

- (2) Annual report. An annual report shall be submitted to the director no later than thirty days after June 30 of each year. The annual report shall detail the volume or weight of solid waste received at the facility, the origin and transporter of the solid waste and the ultimate disposal site. One combined report may be submitted for owners with more than one transfer station. [Eff JAN 13 1994] (Auth: HRS §§342H-3, 342H-4, 342H-31)

§11-58.1-32 Recycling and materials recovery facilities.

(a) Applicability. This Subpart regulates the construction and operation of recyclables handling and recovery facilities including but not limited to the following:

- (1) Recycling centers which process only source separated materials such as batteries, motor oil, and metal sludges.
- (2) Recycling facilities which separate recyclables from nonrecyclables on-site.
- (3) Recycling facilities which only collect, buy, broker, bale, compact or shred recyclable materials.
- (4) Exemptions. The following facilities are exempt from regulation under this section.
 - (A) Composting operations which separate or treat greenwaste, sludge, or ash. These are regulated in sections 11-58.1-04 and 11-58.1-41.
 - (B) Facilities which process hazardous or other regulated wastes as determined by 40 CFR 261 and the Clean Air Act and do not produce a recycled material or solid waste requiring disposal.
 - (C) Buy back and refillable container centers.
 - (D) Recycling drop-off centers are permitted by rule and are not subject to this subchapter.
 - (E) Manufacturers that use clean, source separated paper products, glass, and plastic as feedstock for their manufacturing process, and which as a result of this process, produce an end-product for resale.

(F) Repair and re-sale of clean, source separated clothing, residential and commercial furniture.

(5) Recycling facilities which are in operation at the time this subchapter becomes effective shall complete the requirements for a permit within one year after the effective date of these rules.

(b) Permit requirements. A permit is required to construct and operate a facility used in the recovery, collection, storage, or treatment of recyclable material. The application shall contain the following:

(1) Site analysis. A site analysis shall be submitted and shall include at least a site plan, description of siting of equipment and machinery, public access, and turnaround areas. The site analysis shall include surrounding land uses and, where determined necessary by the director, describe mitigative measures taken to reduce the impact of the facility upon neighboring properties.

(2) Design requirements.

(A) Equipment. A description of the overall operation and a functional description of all processing equipment to be used to load, bale, shred, compact, or process recyclables and the personnel trained to operate them.

(B) Adequate drainage. Adequate drainage to prevent standing water and to control "run-on" and "run-off" of rainwater shall be provided.

(C) Nuisance, health, and safety control. Design methods to control litter, insects, odors, and vectors. Develop a fire plan to prevent and minimize fire hazards. The facility shall maintain a neat and orderly appearance and must be screened and buffered to minimize nuisances to neighboring properties.

(3) Operation plan. An operation plan shall be submitted to the director detailing the following:

(A) Recoverable materials collected. A description of the recoverable materials proposed to be collected, stored, treated, and/or disposed of at the facility

including the current management of the recoverable materials.

- (B) A means of weighing or measuring all materials accepted at the facility and a means of weighing or measuring residue, bypass waste, and recyclables recovered.
 - (C) Residue disposal. Intended disposal measures and capacities for residue created or separated during processing.
- (4) Closure plan. As part of the application for a permit, the owner and/or operator shall develop a closure plan to ensure no adverse environmental impacts.

(c) Reporting requirements. An annual report shall be submitted to the director not later than thirty days after June 30 of each year. The report shall detail the volume in tons of each recoverable material collected, processed, shipped, and disposed of. [Eff JAN 13 1994] (Auth: HRS §§342G-2, 342G-13, 342G-28, 342H-3, 342H-4)

§11-58.1-33 Solid waste salvage facilities. (a) Applicability. This subchapter regulates the construction and operation of materials recovery facilities. This includes, but is not limited to, automobile dismantlers, scrap metal, and white goods processors, and junkyards.

- (1) Exemptions. The following facilities are exempt from regulations under this subchapter.
- (A) Facilities which store twenty-five cars or less at any one time.
 - (B) Facilities which store twenty-five units of white goods or less at any one time.

(b) Permit requirement. A permit is required to construct and operate a materials recovery facility. The application shall contain the following:

- (1) Site analysis. A site plan and analysis including the siting of any equipment and machinery, surrounding land uses, and public access.
- (2) Design requirements.
 - (A) Equipment. A description of the overall operation

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and a functional description of all processing equipment to be used and the personnel to operate them.

(B) Adequate drainage. Adequate drainage to prevent standing water and to control "run-on" and "run-off" of rainwater shall be provided.

(C) Nuisance, health, and safety control. Design methods to control litter, insects, odors, and vectors. Develop a fire plan to prevent and minimize fire hazards. The salvage facility shall maintain a neat and orderly appearance and must be screened and buffered to minimize nuisances to neighboring properties.

(3) Operation plan. An operation plan shall be submitted and should include a brief description of the process, recoverable materials proposed to be collected, stored, and disposed at the facility. A means of weighing or measuring the incoming materials and a description of the intended method of disposal of the salvageable by-products must be included.

(4) Closure plan. As part of the application for a permit, the owner and/or operator shall develop a closure plan to ensure no adverse environmental impacts.

(c) Reporting requirements. At a minimum, an annual report shall be submitted to the director not later than thirty days after June 30 of each year. The report shall detail the volume or weight in tons of the incoming material and the salvageable material recovered and how disposed. [Eff] (Auth: HRS §§342G-13, 342G-28, 342H-3, 342H-4, 342H-31)

§11-58.1-34 to 11-58.1-40 (Reserved)

SUBCHAPTER 4--SOLID WASTE RECLAMATION FACILITIES

§11-58.1-41 Composting facilities. (a) Applicability. This section regulates the construction and operation of composting facilities for sewage sludge, green waste (yard waste), and other solid wastes.

(A) Exemption. Composting facilities processing less than

three thousand tons of green wastes (yard wastes) per year are permitted by rule.

(b) Permit requirements:

(1) Site analysis. A site analysis shall be submitted and shall include at least a site plan, description of the siting of equipment and machinery, public access, and turnaround areas. The site analysis shall include surrounding land uses and, where determined necessary by the director, describe mitigative measures taken to reduce the impact of the facility upon neighboring properties.

(2) Design requirements.

(A) Provide engineering plans and specifications for the entire composting facility, including manufacturer's performance data for the selected equipment.

(B) The composting facility must have sufficient temperature monitoring to ensure that the pathogen reduction criteria are met. For a windrow and an aerated static pile process, this may include monitoring six to eight inches below the pile surface and for an aerated static pile process, six to eight inches from the outlet of the aeration pipe. For an enclosed vessel system, this may include monitoring six to eight inches inside the vessel wall and six to eight inches from the aeration piping (when operating in the positive aeration mode). Temperature monitoring must occur, at a minimum, on a daily basis.

(C) Nuisance, health, and safety control. Design methods to control litter, insects, odors, and vectors. Develop a fire plan to prevent and minimize fire hazards. The transfer station shall maintain a neat and orderly appearance and must be screened and buffered to minimize nuisances to neighboring properties.

(D) The waste storage area and the active composting, curing, and compost storage areas must be located on surfaces capable of minimizing leachate release into the groundwater under the site and the surrounding land surface.

(E) All leachate must be collected and treated by a

method (in the engineering report) approved by the department.

(F) For composting system using only sewage sludge with an additive such as wood chips, the maximum contaminant concentrations of the sewage sludge shall meet the applicable standards in 40 CFR Part 503. Since other contaminants may be present in the sewage sludge as indicated by discharge monitoring and other industrial pre-treatment requirements; the department, on a case specific basis, may determine the maximum allowable concentrations of these contaminants in the sewage sludge.

(G) Adequate drainage. Adequate drainage to prevent standing water and to control "run-on" and "run-off" of rainwater shall be provided.

(3) Operation plan.

(A) Provide a description of the type and size of the facility, detention times for handling and processing the material, a process flow diagram of the entire process, and all the major equipment required. Include in the report monitoring information, such as the locations of all the temperature monitoring points and their frequency of reading.

(B) Provide a detailed description of the source, quality and quantity of the solid waste to be composted, including the source, quality, and expected quantity of any bulking agent to be used. If sewage sludge is to be composted, data on the material must be submitted.

(C) The compost from composting operations shall be nonpathogenic, free of offensive odors, biologically and chemically stable, and free of injurious components or particles, and able to sustain plant growth. Rejects generated by the composting process shall be disposed of in accordance with these rules.

(D) Solid waste that possess a pathogen concern, shall be composted and meet the criteria for reducing pathogens. Three acceptable methods are:

(i) Using the windrow composting method, the solid waste is maintained under aerobic conditions

during the composting process. A minimum of five turnings is required during a period of fifteen consecutive days with the temperature of the mixture being fifty-five degrees Celsius or greater within six to eight inches below the surface of the pile.

- (ii) Using the aerated static pile composting method, the compost pile must be insulated and a temperature of not less than fifty-five degrees Celsius or greater must be maintained throughout the compost pile for at least three consecutive days.
 - (iii) Using the enclosed vessel composting method, the mixture must be maintained at a temperature of not less than fifty-five degrees Celsius or greater throughout the mixture for at least three consecutive days.
 - (iv) Other methods may be submitted to the director and they will be approved on a case-by-case basis.
- (E) Provide a description of the ultimate use for the finished compost and the method of removal from the site. Include a plan for disposal of the finished compost that cannot be used.
- (4) Closure plan. As part of the application for a permit, the owner and/or operator shall develop a closure plan to ensure no adverse environmental impacts.
- (c) Reporting requirements. At a minimum, an annual report shall be submitted to the department, not later than thirty days after June 30 of each year. The report must include:
- (A) The type and quantity, by weight or volume after primary processing, of solid waste received by the facility.
 - (B) The quantity, by weight or volume, of compost produced and removed from the facility.
 - (C) A summary of monitoring done during the operation. [Eff JAN 13 1994] (Auth: HRS §§342G-13, 342G-28, 342H-3, 342H-4, 342H-31)

§11-58.1-42 Remediation facilities. (a) Applicability. This subchapter regulates the construction and operation of off-site remedial facilities. It will include, but not be limited to facilities utilizing the physical, chemical, and biological conversion processes in the recovery of waste materials. Each process will use the best practicable technology and must be in the best interest of the public. Facilities developed for a one-time operation are exempt from these regulations.

(b) Permit requirements.

- (1) Site analysis. A site plan and analysis shall be submitted with the application. The analysis shall include a brief description of the area, the location of any equipment and machinery, surrounding land uses, public access, and where determined by the director, a description of mitigative measures taken to reduce the impact of facility upon neighboring properties.
- (2) Design requirements.
 - (A) Unless specified by the director, the area on which the material is to be placed shall be impermeable to prevent subsurface soil and potential ground water contamination with a system to collect leachate and runoff. If a liner is used it should be of sufficient thickness and strength to withstand stresses imposed by vehicles and the material itself.
 - (B) Equipment. A description of the overall operation and a functional description of all processing equipment to be used in the remediation process and the personnel trained to operate them.
 - (C) Adequate drainage. Adequate drainage to prevent standing water and to control "run-on" and "run-off" of rainwater shall be provided.
 - (D) Nuisance, health, and safety control. Design methods to control litter, insects, odors, and vectors. Develop a fire plan to prevent and minimize fire hazards. The facility shall maintain a neat and orderly appearance and must be screened and buffered to minimize nuisances to neighboring properties.
- (3) Operation plan. The operation plan shall include a description of the process and the equipment necessary, by-products produced, and the means for their disposal.

- (4) Closure plan. As part of the application for a permit, the owner and/or operator shall develop a closure and post-closure plan to ensure no adverse environmental impacts.

(c) Reporting requirement. At a minimum, an annual report shall be submitted to the director not later than thirty days after June 30 of each year. The report shall detail the volume or weight in tons of the incoming material and the material recovered from the process. [Eff JAN 13 1994] (Auth: HRS §§342G-2, 342G-3, 342G-13, 342G-14, 342G28, 342H-3, 342H-4, 342H-31)

§§11-58.1-43 to 11-58.1-50 (Reserved)

SUBCHAPTER 5 -- SPECIAL WASTE MANAGEMENT

§11-58.1-51 Special waste landfills. (a) Applicability. Solid wastes which do not fall under the categories contained in subchapter 3 or 4 are termed special wastes and the landfill shall comply to these requirements (when disposal is by landfill). A permit will be required for the landfill.

(b) Permit requirements. Each special waste landfill permit application will be evaluated on a case by case basis and shall include, but not limited to the following:

- (1) Site analysis. A site plan and analysis of the facility which illustrates the location of all structures including storage areas on the site; offices, maintenance areas, planned areas for expansion, and property boundaries. Including in the analysis will be a description of neighboring land uses and measures taken to mitigate interference with those existing or anticipated uses.
- (2) Design requirements.
 - (A) Adequate design of the landfill depending on the type of waste to be disposed.
 - (B) Adequate drainage to prevent standing water and to control "run-on" and "run-off" of rainwater shall be provided.

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(C) Design methods to control litter, insects, odors, and vectors or any other possibilities of nuisance or to protect health and safety.

(D) Ash monofill shall meet the requirements of subchapter 2.

(3) Operation plan. An operation plan will be submitted with the permit application.

(c) Reporting requirement. At a minimum, an annual report for the twelve-month period ending June 30 shall be submitted to the director not later than thirty days after June 30 of each year. The report shall detail the volume or weight in tons of the incoming material and any monitoring data required by the permit. [Eff JAN 13 1994] (Auth: HRS §§342H-3, 342H-4, 342H-31, 342H-32)

§11-58.1-52 Medical waste treatment and disposal facilities.

(a) Applicability. The purpose of this section is to regulate the disposal of infectious wastes from the point at which such waste is received from a health care facility which generates such wastes for the purpose of off-site transport for storage, treatment, or disposal.

(b) Permit requirements.

(1) All facilities involved with the storage, transfer treatment and disposal of infectious waste are subject to the requirements of this subchapter. Facilities treating, transferring, managing, and disposing of infectious wastes must comply with chapter 11-104. Infectious waste storage and transfer facilities are not authorized to accept low level radioactive waste, solid waste, or treated and destroyed medical waste; unless authorized in writing by the director.

(2) Exemptions. A health care facility with treatment and disposal units located on-site and treating and disposing infectious waste generated on-site.

(3) The application for a permit shall include but not be limited to:

(A) Engineering report including site and security analysis, methods to control litter, insects, odors, and vectors. Development of a fire plan to prevent and minimize fire hazards. Adequate

drainage plan to control "run-on" and "run-off".

(B) Operation plan to include a brief description of its purpose and major equipment to be used.

(c) Reporting requirements. At a minimum, an annual report for a twelve-month period ending June 30 be submitted to the director not later than thirty days after June 30 of each year. The report shall detail the volume or weight of incoming material. [Eff JAN 13 1994] (Auth: HRS §§321-11, 321-21, 342H-3, 342H-4, 342H-31, 342H-32)

§11-58.1-53 Foreign waste treatment and disposal. (a) Applicability. Foreign solid waste generated by carriers which left foreign ports and their first port of entry to the united states is Hawaii must comply with the procedures for the treatment and disposal of foreign solid waste as contained in the U. S. Department of Agriculture Title 7, Chapter III, Part 330, Sub-part Garbage regulations. Sterilization and incineration are the methods used for the treatment and disposal of the foreign wastes.

(b) Permit requirements. Treatment facilities used to treat foreign wastes must comply with the requirements contained in sections 11-58.1-20 and 11-58.1-52 for permits as contained in this chapter. [Eff JAN 13 1994] (Auth. HRS §§342H-3, 342H-4, 342H-31)

§11-58.1-54 Used oil transport and recycle facilities. (a) Applicability. The purpose of these rules is to establish minimum requirements governing the management of used oil pursuant to and for the purpose of implementing Hawaii Revised Statutes, chapter 342N, used oil transport, recycling, and disposal.

(b) Permit requirement. A person who operates as a transporter, recycler, or marketer, as defined in chapter 342N, HRS, of used oil shall comply with this section and obtain a permit from the department.

- (1) Each application shall include but not be limited to:
A description detailing the management and operation of the facility, the geographical area to be served, the source and disposition of the used oil, construction plans and specifications and certification of compliance with local ordinances and zoning requirements.
- (2) Each application shall be signed by the applicant and shall constitute an acknowledgement that the applicant assumes responsibility for the construction, modification, and operation of the facility in accordance with

permit conditions and this section.

- (3) The design of the facility must consider methods to control litter, insects, odors and vectors. A fire plan must be developed to prevent and minimize fire hazards.
- (4) Design of an adequate drainage plan to control "run-on and run-off"
- (5) Operation plan requirements:

- (i) Sampling and testing: The director may require a sampling and testing plan to analyze for constituents of specification fuel. The constituents are:

<u>Constituent/property</u>	<u>Allowable Level</u>
Arsenic	5 ppm maximum
Cadmium	2 ppm maximum
Chromium (Total)	10 ppm maximum
Lead	100 ppm maximum
Total Halogen	1,000 ppm maximum
Flash Point	100_ F minimum
Polychlorinated biphenyl(PCB)	2 ppm maximum

- (ii) Blending of used oil: When specification fuel is blended with virgin oil, the resulting mixture is considered virgin oil for burning. When used oil is blended with virgin oil or specification fuel, the resulting mixture is considered used oil unless an analysis is performed to indicate otherwise. The method of sampling and analysis shall be included in the operation plan.

- (6) Used oil transporter requirements:

- (i) A used oil transporter shall provide a signed voucher to each person surrendering or accepting the used oil.

- (ii) A transporter may temporarily store used oil on the transporter's premises before delivery to a recycler, marketer, transporter, or incinerator.

- (iii) All vehicles used in the actual transporting of used oil shall be identified with the firm's name and the permit number.

- (c) Reporting requirements.
- (1) At a minimum, an annual report for the twelve-month period ending June 30 shall be submitted to the director not later than thirty days after June 30 of each year. The report shall detail the volume or weight of the incoming material and the salvageable material recovered and how disposed.
 - (2) Voucher or invoice is required to track the movement of used oil. At a minimum the voucher shall contain the name and address of the parties, the quantity and type of used oil, whether an analysis has been performed, date of transaction and signature. [Eff JAN 13 1994] (Auth: HRS §§342N-3, 342N-4, 342N-33)

§11-58.1-55 Other non-specified technologies. (a) Applicability. The purpose of this section is to provide a procedure by which new innovative technologies in the treatment and disposal of solid wastes will be considered for permitting.

(b) Permit requirements. An engineering report providing an extensive justification will be required before any new technology is approved by the director for use. The justification shall include:

- (1) Experiences where the technology was used and found to be successful.
- (2) A brief description of the operating process to be used, equipment necessary, and any technical training required by the personnel.
- (3) Design methods to control litter, insects, odors, and vectors. Develop a fire plan to prevent and minimize fire hazards.

(c) Reporting requirements. At a minimum, an annual report for the twelve-month period ending June 30 shall be prepared and submitted to the director, not later than thirty days after June 30 of each year. The report should summarize the data collected either by weight or volume of the incoming material. [Eff JAN 13 1994] (Auth: HRS §§342H-3, 342H-4, 342H-31)

11-58.1-56 to 11-58.1-60 (Reserved)

SUBCHAPTER 6 -- SOLID WASTE MANAGEMENT RESPONSIBILITIES

§11-58.1-61 General responsibilities. (a) The aesthetic, nonhazardous, and sanitary storage of solid waste is the responsibility of the person owning, operating, or managing the property, premises, business establishment, or industry where the solid waste is accumulated.

(b) Any person not exempted in section 11-58.1-04(b) owning, operating, or managing a property, premise, business establishment, or industry, has the responsibility of removing accumulated solid waste to an approved solid waste disposal facility. Contractual or other arrangements for the removal of accumulated solid waste shall not relieve a person of this primary responsibility as stated above. Solid waste shall be removed to an approved solid waste disposal facility, prior to creating a nuisance condition or health or safety hazard.

(c) The disposal of animal carcasses is the responsibility of the land owner or land occupant or both upon whose land the animal carcass is found. On-site disposal of the carcass shall be by immediate burial, covered by at least two feet of compacted earth, or by other methods approved by the director. [Eff JAN 13 1994] (Auth: HRS §§342H-3, 342H-31)

§11-58.1-62 Hazardous wastes. (a) Owners and operators of solid waste disposal facilities shall implement a program at the facility for detecting and preventing the disposal of regulated hazardous waste as defined in 40 CFR Part 261 or the State of Hawaii's rules or statutes, whichever is more stringent, and polychlorinated biphenyls (PCB) wastes as defined in 40 CFR Part 761 into the solid waste disposal facility.

(b) Preparation for disposal of pesticide containers shall be in accordance with section 4-66-55, Hawaii Administrative Rules.

(c) Soils determined to be hazardous shall be treated as hazardous waste as defined in 40 CFR 261 or the State of Hawaii's rules or statutes, whichever is more stringent, and shall be disposed as hazardous waste. [Eff JAN 13 1994] (Auth: HRS §§342H-3, 342H-31)

§11-58.1-63 Infectious wastes. The management and disposal of infectious waste shall be in accordance with chapter 11-104, Hawaii Administrative Rules. Treated infectious waste which have been rendered non-infectious may be disposed in a municipal solid waste landfill or incinerated. All infectious wastes generated within the household may be disposed as residential solid waste. [Eff JAN 13 1994] (Auth: HRS §§321-21, 342H-3)

§11-58.1-64 Radioactive wastes. Disposal of radioactive waste at all solid waste disposal facilities shall be subject to regulation or control pursuant to the U.S. Nuclear Regulatory Commission, the Hawaii Administrative Rules, and the Hawaii Revised Statutes, whichever is more stringent. [Eff JAN 13 1994] (Auth: HRS §§321-11, 342H-3)

§11-58.1-65 Special solid waste controls.
(a) Applicability. The special solid wastes regulated under this subchapter are green wastes, scrap automobiles, white goods, and tires.

(b) Green wastes. Solid waste disposal facilities shall have in place by December 31, 1994, a plan to ban or require source separation of green waste from entering the disposal facility. The plan shall detail requirements for diversion of seventy-five per cent of all commercially generated green waste by December 31, 1995 and fifty percent of all residential green waste by December 31, 1996. If, based on data submitted by the operator as part of the annual report, these diversion rates are not achieved, all commercial green waste shall be banned from the facility by December 31, 1995, and residential green waste by December 31, 1996.

(c) Scrap automobiles, white goods, and tires. Scrap automobiles may not be accepted at disposal facilities permitted under these rules. White goods and motor vehicle tires may not be accepted at disposal facilities permitted under these rules after June 30, 1994. A plan must be developed by the operator of solid waste disposal facility and included in the facility operations plan to implement this ban. [Eff JAN 13 1994] (Auth: HRS §§342G-3, 342G-13)

§11-58.1-66 to 11-58.1-70 (Reserved)

§11-58.1-54

SUBCHAPTER 7 -- MISCELLANEOUS PROVISIONS

§11-58.1-71 Penalties and remedies. Any person who violates any provision of this chapter shall be subject to the penalties and remedies as provided in Hawaii Revised Statutes. [Eff JAN 13 1994] (Auth: HRS §§342G-3, 342H-3, 342N-3)

§11-58.1-72 Severability clause. If any provision of this chapter or the application of any provision of this chapter to any person or circumstance is held invalid, the application of such provision to other persons or circumstances and the remainder of this chapter shall not be affected thereby." [Eff JAN 13 1994] (Auth: HRS §§342H-3, 342H-14)

The repeal of chapter 11-58 and the adoption of chapter 11-58.1, Hawaii Administrative Rules, were adopted on following public hearing in Lihue, Kauai on September 13, 1993, in Kahului, Maui on September 14, 1993, in Honolulu, Oahu on September 16, 1993, in Hilo, Hawaii on September 20, 1993, and in Kona, Hawaii on September 21, 1993, after public hearing notice was given on August 13, 1993, in the Garden Island, the Maui News, the West Hawaii Today, the Hawaii Tribune Herald, and the Honolulu Advertiser.

They shall take effect ten days after filing with the Office of the Lieutenant Governor, except as otherwise provided in chapter 11-58.1.

(signed)
JOHN C. LEWIN, M.D.
Director of Health
Dated: (Dec 15 1993)

(signed)
JOHN WAIHEE
Governor
State of Hawaii
Dated: (Jan 03 1994)

(Jan 03 1994)

Filed

APPROVED AS TO FORMAT:

(signed)
Deputy Attorney General