

Salt Lake Valley Health Department

Health Regulation

#1

**SOLID WASTE
MANAGEMENT AND PERMITTING
REGULATION**

**Adopted by the Salt Lake Valley Board of Health
September 7, 1989**

**Amended
October 5, 1989, July 7, 1994,
February 5, 1998, August 7, 2008
October 1, 2009
December 3, 2009**

Under Authority of Utah Code Ann. § 26A-1-114 (2009).

1. PURPOSE & APPLICABILITY OF REGULATION

- 1.1 The purpose of this regulation is to regulate the management of solid waste in a way that will protect public health, safety, welfare and the environment; will prevent the spread of disease, the creation of nuisances and damage to property; and will minimize environmental pollution.
- 1.2 This regulation applies to persons engaged in the handling, processing, collection, transporting or disposal of solid waste. This regulation also applies to locations where solid waste is accumulated, stored, disposed or processed.

2. DEFINITIONS

For the purpose of this regulation, the following phrases, terms, and words shall have the meanings given in this section:

- 2.1 “Active life” shall mean the period of time that solid waste is routinely and regularly received at a solid waste management facility.
- 2.2 “Active portion” shall mean the portion of a solid waste management facility where treatment, storage, handling, or disposal operations are being or have been conducted. An “active portion is not a “closed portion.”
- 2.3 “Agricultural waste” shall mean manure or crop residues from various agricultural pursuits, including, but not limited to dairies and the raising of livestock and poultry.
- 2.4 “Airport” shall mean an airport open to the public without prior permission and without restrictions within the physical capabilities of available facilities, and any active military portion.
- 2.5 “Applicant” shall mean the person applying for a permit pursuant to the requirements of this regulation.
- 2.6 “Aquifer” shall mean a geologic formation, group of formations, or part of a formation capable of yielding a significant amount of groundwater to a well or spring.
- 2.7 “Asbestos” shall mean the asbestiform varieties of serpentine (chrysotile), riebeckite (crocidolite), cummingtonite-grunerite (amosite), anthophyllite, and actinolite-tremolite.
- 2.8 “Asbestos waste landfill” shall mean a landfill which is permitted by the Department to accept asbestos containing material.
- 2.9 “Asbestos containing material” shall mean any material containing more than one percent (1%) asbestos as determined using the method specified in 40 C.F.R. § 763.1, Polarized Light Microscopy, which when dry, is friable, meaning it can be crumbled, pulverized, or reduced to powder by hand pressure. “Asbestos containing material” shall include non-friable asbestos containing material which is handled in a way that causes it to crumble, pulverize or reduce to powder form. If the asbestos content is less

than 10% but detectable, the Director may require the verification of the asbestos content by point counting using polarized light microscopy (PLM).

- 2.10 “Ash residue” shall mean the solid residue and any entrained liquids resulting from the combustion of solid waste. “Ash residue” includes bottom ash, boiler ash, fly ash, and the solid residue of any air pollution control device.
- 2.11 “Automobile dismantling yard” shall mean a lot or portion thereof, tract or parcel of land, structure or business, which is lawfully licensed to be used, maintained or operated for storing, collecting, keeping, buying, dismantling, or selling of vehicle parts. An “automobile dismantling yard” is not a solid waste management facility.
- 2.12 “Background” or “Background concentration” shall mean the concentration of a contaminant in groundwater or surface water which has not been affected by activity at a solid waste management facility.
- 2.13 “Baseline water quality” shall mean the chemical composition of groundwater or surface water before deposition or processing of solid waste.
- 2.14 “Board of Health” shall mean the Salt Lake Valley Board of Health.
- 2.15 “Bulky waste” shall mean large items of solid waste including, but not limited to, appliances, furniture, construction and demolition waste, motor vehicles, tires, trees, branches, and stumps.
- 2.16 “Cell” shall mean a discrete engineered area of a landfill that is designed for the disposal of solid waste. A “cell” is a subpart of a landfill.
- 2.17 “Clay” shall mean:
- 2.17.1 the mineral soil particles less than 0.002 millimeters diameter; or
 - 2.17.2 a soil material that is 40 percent or more clay and either less than 45 percent sand or less than 40 percent silt.
- 2.18 “Clean fill” shall mean uncontaminated rock, soil, gravel, and inert solid waste that is suitable to be utilized for engineering or grading purposes.
- 2.19 “Closed portion” shall mean a discrete portion of a solid waste management facility which has been closed in accordance with the closure requirements of this regulation.
- 2.20 “Combustion” shall mean the thermal treatment of solid waste in a device that uses elevated temperatures as the primary method to change the chemical, physical, or biological character or composition of the waste.
- 2.21 “Commercial waste” shall mean solid waste generated by retail stores, offices, restaurants, warehouses, and other non-manufacturing commercial activities. “Commercial waste” does not include household waste or industrial waste.

- 2.22 “Compaction” shall mean the volume reduction of material under load.
- 2.23 “Compost” shall mean organic waste material that has biologically decomposed or is in the process of biologically decomposing under controlled conditions.
- 2.24 “Composting” shall mean a method of solid waste management whereby the organic component of the waste stream is biologically decomposed under controlled conditions to a state in which the end product or compost can be safely handled, stored, or applied to the land without adversely affecting human health or the environment.
- 2.25 “Composting facility” shall mean a processing facility that provides compost or a part of a composting process.
- 2.26 “Confined aquifer” shall mean an aquifer containing groundwater at a pressure greater than atmospheric pressure and from which water in a well usually rises to a level above the top of the aquifer.
- 2.27 “Construction and demolition landfill” shall mean a landfill that is permitted by the Department to accept only construction and/or demolition waste.
- 2.28 “Construction and demolition waste” shall mean solid waste resulting from the construction, remodel, repair, or demolition of structures; from road building; and from land clearing. Such waste includes bricks, concrete, and other masonry materials, soil, rock, wall coverings, plaster, drywall, and other inert material, plumbing fixtures, asbestos-free insulation, roofing shingles, asphaltic pavement, glass, plastics that are not sealed in a way that conceals other wastes, wood, concrete reinforcing material, and metals that are incidental to any of the above. “Construction and demolition waste” does not include hazardous waste, asbestos-containing material, garbage, fluorescent electrical fixtures containing mercury, refrigeration units containing chlorofluorocarbons, radioactive waste, tires, containers with liquid or unrecognizable wastes, or fuel tanks.
- 2.29 “Container” shall mean any portable device in which a solid waste is stored, transported, treated, disposed, or otherwise handled.
- 2.30 “Contamination” shall mean a condition resulting from any alteration of the physical, chemical, or biological properties of any environmental media such as air, surface water, groundwater, and soil, or the release or discharge of any liquid, gaseous or solid substance into any waters of the state as will create a nuisance or render such waters harmful or detrimental or injurious to public health, safety, welfare, or the environment, or to domestic, commercial, industrial, agricultural, recreational, or other legitimate beneficial uses, or to livestock, other domesticated animals, wild animals, birds, fish or other aquatic or botanic life.
- 2.31 “Contaminant” shall mean any physical, chemical, biological or radiological substance or matter placed in the air, soil or water as a result, directly or indirectly, of human, animal, or other activity.

- 2.32 “Cover material” shall mean soil or other material approved by the Director used to cover compacted solid waste that is both free of objects that hinder compaction and is not conducive to vector harborage, feeding, or breeding.
- 2.33 “Department” shall mean the Salt Lake Valley Health Department (SLVHD).
- 2.34 “Director” shall mean the Director of the Salt Lake Valley Health Department or his or her designated representative.
- 2.35 “Discharge” shall mean the accidental or intentional releasing, spilling, leaking, pumping, pouring, emitting, emptying, or dumping of any solid waste or solid waste constituent, including leachate, into or on any air, land, or water.
- 2.36 “Downgradient well” shall mean a well installed at a point lower in hydraulic potential relative to other points at a solid waste management facility.
- 2.37 “Dust” shall mean any particulate matter from soils, minerals, ash or other material capable of being suspended in air.
- 2.38 “Emissions” shall mean the act of discharge into the atmosphere of an air contaminant or an effluent which contains or may contain an air contaminant; or the effluent so discharged into the atmosphere.
- 2.39 “Etiologic agent” shall mean any micro-organism, helminth, or virus that causes, or significantly contributes to the cause of increased morbidity or mortality of human beings.
- 2.40 “Facility” shall mean a solid waste management facility.
- 2.41 “Final cover” shall mean a compacted layer of cover material, at least 24 inches (61 centimeters) thick, that is placed on all surfaces of a landfill where no additional solid waste will be deposited within one year. The upper six inches (15 centimeters) shall be soil of a composition suitable to sustain plant growth. The lower portion shall be a material that restricts infiltration and has 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 will minimize infiltration through the closed landfill by the use of an infiltration layer that contains a minimum 18 inches of earthen material, graded at a minimum two percent slope on the surface and a maximum of 33 percent slope on the sides.
- 2.42 “Floodplain” shall mean the lowland and relatively flat areas adjoining inland and coastal waters, including flood prone areas of offshore islands, which are inundated by a flood that has a one percent or greater chance of being equaled or exceeded in any single year.
- 2.43 “Freeboard” shall mean the vertical distance between the lowest elevation of the top of a tank, surface impoundment, or dike and the highest level of the surface of the solid waste contained therein.

- 2.44 “Garbage” shall mean solid and semisolid, putrescible animal and vegetable wastes resulting from the handling, preparing, cooking, storing, serving, and consuming of food or material intended for use as food, and all offal (excluding useful industrial by-products) from all public and private establishments and from all residences.
- 2.45 “Generator” shall mean any person that first creates or causes a product or material to become a solid waste or whose act or process produces a solid waste.
- 2.46 “Groundwater” shall mean subsurface water which is in the zone of saturation, including perched groundwater.
- 2.47 “Groundwater table” shall mean the naturally occurring surface of groundwater at which it is subjected to atmospheric pressure. “Groundwater table” does not include the potentiometric head level in a confined aquifer.
- 2.48 “Hauler” shall mean a person engaged in the off-site collection and transportation of solid waste by vehicle. “Hauler” shall include, but not be limited to, waste haulers, liquid waste haulers, waste tire haulers, and infectious medical waste haulers.
- 2.49 “Hazardous waste” shall mean a solid waste, or a combination of solid wastes which, because of its quantity, concentration, or physical, chemical, or infectious characteristics, may cause or significantly contribute to an increase in mortality or an increase in serious or incapacitating irreversible illness, or pose a substantial present or potential hazard to human health or the environment if improperly treated, stored, transported, disposed, or otherwise managed, or any solid waste listed as a hazardous waste under Utah Admin. Code §§ R315-2-10 & R315-2-11, Utah Hazardous Waste Management Rules, or any solid waste that exhibits a characteristic of a hazardous waste as defined in Utah Admin. Code § R315-2-9, Utah Hazardous Waste Management Rules. The definition for “Hazardous waste” in Utah Admin. Code § R315-2-3 is hereby incorporated by reference.
- 2.50 “Household hazardous waste” shall mean solid waste generated and discarded from any single or multiple dwelling unit, campsite, ranger station, or other residential source that is exempt from hazardous waste regulation under Utah Admin. Code § R315-2-4, Utah Hazardous Waste Management Rules. The container size normally and reasonably associated with households and household activities is five gallons or less.
- 2.51 “Hydraulic conductivity” shall mean a measure of the capacity of a formation or material to transmit water. It is expressed as the volume of water that will move through a one unit square area under a unit hydraulic gradient in a specific time.
- 2.52 “Impermeable” shall mean having a hydraulic conductivity equal to or less than 1×10^{-7} centimeters per second as determined by field and laboratory permeability tests made according to standard test methods that may be correlated with soil densification as determined by a compaction test.
- 2.53 “Incineration” shall mean controlled combustion whose primary purpose is to thermally break down solid, liquid, or gaseous combustible wastes to an ash residue that contains

little or no combustible materials.

- 2.54 “Incinerator” shall mean an enclosed device using controlled flame combustion that neither meets the criteria for classification as a boiler nor is listed as an industrial furnace.
- 2.55 “Industrial waste” shall mean solid waste generated by manufacturing or an industrial process. Such waste is generated by the following processes: electric power generation; fertilizer or other agricultural chemical manufacturing; food and related products preparation; inorganic chemicals manufacturing; iron and steel manufacturing; leather and leather products manufacturing; nonferrous metals manufacturing/foundries; organic chemical production; plastics and resins manufacturing; pulp and paper production; rubber and miscellaneous plastic products production; stone, glass, clay and concrete products manufacturing; textile manufacturing; transportation equipment production; and water treatment.
- 2.56 “Industrial waste landfill” shall mean a landfill permitted under subchapter 4.1.1(i)(b)(i) and accepts only non-hazardous industrial waste.
- 2.57 “Inert waste” shall mean noncombustible, nonhazardous solid waste that retains its physical and chemical structure, including resistance to biological or chemical attack.
- 2.58 “Infectious medical waste” shall mean a solid waste that contains pathogens of sufficient virulence and quantity that exposure to the waste of a susceptible host could result in an infectious disease. Infectious medical waste shall include but not be limited to any and all of the following:
- 2.58.1 Biologic laboratory wastes, including cultures of etiologic agents, that pose a substantial threat to health due to their volume and virulence;
 - 2.58.2 Pathologic specimens, including human or animal tissues, blood elements, excreta, and secretions that contain etiologic agents, and attendant disposable fomites;
 - 2.58.3 Surgical specimens, including human or animal parts and tissues removed surgically or at autopsy that, in the opinion of the attending physician or veterinarian, contain etiologic agents, or attendant disposable fomites;
 - 2.58.4 Equipment, instruments, utensils, and other disposable materials that are likely to transmit etiologic agents from the rooms of humans or the enclosures of animals that have been isolated because of suspected or diagnosed communicable disease;
 - 2.58.5 Human dialysis waste materials including arterial lines and dialyzate membranes;
 - 2.58.6 Carcasses of animals infected with etiologic agents that may present a substantial hazard to public health if improperly managed;

- 2.58.7 Medical sharps that are to be disposed, regardless of whether or not they have been used for injections or body fluid extractions;
- 2.58.8 Chemotherapy waste, including all disposable materials that have come in contact with all cytotoxic/antineoplastic agents during preparation, handling and administration of such agents. Such waste includes but is not limited to masks, gloves, gowns, empty intravenous tubing bags and vials and other contaminated materials. The above waste shall first be classified as empty and of such quantity that it is not subject to state or federal waste management regulations prior to being handled as infectious medical waste; and
- 2.58.9 Any other infectious medical waste that can present a significant danger of infection because it may reasonably be expected to be contaminated with etiologic agents.
- 2.59 “Infectious medical waste generator” shall mean a person who generates infectious medical waste and includes any hospital, psychiatric hospital, home health agency, hospice, skilled nursing facility, intermediate care facility, intermediate care facility for the mentally retarded, residential health care facility, maternity home or birthing center, free standing ambulatory surgical center, facility owned or operated by health maintenance organization, or stage renal disease treatment center that includes a free standing hemodialysis unit. “Infectious medical waste generator” shall also include rehabilitation hospitals, alcohol and chemical dependency units, infirmaries, emergency care clinics, employee health clinics, blood banks and plasma centers, biomedical laboratories, ambulance/paramedic services, veterinary clinics, and funeral homes, or any other health care facility that the Director designates. “Infectious medical waste generator” does not include a business or single family residence that generates less than 25 pounds of infectious medical waste in a calendar month.
- 2.60 “Infectious medical waste hauler” shall mean a hauler who transports at least 50 pounds of infectious medical waste in a calendar month.
- 2.61 “Junk” shall mean old, used, worn, or discarded metal, glass, paper, plastic or other material that has served its original intended purpose and that is not destined to be recycled.
- 2.62 “Landfill” shall mean a solid waste management facility, which is intended to receive solid waste or its residue after treatment, for permanent disposal.
- 2.63 “Landspreading facility” shall mean a processing facility where sewage treatment plant sludge or other similar solid waste is applied to the soil surface or injected into the upper layer of the soil.
- 2.64 “Leachate” shall mean liquid that has passed through, contacted, or emerged from solid waste and which contains dissolved, suspended, or miscible materials, chemicals, or microbial waste products removed from the solid waste.

- 2.65 “Leachate recirculation” shall mean the recycling or reintroduction of leachate into a landfill.
- 2.66 “Lift” shall mean the vertical thickness of a compacted volume of solid waste and the cover material immediately above it.
- 2.67 “Liner” shall mean a continuous layer of natural or man-made materials beneath or on the sides of a landfill, cell, or surface impoundment to restrict the downward or lateral escape of solid waste or its constituents.
- 2.68 “Liquid waste” shall mean a solid waste that contains “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, latest edition). “Liquid waste” does not include infectious medical waste or hazardous waste.
- 2.69 “Liquid waste hauler” shall mean a hauler of sludge, liquid waste, semi-liquid waste, or used oil.
- 2.70 “Litter” shall mean a quantity of uncontained paper, metal, plastic, glass, or other solid waste.
- 2.71 “Littering” shall mean the throwing, discharging, dropping, placing, depositing, or sweeping of litter or other solid waste on any premises other than in approved storage containers.
- 2.72 “Lower explosive limit (LEL)” shall mean the lowest percentage by volume of a mixture of flammable gases that could propagate a flame in air at 77° Fahrenheit (25° Celsius) and atmospheric pressure.
- 2.73 “Monofill” shall mean a landfill or landfill cell into which only one type of solid waste is placed.
- 2.74 “Municipality” shall mean a county, village, town, city, district, or designated agency thereof.
- 2.75 “Municipal waste landfill” shall mean a landfill or cell permitted pursuant to subchapter 4.1.1(i)(b)(i) to receive household waste, and which may also receive commercial waste, construction and demolition waste, or any other waste approved by the Director.
- 2.76 “Municipal waste” shall mean solid waste generated from households, commerce, industry, construction, and demolition of structures. “Municipal waste” does not include infectious medical waste or hazardous waste.
- 2.77 “Open burning” shall mean a fire whose products of combustion are emitted directly into the air without passing through a stack or chimney.

- 2.78 “Open dump” shall mean any location that has accepted or disposed of solid waste without approval of the Department.
- 2.79 “Operator” shall mean any person who owns, leases, operates or manages a solid waste management facility or a hauler operation.
- 2.80 “Owner” shall mean any person who solely, jointly or severally with others:
- 2.80.1 has legal title to a solid waste management facility, a hauler operation or other property with or without accompanying actual possession thereof; or
- 2.80.2 has charge, care, or control of any solid waste management facility or a hauler operation as legal or equitable owner, agent of the owner, lessor or lessee, or as an executor, administrator, trustee or guardian of the estate of the owner.
- 2.81 “Partial closure” shall mean the closure of a discrete part of a solid waste management facility in accordance with the closure requirements of this regulation. “Partial closure” may include the closure of a trench, a unit operation, a cell, or a pit, while other parts of the same facility continue in operation or may be placed in operation in the future.
- 2.82 “Permit” shall mean a written form of authorization issued in accordance with this Regulation.
- 2.83 “Processing facility” shall mean a solid waste management facility fixed or mobile, where solid waste is stored, classified, consolidated, baled, shredded, sorted, composted, blended, solidified, salvaged, treated, or handled prior to final disposal. “Processing facilities” include, but are not limited to: incinerators; transfer stations; landspreading facilities; composting facilities; surface impoundments; waste oil storage, reprocessing, or refining facilities; recycling facilities, pyrolysis plants; reclamation facilities; resource recovery facilities; and waste tire storage facilities. “Processing facility” does not include scrap metal processing facilities and automobile dismantling yards.
- 2.84 “Putrescible” shall mean organic matter that has a tendency to decompose with the formation of foul smelling by-products.
- 2.85 “Pyrolysis” shall mean the chemical decomposition of material by heat in an oxygen-deficient atmosphere.
- 2.86 “Pyrolysis plant” shall mean a processing facility where pyrolysis occurs.
- 2.87 “Quality assurance” shall mean standards and procedures to ensure that a product, procedure, or facility meets or exceeds desired performance criteria and documentation to verify the results obtained. Quality assurance includes quality control.
- 2.88 “Quality control” shall mean the verification and maintenance of the characteristics of an item or service to contractual and regulatory standard requirements. “Quality control” includes those actions taken before construction, installation, sampling,

analysis, cleaning, removal or other remedial action to ensure that the materials chosen and workmanship comply with the Department-approved quality control plan, engineering plans, reports, and specifications.

- 2.89 “Recycling” shall mean the reuse of all or part of recovered solid waste by resource recovery for manufacturing, agriculture, power or heat production or any other process.
- 2.90 “Recycling facility” shall mean a processing facility designed and operated to store, collect, redistribute, and return processed materials to market.
- 2.91 “Remediation” shall mean the corrective actions taken in the event of a discharge or threatened discharge of a contaminant into the environment.
- 2.92 “Residue” shall mean any solid or liquid that remains after a treatment process.
- 2.93 “Resource recovery” shall mean the processing of solid waste to produce materials or energy that may be used or reused in manufacturing, agriculture, power or heat production, or any other process.
- 2.94 “Resource recovery facility” shall mean a processing facility designed and operated to separate or process solid or liquid waste into usable material including, but not limited to, fuel, heat, or other energy.
- 2.95 “Run-off” shall mean any water, leachate, or other liquid that drains over land from any part of a solid waste management facility.
- 2.96 “Salvaging” shall mean the controlled removal or handling of junk or other waste material for processing, recycling, or other utilization.
- 2.97 “Scrap metal processing facility” shall mean a lot, or portion thereof, tract of land, structure or business used, maintained or operated for the processing or resale of iron, steel, or nonferrous metal and whose principle product is scrap iron, steel, or nonferrous metal for sale, reuse, melting, smelting, or rolling.
- 2.98 “Scavenge” shall mean the unauthorized removal of solid waste from a solid waste management facility.
- 2.99 “Seismic zone” shall mean an area with a ten percent probability that the maximum horizontal acceleration in hard rock, expressed as a percentage of the earth's gravitational pull (g), will exceed 0.10g in 250 years.
- 2.100 “Sewage” shall mean human or animal wastes carried by water or other liquid from a dwelling, business building, institution, industrial establishment, or agricultural, recreational, or other location including, but not limited to, sewer systems, septic tanks, privy vaults, and cesspools, including any groundwater, surface water, and storm water that may be mixed with these wastes.
- 2.101 “Sharps” shall mean any discarded or contaminated article or instrument that may cause puncture or cuts. Such waste includes, but is not limited to, needles, syringes,

pipettes, intravenous tubing with needles attached, glassware, lancets, and scalpel blades.

- 2.102 “Sludge” shall mean any solid, semi-solid, or liquid waste generated from a municipal, commercial, or industrial process, or from a wastewater treatment plant, water supply treatment plant, or air pollution control facility or any other waste having similar characteristics and effect. “Sludge” does not include industrial discharges that are point sources subject to permits under the Utah Water Quality, Utah Admin. Code § R317.
- 2.103 “Solid waste” shall mean garbage, trash, junk, asbestos or asbestos-containing material, hazardous waste, infectious medical waste, industrial waste, inert waste, construction and demolition waste, dead animals, sludge, liquid or semi-liquid waste, leachate, used oil, other spent, or discarded materials, or materials stored or accumulated for the purpose of discarding; materials that have served their original intended purpose, or waste material resulting from industrial manufacturing, mining, commercial, agricultural, household, institutional, recreational, or other activities. “Solid waste” does not include solid or dissolved materials in domestic sewage or in irrigation return flows, or discharges for which a permit is required under state or federal regulations.
- 2.104 “Solid waste disturbance” shall mean an act or omission that results in solid waste endangering or injuring the health of any person or the environment.
- 2.105 “Solid waste management facility” shall mean any place, site, or facility permitted to engage in solid waste collection, receiving, transfer, storage, recycling, treatment or disposal including, but not limited to, processing facilities and landfills. Scrap metal processing facilities are not solid waste management facilities for the purposes of this regulation.
- 2.106 “Special waste” shall mean solid wastes not considered hazardous but may require complex or special management due to characteristics such as their physical, biological, or chemical characteristics, high moisture content or bulk. Special waste includes, but is not limited to, asbestos-containing material, infectious medical waste, dead animals, ash, and tires.
- 2.107 “Surface impoundment” shall mean a processing facility or part of one that is a natural topographical depression, man-made excavation, or diked area formed primarily of earthen materials (although it may be lined with man-made materials) and designed to hold solid waste in semi-solid or liquid form. Surface impoundment includes, but is not limited to, holding, storage, settling, blending or aeration pits, ponds, and lagoons.
- 2.108 “Surface water” shall mean lakes, bays, ponds, impounding reservoirs, springs, rivers, streams, creeks, inlets, canals, and all other bodies of surface water, natural or artificial, fresh or salt, public or private.
- 2.109 “Tank” shall mean a stationary device designed to contain an accumulation of solid waste, liquid or leachate, and constructed primarily of non-earthen material such as wood, concrete, steel, or plastic, that provides structural support.

- 2.110 “Tire” shall mean a heavy rubber or petroleum tube, usually treaded, that is either pneumatic or solid that is used to be fixed about a wheel of a vehicle to reduce shock. Excluded from this definition are tires from devices moved exclusively by human power.
- 2.111 “Tire shreddings” shall mean a tire or waste tire that has been reduced in size through mechanical or other Department approved means where the greatest dimension of a minimum of 60 percent, by weight, of the pieces are no more than six inches and the greatest dimension of any piece is no more than 12 inches.
- 2.112 “Transfer station” shall mean a processing facility where solid waste is transferred for transportation to another solid waste management facility for treatment or disposal.
- 2.113 “Treatment” shall mean any method, technique, or process designed to change the physical, chemical, or biological character or composition of any solid waste or part of it to recover energy or materials from it, or to render it safer to transport, store, or dispose, or to make it amenable for recovery, storage, or to reduce its volume.
- 2.114 “Unauthorized solid waste” shall mean solid waste that a hauler or a solid waste management facility is not permitted to accept for transport, processing, or disposal.
- 2.115 “Underground injection” shall mean the subsurface emplacement of semi-solid or liquid solid waste through a bored, drilled, or driven well or through a dug well, of which the depth of the dug well is greater than its largest surface dimensions.
- 2.116 “Unsaturated zone” shall mean a hydrologic zone in which the interstices between particles of geologic material or all of the joints, fractures, or solution channels in a consolidated rock unit are not filled with water.
- 2.117 “Upgradient well” shall mean a well installed at a point higher in hydraulic potential relative to other points at a solid waste management facility.
- 2.118 “Vector” shall mean any agent capable of transmitting a pathogen from one individual or organism to another. “Vectors” include, but are not limited to: insects, rodents, and other vermin.
- 2.119 “Vehicle” shall mean any motor vehicle, trailer, water vessel, railroad car, or airplane.
- 2.120 “Waste hauler” shall mean a hauler who collects, hauls, or transports garbage, trash, junk, asbestos, construction or demolition waste, or dead animals. The term waste hauler does not include businesses that collect or transport solid waste as an incidental part of their business.
- 2.121 “Waste tire” shall mean any tire that has been discarded or has ceased to serve the purpose for which it was initially intended due to factors such as wear or imperfections.
- 2.122 “Waste tire hauler” shall mean any person who collects and hauls waste tires.

- 2.123 “Wellhead protection area” shall mean the surface and subsurface area surrounding a well or wellfield that supplies a private or public water system through which contaminants could pass and eventually reach the water well or wellfield.
- 2.124 “Wetlands” shall mean areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, under normal circumstances, a prevalence of vegetation typically adapted for life in saturated soil conditions. “Wetlands” shall include but not be limited to swamps, marshes, bogs, and similar areas.
- 2.125 “Working face” shall mean the portion of a landfill where solid waste is discharged or placed and compacted before placement of cover material.

3. GENERAL PROVISIONS

3.1 Jurisdiction of the Department.

- 3.1.1 This regulation is promulgated by the Salt Lake Valley Board of Health as authorized by Utah Code Ann. § 26A-1-121(1) (2009) and Salt Lake County Code of Ordinances § 9.04 (2009).
- 3.1.2 The Department is empowered to enforce this regulation in all incorporated and unincorporated areas served by the Department as authorized by Utah Code Ann. § 26A-1-114(1)(a) (2009) and Salt Lake County Code of Ordinances § 9.04 (2009).
- 3.2 It shall be unlawful for any person not to comply with any regulation promulgated by the Department unless granted an express variance by the Salt Lake Valley Board of Health.
- 3.3 Compliance with this regulation does not constitute a defense if charged with any environmental crime or violation of any local, state or federal law.
- 3.4 Legal action taken by the Department under this Regulation does not preclude prosecution for any environmental crime that may have been committed or violation of any other local, state or federal law.
- 3.5 Nothing in this regulation affects or modifies in any way the obligations or liability of any person under any other regulation or provision thereof issued by the Department, any ordinance issued by Salt Lake County or any municipality located within Salt Lake County or any state or federally issued law, including common law. However, Departmental regulations supersede other existing local and county standards, regulations and ordinances pertaining to similar subject matter that are inconsistent.
- 3.6 Verbal or contractual obligations shall not diminish or remove the owner’s or other responsible person’s obligation to comply with this regulation.
- 3.7 **Severance.** If any section, subsection, sentence, clause, or phrase of this regulation is for any reason held to be invalid or unconstitutional by a decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining

portions of this regulation.

3.8 Waivers and Adjustments to Regulatory Requirements.

- 3.8.1 Where Section 4, Solid Waste Provisions, of this Regulation allows for the Director's discretion to waive a requirement, applicants may request a waiver in writing by outlining the reasons why the solid waste management facility or hauler should be subject to special consideration.
- 3.8.2 Adjustments to the application requirements and regulatory provisions applicable to a solid waste management facility may be made by the Board of Health based on the facility's potential to negatively impact air, soil, water, or wildlife habitat quality or the potential to negatively impact public health or safety.

3.9 Prohibited Acts in General: Except as allowed pursuant to this regulation, it shall be unlawful for any person:

- 3.9.1 To dispose of more than four tires at one time. No person shall dispose waste tires except at a solid waste management facility permitted to accept waste tires.
- 3.9.2 To salvage without approval from the Director or to scavenge at a solid waste management facility;
- 3.9.3 To dispose of solid waste anywhere other than a facility permitted by the Department, the State of Utah, and/or the Federal government, if applicable, to accept that type of waste.
- 3.9.4 To accept solid waste for processing or disposal except at a solid waste management facility that is permitted by the Department, the State of Utah, and/or the Federal government, if applicable, to accept that type of waste.
- 3.9.5 To create, operate, or allow to exist an open dump.
- 3.9.6 To create, cause, or allow insect or rodent propagation, conditions for transmission of disease, any unsanitary condition, or any other health or public safety hazard.
- 3.9.7 To accept, process, or to dispose of hot or smoldering waste or any waste that may pose a hazard to solid waste haulers, their vehicles, or to solid waste management facility employees.
- 3.9.8 To feed domestic animals at a solid waste management facility.
- 3.9.9 To "open burn" solid waste without the approval of the Director.
- 3.9.10 To accumulate, litter, store, collect, transport, transfer, treat, process, utilize, reclaim, recover, recycle, incinerate, or dispose of any solid waste in such a way that a public health or safety hazard or a nuisance is created.

- 3.9.11 To fail to keep records or to falsify records on the types or amounts of solid waste transported, treated, stored, or disposed, including the name and location of the solid waste management facility.
- 3.9.12 To cause a discharge of solid waste or contaminants into water or waterways within Salt Lake County, including wetlands, that violates any requirements of the Utah Water Quality Act, Utah Code Ann. § 19-5-101 (2009) including, but not limited to, the Utah Pollutant Discharge Elimination System (UPDES), the Salt Lake Valley Health Department Wastewater Regulation, #13 or the area-wide or state-wide water quality management plan that has been approved under Section 208 of the Federal Clean Water Act, as amended.
- 3.9.13 To construct any structure on any active or closed landfill or to use any property used as a landfill for any purpose without first obtaining written approval from the Director.

3.10 General Solid Waste Management Facility Siting Standards. A new solid waste management facility shall not be located on or an existing solid waste management facility expanded within:

- 3.10.1 An area which is likely to be impacted by a landslide or mudflow unless it has been demonstrated to the Director that engineering measures have been incorporated in the landfill design to ensure the stability of the site and its constituent wastes.
- 3.10.2 A wetland, unless it has been demonstrated to the Director that:
- (i) No alternative exists that would have a lesser environmental impact;
 - (ii) The site will not cause or contribute to any violation of federal, state, or local regulations, or any water quality standards;
 - (iii) The site will not jeopardize the continued existence of endangered or threatened species; and
 - (iv) According to the appropriate governmental agencies, the site will not result in significant destruction or degradation of wetlands.
- 3.10.3 Two-hundred feet of a fault area, unless it has been demonstrated to the Director that no alternatives exist or that no displacement within the Holocene Epoch has occurred.
- 3.10.4 Any seismic zone, unless it has been demonstrated to the Director that engineering measures have been incorporated that will ensure containment.
- 3.10.5 A one-hundred year floodplain, unless engineering measures have been incorporated in the design of the landfill that will ensure diversion of flood water from the disposal site.

- 3.10.6 Ten-thousand feet of an airport runway used by turbojet aircraft or within 5,000 feet of an airport runway used by only piston-type aircraft, unless it is satisfactorily demonstrated to the Director that the site creates no bird hazard to the aircraft.
- 3.10.7 Recharge zones for drinking water aquifers.
- 3.10.8 One-thousand five-hundred feet of a well head or spring protection area, unless it can be satisfactorily demonstrated to the Director that the site is not within the zone of contribution of the well, well field, or spring.
- 3.10.9 Any dam failure area.
- 3.10.10 One fourth mile of existing incompatible permanent dwellings or structures including residential areas, schools, places of worship, hospitals, and historic structures unless it can be satisfactorily demonstrated to the Director that the facility will not negatively impact public health.

4. SOLID WASTE PROVISIONS

4.1 Solid Waste Management Facilities.

4.1.1 Permit and Approval Requirements and Application Process.

- (i) **Permits and Approval.** No person shall construct or operate a solid waste management facility without obtaining a valid permit issued by the Department according to the requirements set out in part 4.1.1 of this regulation. A solid waste management facility shall maintain a valid permit during the construction, active life, and closure period of the facility. Modification to an existing solid waste management facility shall require Department approval.

a. Processing Facility Permits.

- i. **Processing Facility Permit for Municipal or Industrial Waste.** A Processing Facility Permit for Municipal or Industrial Waste is required for a processing facility which accepts municipal waste or non-hazardous industrial waste and transfers the solid waste for disposal.
- ii. **Construction and Demolition Processing Facility Permit.** A construction and demolition processing facility permit is required for a processing facility that accepts only construction and demolition waste and transfers the waste for disposal.
- iii. **Liquid Waste Processing Facility Permit.** A Liquid Waste Processing Facility Permit is required for a processing facility that blends or mixes liquid or semi-liquid waste or a processing facility that transfers liquid waste to be processed or disposed of at a solid

waste management facility located outside Salt Lake County.

- iv. **Waste Tire Storage Facility Permit.** A Waste Tire Storage Facility Permit is required to operate a storage facility for waste tires.
- v. **Infectious Medical Waste Facility Permit for Storage or Transfer.** An Infectious Medical Waste Facility Permit for Storage or Transfer is required for a processing facility that stores or transfers infectious medical waste.
- vi. **Infectious Medical Waste Treatment Facility Permit.** An Infectious Medical Waste Treatment Facility Permit is required for a processing facility that accepts infectious medical waste from off-site generators for incineration or other treatment.
- vii. **Recycling Facility Permit.** Any other processing facility not mentioned above is required to obtain a Recycling Facility Permit.

b. Landfill Permits:

- i. **Landfill Permit for Municipal or Industrial Waste.** A Landfill Permit for Municipal or Industrial Waste is required for a landfill to accept municipal waste or non-hazardous industrial waste.
- ii. **Construction and Demolition Landfill Permit.** A Construction and Demolition Landfill Permit is required for a landfill to accept only construction and demolition waste.
- iii. **Monofill Permit.** A Monofill permit is required for a monofill that receives solid waste generated by a person other than the monofill's owner.
- iv. **Private Landfill Permit.** A Private Landfill Permit is required for a landfill which accepts solid waste generated only by the facility's owner or operator.

(ii) **Exemptions.** The following facilities or persons are exempt from the permit, approval and bond requirements of part 4.1.1 of this regulation and the fee requirements of Section 5 of this regulation:

- a. Solid waste management facilities permitted by state or federal agencies to accept hazardous waste, except for solid waste management facilities that contain a portion of the facility or cell which receives exclusively non-hazardous solid waste.
- b. Solid waste generated from the extraction, beneficiation, and processing of ores and minerals, including phosphate rock and overburden from the mining of uranium ore, or drilling fluids,

produced waters, and other wastes associated with the exploration, development, or production of crude oil, natural gas, or geothermal energy regulated by state or federal agencies.

- c. Publicly-owned wastewater treatment facilities permitted by the State of Utah or the Federal Government.
- d. Temporary newspaper, aluminum, or other similar collection containers that are completely enclosed, except for a deposit opening, if the size of the container does not exceed thirty cubic yards and the deposited material is removed from the container on a regular basis.
- e. Recycling facilities which recover pre-separated recyclable materials provided that:
 - i. The facility generates less than one ton of residue per day;
 - ii. The facility has design capacity of less than 30 tons per day;
 - iii. The facility does not create hazardous or putrescible residue;
 - iv. At least fifty percent of the material at the facility at the beginning of a calendar year is recycled before the end of that year;
 - v. All materials on-site are recycled within two years of being deposited for recycle; and
 - vi. The facility is designed to properly manage solid waste so as not to create litter or a solid waste disturbance.
- f. Licensed automobile dismantling yards and scrap metal processors.
- g. Clean fill used for grading, provided the material is not contaminated and is used in compliance with all local, state, and federal regulations.
- h. River and stream bank stabilization operations, provided only clean fill is used and provided the stabilization is approved or permitted by applicable state or federal agencies.
- i. Crematoriums or cemeteries if operated according to industry standards.
- j. Incinerators, steam sterilizers, or autoclaves that are located on-site of an infectious medical waste generator and which process only infectious medical waste generated on site.
- l. Generators of waste tires if the waste tires are generated as a result of selling new tires or retreading operations or generated as an incidental part of their business if less than 1,000 waste tires are stored at the

facility or premises at any given time.

1. Agricultural waste if the solid waste is non-hazardous and is generated and disposed of on the premises if the waste was generated in accordance with this Regulation and not within any prohibited areas listed in section 3.10.

(iii) **Permit Application Process.**

- a. **Application Due Dates.** Permit applicants shall submit all documentation and fees required under 4.1.1(iii) of this regulation within the following time periods:
 - i. For a permit to construct a new solid waste management facility, at least ninety (90) calendar days prior to the start of construction.
 - ii. For a permit to operate a new or existing solid waste management facility, at least thirty (30) calendar days prior to commencement of operation.
- b. **Fees.** To be issued a Permit required under part 4.1.1 of this regulation, an applicant shall submit the relevant application fee provided in part 5.2.1 of this regulation.
- c. **Zoning Approval.** An applicant for a permit shall submit to the Department proof of planning or zoning approval for a facility from the planning or zoning agency having jurisdiction over the location.
- d. **Plans and Specifications.** Unless waived by the Director because of the size, simplicity or location of the solid waste management facility, the following plans and specifications shall be submitted to the Department for review and permit approval.
 - i. **Processing Facilities.** If the applicant is applying for a processing facility permit as set forth in 4.1.1(i)(a), the applicant shall submit a Report pursuant to subpart 4.1.2(i) and a Closure and Post Closure Plan pursuant to subpart 4.1.2(ii).
 - ii. **Landfills.** If the applicant is applying for a landfill permit as set forth in chapter 4.1.1(i)(b), the applicant shall submit a Report pursuant to subpart 4.1.3(i) and a Closure and Post Closure Plan pursuant to subpart 4.1.3(ii).
- e. **Public Notice.** For permit issuance, the applicant shall submit proof that it has published notice of the proposed solid waste management facility in a newspaper of general circulation as specified in this chapter. Notice shall be placed in a newspaper of general circulation in the State of Utah for at least three consecutive days. The notice

shall include:

The address of the proposed solid waste management facility;

- i. That application was made with the Department to construct and/or operate a solid waste management facility at the location;
 - ii. The date application was made with the Department.
 - iii. A reasonably specific description of the activities proposed to take place at the facility;
 - iv. A statement to the effect that the facility's application along with the facilities plans and specifications may be viewed by the public at the Salt Lake Valley Health Department's Division of Environmental Health located at 788 E. Woodoak Lane in Murray, Utah, 84107; and
 - v. A statement to the effect that the public may request a hearing on the matter by contacting the Salt Lake Valley Health Department within 10 days of the last date of published notice. A hearing will be held at the Director's discretion.
- f. Public Hearings.** Before permit issuance, the Director may require the applicant to hold or participate in one or more public hearing(s). A public hearing may be called for by the Department or by any member of the public with the consent of the Director.
- g. Bond and Financial Assurances.** For permit issuance to construct or operate a solid waste management facility, an applicant shall acquire and file with the Department a surety bond or escrow in accordance with the requirements set forth in subpart 4.1.1(iv) of this regulation. If deemed necessary, the Director may require an applicant to submit additional financial assurances. An applicant who desires to construct or jointly operate both a landfill and a processing facility on the same or contiguous property may construct or operate the facilities under a single bond and is not required to submit duplicate information in applying for more than one permit.

(iv) Application for Department Approval. Department Approval applications shall be made at least thirty (30) calendar days prior to the start of construction or modification of design, operation, or closure activity.

v. Bond and Financial Assurance Requirements.

- a. Bonds and financial assurances required pursuant to chapters 4.1.1(iii)(g) and 4.1.1(v) shall be filed in favor of the Department and ensure that the operation, maintenance, closure and post-closure of the solid waste management facility will be in accordance with this

regulation and the facility's Department-approved plans and specifications.

- b. Bond and financial assurance cost estimates shall be based on:
 - i. A third party performing closure and post-closure care at any time during the active life of the solid waste management facility and adjusted annually for inflation until final closure;
 - ii. The disposal costs for the maximum amount of solid waste that will be stored at the facility at any given time.
- c. The cost estimate of a bond or other financial assurance shall include, but not be limited to:
 - i. The cost of obtaining, moving, and placing a final cover over the landfill or the cost of moving, transporting or treating and disposing of the solid waste;
 - ii. The cost of vegetating the landfill or the cost of removing the solid waste from the processing facility and leaving the property in a clean condition and free from contamination;
 - iii. The cost of installing and maintaining any groundwater monitoring wells, gas monitoring or any other required devices, and the costs of sampling and analysis for the time interval, including closure and post-closure periods, required in part 4.1.4(iii) and chapter 4.1.5(iii) g. and as approved in the plans and specifications;
 - iv. The cost of maintaining the integrity of the final cover of the landfill for the closure period; and
 - v. The cost of corrective action for known releases and any other closure and post-closure requirements.
- d. Exemptions.** Solid waste management facilities whose debts and liabilities are the debts and liabilities of a municipal, state, or federal government shall be exempt from the bond requirements of this regulation but are not exempt from the financial assurance requirements.

vi. Department Review. Issuance of a permit shall depend upon a determination by the Director that plans, specifications, and other information required under this regulation comply with the requirements of this regulation and with state and federal rules and regulations.

vii. An applicant who jointly operates both a disposal facility and a processing facility on the same or a contiguous property may operate the facilities under a single permit and bond. If such a provision is made, the Department shall adjust

the permit fee and bond to ensure the requirements of this regulation are met. In no case shall the permit fee and bond exceed the total amount if the application for the landfill and processing facility were made separately.

4.1.2 **Processing Facilities Plans and Specifications.**

- (i) **Report Requirements.** Applicants shall report the information listed in chapters 4.1.2 (i)(a)-(z) of this regulation to the Department upon application for a permit to construct or operate a processing facility. The Director may require some of the following items to be prepared by a licensed professional engineer.
- a. Contact information for the owner and operator of the processing facility as well as managers on duty and in charge of actual operation and maintenance of the processing facility. Contact information shall include names, email addresses, mailing addresses, and telephone numbers.
 - b. Evidence of an ownership or a leasehold interest in the proposed site including a legal description of parcel boundaries including total area of the property.
 - c. A plat map or aerial photograph that accurately shows the exact location of the proposed facility, its specific boundaries, and all homes, businesses, and structures within ¼ mile of the site boundaries. The plat map or aerial photograph shall also indicate: road access to the facility, the location of fencing or other means of limiting access, the availability of shelter and sanitary facilities for operating personnel, internal roads, equipment flow patterns, location of where salvaged materials will be kept, general and irregular topography, and the location of existing and proposed utilities servicing the processing facility.
 - d. Detailed drawings and specifications of all fencing, buildings, structures, equipment, storage areas, and other facility plans.
 - e. The method of acceptably screening the facility from the surrounding area.
 - f. The present and future population and area to be served by the facility.
 - g. A description of the anticipated present and future type, moisture content, quantity, and sources of solid waste to be processed at the facility. This description shall include a breakdown of those sources of solid waste within Salt Lake County, those outside Salt Lake County and those outside the State of Utah.
 - h. The processing facility's proposed method of solid waste volume reduction, treatment, or processing to be undertaken at the facility,

including but not limited to incineration, composting, compaction, compression, baling, shredding, grinding, tamping, separating, classifying, drying, and/or blending.

- i. The anticipated types of vehicles used to transport solid waste into and out of the processing facility and the procedures for loading and unloading the vehicles.
- j. The estimated frequency of vehicle deliveries of solid waste to the processing facility and the frequency of removal of residue and salvaged or composted materials.
- k. The names and locations of solid waste management facilities where solid waste processed at the facility will be hauled.
- l. Design criteria, rated capacities, expected performance data, and noise emission data.
- m. The primary and secondary types and sources of fuel to be used by the processing facility.
- n. The daily quantity and characteristics of residue and the disposal location for all residue including but not limited to fly and bottom ash residue, by-products resulting from air pollution control devices, and quench water, and the method in which each residue will be managed and disposed;
- o. Identify and explain the appurtenances and procedures intended to:
 - i. Undertake proposed daily cleanup procedures.
 - ii. Handle heavy or bulky waste, special waste, or waste that may require special handling.
 - iii. Store solid waste beyond the end of the working day.
 - iv. Control or prevent dust, odors, fire, explosions, noise, and wind-blown materials.
 - v. Handle solid waste and repairs if there is a major breakdown including power failure, equipment failure or other failure inhibiting operation of the facility.
- p. The processing facility's policy on maintaining an operating record of the amounts and types of solid waste accepted at the facility and how the facility will document when radioactive, hazardous, liquid, or any other unauthorized solid waste is detected or rejected at the facility.

- q. The processing facility's policy on personnel training to prevent and address emergencies, including safety clothing and equipment, communication methods, precautions and procedures to be employed in the event of a release or discharge such as provisions for containment, cleanup, decontamination, and Department notification.
- r. The processing facility's policy outlining procedures to exclude and isolate radioactive, hazardous, liquid, or any other unauthorized solid waste not specifically permitted to be processed at the processing facility. The policy shall include protocols and provisions for:
 - i. Training of facility personnel in recognizing radioactive, hazardous, liquid, and any other unauthorized solid wastes;
 - ii. Random inspections of incoming loads;
 - iii. Inspections of all suspicious loads;
 - iv. Procedures for notifying the Department of the presence of radioactive, hazardous, liquid, and any other unauthorized solid waste.
- s. The processing facility's proposed method of collecting, treating and disposing any liquid waste including leachate, and other residues resulting from the operation of the processing facility.
- t. The processing facility's proposed method of salvaging recycling, resource recovery, or reclamation activities to be operated at the facility, on the incoming solid waste and the outgoing residue;
- u. The processing facility's proposal for the disposition or utilization of processed compost or waste material, including copies of signed contracts for utilization or other evidence of assured utilization of composted or processed waste materials.
- v. The processing facility's proposed plan for sampling and analysis of fly and bottom ash generated at the processing facility; including the frequency of sampling and analysis.
- w. Emissions data including expected type of emissions, the amount of each emission, any chemical transformations of the emissions which may result after their release, dispersion patterns of the emissions, fall out and wet fall of the emissions, the impact of the emissions on non-attainment area, the type of emission monitoring including stack monitoring, the potential health impacts of the emissions and the number of people or the area which may be affected by the emissions or acceptable documentation submitted to and accepted by Utah Department of Environmental Quality, Division of Air Quality.

- x. Emissions and gas monitoring plans and frequencies if it is determined by the Director that the processing facility's operation could potentially impact air quality or pose a hazard.
- y. The processing facility's proposed methods and procedures for decontaminating equipment and containers.
- z. The processing facility's water monitoring plan as described in subpart 4.1.6(i) of this regulation if the Director determines that the processing facility could potentially impact groundwater or surface water quality.
- aa. **Landspreading applicants.** In addition to the requirements set forth in chapters a.- z. aa. above, the report submitted by an applicant seeking permit approval for a landspreading facility shall also:
 - i. Describe the benefits of the material to be landspread.
 - ii. Describe the potential impact on human and animal health from:
 - 1. Heavy metal and toxic organic chemical uptake by crops,
 - 2. Potential loss of crop land due to the landspreading of the solid waste;
 - 3. Degradation of surface and groundwater quality due to the landspreading facility;
 - 4. Impact on soil biota;
 - 5. Impact on existing or future vegetation;
 - 6. Affect on the food chain including wildlife;
 - 7. Pathogen impact;
 - 8. Odors and potential vector attraction; and
 - 9. Any other nuisance that may be created by the landspreading facility.
 - iii. Identify and describe how the facility will address the odor impact on down wind residents and other communities surrounding the facility that could be affected.
 - iv. Identify the depth of the bedrock of the proposed site and the seasonal high groundwater.
 - v. Describe how snow will be removed prior to landspreading, how run-on and run-off from snow melt or other precipitation will be

handled, and provide a description of the surface drainage patterns of the proposed site.

- vi. Provide a chemical analysis of the soils of the proposed landspreading facility including surface soils and soils to a depth of twelve inches below the plowing depth. The analysis shall include the following chemical parameters: pH, total Kjeldahl nitrogen, ammonia, chlorine, total phosphorus, total potassium, total solids, arsenic, cadmium, copper, total chromium, mercury, nickel, lead, selenium, zinc, and polychlorinated biphenyls, reported on a dry weight basis except for pH and total solids.

(ii) **Closure and Post-Closure Plan.**

- a. Permit applicants shall prepare a written closure and post-closure plan that describes the monitoring, routine maintenance, and other steps necessary to close the processing facility at any point during the facility's active life and complete post-closure activities in accordance with the requirements of subpart 4.1.4(iii). The closure and post-closure plan shall include methods and procedures that will be used to close the facility.
- b. No modification to the closure and post-closure plan shall be made after it is approved by the Department, unless approved by the Director.
- c. A copy of the approved closure and post-closure plan shall be kept at the facility or a designated alternative location and at the Department throughout the closure and post-closure care periods.

4.1.3 **Landfill Plans and Specifications.**

- (i) **Report Requirements.** Applicants shall report the following information to the Department upon application for a permit to construct or operate a landfill. The Director may require some of the following items to be reported by a licensed professional engineer.
 - a. Contact information for the owner and operator of the landfill as well as managers on duty and in charge of actual operation and maintenance of the landfill. Contact information shall include names, email addresses, mailing addresses, and telephone numbers.
 - b. Evidence of land ownership, lease agreements, and a copy of agreements or permission to use the property for a landfill.
 - c. The number of personnel to be employed at the landfill.
 - d. Hours of operations at the landfill.

- e. The expected life span of the landfill, and the use of the land following its completion.
- f. The present and future population and area to be served by the proposed landfill.
- g. A plat map, or aerial photograph and/or blueprint that accurately shows the exact location and boundaries of the proposed landfill, all homes and business structures within ¼ mile of the facility; current land use and zoning within ¼ mile of the facility; and runways within 5000 feet of the landfill. The plat map or aerial photograph shall also indicate the location of all: internal and external all-weather access roads; unloading areas; on-site facilities including restrooms for employees; utility connections; wells, watercourses, and surface drainage channels on the landfill and within ¼ mile of the landfill's boundaries; rock outcroppings within landfill boundaries; access roads to the landfill; general and irregular topography, and other applicable details. All such details shall be identified and indicated on the plat map or aerial photograph.
- h. A description of historical and current land use and the total area of the proposed landfill;
- i. A description of conditions at and improvements to the landfill to control run-on and run-off.
- j. A soil description including pH, metal concentrations for the metals listed in Appendix A of this regulation, and the ion exchange capacity to a depth of at least five feet (1.5 meters) below the proposed landfill or proposed excavations and a detailed description of geology of the area. Sample collection shall be obtained by soil borings, trenching, or other methods approved by the Director.
- k. A description of surface water within ¼ miles (402 meters) of the landfill, including seasonal variations, and a description of minimum and maximum groundwater elevations throughout the landfill site, groundwater flow patterns, and groundwater quality and quantity.
- l. A description of liners to be installed to prevent migration of waste, leachate and other contaminants;
- m. The availability, amounts, source, and characteristics of cover material and the cover design, including cover material needed for emergency fire control and closure.
- n. Potential leachate and decomposition gas generation, including the amount and physical and chemical characteristics of the leachate and decomposition gas, and the methods of control, monitoring, collection, treatment, and disposal.

- o. The anticipated present and future type, quantity (daily and total), and source of the solid waste to be deposited at the landfill including those sources within Salt Lake County, those sources outside Salt Lake County, and those sources outside the State of Utah.
- p. The method and pattern of landfilling.
- q. Anticipated provisions for:
 - i. Equipment (brand and model) available for efficient excavating, earth moving, spreading, compaction, and other needs;
 - ii. Fencing and other provisions made for control of access and the prevention of scattering of waste material by wind;
 - iii. Provisions for fire, dust, bird, vector, and odor control;
 - iv. Provisions made for traffic control and user notification requirements; and
 - v. Methods of salvaging or recovering wastes for recycling.
- r. The landfill's policy on maintaining an operating record of the amount and type of solid waste accepted.
- s. The landfill's policy on safety and emergency response, including communication procedures.
- t. The landfill's policy on employee training for emergency response.
- u. The landfill's policy on the frequency of inspecting incoming loads based on random selection of loads.
- v. The landfill's policy on controlling run-on and run-off.
- w. The landfill's policy on handling special wastes.
- x. The landfill's policy on procedures to exclude hazardous, liquid, or other unauthorized wastes from entering the facility, including:
 - i. Specific provisions on how to inspect and recognize characteristics of suspicious loads;
 - ii. Specific provisions on how to recognize hazardous wastes and unauthorized wastes;
 - iii. Specific provisions for immediately notifying the Department in writing when hazardous or unauthorized wastes are discovered at

the landfill or if they are rejected; and

- iv. Specific provisions for isolating and handling special or other unauthorized waste.
- v. Specific provisions for maintaining inspection records of loads containing unauthorized waste.
- y. The landfill's water monitoring plan as described in subpart 4.1.6(i) of this Regulation.

(ii) **Landfill Closure Plan and Post-Closure Plan.**

- a. Landfill permit applicants shall prepare a written closure and post-closure plan that describes the monitoring, routine maintenance, and other steps necessary to close the landfill and all cells of the landfill at any point during the facility's active life and complete post-closure activities in accordance with the requirements of subpart 4.1.5(iii).
- b. The closure and post-closure plan shall include:
 - i. A description of the methods, procedures, and processes that will be used to close each cell of the landfill including but not limited to:
 1. The maintenance and control of the landfill and the elimination of the escape of waste, leachate, decomposition products and gases, and runoff;
 2. The final facility topographic and drainage plan;
 3. The source and composition of cover material, sloping, landscaping, and vegetation;
 4. The specific engineering procedures for on-site structures;
 5. The description of the monitoring and maintenance activities including frequency of performance required in chapters 4.1.5(iii)(g) for each landfill or cell closed;
 6. The name, address, and telephone numbers of the persons to contact about the landfill during closure or post-closure; and
 7. A description of the planned uses of the property during post-closure care of the property.
 - ii. An estimate of the maximum portion of operation that will be open at any time during the active life of the landfill and the closing

sequence of phased operations;

- iii. An estimate of the maximum inventory of solid waste to ever exist on-site over the active life of the landfill; and
 - iv. A schedule for completion of all activities necessary to satisfy the closure and post closure requirements.
- c. No modification to the Department-approved closure and post-closure plan shall be made without the approval of the Director.
 - d. A copy of the approved closure and post-closure plan shall be kept at the facility or a designated alternative location and at the Department throughout the closure and post-closure care periods.

4.1.4 Processing Facility Minimum Design, Construction, Operating, and Closure Requirements.

(i) Processing Facility General Design and Construction Requirements.

- a. A processing facility shall be situated to minimize interference with other community activities.
- b. The Director may require the installation of ground water monitoring wells prior to construction and operation of a processing facility or any time after the facility has commenced operation.
- c. A processing facility located within 500 feet (152.5 meters) of a residence shall be obscured by a fence at least eight feet (2.4 meters) high with 75 percent screening. This rule may be modified or waived in writing if the Director is satisfied that the public or environmental health will not be adversely affected.
- d. All-weather roads negotiable by loaded vehicles shall:
 - i. Be provided at the facility;
 - ii. Connect the facility with public roads,
 - iii. Be designed and maintained to prevent traffic congestion and hazards, and
 - iv. Be designed to minimize air and noise pollution.
- e. A processing facility shall be roofed and enclosed on at least three sides to control dust, litter, and other solid wastes from escaping the premises.

- f. A processing facility shall have a scales or another Department-approved method to accurately determine the amount of solid waste received at the facility.
- g. The processing facility shall have an unloading area of adequate size and design to facilitate the rapid unloading of solid waste from collection vehicles.
- h. **Drainage.** The processing facility shall be designed so surface drainage is diverted around or away from the operational areas of the facility.
- i. **Surfaces.** Floor surfaces shall be constructed of impervious materials, easily cleanable by flushing and equipped with floor drains or a sump pump connected to a sanitary sewer system or an equivalent system approved by the Director to facilitate the removal of moisture.
- j. **Shelter.** Adequate drinking water, shelter from the elements, and sanitary facilities shall be available at the facility for personnel.
- k. **Surface Impoundments.** In addition to the requirements set forth in 4.1.4(i)(a)-(i) above, surface impoundments shall comply with the following design and construction requirements:
 - i. Surface impoundments shall be greater than two feet deep and shall be designed and constructed with a minimum two foot freeboard consisting of soil or other material approved by the Director. The free board shall at all times extend two feet above the top of the highest point of the waste within the surface impoundment.
 - ii. Surface impoundments shall be constructed with a liner system to minimize percolation. The liner system shall either be constructed of an impermeable clay having a hydraulic conductivity of 1×10^{-7} (or less) centimeters per second or a synthetic or man-made liner approved by the Director.
 - iii. The base of the surface impoundment shall be a minimum of five feet (1.5 meters) above both the seasonal high groundwater table and the top of bedrock.
 - iv. A minimum of one upgradient and two down gradient groundwater monitoring wells, or more if required by the Director shall be installed at the surface impoundment site. Groundwater monitoring wells shall be installed and sampled according to the requirements set forth in part 4.1.6. In lieu of or in addition to groundwater monitoring wells, the Director may require a secondary liner system for the surface impoundment.

1. **Landspreading Facilities.** In addition to the requirements set forth in chapters a. – j. above, landspreading facilities shall comply with the following design and construction requirements:

- i. A landspreading facility may not be located within 50 feet of any property line or within 500 feet of any residence or place of business, except where the property line or residence is the residence of the owner.
- ii. A landspreading facility may not be located within 200 feet of any potable water supply or surface water, or within 25 feet of any drainage swale or surface drainage system.
- iii. The owner or operator may be required by the Director to install a minimum of one up-gradient and two down-gradient groundwater monitoring wells in accordance with part 4.1.6 of this regulation.

(ii) **Processing Facility General Operating Requirements.**

- a. The owner or operator of a processing facility shall comply with all plans, policies, and representations submitted to the Department pursuant to the Report requirements in subpart 4.1.2(i) of this regulation.
- b. **Signage.** A sign shall be posted at the entrance of the processing facility that indicates the name, permit number, hours of operation, penalty for unauthorized use, necessary safety precautions, types of waste accepted or prohibited, and any other pertinent information that will ensure the health and safety of the public.
- c. **Minimum Operating Standards.**
 - i. A processing facility shall be equipped, operated, and maintained to minimize interference with other community activities.
 - ii. Solid waste shall be confined to the loading, unloading, and processing areas of the facility.
 - iii. Dust, odor, and noise resulting from the unloading of solid waste and the operation of the processing facility shall be controlled at all times to comply with applicable laws.
 - iv. Accumulations of solid waste shall be controlled to minimize odors and prevent infestation by insects or rodents, and supplemental effective vector control measures shall be initiated immediately by the operator if necessary to prevent or eliminate insects and rodents.

- v. All residue from the processing facility including all solid waste remaining at the end of the working day shall be promptly disposed of at an approved landfill or stored in a manner consistent with subchapter 4.1.4(ii)(d)(iii) of this regulation.
- vi. Fly and bottom ash residue from solid waste incinerators or other processing facilities shall be analyzed by the owner or operator for hazardous characteristics prior to disposal at a landfill. Sampling analysis shall be conducted at the frequency stated in the processing facility's plan required by chapter 4.1.2(i)(v).
- vii. The facility owner or operator shall effectively collect, treat, and dispose of leachate and drainage from the facility. Leachate shall be sampled and analyzed prior to disposal and shall not be allowed to cause or contribute to contamination of groundwater quality; to drain or discharge into surface water except pursuant to Utah Pollution Discharge Elimination System Permit, or violate any established surface water standards.
- viii. Unless otherwise approved by the Director, all waste water from the processing facility shall be discharged into the sanitary sewer upon obtaining permission from the publicly owned treatment works.
- ix. The owner or operator of the Processing Facility shall divert surface water run-on away from facility operations.
- x. **Water Quality Monitoring.** The Director may require the owner or operator of a processing facility to monitor the effects the facility has on ground water and surface water quality by requiring the processing facility to conform to the requirements of part 4.1.6 of this regulation.

d. **Vehicles.**

- i. Unloading of collection vehicles shall take place only within the enclosed structure or designated areas approved by the Director.
- ii. Collection and transfer vehicles shall be loaded and operated to prevent dropping, leaking, sifting, blowing, or discharge of solid waste.
- iii. A sufficient number of transfer vehicles or trailers shall be available to prevent excessive storage of solid waste at the processing facility. Vehicles containing garbage shall be removed or emptied as often as necessary to maintain good sanitation, in no case less than every twenty four hours.

- iv. Solid waste transfer vehicles shall be cleaned as frequently as necessary to prevent objectionable odors, vector conditions, or any other nuisance from forming.

e. Permitted and Unauthorized Waste.

- i. A processing facility shall accept and process only those types of solid waste for which it was permitted by the Department.
- ii. Facility personnel shall be trained according to the facility's policy on how to recognize radioactive, hazardous, liquid, or any other unauthorized solid waste and shall be instructed to notify the Department immediately when any of these solid wastes are encountered.
- iii. Radioactive, hazardous, liquid or any other unauthorized solid wastes shall not be accepted at a processing facility. The Department shall be notified immediately if hazardous waste is refused by the facility or is discovered by the owner or operator of the facility.
- iv. Solid waste that is burning or at a temperature likely to cause a fire shall not be accepted at the processing facility.
- v. Any large, heavy, or bulky items that cannot be handled in the routine operation of the facility shall be excluded unless special provisions are made to handle the waste.

f. Load Inspection.

- i. At least one percent of the incoming loads to the processing facility shall be randomly selected for inspection.
- ii. The processing facility owner or operator shall inspect all suspicious loads arriving at the facility.

g. Composting and Salvaging.

- i. Materials resulting from composting or similar processes and offered for sale or use by the general public shall:
 - 1. contain no pathogenic organisms,
 - 2. not be capable of reheating upon standing,
 - 3. be innocuous,
 - 4. be relatively odor free,

5. contain no sharp particles or objects that would cause injury to persons handling the compost or material, and
 6. not otherwise endanger the public health.
- ii. Salvaging shall be conducted in a way that prevents injury and interference with required facility operation and prevents the creation of a nuisance or vector harborage.
 - iii. Salvaged material not confined to an area approved by the Director shall be removed from the facility within twenty four hours of being salvaged.
 - iv. Drugs, cosmetics, foods, beverages, hazardous wastes or other similar materials capable of impairing public health shall not be salvaged unless permitted by the Director.
- h. **Maintenance.** Adequate provisions shall be made for routine operational maintenance of the processing facility and all appurtenances.
- i. Processing facilities, including access roads, shall be cleaned as often as necessary to prevent conditions creating a health hazard, littering or a nuisance.
 - ii. All plumbing shall be properly maintained and the floors drained and free of standing water; and
 - iii. All utility services shall be properly maintained.
 - iv. All operational equipment shall be repaired quickly and efficiently.
- i. If for any reason the processing facility is rendered inoperable, a Department approved alternative method shall be used for solid waste processing or disposal.
- j. **Emergency Management.**
- i. Emergency procedures shall be adopted and provided to employees in the event of any discharge of solid waste including the emergency clean-up procedures, decontamination procedures, and notification procedures of emergency and Department personnel.
 - ii. Equipment shall be provided to control accidental fires and arrangements shall be made with the local fire protection agency to provide emergency services when needed.

- iii. Methods of communication shall be provided for emergency purposes.
- k. **Supervision.** During hours when the public has access, the processing facility shall be operated under the close supervision of responsible individuals who are familiar with the requirements and operational procedures of the facility.
- l. **Access.**
 - i. Public access to the facility shall be limited to hours of operation;
 - ii. Access shall be restricted where explosion hazards exist or where hazardous materials are stored or handled.
- m. **Operating record.** The processing facility's owner or operator shall keep and submit to the Department as requested an operating record that includes:
 - i. The types and amounts of solid waste handled, composted, processed, treated or incinerated at the facility;
 - ii. The amount of fuel, compost, or other recovered or recyclable material produced from solid waste at the facility;
 - iii. The amount and composition of by-products or residue removed;
 - iv. The disposition of by-products or residue;
 - v. Combustion temperatures and residence times;
 - vi. Stack testing and other air pollution monitoring results;
 - vii. All incoming load inspections conducted at the facility;
 - viii. Groundwater monitoring, testing, or analytical data gathered pursuant to the requirements in part 4.1.6 of this regulation.
 - ix. Inspection records, training records, and notification procedures required in chapter 4.1.4(ii)(e) of this regulation; and
 - x. Other information on the operation of the processing facility not specifically mentioned in this regulation that is required by the Director.
- n. **Surface impoundments.** In addition to the requirements set forth in chapters a. – m. above, the owner or operator of a surface impoundment shall also comply with the following operating

requirements:

- i. Baseline water quality data listed in Appendix A of this regulation shall be established prior to depositing any solid waste at the surface impoundment.
- ii. Soils at the facility shall be analyzed for pH and the metals listed in Appendix A prior to depositing any solid waste at the surface impoundment.
- iii. Further chemical analysis shall be undertaken as deemed necessary by the Director prior to depositing waste at the surface impoundment.
- iv. The owner or operator of a surface impoundment shall verify that the cleaning, blending, or removal of any sludge from the surface impoundment does not in any way damage the integrity of the liner system.
- v. Surface impoundments shall be completely emptied annually unless otherwise approved by the Director. The Department shall be notified seven days prior to emptying to facilitate inspection of the liner prior to refilling. Any damage to the liner shall be repaired prior to placing or filling the surface impoundment with any liquid, semi-liquid, or other waste.
- vi. Samples of groundwater from monitoring wells or other monitoring devices shall be collected and analyzed on a quarterly basis, unless otherwise approved by the Director, for the following parameters: chloride, nitrate, sulfate, total hardness, alkalinity, total organic carbon, chemical oxygen demand and the field parameters listed in Appendix A.
- vii. Samples of groundwater from monitoring wells or other monitoring devices shall be collected and analyzed on a semi-annual basis, unless otherwise approved by the Director, for the priority metals listed in Appendix A and for persistent organic compounds as determined by the Director.
- viii. A report shall be submitted annually to the Department that includes the results of all required analyses, the sources and quantities of all materials placed in the surface impoundment, the date and the amounts of material removed from the impoundment, and the location of where the material was taken.
- o. **Landspreading Facilities.** In addition to the requirements set forth in chapters a. – m. above, the owner or operator of a landspreading facility shall also comply with the following operating requirements

and prohibitions:

- i. Materials determined hazardous by the Department, State of Utah, or the federal government shall not be landspread.
 - ii. On an interval approved by the Department, the landspreading facility owner or operator shall sample and provide for a chemical analysis of Appendix A parameters from:
 1. Groundwater obtained from monitoring wells,
 2. The sludge at the facility. Sludge shall be analyzed for nitrogen both upon receipt at the facility and after processing. Such samples shall be performed on grab samples that are immediately frozen upon sampling and remain frozen throughout the storage period;
 3. The landspreading facility's soils; and
 4. The vegetation grown at the facility.
 - iii. The owner or operator of the landspreading facility shall provide to the Department the loading rates and the loading capacities of the landspreading facility, its proposed maximum levels limits and provide assurance that the Department-approved soil limits will not be exceeded.
- p. **Waste Tire Storage Facility Requirements.** In addition to the requirements set forth in chapters a.- m. above, waste tire storage facilities shall also comply with the following operating requirements:
- i. Waste tire storage areas shall be fenced to control access.
 - ii. Tires shall be stored in a way that affords fire protection by limiting the storage area or tire piles to 5,000 square feet of contiguous tires with an elevation not to exceed ten feet.
 - iii. A space at least fifty feet wide shall be provided and maintained between each storage area or waste tire pile. A distance of forty feet from the perimeter of the property and fifty feet from all buildings shall be provided and maintained. Such space shall not be obstructed by buildings or debris and shall not contain weeds, trees, or other flammable materials.
 - iv. Equipment, soil and other Department approved materials shall be readily available in quantities adequate to extinguish fires at the facility.

- v. The facility shall employ vector control measures which may include:
 - 1. Covering waste tire storage areas with Department approved impermeable barriers that give protection from an accumulation of precipitation;
 - 2. Treating with Department approved chemicals;
 - 3. Shredding tires to eliminate vector breeding, or
 - 4. Storing tires in a way that allows for complete drainage.
- vi. Approach roads and spacing between tire piles shall be maintained so that fire fighting equipment can easily access fires.

(iii) **Processing Facility Closure and Post Closure Requirements.**

- a. The owner or operator of the processing facility shall close the facility in a way that the need for further maintenance and the post-closure formation and release of leachate, gases, or odors to the air, groundwater, or surface water is minimized.
- b. At least 90 calendar days prior to the close of the processing facility, the owner or operator shall notify the Department of closure. An inspection shall be made by the Director to determine corrective repair and any additional closure and post-closure care needed.
- c. At least 30 calendar days prior to closure, the owner or operator of the facility shall notify users of the facility of closure. If the users are a municipality, business, or hauler the notification shall be given directly. If the general public uses the processing facility a notice shall be posted at the facility.
- d. The owner or operator of the facility shall begin closure activities of the facility in accordance with the closure plan approved by the Director no later than 30 calendar days following final receipt of solid waste at the facility. In addition to the closure and post closure activities approved in the closure and post-closure plan, the owner or operator shall conduct closure and post-closure care consisting of but not limited to:
 - i. Removal of all solid waste material and waste residues from the facility property, unless the facility is also permitted as a landfill;
 - ii. Monitoring of groundwater and surface water pursuant to the water monitoring requirements of part 4.1.6 of this regulation for a period of time determined by the Director;

- iii. The sampling and analysis of soil to assure no contamination of soils has occurred; and
- iv. The construction of additional fencing or other appropriate structures to limit access and the posting of signs indicating closure of the facility and alternative disposal locations.
- e. Following closure and post-closure care of the processing facility, the Director shall determine if the closure and post-closure care has been completed in accordance with the closure and post-closure plan. The Director may require, prior to final approval, that a qualified engineer certify the closure.

4.1.5 **Landfill Construction, Design, Operating, and Closure Requirements.**

(i) **Landfill Design and Construction Requirements.**

- a. An owner or operator of a landfill shall install groundwater monitoring wells and establish a water quality sampling and analysis program of ground and surface water prior to construction of a landfill.
- b. Landfills shall be designed in a way that protects the environment and [the health and safety of employees, patrons, and the public.
- c. The landfill shall be constructed to control run-off from the active portion of the landfill during peak water discharges from a 24 hour 25 year storm. Landfill run-off control shall include suitable channeling devices, including, but not limited to, ditches, berms, or dikes, to divert surface water run-off from the land area contiguous to the landfill.
- d. A liner system shall be installed in a new landfill or new cell to minimize potential leachate migration. The liner system shall prevent both vertical and horizontal migration and shall either be constructed of clay having a hydraulic conductivity of less than or equal to 1×10^{-7} centimeters per second or a synthetic or manmade liner approved by the Director. Requests for a waiver to this requirement must be supported by an engineering report.
- e. The owner or operator of a landfill shall install gates and fencing around the facility to restrict unauthorized use of the facility.
- f. **Asbestos Waste Landfills.** Asbestos waste landfills shall be screened by fencing or berms and shall be posted with warning signs on all four sides. The wording "CAUTION ASBESTOS WASTE" or similar wording shall be printed on the signs with lettering at least three inches high.

(ii) **Landfill Operating Requirements.**

- a. The owner or operator of a landfill shall comply with all plans, policies, and representations submitted to the Department pursuant to the Report requirements in subpart 4.1.3(i) of this regulation.
- b. Landfills shall be operated in a way that protects the environment and the health and safety of employees, patrons, and the public.
- c. The owner or operator of a landfill shall provide its employees the following:
 - i. A safety manual and instruction on the application of the manual's procedures; and
 - ii. Personal safety devices including, but not limited to, hard hats, gloves, safety glasses and safety footwear.
- d. The owner or operator of a landfill shall maintain and make available to the Department upon request operating records including:
 - i. Inspections of incoming loads conducted by landfill personnel;
 - ii. Employee safety trainings;
 - iii. The amount of solid waste accepted at the landfill for disposal as determined by weighing incoming loads, measuring the volume of incoming loads, or estimating the area filled by the incoming load;
 - iv. The type of solid waste accepted for disposal at the landfill;
 - v. The amount and location of landfill area completed;
 - vi. Groundwater monitoring, testing, or analytical data gathered pursuant to the requirements in part 4.1.6 of this regulation.
 - vii. Methane gas monitoring data gathered pursuant to subpart 4.1.5(iv) of this Regulation.
 - viii. The amount of leachate generated at the facility.
 - ix. Frequency of leachate testing and analysis. Unless otherwise approved by the Director, sampling and analysis for leachate shall be conducted at least:
 - a. Twice a year for landfills permitted to receive industrial waste;
 - b. Twice a year for municipal waste landfills; and
 - c. Once a year for construction and demolition landfills.

- x. Methods used to test and analyze leachate content;
- xi. Analytical data from leachate testing; and
- xii. Methods used to pump and dispose of leachate.
- xiii. Closure and post-closure plans as required in section 4.1.3(ii) of this regulation.

e. Solid Waste Disposal Restrictions

- i. A landfill shall not accept any hazardous or liquid waste. Municipal waste landfills may, however, accept household hazardous waste and liquid waste generated from households provided that it is not septic waste and the containers are of a capacity no greater than five gallons.
- ii. A landfill shall not accept asbestos waste for disposal unless it is permitted to accept asbestos waste.
- iii. A landfill shall not accept waste tires with a rim diameter greater than 24.5 inches, tire shreadings, or other material derived from the shredding of tires unless it is permitted to accept waste tires.
- iv. The unloading and depositing of solid waste at the landfill shall be in only those areas designated by landfill personnel and as authorized by the director.
- v. Solid waste shall not be deposited in surface water or groundwater and shall be prevented from entering or leaching into surface water or groundwater.
- vi. Open burning shall not be permitted at a landfill. Fires in solid waste being delivered to the landfill or that occur at the working face or within equipment or personnel facilities shall be extinguished as quickly as possible.

f. **Unauthorized Solid Waste Detection.** The owner or operator of a landfill shall develop and implement a policy on how to detect and prevent the disposal or attempted disposal of unauthorized solid waste at the landfill. The policy shall provide protocols for:

- i. The inspection of at least one percent of all incoming loads to be selected at a random basis and the inspection of all suspicious incoming loads;
- ii. Keeping records of inspections conducted of incoming loads;
- iii. Training site personnel to recognize hazardous waste and unauthorized waste discovered at the landfill.

g. Landfill personnel shall notify the Department immediately if an incoming load of solid waste is rejected at the landfill or if hazardous or unauthorized waste is found at the landfill. Notice shall be made in writing and on a form prescribed by the Department. If applicable, a copy of the notice shall be given to the hauler of the rejected waste.

h. **Noise and Vector Control.**

- i. The landfill shall be maintained in a way that prevents vector breeding or feeding.
- ii. Vector, dust and odors shall be effectively controlled so they are not a hazard to health or safety.
- iii. Noise levels at the facility shall be controlled to prevent the levels beyond the property line from exceeding the allowable limits set forth in the Department's Health Regulation No. 21, Noise Control.

i. On-site roads and other through-ways shall be passable and safe at all times. This chapter is not intended to prevent the owner or operator of a landfill from restricting access to closed portions of the landfill.

j. Access to the landfill shall only be allowed during hours of operation.

k. **Signage.**

- i. The owner or operator of a landfill shall post a sign at the entrance to the landfill indicating the landfill name, permit number, hours of operation, penalty for unauthorized use, necessary safety precautions, types of waste accepted and prohibited, and any other pertinent information required to ensure the safety and health of persons present at the facility.

- ii. The owner or operator of a landfill shall post signs throughout the facility to direct traffic to open off-loading areas.
- l. Qualified personnel shall be present at the landfill to supervise activities during all hours of operation.
- m. The owner or operator of a landfill shall provide employees with equipment for communicating with one another and with first responders in case of an emergency at the facility. All operational equipment shall be repaired quickly and efficiently.
- n. Adequate equipment for trenching, compaction, and covering shall be available at the landfill during operating hours and for emergency response.
- o. Safety devices including, but not limited to, rollover protective structures, seat belts, audible reverse warning devices, and a fire extinguisher shall be provided on all equipment used to spread and compact solid waste or cover material at the landfill.
- p. Salvaging shall only be conducted by a lawfully permitted recycler and in a way that prevents injury, interference with required landfill operations, and the creation of a health or safety hazard, nuisance, or vector harborage. Drugs, cosmetics, foods, beverages, hazardous chemicals, poisons, pesticides, infectious waste, or other similar materials capable of impairing public health shall not be salvaged.
- q. Solid waste shall be compacted to the greatest degree practical. The working face shall be limited to the smallest area practical in order to confine the amount of exposed waste without interfering with effective operation procedures.
- r. At least six inches of compacted cover material shall be placed daily over all solid waste received, or as often as directed by the Director, after compaction of the solid waste to the smallest practical volume. Cells that will not have additional solid waste placed on them for 30 days or more shall be covered with 12 inches (30.4 centimeters) of compacted cover material.
- s. Within 30 days after completing a cell, a minimum of two feet of compacted final cover material shall be placed over the completed cell or any portion of a landfill where no additional waste will be placed for a period exceeding 12 months. Final grading of the cell or portion of the landfill where no additional waste will be placed for a period exceeding 12 months shall be sloped to promote drainage of water away from the landfill and shall be a minimum of two percent slope and a maximum of thirty-three percent for side slopes.

- t. The final cover on any completed portion of the landfill shall be vegetated to minimize erosion and maximize evapotranspiration.
- u. Leachate from a new landfill or cell shall be collected in a leachate collection system approved by the Director and shall be sampled and monitored as required by the Director. Leachate shall be disposed of through a controlled leachate recirculation process approved by the Director or a means of leachate disposal approved by the Director. Leachate shall not be allowed to drain or discharge into surface waters except pursuant to a State Pollution Discharge Elimination System Permit and shall not cause or contribute to contamination of groundwater quality or a violation of any established groundwater or surface water standards.
- v. Surface water run-on and run-off shall be diverted from flowing onto the active portion of the landfill during peak water discharges from a 24 hour 25 year storm. Run-off not contaminated by solid waste from a landfill shall be routed to a settling basin or shall be controlled by other equally effective measures to remove sediment before discharge to a receiving stream.
- w. **Methane Monitoring.** During the active life of the landfill, the owner or operator of a landfill permitted pursuant to subchapter 4.1.1(i)(b)(i) shall routinely monitor landfill methane concentrations in accordance with subpart 4.1.5(iv) of this Regulation to ensure that:
 - i. The concentration of methane gas generated by the landfill does not exceed 25 percent of methane's lower explosive limit (LEL) in structures at the landfill (excluding gas control or recovery system components); and
 - ii. The concentration of methane gas generated by the facility does not exceed methane's LEL at the landfill's boundary.
- x. **Groundwater and Surface Water Monitoring.** The owner or operator of a landfill shall routinely monitor groundwater and surface water in accordance with part 4.1.6 of this Regulation to ensure the solid waste deposited at the landfill does not degrade groundwater or surface water quality or violate any rule or regulation of the Department, the State of Utah, or the Federal government. The Director may waive groundwater monitoring requirements if the landfill owner or operator can demonstrate that there is no potential for contamination from the landfill or cell to the uppermost aquifer during the active life, the closure period, or the post closure period of the landfill or cell. This demonstration shall be certified by a qualified geologist or geotechnical engineer, and shall incorporate reliable site-specific data.

- y. **Landfills and Cells Permitted to Accept Asbestos Waste.** In addition to the operating Requirements set forth in chapters 4.1.5(ii)(a)-(x) above, landfills and cells permitted to accept asbestos waste shall also be subject to the following requirements:
- i. **Additional Operating Record Requirement.** The owner or operator of a landfill permitted to receive asbestos waste shall keep an additional operating record containing the identity of persons who have disposed asbestos waste at the landfill and the amount of asbestos waste each person has disposed at the landfill.
 - ii. Landfills permitted to receive asbestos waste shall accept only asbestos waste that is wetted and contained in securely tied six mil thick plastic bags or other durable containers approved by the Director. The owner or operator of the landfill permitted to receive asbestos waste shall notify the Department of any asbestos waste received at the landfill that is not wet or properly contained. No asbestos waste capable of being emitted in the atmosphere during normal unloading shall be unloaded unless the material is wetted and the Department is notified.
 - iii. Owners or operators of a landfill permitted to receive asbestos waste shall assure asbestos waste is unloaded in a way that minimizes breaking of containers or bags. This may require the asbestos waste landfill to require users to notify the facility of the time and date the asbestos waste will be transported and the volume of asbestos to be disposed so that the facility operator can oversee the unloading.
 - iv. Unless otherwise approved by the Director, asbestos waste shall only be placed in pre-dug trenches away from other solid waste management operations. Asbestos waste cells shall not be located on top of existing solid waste.
 - v. All asbestos waste received at a landfill shall be covered daily or as often as directed by the Director with a cover material approved by the Director, such as soil that is free of debris or other objects that may puncture the asbestos containing bags or containers. Asbestos shall be covered with two feet (61 centimeters) of cover material if equipment will be driven over the disposal area or site or six inches (15.2 centimeters) of cover material if placed in trenches and equipment will not be driven over the disposal site;
 - vi. The owner or operator of a landfill permitted to receive asbestos waste shall provide to the Department, and keep on file, a plat map showing the exact location of all asbestos disposal areas.

(iii) **Landfill Closure and Post Closure.**

- a. The owner or operator of a landfill shall close each landfill or cell according to the closure plan submitted pursuant to subpart 4.1.3(ii) of this regulation and in a way that minimizes the need for further maintenance and minimizes the post-closure formation and release of leachate and explosive gasses into the air, groundwater, or surface water to the extent necessary to protect the public health and welfare and to prevent any nuisance.
- b. Final grading of the landfill shall be sloped to promote drainage of water off the landfill and shall be a minimum of two percent slope and a maximum of thirty-three percent for side slopes. Final cover material shall be well compacted to enhance runoff while minimizing infiltration.
- c. The owner or operator of a landfill shall notify the Department at least 90 days before closure so that the Department may review closure and post closure plans for completeness.
- d. The owner or operator of a landfill shall notify users of the landfill at least 30 days before closure. Municipalities and haulers shall be notified by letter or in person. The public may be notified by a posting at the landfill.
- e. The owner or operator of the landfill shall undertake closure activities of each cell in accordance with the closure plan approved by the Director within 30 days following final receipt of waste at the landfill, or cell. The Director may grant an extension to the thirty day requirement for beginning closure if it can be demonstrated that the landfill will not pose a threat to public health or the environment.
- f. Before undertaking closure activities, the Director may require the owner or operator of the landfill to: install additional fencing or other appropriate structures to limit access, post signs indicating closure and alternative disposal site locations; and place all litter and other waste in the landfill or cell.
- g. Following closure of a landfill permitted to accept municipal solid waste, construction and demolition waste, or non-hazardous industrial waste, the owner or operator shall conduct post-closure care for thirty (30) years or as long as the Director determines necessary for the landfill or cell. For monofills, the post-closure care period shall be ten years or as long as the Director determines is necessary. Post-closure care shall include, but not be limited to:
 - i. Maintaining the integrity and effectiveness of all final cover, including making repairs to the cover as necessary to correct the effects of settling, subsidence, erosion, or other events, and

preventing run-on and run-off from eroding or otherwise damaging the final cover.

- ii. Maintaining and operating the leachate collection system in accordance with the requirements in chapter 4.1.5(ii)(u) for a period of thirty years or as long as the Director determines necessary for the landfill or cell or until leachate is no longer generated.
 - iii. Monitoring the groundwater in accordance with the requirements in part 4.1.6 and maintaining the groundwater monitoring system; and
 - iv. Maintaining and operating the methane gas monitoring system in accordance with the requirements in subpart 4.1.5(iv).
- h. Following the period described in subpart 4.1.5(iii)(g), the owner or operator of a landfill shall conduct additional post-closure care consisting of but not limited to groundwater monitoring and gas monitoring for a period of time as determined by the Director to protect the public health and welfare, the environment, and prevent any nuisance.
- i. Post-closure use of the landfill property shall not disturb the integrity of the final cover, liner, or any other components of the containment system, leachate collection system, or the function of the monitoring systems, unless, upon demonstration to the Director by the owner or operator, the Director determines that the activities will not increase the potential threat to public health or the disturbance is necessary to reduce a threat to public health. The owner or operator shall obtain approval from the Director prior to excavating any closed portion of the landfill or removing any waste or waste residues, liners or contaminated soils.
- j. Following closure of a landfill or cell, and following completion of post-closure care of a landfill or cell, the owner or operator shall submit to the Department a certification verifying that closure and or post-closure has been completed in accordance with the Department-approved closure plan and post-closure plan. Certification shall be completed by the Director or an independent registered professional engineer.
- k. **Property Deed Recording.**
- i. Following final closure of the landfill or cell, the owner or operator shall record a notation on the deed to the landfill property, or some other instrument that is normally examined during a title search, that will in perpetuity notify any potential purchaser of the property of the previous use of the property as a landfill and any

use restrictions.

- ii. If the owner or operator or any subsequent owner or operator of the land upon which a landfill cell is located wishes to remove wastes and waste residues, the liner (if any), or contaminated soils, he or she shall first request from the Director approval for such removal. The owner or operator may also request permission from the Director to remove or modify the notation on the deed to the landfill property or other instrument normally examined during title search if all wastes are removed and no contamination of groundwater or soil is present.

(iv) **Methane Monitoring Requirements.**

- a. In monitoring methane concentrations pursuant to chapters 4.1.5(ii)(w) and 4.1.5(iii)(g) of this Regulation, the owner or operator of a landfill shall gather and maintain data indicating: levels of methane concentrations found in landfill structures and at the landfill boundary; the frequency of monitoring concentrations; and the type of equipment used to monitor concentrations.
- b. To comply with the methane monitoring requirement in chapters 4.1.5(ii)(w) and 4.1.5(iii)(g) of this Regulation, landfill owners or operators shall determine the type and frequency of methane monitoring according to the following criteria:
 - i. Soil conditions;
 - ii. The hydrogeologic conditions surrounding the landfill;
 - iii. The hydraulic conditions surrounding the landfill; and
 - iv. The location of landfill structures and property boundaries.
- c. If methane gas levels exceed 25 percent of the LEL within any structure or the LEL at the property line, the owner or operator shall:
 - i. Immediately take all necessary steps to ensure the immediate protection of human health and safety;
 - ii. Immediately notify the Department of the methane gas levels detected and the remediation steps that have already been taken; and
 - iii. Within 14 days, submit to the Department for approval an ongoing remediation plan for methane gas accumulation. The plan shall describe the nature and extent of the problem and the proposed remedy. The plan shall be implemented upon approval by the Director.

- (v) **Closing of Open Dumps.** Open dumps shall be closed in accordance with the following requirements:
 - a. Absence of rats and other vermin shall be demonstrated. If rats or other vermin are present, an extermination procedure shall be established and carried out by qualified individuals prior to closing;
 - b. All fires shall be extinguished before the final cover of earth is applied;
 - c. All solid wastes shall be consolidated, compacted, and covered with at least two feet of final cover material as defined in this regulation;
 - d. The final grading shall provide proper surface drainage and prevent ponding;
 - e. The area shall be planted with appropriate grass or other vegetation, unless other approval is given by the Director; and
 - f. Any other corrective measures to protect the public health, safety, or welfare shall be taken as directed by the Director, which may include, but not be limited to, litter control, groundwater monitoring, gas monitoring, leachate management, and continued management and maintenance of the integrity of the final cover.

4.1.6 **Groundwater and Surface Water Monitoring Requirements.** If required by this regulation or by the Director to monitor groundwater and/or surface water, the owner or operator of a solid waste management facility shall:

- (i) File and keep current with the Department an approved Water Monitoring Plan. Once approved by the Director, the owner or operator of the solid waste management facility shall comply with the requirements and incorporated standards of the Water Monitoring Plan. A Water Monitoring Plan shall include:
 - a. Proposed methods for well construction. Construction method approval shall be obtained before well construction begins.
 - b. The name of the person to perform water quality sampling and their proposed sampling frequency, sampling time period, and sampling methods.
 - c. The name of the lab to perform sample analysis.
 - d. The type, method, and procedure of analysis to be performed on water samples.

- e. A quality assurance/quality control plan for well construction and for groundwater sampling and analysis. The quality assurance/quality control plan shall be approved by the Director prior to obtaining baseline water quality pursuant to subpart 4.1.6(vi) of this regulation.
 - f. The baseline water quality protection standard obtained pursuant to subpart 4.1.6(vi) of this regulation. The owner or operator shall submit the baseline water quality to the Department within thirty (30) days of being determined. The Director shall establish surface and groundwater protection standards based upon the baseline water quality and shall incorporate the water quality protection standard in the solid waste management facility's Water Monitoring Plan.
 - g. A proposed timetable for sampling.
 - h. Proposed statistical method for determining whether a significant change has occurred compared to baseline water quality.
 - i. Any other record or report required by the Director to ensure groundwater and surface water quality.
- (ii) Notify the Director at least seven days prior to construction of monitoring wells to facilitate the presence of a Department representative at construction.
- (iii) Install monitoring wells according to the following specifications:
- a. Unless specified elsewhere in this regulation, the number of monitoring wells to be installed and the depth of up gradient and down gradient wells shall be determined by the Director based on on-site terrain features; the type of solid waste to be deposited, treated, or processed; soil type and conditions at the solid waste management facility; hydrogeologic conditions surrounding and beneath the facility; and hydraulic conditions surrounding and beneath the facility including depth to and flow rate of groundwater.
 - b. Monitoring wells must be constructed in such a manner as to prevent contamination of the samples, the sampled strata, and between aquifers and water bearing strata.
 - c. Monitoring wells shall be cased in a manner that maintains the integrity of the monitoring well bore hole. This casing must allow collection of representative groundwater samples.
- (iv) Operate and maintain all monitoring wells and all other devices and equipment used to monitor groundwater and surface water so that they perform to design specifications throughout the entire period of Department required monitoring.

- (v) Notify the Department at least seven calendar days prior to sampling to facilitate the presence of a Department representative during sampling and to collect duplicate samples, if deemed necessary by the Director.
- (vi) Obtain baseline water quality during the first year after wells are installed, unless otherwise approved or required by the Director. Baseline water quality shall be established prior to deposition of waste in the landfill and shall be obtained by analyzing a minimum of eight independent samples from each upgradient well or upstream surface water point and four independent samples from each downgradient well or downstream surface water point for all parameters listed in Appendix A of this Regulation and any other parameters requested by the Director.
- (vii) After background constituent levels have been established, the Director will set a surface water and ground water quality standard that will become part of the permit.
- (viii) After baseline water quality has been established, sample for routine parameters listed in Appendix A of this Regulation. The Director may modify this requirement on a case-by-case basis depending upon the nature of the groundwater, the surface water, or the solid waste management facility by considering:
 - a. The types, quantities, and concentrations of constituents in solid wastes found at the solid waste management facility;
 - b. The mobility, stability, and persistence of solid waste constituents or their reaction products in the unsaturated zone beneath the solid waste management facility, for groundwater only;
 - c. The detectability of indicator parameters, solid waste constituents, and reaction products in the groundwater; and
 - d. The baseline water quality values and coefficients of variation of monitoring parameters or constituents in the groundwater.
- (ix) Conduct sampling and analysis for surface water and groundwater at least twice a year; except construction and demolition landfills may conduct sampling and analysis once a year.
- (x) Ensure that samples and measurements taken for the purpose of monitoring are in accordance with the method listed in the latest edition of EPA document SW-846 or other Department approved methods, and are representative samples collected in accordance with the quality assurance/quality control plan approved by the Director.
- (xi) Have a state certified environmental laboratory complete sample analysis using methods found in EPA Report SW-846 "Test Methods for Evaluating Solid Waste," latest edition, or other Department approved

methods.

- (xii) Determine whether a significant change to baseline water quality has occurred using a statistical method proposed in the landfill's Water Monitoring Plan and approved by the Department. Possible statistical methods include:
- 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 downgradient monitoring well's mean and the baseline water quality mean levels for each constituent;
 - b. A parametric analysis of variance 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 downgradient monitoring well's median and baseline water quality median levels for each constituent;
 - c. tolerance or prediction interval procedure in which an interval for each constituent is established from the distribution of the baseline data, and the level of each constituent in each monitoring well is compared to the upper tolerance or prediction limit;
 - d. A control chart approach that gives control limits for each constituent;
or
 - e. Other Department approved statistical test methods.
- (xiii) If the concentration of any of the parameters listed in Appendix A of this regulation at any time statistically exceeds the established baseline parameters, the solid waste management facility owner or operator shall:
- a. Within 14 days of receipt of the sample analysis results notify the Director of this finding in writing and record the information in the operating record. The notification shall indicate what parameters or constituents have shown statistically significant changes; and
 - b. Immediately resample the surface water or groundwater in all monitoring wells, both upgradient and downgradient, or in a subset of wells specified by the Director, determine the concentration of all constituents listed in appendix A of this regulation and additional constituents that may have been identified in the Water Monitoring Plan, and whether there is a statistically significant change such that the established groundwater or surface water quality protection level has been exceeded, and notify the Director in writing within seven days of receipt of the sample analysis results.

- c. The owner or operator may demonstrate that a source other than the solid waste management facility caused the contamination or that the statistically significant change resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater or surface water quality. A report documenting this demonstration shall be certified by a Director-approved groundwater scientist and entered in the operating record. If a successful demonstration is made and documented, the owner or operator may continue monitoring as specified in subchapters 4.1.6(viii).
- (xiv) If, after 90 days, a successful demonstration as allowed in subchapter 4.1.6(xiii)(c) is not made, the solid waste management facility owner or operator shall initiate an assessment monitoring program required as follows:
- a. Take one sample from each downgradient well or surface water point and analyze for all constituents listed in Utah Admin. Code § R315, Solid and Hazardous Waste Rules, which is adopted and incorporated by reference and designated as Appendix B of this Regulation.
 - b. For any constituent detected from Appendix B of this Regulation in the downgradient wells or downstream point, a minimum of eight independent samples from the upgradient well or upstream point and four independent samples from each downgradient well or downstream surface water point shall be collected and analyzed to establish baseline water quality for the constituents; and
 - c. Within 14 days of the receipt of the results of the analysis of the samples, notify the Director in writing identifying the Appendix B constituents and their concentrations that have been detected as well as baseline levels and record the data in the operating record. The Director shall establish a groundwater or surface water quality protection standard pursuant to part subpart 4.1.6(vi) for any Appendix B constituent detected in the downgradient wells.
 - d. The owner or operator shall thereafter resample:
 - i. All wells or surface water on a quarterly basis for all constituents in Appendix A of this Regulation, or an alternative list that may have been approved and incorporated into the facility's water monitoring plan, and for those constituents detected from Appendix B of this regulation; and
 - ii. The downgradient wells or surface water points on an annual basis for all constituents in Appendix B of this regulation.
 - e. If after two consecutive sampling events, the concentrations of all constituents being analyzed in chapter 4.1.6(xiv) d. are shown to be at or below established baseline values, the solid waste management

facility owner or operator shall notify the Director of this finding and may, upon approval, return to the monitoring schedule and constituents as specified in subparts 4.1.6(viii)-(ix).

- (xv) If one or more constituents from Appendix A of this regulation or an approved alternative list, or from those detected from Appendix B of this regulation are detected as statistically significant levels above the groundwater or surface water quality protection standard as established pursuant to subpart 4.1.6(vi) in any sampling event, the owner or operator shall:
- a. Within 14 days of the receipt of this finding, notify the Department of the identified the constituents and concentrations that have exceeded the groundwater or surface water quality standard. Within the same time period, the solid waste management facility owner or operator shall also notify the Director that the groundwater or surface water quality standard has been exceeded and record the data in the operating record;
 - b. Characterize the nature and extent of the release by installing additional monitoring wells or designating additional surface water monitoring points as necessary;
 - c. Install at least one additional monitoring well or sample one additional surface water monitoring point at the facility boundary in the direction of contaminant migration and sample this well and analyze the sample for the constituents in Appendix A or the approved alternative list and the detected constituents from Appendix B; and
 - d. 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 or surface water points in accordance with chapters 4.1.6(xiv)(b)-(c); and
 - e. The solid waste management facility owner or operator may demonstrate that a source other than the facility caused the contamination or that the statistically significant change resulted from error in sampling, analysis, statistical evaluation, or natural variation in ground water or surface water quality. A report documenting this demonstration must be certified by a qualified groundwater scientist and entered in the operating record. If a successful demonstration is made, documented and approved, the owner or operator may continue monitoring as specified in chapters 4.1.6(viii)-(ix) ~~(xiv) d. or e.~~ when applicable.
- (xvi) If, within 90 days, a successful demonstration as stated in chapter 4.1.6(xv)(e) is not made, the owner or operator must:
- a. Continue to monitor as required in chapter 4.1.6(xiv)(d).

- b. Take any interim measures as required by the Director or as necessary to ensure the protection of human health and the environment; and
- c. Assess possible corrective action measures for the current conditions and circumstances of the solid waste management facility, addressing at least the following:
 - i. The performance, reliability, ease of implementation, and potential impacts of appropriate potential remedies, including safety impacts, cross-media impacts, and control exposure to any residual contamination;
 - ii. Time required to begin and complete the remedy;
 - iii. The costs of remedy implementation;
 - iv. Public health or environmental requirements that may substantially affect implementation of the remedy; and
 - v. Prior to the selection of a remedy, discuss the results of the corrective measures assessment in a public meeting with interested and affected parties.
- d. Based on the results of the corrective measures assessment conducted and the comments received in the public meeting, the owner or operator shall select a remedy which shall be submitted to the Director.
 - i. The corrective action remedy shall:
 - 1. Be protective of human health and the environment;
 - 2. Use permanent solutions that are within the capability of best available technology;
 - 3. Attain the established groundwater or surface water quality standard;
 - 4. Control the sources of release so as to reduce or eliminate, to the maximum extent practicable, further releases of contaminants into the environment that may pose a threat to human health or the environment; and
 - 5. Be approved by the Director.
 - ii. Within 14 days after the selection of the remedy, the owner or operator shall submit a report to the Director for approval

describing the selected remedy and amendments, along with a schedule of implementation and estimated time of completion.

- (xvii) Upon approval of the selected corrective action remedy, the Director shall notify the owner or operator of such approval and require that the corrective action plan proceed according to the approved schedule.
- a. The Director may also require solid waste management facility closure if the groundwater or surface water quality standard is exceeded and, in addition, may revoke any permit and require reapplication.
 - b. The Director or the owner or operator may determine, based on information developed after implementation of the corrective action plan, that compliance with the requirements of subchapter 4.1.6(xvi)(d)(i) is not being achieved through the remedy selected. In such cases, the owner or operator shall implement other approved methods or techniques that could practicably achieve compliance with the requirements.
 - c. Upon completion of the remedy, the owner or operator shall notify the Director. The notification shall contain certification signed by the owner or operator and a qualified environmental scientist that the concentration of contaminant constituents has been reduced to levels below the specified limits of the groundwater or surface water quality standard for a period of three years or an alternative length of time specified by the Director. Upon approval, the owner or operator shall:
 - i. Terminate corrective action measures; and
 - ii. Continue detection monitoring as required subparts 4.1.6(viii) and (ix).

4.2 Haulers.

4.2.1 Permit Requirements and Approval Process.

- (i) **Permits.** No person shall operate as a hauler without obtaining a valid permit issued by the Department according to the requirements set out in part 4.2.1 of this regulation.
- a. **Waste Hauler Permit.** A Waste Hauler Permit is required for a hauler who hauls non-liquid, non-infectious solid waste.
 - b. **Waste Tire Hauler Permit.** A Waste Tire Hauler Permit is required for a hauler who hauls waste tires.
 - c. **Liquid Waste Hauler Permit.** A Liquid Waste Hauler Permit is required for a hauler who hauls non-infectious liquid waste.

d. **Infectious Medical Waste Hauler Permit.** An Infectious Medical Waste Hauler Permit is required for a hauler who hauls fifty or more pounds of infectious medical waste per month.

(ii) **Exempt Haulers.** The following haulers and persons are exempt from the permit and insurance requirements of part 4.2.1 of this regulation and the fee requirements of Section 5 of this regulation.

a. A person who transports only construction and demolition waste that is generated from the operation of their business.

b. A person who transports asbestos waste and is a properly licensed and permitted asbestos contractor.

c. A person who transports less than 25 gallons of liquid waste per month.

d. A person who hauls 10 or fewer tires per month.

(iii) **Permit Application.**

a. **Prescribed Form.** Application for a permit to operate as a hauler shall be submitted on the Department prescribed form.

b. **Fees.** To be approved for a permit to operate as a hauler required under subpart 4.2.1(i) of this regulation, an applicant shall submit the applicable application fee provided in part 5.2.1 of this regulation.

c. **Safety Plan.** Applicants for a permit to operate as a hauler shall also submit a written safety plan in accordance with part 4.2.10 of this regulation.

d. **Vehicle Inspection.** Upon permit application, applicants for a permit to operate as a hauler shall make available to the Department for inspection each vehicle used by the hauler for solid waste collection.

e. **Insurance Coverage.** Upon permit application, applicants for a permit to operate as a hauler shall provide documentation to the Department indicating that the hauler has obtained the following minimum insurance coverage:

i. Commercial general liability insurance, including but not limited to waste hauler pollution liability insurance, on an occurrence form in the minimum amount of \$1,000,000 per occurrence with a \$2,000,000 general policy aggregate and \$2,000,000 products completed operations policy aggregate. The policy shall protect the Applicant and any subcontractor from claims for damages for personal injury and from claims for property damage that may arise from Applicants operations under this regulation, whether

performed by Applicant itself, any subcontractor, or anyone directly or indirectly employed by either of them. Such insurance shall provide coverage for premises operations, acts of independent contractors, and completed operations.

- ii. Commercial automobile liability insurance, including but not limited to waste hauler pollution liability insurance that provides coverage for owned, hired, and non-owned automobiles, in the minimum amount of \$1,000,000 per occurrence.
- iii. All policies of insurance shall be issued by insurance companies licensed to do business in the State of Utah and either currently rated A- or better by A.M. Best Company; or listed in the United States' Treasury Department's current Listing of Approved Sureties (Department Circular 570), as amended.
- iv. Applicant shall furnish certificates of insurance and waste hauler pollution liability endorsement, acceptable to the Department, verifying the foregoing matters upon receipt of permit and thereafter as required.
- v. In the event any work is subcontracted, Applicant shall require its subcontractor to secure and maintain all minimum insurance coverages required of the Applicant hereunder.
- vi. All required certificates and policies shall provide that coverage thereunder shall not be canceled or modified without providing thirty (30) days prior written notice to the Department in a manner approved by the Salt Lake County District Attorney.

4.2.2 Upon Department approval of the permit application and written safety plan, passage of vehicle inspection, and proof of adequate liability coverage, the Department shall issue the following documents to the Hauler Applicant:

- (i) An inspection report signed by the Director stating that the vehicle identified by the report has passed inspection;
- (ii) Two permit stickers that shall be placed on the vehicle by the Director to identify the vehicle as having been inspected for the current year. Such stickers shall not be removed, except by the Department, so long as the vehicle is used for hauling; and
- (iii) A receipt showing payment of the permit fee.

4.2.3 **Vehicle Construction.** Each vehicle to be used by a hauler in the collection or transportation of solid waste shall meet the following requirements:

- (i) The vehicle body shall be clean, easily cleanable, and in good condition and repair;

- (ii) The body shall be lined with steel and welded at all seams or constructed of other materials approved by the Director;
- (iii) The size capacity of the vehicle body or tank shall be certified by the manufacturer or a size certification company approved by the Director;
- (iv) The vehicle shall be easily loaded and emptied;
- (v) The tailgate or hopper of the vehicle shall be constructed so the contents of the body will not spill or blow from the vehicle while in motion;
- (vi) A heavy-duty canvas or other acceptable heavy-duty cover that is adequate in size to cover the open body of the vehicle shall accompany the vehicle;
- (vii) The name and telephone number of the person owning the vehicle and the size capacity of the truck body or tank shall be permanently affixed on the body in letters and numbers that are legible and are at least three inches (7.6 centimeters) high;
- (viii) All equipment attached to a vehicle hauling liquid or hazardous waste, including, but not limited to, pumps, hoses, valves, and the containers or tanks or both used to contain or pump the waste, shall be maintained water-tight and in good repair; and
- (ix) The vehicle shall comply with all applicable air pollution and noise control ordinances and regulations.

4.2.4 **Vehicle Maintenance.**

- (i) All equipment used for the collection and transportation of solid waste shall be maintained in good condition and cleaned with a frequency and method approved by the Department to prevent the propagation or attraction of flies, rodents, or other vectors and prevent the creation of a nuisance. The cleaning of equipment used for the collection and transportation of solid waste, including all vehicles, shall be done in compliance with the requirements of the Utah Water Quality Act.
- (ii) A collection vehicle that fails to meet the requirements of this regulation shall not be used to collect or transport solid waste until such repairs are made that bring the vehicle into compliance with this regulation. If repairs are not made, the permit issued for the vehicle shall be revoked pursuant to section 5.6 of this regulation.

4.2.5 **Vehicles To Be Used for Permitted Use Only.** Solid waste collection and transportation vehicle shall be used to collect and transport only solid waste for which they were designed and approved by the Department when the permit was issued.

4.2.6 Collection and Transportation of Solid Waste. Each hauler shall be responsible for the satisfactory collection and transportation of all solid waste to a solid waste management facility approved by the Department. No hauler shall:

- (i) Allow any vehicle loaded with solid waste to remain standing upon any premises, street, road, or highway any longer than necessary for loading and transporting except that solid waste may remain for a longer period of time in an emergency, such as severe weather conditions, equipment breakdown, or an accident.
- (ii) Collect, haul, or transport any solid waste in an open container for a distance of five blocks or more without making a waste collection stop, unless covered completely or secured to prevent littering or discharge.
- (iii) Operate any vehicle used for the collection and transportation of solid waste in a way that the contents discharge from the vehicle. If a discharge occurs during collection or transportation, the material shall be picked up immediately by the hauler and returned to the vehicle and the area shall be properly cleaned.
- (iv) Collect, haul, or transport any solid waste, except in a sanitary container or vehicle especially constructed for that purpose and with a valid permit from the Department; or
- (v) Collect unauthorized solid waste or solid waste that is smoldering, smoking, or burning.

4.2.7 Container Construction, Maintenance, and Placement Requirements.

- (i) Containers shall be constructed of metal, durable plastic, or rubber. Metal containers shall be painted to prevent rust and corrosion.
- (ii) Containers shall have on the front or side, the name and telephone number of the hauler legibly printed in letters at least one inch high. Containers provided to dwellings as part of a municipality-wide service may instead use an identification code.
- (iii) Containers shall be outfitted with tight-fitting lids or other covers approved by the Director.
- (iv) Containers shall be constructed with wide necks and mouths and tapered sides to prevent clogging and littering if containers are emptied manually.
- (v) Containers shall be maintained in a clean condition and in good repair including repainting if necessary to prevent rust and corrosion. If the hauler furnishes containers, the hauler shall be responsible for maintaining the containers in a clean and good condition. The hauler shall have the proper facilities and equipment to clean and repair the waste containers provided or the hauler shall have working arrangements with a person who

provides that service. The hauler shall plan and work with the property owner or occupant or both for placement of the storage containers to minimize traffic or other hazards and the prevention of a nuisance. Containers shall be placed in areas least offensive to adjoining properties and shall not be placed or located on a parking strip, except for the day of collection, or stored within three feet of an adjoining property.

- (vi) Containers shall be designed and constructed in a way that they can be emptied without the hauler coming into physical contact with the solid waste.
- (vii) Containers shall be emptied weekly or at another interval approved by the Director.
- (viii) Containers not meeting these requirements shall not be used without approval from the Director.

4.2.8 **Unloading Solid Waste.** Haulers shall only unload solid waste at a solid waste management facility. All unloading shall be in accordance with the requirements of the solid waste management facility's Department-approved plans and specifications.

4.2.9 **Record Keeping and Reporting.** At the request of the Director, a hauler shall report to the Director the names and addresses of all places of business or persons where collection of solid waste is made and where such waste is hauled and deposited. The report shall be prepared in the format required by the Director.

4.2.10 **Safety Plan and Training.** Each hauler shall have a written safety plan for the collection, transportation, and disposal of solid waste. Each hauler shall be trained in each part of the safety plan prior to the collection, transportation, or disposal of solid waste and prior to the operation of the collection or transportation vehicle. The safety plan and training shall include the following parts:

- (i) The proper operation and safety features of the solid waste collection vehicle;
- (ii) The proper methods of collecting, transporting, and unloading solid waste;
- (iii) Requirements for the collection, transportation, and disposal of solid waste, including the prohibited acts listed in this regulation relating to the collection, transport, and disposal of solid waste. The regulatory requirements pertaining to the type of solid waste that the operator is permitted to collect and transport;
- (iv) A description and understanding of the characteristics of solid waste and its hazardous properties; and

- (v) The procedures that must be followed if:
 - a. Actual or potential injury results from contact with solid waste;
 - b. Spillage of solid waste occurs during collection or transportation;
 - c. Hot or burning solid waste loads are encountered; or
 - d. Unauthorized waste material is deposited in the containers to be collected.

4.2.11 Additional Requirements Pertaining to Waste Tire Haulers.

- (i) Waste tire haulers shall keep an accurate record of the number of waste tires collected and the date the waste tires were collected. Records shall be kept for each individual waste tire generator and the location of the solid waste management facility and dates the waste tires were disposed. Records shall be made in triplicate copies with one copy provided to the waste tire generator, one copy provided to the landfill or processing facility, and one copy kept by the hauler and provided to the Department upon request. Records shall be retained by the waste tire haulers for a minimum of five years.
- (ii) A copy of the waste tire hauler records required by part 4.2.9 shall be provided to the generator upon waste tire collection; to the solid waste management facility upon unloading; and to the Department upon request. Records shall be retained by the waste tire hauler for at least five years.

4.2.12 Additional Requirements Pertaining to Infectious Medical Waste Haulers.

- (i) Each side of the infectious medical waste collection and transportation vehicle shall be identified with a permanently affixed and conspicuously displayed rectangular sign or decal measuring at least 9.8 by 13.8 inches in size with red labeling on a white background stating "INFECTIOUS WASTE" or "BIOHAZARD" accompanied by the international biohazard symbol.
- (ii) Infectious medical waste may be transported only to a solid waste management facility approved to process or dispose of infectious medical waste.
- (iii) Infectious medical waste shall be transported in a leakproof, fully enclosed container or vehicle compartment.
- (iv) Quantities of more than 100 pounds of infectious medical waste shall not be transported in the same vehicle with other solid waste unless the infectious medical waste is separately contained in rigid reusable containers, kept separate by barriers from the other waste, or unless all the waste is to be treated or disposed of as infectious medical waste in

accordance with this regulation.

- (v) Infectious medical waste shall not be unloaded and reloaded or transferred to another vehicle unless the loading and unloading has been approved by the Department or the unloading is done at an infectious medical waste transfer station permitted under subchapter 4.1.1(i)(a)(v) of this regulation. Such facility shall keep the infectious medical waste in a secured area separate from other wastes. If the infectious medical waste is to be stored for longer than three hours following unloading at the facility, such storage shall be in a refrigerated unit capable of cooling and maintaining the medical waste at or below a temperature of 32 degrees Fahrenheit.
- (vi) Employers of persons engaged in manually loading and/or unloading containers of infectious medical waste on or from transport vehicles shall provide and require the wearing of protective gloves, coveralls, and, if necessary, face shields and respirators. Soiled protective clothing shall be decontaminated or properly disposed of in accordance with subsection 4.3 of this regulation.
- (vii) Surfaces of transport vehicles that have come into contact with infectious medical waste shall be decontaminated.

4.3 Additional Requirements Regarding Storage, Treatment, and Disposal of Infectious Medical Waste. The requirements of parts 4.3.1 through 4.3.3 shall apply to all persons that process, dispose or generate infectious medical waste.

4.3.1 Infectious Medical Waste Storage and Containment

- (i) Infectious medical waste shall be contained in a manner that prevents unsupervised or unauthorized access to the material.
- (ii) Infectious medical waste containers shall be leakproof, have tight-fitting covers, and be kept clean and in good repair.
- (iii) Infectious medical waste shall be prevented from providing a breeding place or food source for insects, rodents, or other vectors nor shall it cause any other nuisance or public health hazard. All containers of infectious medical waste shall be stored in a manner that minimizes odors and is not in or near patient areas or food storage or preparation areas.
- (iv) Medical sharps, including but not limited to syringes and needles, capable of causing skin puncture shall be contained for disposal as infectious medical waste in metal or rigid plastic puncture resistant containers, equipped with tight fitting lids, completely enclosed and capable of preventing contact and spillage.
- (v) Infectious medical waste, except for sharps capable of puncturing or cutting, shall be contained in disposable plastic bags that are impervious to moisture and that have a minimum thickness of 3.0 mills, or equivalent

tensile strength. The bags and containers shall be securely tied or sealed to prevent leakage during storage, handling, or transport.

- (vi) All bags and containers used for containment and disposal of infectious medical waste shall be red in color or, if another color, conspicuously labeled with the words “INFECTIOUS WASTE,” “BIOHAZARD,” or with the international infectious waste symbol.
- (vii) Areas in which infectious medical waste is stored shall be labeled with the words “INFECTIOUS WASTE,” “BIOHAZARD,” or with the international infectious waste symbol.
- (viii) All generators of infectious medical waste shall have and provide for their employees a written plan that includes: the type of waste handled as infectious medical waste; the treatment, storage, and disposal procedures employed by the generator; the procedures to be followed if any person comes in contact with infectious medical waste; and the safety procedures all employees will follow related to handling infectious medical waste. The plan shall be kept on file and available to the Department on request and the Department may verify that all employees are properly trained. The employer shall review and update the plan annually or more often if necessary.
- (ix) Reusable pails, drums, dumpsters, or bins used for containment of infectious medical waste shall not be otherwise used unless properly decontaminated as per part 4.3.2 of this regulation.
- (x) Infectious medical waste contained in disposable containers shall be placed for storage in disposable or reusable pails, cartons, drums, dumpsters, or portable bins.

4.3.2 Decontamination of Reusable Containers. Surfaces of reusable storage containers contaminated by infectious medical waste shall be thoroughly washed and decontaminated after being emptied and before each reuse by one of the following methods:

- (i) By exposure to hot water of at least 180 degrees Fahrenheit (82 degrees Celsius) for a minimum of 15 seconds; or
- (ii) By exposure to a chemical sanitizer by rinsing with or immersion in one of the following for a minimum of three minutes:
 - a. Hypochlorite solution (500 milligrams per liter available chlorine);
 - b. Phenol solution (500 milligrams per liter active agent);
 - c. Iodoform solution (100 milligrams per liter available iodine);

- d. Quaternary ammonium solution (400 milligrams per liter active agent);
or

(iii) Other methods approved by the Director.

4.3.3 Processing, Treatment, and Disposal of Infectious Medical Waste.

- (i) Grinders shall not be used to process infectious medical waste until after the waste has been rendered non-infectious. Infectious medical waste in bags or other disposal containers shall not be subject to compaction by any compacting device and shall not be placed in a portable or mobile trash compactor for storage or transporting.
- (ii) Unless landfilling is the only available alternative, infectious medical wastes consisting of recognizable human anatomical remains and fetal remains shall be disposed by incineration, at a crematory, or interment at a cemetery.
- (iii) Unless otherwise approved by the Director, treatment of infectious medical waste shall be by one of the following methods:
 - a. By incineration in a controlled air multi-chambered incinerator that meets, at a minimum, the Air Quality standards and residence times established by the State of Utah and that provides complete combustion of the waste to carbonized or mineralized ash. Listed or characteristic hazardous wastes shall not be incinerated in an infectious medical waste incinerator unless such incinerator is also permitted as a hazardous waste incinerator. Radioactive waste shall only be disposed of at a facility approved for radioactive waste disposal. Infectious medical waste ash may be disposed of as non-infectious solid waste provided it is otherwise non-hazardous.
 - b. By heat sterilization in a steam sterilizer or by another sterilization technique approved by the Director that renders the waste non-infectious. Minimum operating procedures for steam sterilizers shall include:
 - i. Adoption of standard written operating procedures for each steam sterilizer including time, temperature, pressure, type of waste, type of containers, closure on containers, pattern of loading, water content, and maximum load quantity;
 - ii. Attainment of a temperature of 250 degrees Fahrenheit (121 degrees Celsius) for one-half hour or longer, depending on quantity and compaction of the load, in order to achieve sterilization of the entire load. A check of recording and or indicating thermometers shall be made during each complete cycle to ensure the required temperature attainment. Thermometers shall be calibrated at least

annually or more frequently if needed;

- iii. Use of heat sensitive tape or other device for each container that is processed to indicate the attainment of adequate sterilization conditions; and
 - iv. Use of the biological indicator, *Bacillus stearothermophilus* placed at the center of a load at least once a month, to confirm the attainment of adequate sterilization conditions.
- (iv) Unless otherwise approved by the Director, disposal of infectious medical waste shall be by one of the following methods:
- a. By burial at a landfill approved to accept infectious medical waste, provided the waste is buried immediately with cover material or non-infectious solid waste prior to compaction to ensure that equipment and persons are not contaminated by subsequent compaction and covering operation.
 - b. By discharge to a sewer system approved by the Director if the infectious medical waste is liquid and provided the waste will not remain viable in the sewer system.
- (v) Trash chutes shall not be used to transfer infectious medical waste.

4.4 Demolition of Buildings and Structures.

4.4.1 **Inspection and Removal Prior to Demolition.** No person shall demolish any building, dwelling or structure without first having the building, dwelling or structure inspected by a Department registered predemolition building inspector and without first removing all asbestos-containing material, mercury thermostats, mercury vapor fluorescent lights, fluorescent lighting fixtures with transformers containing polychlorinated biphenyls, refrigeration units containing chlorofluorocarbons and drums or containers of hazardous or radioactive waste. All material, fixtures, items, containers and waste listed in this section shall be disposed of at a facility approved to accept such waste for disposal or recycling.

4.4.2 **Predemolition Inspection Report.**

- (i) Department registered predemolition inspectors shall complete an inspection report for each building, structure or dwelling they inspect and shall give a copy of the completed inspection report to the property owner, or other person responsible for the demolition of the building, and forward a copy of the report to the Department. The Department may prescribe the format or furnish the inspection form to be used. Each inspection report shall include the following:
 - a. The name, registration number, and employer of the Department registered predemolition building inspector conducting the inspection;

- b. The address of the building inspected;
 - c. The name, address and telephone number of the owner of the building, person who has applied for the demolition permit, or other person responsible for the demolition of the building;
 - d. An itemized listing which indicates the presence, number, or amount of each item listed in part 4.4.1; and
 - e. If available, the name, address, and telephone number of the person or contractor that will be responsible for the removal and disposal of the items identified during the inspection.
- (ii) The Department registered predemolition inspector shall, in addition to the inspection report, provide the building owner or other person responsible for the demolition of the building, with the names of the approved asbestos analytical laboratories, removal contractors and requirements pertaining to removal, and the names and addresses of approved solid waste management facilities, for each of the items identified in the inspection report.
 - (iii) If the Department registered predemolition building inspector conducts or plans to conduct a reinspection or follow-up inspection of the building, prior to demolition, to confirm removal of the items listed in the inspection report, a notation shall be made on the inspection report of the date and time the reinspection was or will be conducted.
 - (iv) The Department or registered predemolition building inspector shall approve demolition of a building or structure after receiving the completed inspection report and certifying that the items contained in the inspection report have been properly removed and disposed or recycled.
 - (v) A copy of each inspection report shall be maintained by the Department registered predemolition building inspector or the inspector's employer for a period of at least five years.

4.4.3 Qualification, Testing, and Registration for Department Registered Predemolition Building Inspectors.

- (i) Prior to being considered for Department registration, Department registered predemolition building inspector applicants shall:
 - a. Hold current certification with the State Division of Air Quality as a certified asbestos inspector;
 - b. Maintain current employment with a State certified asbestos consultant or be State certified as an asbestos consultant if self employed. Applicants that only conduct inspections of buildings owned by their

employer and employees of a government regulatory agency conducting predemolition inspections for their agency shall be exempt from this requirement but not from the requirement of chapter 4.4.3(i)(a) above; and

- c. Submit a letter, written by the applicant's employer acknowledging the applicant's employment and authorization as a representative for the company.
- (ii) Qualifying applicants shall be required to successfully pass a Department administered written examination. The Department, upon request, shall supply qualified applicants with study information. Applicants shall demonstrate knowledge of:
 - a. The regulatory requirements of subsection 4.4 of this regulation; and
 - b. The identification of materials, fixtures, appliances, containers, and other items requiring removal from buildings prior to demolition and the identification of their hazardous constituent and their proper disposal or recycling requirements.
- (iii) Applicants that successfully pass the Department's written examination and pay the required registration fee stated in subsection 5.3 and required in part 4.4.3(iii) of this regulation shall be assigned and issued a registration number identifying them as a Department registered predemolition building inspector and authorizing them to conduct predemolition inspections of structures within Salt Lake County. Upon payment of the fee required in part 4.4.3(iii), applicant shall be issued a registration number identifying them as a Department registered predemolition inspector and authorizing them to conduct predemolition inspections of structures within Salt Lake County.
- (iv) Department registered pre-demolition building inspector registrations shall be valid for two years from the date of issuance. Inspectors must renew their permits with the Health Department within 60 days prior to their current permits' expiration.
- (v) Department registered pre-demolition inspectors shall immediately notify the Department of a change in address.
- (vi) Department registered pre-demolition inspectors who change employment or who fail to maintain current certification with the State Division of Air Quality as a certified asbestos inspector shall immediately notify the Department and shall not conduct further predemolition building inspections until the Department gives approval.

4.5 Asbestos. In addition to the requirements set forth in part 4.1.5(ii)(y) and 4.4 of this regulation, the Department incorporates by reference the Asbestos Rules promulgated by the Utah Air Quality Board in Utah Admin. Code R307-801

4.6 Automobile Dismantling Yard and scrap Metal Processor Requirements.

4.6.1 **Prohibited Wastes.** No automobile dismantling yard, scrap metal processor, or other facility shall accept any hazardous or putrescible waste for processing or disposal.

4.6.2 Processing and Monitoring Requirements.

- (i) No automobile dismantling yard shall shred, pulverize, crush, or send to be crushed or shredded any vehicle, appliance, or other item that contains fuel, used oil, antifreeze, liquid polychlorinated byphenyls, chlorofluorocarbons, or other hazardous waste.
- (ii) Scrap metal processors shall have a representative sample of the residue produced from facilities shredding vehicles analyzed on a semi-annual basis for total petroleum hydrocarbons (TPH), polychlorinated byphenyls (PCBs), lead, cadmium, and any other constituents requested by the Director. The results of this testing shall be submitted to the Director on a semi-annual basis. All analytical testing shall be performed by a state certified environmental laboratory, using approved methods found in EPA Report SW-846 "Test Methods for Evaluating Solid Waste", third edition, November 1986, as revised December 1987.

5. LICENSES, PERMITS, BONDS & REGULATORY FEES

5.1 The Department may establish and collect appropriate fees for licenses and permits as set out in this regulation. The Department may collect appropriate fees as set out in this regulation for the performance of services, including inspections and plan reviews. If information on a license or permit application changes, the applicant shall notify the Department in writing within 20 calendar days.

5.2 Unless otherwise provided or omitted, solid waste management facilities and haulers required to obtain a permit pursuant to part 4.1.1 of this regulation shall pay the applicable application fee and a tonnage fee. The application fee is due upon permit application and, if so stated, is due annually thereafter. The tonnage fee is due quarterly on the first day of January, April, July, and October.

5.2.1 Application Fees. The Application fees are:

- (i) **Municipal Waste Permit Fee.** A Municipal Waste Permit Fee shall be paid by applicants for a permit issued pursuant to subchapters 4.1.1(i)(a)(i)-(b)(i) upon permit application. The Municipal Waste Permit Fee shall be \$50 per site acre;
- (ii) **Construction and Demolition Waste Permit Fee.** A Construction and Demolition Waste Permit Fee shall be paid by applicants for a permit issued pursuant to subchapters 4.1.1(i)(a)(ii)-(b)(ii) upon permit

application. The Construction and Demolition Waste Permit Fee shall be \$25.00 per site acre.

- (iii) **Monofill Permit Fee.** A Monofill Permit Fee shall be paid by applicants for a permit issued pursuant to subchapter 4.1.1(i)(b)(iii) upon permit application. The Monofill Permit Fee shall be \$25.00 per site acre.
- (iv) **Liquid Waste Processing Facility Permit Fee.** A Liquid Waste Processing Facility Permit Fee shall be paid by applicants for a permit issued pursuant to subchapter 4.1.1(i)(a)(iii) upon permit application. The Liquid Waste Processing Facility Permit fee shall be \$200.
- (v) **Waste Tire Storage Facility Permit Fee.** A Waste Tire Storage Facility Permit Fee shall be paid by applicants for a permit issued pursuant to subchapter 4.1.1(i)(a)(iv) upon permit application and annually thereafter. The Waste Tire Storage Facility Permit fee is calculated according to the following table:

0 – 15	Tons per day maximum design capacity	\$100.00
16-200	Tons per day maximum design capacity	\$200.00
201-700	Tons per day maximum design capacity	\$300.00
Greater than 700	Tons per day maximum design capacity	\$500.00

- (vi) **Waste Hauler Permit Fee.** A Waste Hauler Permit Fee shall be paid by applicants for a permit issued pursuant to chapter 4.2.1(i)(a) upon permit application. The Waste Hauler Permit Fee shall be \$50.00 for the first vehicle and \$35 for each additional vehicle.
- (vii) **Infectious Medical Waste Facility Permit Fee for Storage or Transfer.** An Infectious Medical Waste Facility Permit Fee for Storage or Transfer shall be paid by applicants for a permit issued pursuant to subchapter 4.1.1(i)(a)(v) upon permit application and annually thereafter. The Infectious Medical Waste Facility Permit Fee for Storage or Transfer shall be \$100.
- (viii) **Infectious Medical Waste Treatment Facility Permit Fee.** An Infectious Medical Waste Treatment Facility Permit shall be paid by applicants for a permit issued pursuant to subchapter 4.1.1(i)(a)(vi). upon permit application. The Infectious Medical Waste Treatment Facility Permit fee shall be \$300.
- (ix) **Infectious Medical Waste Hauler Permit Fee.** An Infectious Medical Waste Hauler Permit Fee shall be paid by applicants for a permit issued

pursuant to chapter 4.2.1(i)(d) upon permit application. The Infectious Medical Waste Hauler Permit shall be \$100 per vehicle.

- (x) **Recycling or Private Solid Waste Management Facility Permit Fee.** A Recycling or Private Solid Waste Management Facility Permit Fee shall be paid by applicants for a permit issued pursuant to subchapters 4.1.1(i)(a)(vii)-(b)(iv) upon permit application and annually thereafter. The Recycling or Private Solid Waste Management Facility Permit Fee is calculated according to the following table:

0 – 200	Tons per day maximum design capacity	\$300.00
201 – 700	Tons per day maximum design capacity	\$400.00
Over 700	Tons per day maximum design capacity	\$500.00

- (xi) **Liquid Waste Hauler Permit Fee.** A Liquid Waste Hauler Permit Fee shall be paid by applicants for a permit issued pursuant to chapter 4.2.1(i)(c) upon permit application. The Liquid Waste Hauler Permit Fee shall be \$125 for the first five vehicles and \$25 for each additional vehicle.
- (xii) **Waste Tire Hauler Permit Fee.** A Waste Tire Hauler Permit Fee shall be paid by applicants for a permit issued pursuant to chapter 4.2.1(i)(b) upon permit application. The Waste Tire Hauler Permit Fee shall be \$50 for the first five vehicles and \$10 for each additional vehicle.
- (xiii) **Incomplete Permit Application Fee.** Incomplete permit applications shall subject the applicant to an hourly review fee of \$60 per hour for the review of subsequent documents.

5.2.2 Tonnage Fees:

- (i) **Municipal Waste Permit Tonnage Fee** – Owners or operators of solid waste management facilities permitted pursuant to subchapters 4.1.1(i)(a)(i)-(b)(i) shall pay a tonnage fee of \$1.50 per ton of solid waste accepted. Processing Facilities permitted pursuant to subchapter 4.1.1(i)(a)(i) are exempt from paying this fee on solid waste transferred for disposal inside Salt Lake County.
- (ii) **Construction and Demolition Waste Permit Tonnage Fee** – Owners or operators of solid waste management facilities permitted pursuant to subchapters 4.1.1(i)(a)(ii)-(b)(ii) shall pay a tonnage fee of \$.30 per ton of solid waste accepted. Processing Facilities permitted pursuant to subchapter 4.1.1(i)(a)(ii) are exempt from paying this fee on solid waste transferred for disposal inside Salt Lake County.
- (iii) **Monofill Permit Tonnage Fee** – Monofill Permit holders shall pay a tonnage fee of \$.30 per ton of solid waste accepted.

- (iv) **Liquid Waste Processing Facility Permit Tonnage Fee** – Liquid Waste Processing Facility Permit holders shall pay a tonnage fee of \$.30 per ton of waste accepted at the facility.
- (v) **Infectious Medical Waste Treatment Facility Permit Tonnage Fee** – Infectious Medical Waste Treatment Facility Permit holders shall pay a tonnage fee of \$3.00 per ton of infectious medical waste treated at the facility.

5.3 Pre-Demolition Inspectors who register pursuant to subsection 4.4 of this regulation shall pay a registration fee of \$50.00, due upon application. Registration is valid for two years.

5.4 Late Fees and Follow-Up Inspection Fees.

5.4.1 The Department may impose upon any party subject to this regulation penalties and charges for failure to timely pay service and license or permit fees as set out in this regulation. Attorney's fees and collection fees may also be applied.

5.4.2 Fees unpaid to the Health Department after one month of the due date will be assessed a penalty of 10% of the outstanding balance. Failure to pay the fees and additional charges after two months of the due date will be assessed an additional penalty of 15% of the outstanding balance including previous penalties. Failure to pay the fees and additional charges after 100 days of the due date will result in suspension of the permit and the right to operate. A \$40.00 charge will be assessed for each returned check.

5.4.3 Solid Waste Management Facility Follow-Up Inspection Fee. The Department will charge a follow-up fee to a Solid Waste Management Facility Permit holder when conditions found during an inspection require a follow-up inspection to ensure compliance. The fee for a Solid Waste Management Facility Follow-up Inspection is \$100.

5.4.4 Hauler Follow-Up Inspection Fee. The Department will charge a follow-up fee to a Hauler Permit holder when conditions found during an inspection require a follow-up inspection to ensure compliance. The fee for a Hauler Follow-up Inspection is \$100

5.5 Unless otherwise provided for in this regulation or approved by the Director in the Department's Fee Standard, all fees collected by the Department are non-refundable. All licenses and permits issued by the Department are non-transferable.

5.6 **Denial, Suspension, or Revocation of Approval or Permit.** Any approval, permit, or application for permit renewal received or issued pursuant to this regulation may be denied, suspended, or revoked by the Director following notice and opportunity for a hearing:

- 5.6.1 Failure of the reports, plans, or specifications to show the solid waste management facility will be constructed, operated, or maintained in accordance with the requirements and standards of this regulation;
- 5.6.2 Submission of incorrect or false information in the application, reports, plans, or specifications;
- 5.6.3 Failure to construct, operate, or maintain the solid waste management facility, site, or vehicle in accordance with the application, reports, plans, and specifications approved by the Department;
- 5.6.4 Operation of the solid waste management facility, site, business, or vehicle in a way that causes or creates a nuisance or hazard to the public health, safety, or welfare;
- 5.6.5 Violation of any rule or regulation, restriction, or requirement adopted by the Department;
- 5.6.6 Violation of any condition on which the permit was issued;
- 5.6.7 Failure to pay to the Department the permit or tonnage fee required in Section 5.2 or failure to post or maintain the surety bond required in subpart 4.1.1(iii);
- 5.6.8 Failure to pay any deficiency in the required bond or failure to provide or maintain the financial assurance as required in subpart 4.1.1(iii);
- 5.6.9 Failure of the owner or operator of a solid waste management facility to permit or allow the Department to conduct inspections or obtain samples as necessary to determine compliance with this regulation; or
- 5.6.10 Previous history of non-compliance with any local, state or federal environmental law, or previous revocation or permanent suspension of any permit issued under any local, state, or federal environmental law.
- 5.6.11 Failure to pay all charges, including late fees after 100 days of the due date.
- 5.6.12 The Department may deny the application of a person for a new facility if the person owns or operates or has responsibility for an existing facility that is in violation of this regulation.

6. INSPECTIONS & INVESTIGATIONS

- 6.1 To ensure compliance, the Department has the authority to perform inspections, investigations, reviews, and other actions as necessary.
- 6.2 **Authority for Department to Enter Premises.**
 - 6.2.1 **Regulated Commercial Premises.** Upon presenting proper identification, authorized representatives of the Department may enter upon the premises of

properties regulated by the Department to perform routine inspections to ensure compliance with rules, standards, regulations, and ordinances adopted by the Department, the Departments of Health & Environmental Quality, county or municipal governing bodies, or the Division of Occupational and Professional Licensing.

6.2.2 **Consent by License or Permit:** The Department may require licensees or permittees to consent to access for inspections as part of their license or permit. Failure to allow access for inspections as set out in the license or permit may result in the suspension or revocation of the license or permit.

6.3 The owner or other responsible person may request information gathered by the Department during an investigation, inspection or review as authorized by the Government Records Access and Management Act, Utah Code Ann. § 63G-2-101 to -901 (2009).

6.4 **Pre-open and Construction Inspection.** Upon completion of construction of a processing facility and prior to its initial operation, the Department shall be notified so an inspection may be made of the facility to determine conformance with the approved plan and with the applicable provisions of this regulation. Performance tests of the processing facility may be required by the Director. A report covering the results of any performance tests shall be prepared by the design engineer of the project and submitted to the Department with a copy of all supporting data.

7. **ENFORCEMENT MECHANISMS.** If the Department has investigated or inspected any property or facility and believes the property owner or other responsible party is in violation of this regulation or the Department has other reasonable grounds to believe that there has been a violation of any part of this regulation or that the property owner or otherwise responsible party is not in compliance with this regulation, the Department may take civil enforcement action as authorized by statute, rule, ordinance, and regulation and may also refer the matter for criminal prosecution. Civil enforcement may involve court or administrative actions, injunctive actions, and closures and may involve cost recovery, penalties, and other remedies. Civil and criminal actions may be brought simultaneously. A person does not need to be first adjudged liable in a civil matter before facing criminal charges.

7.1 **Criminal Enforcement Actions.** The Department may recommend criminal prosecution for environmental violations either alone or in conjunction with civil enforcement. Criminal prosecutions for environmental violations of state or federal law may be filed by the District Attorney, Utah Attorney General, United States Department of Justice, or other enforcement entity. Factors that the Department may consider in recommending criminal enforcement include the following factors and any other relevant factors:

7.1.1 The nature and seriousness of the offense including the immediacy of the threat of danger to the life or safety of another or the harm or threatened harm to human health or environment;

- 7.1.2 The degree to which the violation was designed to provide economic gain or cost avoidance or it involved a pattern of conduct or a common attitude of illegal conduct;
- 7.1.3 The degree to which the offender is a known violator and has avoided prior actions by the department;
- 7.1.4 The degree to which prosecution might deter future violations;
- 7.1.5 The person's actual culpability in connection with the offense including the presence in connection with the offense including the presence of criminal intent;
- 7.1.6 The person's willingness to cooperate in the investigation including whether the violator has attempted to conceal evidence or prosecution of others;
- 7.1.7 The appropriateness of referring the case to other agencies having prosecutorial interest; and
- 7.1.8 Possibilities of civil remedies which would be more appropriate than initiating the criminal justice process.

7.2 **Civil Enforcement Actions.** The Department may request that the District Attorney bring an action to restrain or enjoin actions in violation of public health, environmental laws, and other laws or abate conditions in violation of such laws.

7.3 **Administrative Actions.**

- 7.3.1 The Department may, at its discretion, issue a Notice of Violation & Order of Compliance (NOV).
- 7.3.2 **Service of NOV.** The Department may provide notice to the owner of the property or otherwise responsible person by sending the NOV via first class mail to the last known address of the owner of the property or other responsible person. If notice is returned undeliverable, the owner of the property or other responsible person may be personally served or be given notice by other methods reasonably calculated to give actual notice to the owner or other responsible party.
- 7.3.3 **Contents of NOV.** The NOV shall:
 - (i) Describe the property and the persons believed to be in violation;
 - (ii) Describe the violation;
 - (iii) Describe remedial action that will comply with the provisions of this regulation;
 - (iv) Set a reasonable time for the performance of any required remedial action(s);

- (v) Describe the procedure to contest the NOV and the time limits for such a contest; and
- (vi) Notify the owner or other responsible person that if no written contest is filed within the time required, the NOV will become final and unappealable to any administrative entity or court.

7.3.4 **Challenging an NOV.** As detailed in the SLVHD's Adjudicative Hearing Procedures, a party aggrieved by an NOV may request a departmental conference, departmental hearing, or departmental appeal in writing within ten (10) days of the date of the NOV.

7.3.5 **Departmental Conference, Settlement Agreements, and Stipulations & Orders.**

- (i) After issuance of the NOV, the alleged violator has the option to request and attend a Departmental Conference to discuss the NOV and settlement with the Department. No hearing officer will be present. The process of requesting a Departmental Conference are more fully described in the SLVHD's Adjudicative Hearing Procedures.
- (ii) If the parties agree to a settlement, the Department will prepare, in conjunction with the District Attorney's Office, a binding Settlement Agreement or Stipulation & Consent Order which may require the payment of penalties and the costs of investigation. Parties may also agree to a settlement at any time subsequent to the Departmental Conference. After signing a Settlement Agreement or Stipulation & Consent Decree, the parties waive all rights to further department and court hearings or appeals. Settlement Agreements or Stipulation & Consent orders may be enforced in state courts.

7.3.6 **Hearings & Appeals.** Parties Aggrieved by an NOV may also request a Departmental Hearing or a Departmental Appeal. A hearing officer is present at these proceedings and makes a written determination. The methods of challenging an NOV are more fully described in the SLVHD's Adjudicative Hearing Procedures. Departmental Hearing Orders and Departmental Appeal Orders may be appealed to the entities and within the time limits set out in the SLVHD's Adjudicatory Hearing Procedures.

7.3.7 **Failing to respond to an NOV.** If a party fails to respond to an NOV within the required time, the NOV becomes a final order unappealable to any administrative entity or court. The Department may then enforce the order in state court.

7.4 **Additional Administrative Enforcement Authority.**

7.4.1 The Department may declare unsanitary conditions a nuisance and cause every nuisance affecting the public health to be abated.

- 7.4.2 Any variances allowed by the Department to the requirements of this regulation shall be only by written approval of the Board.
- 7.4.3 **Emergency Enforcement.** If the Director finds that an emergency exists that requires immediate action to protect the public health, he or she may without notice or hearing issue an order declaring the existence of an emergency and requiring that action be taken as he deems necessary to meet the emergency. The order shall be effective immediately. Any person to whom the order is directed shall comply and abate the nuisance immediately; but may petition the Director for a hearing in accordance with the Salt Lake Valley Health Department's Adjudicative Hearing Procedures. After the hearing and depending upon the findings as to whether the person has complied with the provisions of this regulation, the Director shall continue the order in effect or modify or revoke it. If circumstances warrant because of the seriousness of the hazard, the Department may act to correct or abate the emergency without issuance of an order or directive or without waiting for the expiration of compliance time previously given in an order.

8. CRIMINAL, CIVIL & ADMINISTRATIVE PENALTIES.

8.1 Criminal Penalties.

- 8.1.1 Any person who is found guilty by a court of violating any of the provisions of this regulation, either by failing to do the acts required herein or by doing a prohibited act, is guilty of a class B misdemeanor, pursuant to Utah Code Ann. § 26A-1-123 (2009).
- 8.1.2 Each day such violation is committed or permitted to continue shall constitute a separate violation.
- 8.1.3 Each similar subsequent violation occurring within two years of the initial violation may constitute a class A misdemeanor.

8.2 Civil and Administrative Penalties.

- 8.2.1 Penalties may be included in a Settlement Agreement or Stipulation & Consent Order. Penalties may also be imposed by the Hearing Officer. Penalties may be assessed according to the following factors:
- (i) The violator's history of compliance or non-compliance;
 - (ii) The violator's economic benefit of non-compliance;
 - (iii) The documented costs associated with environmental or health damage;
 - (iv) The violator's degree of willfulness or negligence; and
 - (v) The violator's good faith efforts to comply and cooperate.

8.2.2 The Director may multiply the penalty by the number of days the violation occurred.

8.3 Recovery of Investigation & Abatement Costs.

8.3.1 The Department may recover its inspection, investigative and abatement expenses and costs from owners or other responsible person.

8.3.2 The Department may record a judgment lien on a violator's property to recover its expenses and costs.

9. EFFECTIVE DATE.

9.1 This regulation was submitted to public hearing and comment and became effective after notice and adoption by the Board of Health during its regularly scheduled meeting on October 1, 2009. The tonnage fees in section 5.2.2 were submitted to public hearing and comment and subsequently adopted by the Board of Health during its regularly scheduled meeting on December 3, 2009 effective July 1, 2010.

APPROVED AND ADOPTED this _____ day of _____, 2009.

SALT LAKE VALLEY BOARD OF HEALTH

By: _____
NANO PODOLSKY, Chair

ATTEST:

By: _____
GARY L. EDWARDS, M.S.
Executive Director
Salt Lake Valley Health Department

APPENDIX A

Water Quality Analysis Table

APPENDIX A
WATER QUALITY ANALYSIS TABLE

	GROUND AND SURFACE WATER		LEACHATE
	Baseline Parameters	Routine Parameters	All Samples
FIELD PARAMETERS			
Dissolved Oxygen (DO) ¹	X	X	X
Floater or Sinkers ²	X		X
Odor ³	X	X	X
pH	X	X	X
Specific Conductance	X	X	X
Static Water Level	X	X	X
Temperature	X	X	X
LEACHATE INDICATORS			
Alkalinity	X	X	X
Ammonia	X	X	X
Bicarbonate	X	X	X
Biochemical Oxygen Demand (BOD)	X		X
Carbonate ⁴	X	X	X
Chemical Oxygen Demand (COD)	X	X	X
Chloride	X	X	X
Nitrate	X	X	X
Phenols	X		X
Sulfate	X	X	X
Total Dissolved Solids (TDS)	X	X	X
Total Kjeldahl Nitrogen (TKN)	X		X
Total Organic Carbon (TOC)	X	X	X
Total Organic Halogen (TOH)	X	X	X
Turbidity	X		X
METALS ⁵			
Aluminum	X		X
Antimony	X		X
Arsenic	X	X	X
Barium	X	X	X
Beryllium	X	X	X
Boron	X		X
Cadmium	X	X	X
Calcium	X		X
Chromium (total & hexavalent)	X	X	X
Cobalt	X	X	X
Copper	X	X	X
Cyanide	X		X
Iron	X	X	X
Lead	X	X	X
Magnesium	X	X	X
Manganese, dissolved	X	X	X
Mercury	X	X	X
Nickel	X		X
Potassium	X		X
Selenium	X	X	X
Silver	X	X	X
Sodium	X	X	X
Thallium	X	X	X
Vanadium	X	X	X
Zinc	X	X	X

APPENDIX A (cont)

	GROUND AND SURFACE WATER		LEACHATE
	Baseline Parameters	Routine Parameters	All Samples
ORGANIC CONSTITUENTS			
Volatile Organics ⁶ (as listed below)	X	X	X
Acetone		cis-1,3-Dichloropropene	
Acrolein		trans-1,3-Dichloropropene	
Acrylonitrile		Ethylbenzene	
Benzene		2-Hexanone (Methyl butyl ketone)	
Bromochloromethane		Methyl bromide (Bromomethane)	
Bromodichloromethane		Methyl chloride (Chloromethane)	
Bromoform (Tribromomethane)		Methylene bromide (Dibromomethane)	
Carbon disulfide		Methylene chloride (Dichloromethane)	
Carbon tetrachloride		Methyl ethyl ketone (2-Butanone)	
Chlorobenzene		Methyl iodide (Iodomethane)	
Chloroethane (Ethyl chloride)		4-Methyl-2-pentanone (MIBK)	
Chloroform (Trichloromethane)		Styrene	
Dibromochloromethane		1,1,1,2-Tetrachloroethane	
1,2-Dibromo-3-chloropropane		1,1,2,2-Tetrachloroethane	
1,2-Dibromoethane (EDB)		Tetrachloroethylene (PCE)	
1,2-Dichlorobenzene (ortho)		Toluene	
1,4-Dichlorobenzene (para)		1,1,1-Trichloroethane (Methyl chloroform)	
trans-1,4-Dichloro-2-butene		1,1,2-Trichloroethane	
1,1-Dichloroethane		Trichloroethylene (TCE)	
1,2-Dichloroethane		Trichlorofluoromethane (Freon II)	
1,1-Dichloroethylene		1,2,3-Trichloropropane	
cis-1,2-Dichloroethylene		Vinyl acetate	
trans-1,2-Dichloroethylene		Vinyl chloride	
1,2-Dichloropropane		Xylenes	

Notes

¹ Surface water and leachate only.

² Any floaters or sinkers found shall be analyzed separately for baseline parameters.

³ Any odors noticed during well development, purging, or sampling must be noted and reported.

⁴ Carbonate must be calculated unless the pH is above 8.2.

⁵ Standard analytical procedures for the heavy metals are provided in EPA Report SW-846 "Test Methods for Evaluating Solid Waste" third edition, November 1986, as revised December 1987, includes either Method 6010 or a method from the 7000 series of methods, or other approved methods.

⁶ Standard analytical procedures for the organic constituents are provided in SW-846 as Method 8260.

APPENDIX B

**Utah Solid Waste Permitting and Management Rules
R315-301 Through 320
Appendix D**

Appendix B - List of Hazardous Inorganic and Organic Constituents ¹

Common Name ²	CAS RN ³	Chemical abstracts service index name ⁴	Suggested methods ⁵	PQL (µg/L) ⁶
Acenaphthene.....	83 - 32 - 9	Acenaphthylene, 1,2-dihydro-.....	8100	200
			8270	10
Acenaphthylene.....	208 - 96 - 8	Acenaphthylene.....	8100	200
			8270	10
Acetone.....	67 - 64 - 1	2-Propanone.....	8260	100
Acetonitrile; Methyl cyanide.....	75 - 05 - 8	Acetonitrile.....	8015	100
Acetophenone.....	98 - 86 - 2	Ethanone, 1-phenyl-.....	8270	10
2-Acetylaminofluorene; 2-AAF.....	53 - 96 - 3	Acetamide, N-9H-fluoren-2-yl-.....	8270	20
Acrolein.....	107 - 02 - 8	2-Propenal.....	8030	5
			8260	100
Acrylonitrile.....	107 - 13 - 1	2-Propenenitrile.....	8030	5
			8260	200
Aldrin.....	309 - 00 - 2	1,4:5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro- 1,4,4a,5,8,8a-hexahydro- (1,4],4a[5],8],8a]-	8080	0.05
			8270	10
Allyl chloride.....	107 - 05 - 1	1-Propene, 3-chloro-.....	8010	5
			8260	10
4-Aminobiphenyl.....	92 - 67 - 1	[1,1 ¹ -Biphenyl]-4-amine.....	8270	20
Anthracene.....	120 - 12 - 7	Anthracene.....	8100	200
			8270	10
Antimony.....	(Total)	Antimony.....	6010	300
			7040	2000
			7041	30
Arsenic.....	(Total)	Arsenic.....	6010	500
			7060	10
			7061	20
Barium.....	(Total)	Barium.....	6010	20
			7080	1000
Benzene.....	71 - 43 - 2	Benzene.....	8020	2
			8021	0.1
			8260	5
Benzo[a]anthracene; Benzanthracene...	56 - 55 - 3	Benz[a]anthracene.....	8100	200
			8270	10
Benzo[b]fluoranthene.....	205 - 99 - 2	Benz[e]acephenanthrylene.....	8100	200
			8270	10
Benzo[k]fluoranthene.....	207 - 08 - 9	Benzo[k]fluoranthene.....	8100	200
			8270	10
Benzo[ghi]perylene.....	191 - 24 - 2	Benzo[ghi]perylene.....	8100	200
			8270	10
Benzo[a]pyrene.....	50 - 32 - 8	Benzo[a]pyrene.....	8100	200
			8270	10
Benzyl alcohol.....	100 - 51 - 6	Benzenemethanol.....	8270	20
Beryllium.....	(Total)	Beryllium.....	6010	3
			7090	50

Common Name ²	CAS RN ³	Chemical abstracts service index name ⁴	Suggested PQL methods ⁵ (µg/L) ⁶
alpha-BHC.....	319 - 84 - 6	Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1,2),3[4],5[6]-.	7091 2 8080 0.05 8270 10
beta-BHC.....	319 - 85 - 7	Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1,2[3],4[5],6)-.	8080 0.05 8270 20
delta-BHC.....	319 - 86 - 8	Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1,2),3[4],5[6]-.	8080 0.1 8270 20
gamma-BHC; Lindane.....	58 - 89 - 9	Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1,2),3[4],5[6]-.	8080 0.05 8270 20
Bis(2-chloroethoxy)methane.....	111 - 91 - 1	Ethane, 1,1 ¹ -[methylenebis(oxy)]bis[2-chloro-.	8110 5 8270 10
Bis(2-chloroethyl) ether; Dichloroethyl ether.	111-44-4	Ethane, 1,1 ¹ -oxybis[2-chloro-....	8110 3 8270 10
Bis-(2-chloro-1-methylethyl) ether; 2,2 ¹ -Dichlorodiisopropyl ether; DCIP, See note 7	108 - 60 - 1	Propane, 2,2 ¹ -oxybis[1-chloro-....	8110 10 8270 10
Bis(2-ethylhexyl) phthalate.....	117 - 81 - 7	1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester.	8060 20
Bromochloromethane; Chlorobromomethane.	74 - 97 - 5	Methane, bromochloro-.....	8021 0.1 8260 5
Bromodichloromethane; Dibromochloromethane.	75 - 27 - 4	Methane, bromodichloro-.....	8010 1 8021 0.2 8260 5
Bromoform; Tribromomethane.....	75 - 25 - 2	Methane, tribromo-.....	8010 2 8021 15 8260 5
4-Bromophenyl phenyl ether.....	101 - 55 - 3	Benzene, 1-bromo-4-phenoxy-.....	8110 25 8270 10
Butyl benzyl phthalate; Benzyl butyl phthalate.	85 - 68 - 7	1,2-Benzenedicarboxylic acid, butyl phenylmethyl ester.	8060 5 8270 10
Cadmium.....	(Total)	Cadmium.....	6010 40 7130 50 7131 1
Carbon disulfide.....	75 - 15 - 0	Carbon disulfide.....	8260 100
Carbon tetrachloride.....	56 - 23 - 5	Methane, tetrachloro-.....	8010 1 8021 0.1 8260 10
Chlordane.....	See Note 8	4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-.	8080 0.1 8270 50
p-Chloroaniline.....	106 - 47 - 8	Benzenamine, 4-chloro-.....	8270 20
Chlorobenzene.....	108 - 90 - 7	Benzene, chloro-.....	8010 2 8020 2 8021 0.1 8260 5
Chlorobenzilate.....	510 - 15 - 6	Benzeneacetic acid, 4-chloro-]--(4-chlorophenyl)-]-hydroxy-, ethyl	8270 10

Common Name ²	CAS RN ³	Chemical abstracts service index name ⁴	Suggested PQL methods ⁵ (µg/L) ⁶	
		ester.		
p-Chloro-m-cresol; 4-Chloro-3-methylphenol.	59 - 50 - 7	Phenol, 4-chloro-3-methyl-.....	8040	5
Chloroethane; Ethyl chloride.....	75 - 00 - 3	Ethane, chloro-.....	8270	20
			8010	5
			8021	1
			8260	10
Chloroform; Trichloromethane.....	67 - 66 - 3	Methane, trichloro-.....	8010	0.5
			8021	0.2
			8260	5
2-Chloronaphthalene.....	91 - 58 - 7	Naphthalene, 2-chloro-.....	8120	10
			8270	10
2-Chlorophenol.....	95 - 57 - 8	Phenol, 2-chloro-.....	8040	5
			8270	10
4-Chlorophenyl phenyl ether.....	7005-72-3	Benzene, 1-chloro-4-phenoxy-.....	8110	40
			8270	10
Chloroprene.....	126 - 99 - 8	1,3-Butadiene, 2-chloro-.....	8010	50
			8260	20
Chromium.....	(Total) Chromium.....		6010	70
			7190	500
			7191	10
Chrysene.....	218 - 01 - 9	Chrysene.....	8100	200
			8270	10
Cobalt.....	(Total) Cobalt.....		6010	70
			7200	500
			7201	10
Copper.....	(Total) Copper.....		6010	60
			7210	200
			7211	10
m-Cresol; 3-methylphenol.....	108 - 39 - 4	Phenol, 3-methyl-.....	8270	10
o-Cresol; 2-methylphenol.....	95 - 48 - 7	Phenol, 2-methyl-.....	8270	10
p-Cresol; 4-methylphenol.....	106 - 44 - 5	Phenol, 4-methyl-.....	8270	10
Cyanide.....	57 - 12 - 5	Cyanide.....	9010	200
2,4-D; 2,4-Dichlorophenoxyacetic acid	94 - 75 - 7	Acetic acid, (2,4-dichlorophenoxy)-.	8150	10
4,4 ¹ -DDD.....	72 - 54 - 8	Benzene 1,1 ¹ -(2,2-dichloroethylidene)bis[4-chloro-.	8080	0.1
			8270	10
4,4 ¹ -DDE.....	72 - 55 - 9	Benzene, 1,1 ¹ -(dichloroethylenylidene)bis[4-chloro-.	8080	0.05
			8270	10
4,4 ¹ -DDT.....	50 - 29 - 3	Benzene, 1,1 ¹ -(2,2,2-trichloroethylidene)bis[4-chloro-.	8080	0.1
			8270	10
Diallate.....	2303-16-4	Carbamothioic acid, bis(1-methylethyl)-,S-(2,3-dichloro-2-propenyl) ester.	8270	10
Dibenz[a,h]anthracene.....	53 - 70 - 3	Dibenz[a,h]anthracene.....	8100	200
			8270	10
Dibenzofuran.....	132 - 64 - 9	Dibenzofuran.....	8270	10
Dibromochloromethane; Chlorodibromomethane.	124 - 48 - 1	Methane, dibromochloro-.....	8010	1
			8021	0.3

Common Name ²	CAS RN ³	Chemical abstracts service index name ⁴	Suggested PQL methods ⁵ (µg/L) ⁶
			8260 5
1,2-Dibromo-3-chloropropane; DBCP..	96 - 12 - 8	Propane, 1,2-dibromo-3-chloro-.....	8011 0.1 8021 30 8260 25
1,2-Dibromoethane; Ethylene dibromide; EDB.	106 - 93 - 4	Ethane, 1,2-dibromo-.....	8011 0.1 8021 10 8260 5
Di-n-butyl phthalate.....	84 - 74 - 2	1,2-Benzenedicarboxylic acid, dibutyl ester.	8060 5 8270 10
o-Dichlorobenzene; 1,2-Dichlorobenzene.	95 - 50 - 1	Benzene, 1,2-dichloro-.....	8010 2 8020 5 8021 0.5 8120 10 8260 5 8270 10
m-Dichlorobenzene; 1,3-Dichlorobenzene.	541 - 73 - 1	Benzene, 1,3-Dichloro-.....	8010 5 8020 5 8021 0.2 8120 10 8260 5 8270 10
p-Dichlorobenzene; 1,4-Dichlorobenzene.	106 - 46 - 7	Benzene, 1,4-dichloro-.....	8010 2 8020 5 8021 0.1 8120 15 8260 5 8270 10
3,3 ¹ -Dichlorobenzidine.....	91 - 94 - 1	[1,1 ¹ -Biphenyl]-4,4 ¹ -diamine, 3,3 ¹ -dichloro-.	8270 20
trans-1,4-Dichloro-2-butene.....	110-57-6	2-Butene, 1,4-dichloro-, (E)-.....	8260 100
Dichlorodifluoromethane; CFC 12;.....	75 - 71 - 8	Methane, dichlorodifluoro-.....	8021 0.5 8260 5
1,1-Dichloroethane; Ethyldidene chloride.	75 - 34 - 3	Ethane, 1,1-dichloro-.....	8010 1 8021 0.5 8260 5
1,2-Dichloroethane; Ethylene dichloride.	107 - 06 - 2	Ethane, 1,1-dichloro-.....	8010 0.5 8021 0.3 8260 5
1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride.	75 - 35 - 4	Ethene, 1,1-dichloro-.....	8010 1 8021 0.5 8260 5
cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene.	156 - 59 - 2	Ethene, 1,2-dichloro-, (Z)-.....	8021 0.2 8260 5
trans-1,2-Dichloroethylene trans-1,2-Dichloroethene.	156 - 60 - 5	Ethene, 1,2-dichloro-, (E)-.....	8010 1 8021 0.5 8260 5
2,4-Dichlorophenol.....	120 - 83 - 2	Phenol, 2,4-dichloro-.....	8040 5

Common Name ²	CAS RN ³	Chemical abstracts service index name ⁴	Suggested PQL methods ⁵ (µg/L) ⁶
			8270 10
2,6-Dichlorophenol.....	87 - 65 - 0	Phenol, 2,6-dichloro-.....	8270 10
1,2-Dichloropropane; Propylene dichloride.	78 - 87 - 5	Propane, 1,2-dichloro-.....	8010 0.5 8021 0.05 8260 5
1,3-Dichloropropane; Trimethylene dichloride.	142 - 28 - 9	Propane, 1,3-dichloro-.....	8021 0.3 8260 5
2,2-Dichloropropane; Isopropylidene chloride.	594 - 20 - 7	Propane, 2,2-dichloro-.....	8021 0.5 8260 15
1,1-Dichloropropene.....	563 - 58 - 6	1-Propene, 1,1-dichloro-.....	8021 0.2 8260 5
cis-1,3-Dichloropropene.....	10061-01-5	1-Propene, 1,3-dichloro-, (Z)-.....	8010 20 8260 10
trans-1,3-Dichloropropene.....	10061-02-6	1-Propene, 1,3-dichloro-, (E)-.....	8010 5 8260 10
Dieldrin.....	60 - 57 - 1	2,7:3,6-Dimethanonaphth[2,3-b]oxirene, 3,4,5,6,9,9-hexa, chloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1a),2[,2a],3[,6[,6a],7[,7a)]-.	8080 0.05 8270 10
Diethyl phthalate.....	84 - 66 - 2	1,2-Benzenedicarboxylic acid, diethyl ester.	8060 5 8270 10
0,0-Diethyl 0-2-pyrazinyl phosphorothioate; Thionazin. Dimethoate.....	297 - 97 - 2 60 - 51 - 5	Phosphorothioic acid, 0,0-diethyl 0-8141 pyrazinyl ester. Phosphorodithioic acid, 0,0-dimethyl S-[2-(methylamino)-2-oxoethyl] ester.	8141 5 8270 20 8141 3 8270 20
p-(Dimethylamino)azobenzene.....	60 - 11 - 7	Benzenamine, N,N-dimethyl-4-(phenylazo)-.	8270 10
7,12-Dimethylbenz[a]anthracene.....	57 - 97 - 6	Benz[a]anthracene, 7,12-dimethyl-...	8270 10
3,3 ¹ -Dimethylbenzidine.....	119 - 93 - 7	[1,1 ¹ -Biphenyl]-4,4 ¹ -diamine, 3,3 ¹ -dimethyl-.	8270 10
2,4-Dimethylphenol; m-Xylenol.....	105 - 67 - 9	Phenol, 2,4-dimethyl-.....	8040 5 8270 10
Dimethyl phthalate.....	131 - 11 - 3	1,2-Benzenedicarboxylic acid, dimethyl ester.	8060 5 8270 10
m-Dinitrobenzene.....	99 - 65 - 0	Benzene, 1,3-dinitro-.....	8270 20
4,6-Dinitro-o-cresol 4,6-Dinitro-2-methylphenol.	534 - 52 - 1	Phenol, 2-methyl-4,6-dinitro.....	8040 150 8270 50
2,4-Dinitrophenol;.....	51 - 28 - 5	Phenol, 2,4-dinitro-.....	8040 150 8270 50
2,4-Dinitrotoluene.....	121 - 14 - 2	Benzene, 1-methyl-2,4-dinitro-.....	8090 0.2 8270 10
2,6-Dinitrotoluene.....	606 - 20 - 2	Benzene, 2-methyl-1,3-dinitro-.....	8090 0.1 8270 10
Dinoseb; DNBP; 2-sec-Butyl-4,6-dinitrophenol.	88 - 85 - 7	Phenol, 2-(1-methylpropyl)-4,6-dinitro-.	8150 1 8270 20
Di-n-octyl phthalate.....	117 - 84 - 0	1,2-Benzenedicarboxylic acid,	8060 30

Common Name ²	CAS RN ³	Chemical abstracts service index name ⁴	Suggested PQL methods ⁵ (µg/L) ⁶
		dioctyl ester.	8270 10
Diphenylamine.....	122 - 39 - 4	Benzenamine, N-phenyl-.....	8270 10
Disulfoton.....	298 - 04 - 4	Phosphorodithioic acid, 0,0-diethyl S-[2-(ethylthio)ethyl] ester.	8140 2 8141 0.5
Endosulfan I.....	959 - 98 - 8	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexa- chloro- 1,5,5a,6,9,9a-hexahydro-, 3-oxide,	8270 10 8080 0.1
Endosulfan II.....	33213-65-9	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexa- chloro- 1,5,5a,6,9,9a-hexahydro-, 3-oxide, (3),5a],6[,9[,9a)]-.	8080 0.05 8270 20
Endosulfan sulfate.....	1031-07-8	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexa- chloro- 1,5,5a,6,9,9a-hexahydro-,3-3-dioxide.	8080 0.5 8270 10
Endrin.....	72 - 20 - 8	2,7:3,6-Dimethanonaphth[2,3-b]oxirene, 3,4,5,6,9,9-hexachloro- 1a,2,2a,3,6,6a,7,7a-octahydro-, (1a), 2[,2a[,3[,6[,6a[,7[,7a)]-.	8080 0.1 8270 20
Endrin aldehyde.....	7421-93-4	1,2,4-Methenocyclopenta[cd] pentalene-5-carboxaldehyde, 2,2a,3,3,4,7-hexachlorodecahydro-, (1),2[,2a[,4[,4a[,5[,6a[,6b[,7R*)-.	8080 0.2 8270 10
Ethylbenzene.....	100 - 41 - 4	Benzene, ethyl-.....	8020 2 8221 0.05 8260 5
Ethyl methacrylate.....	97 - 63 - 2	2-Propenoic acid, 2-methyl-, ethyl ester.	8015 5 8260 10 8270 10
Ethyl methanesulfonate.....	62 - 50 - 0	Methanesulfonic acid, ethyl ester....	8270 20
Famphur.....	52 - 85 - 7	Phosphorothioic acid, 0-[4- [(dimethylamino)sulfonyl]phenyl] 0,0-dimethyl ester.	8270 20
Fluoranthene.....	206 - 44 - 0	Fluoranthene.....	8100 200 8270 10
Fluorene.....	86 - 73 - 7	9H-Fluorene.....	8100 200 8270 10
Heptachlor.....	76 - 44 - 8	4,7-Methano-1H-indene, 1,4,5,6,7,8,8- heptachloro-3a,4,7,7a-tetrahydro-.	8080 0.05 8270 10
Heptachlor epoxide.....	1024-57-3	2,5-Methano-2H-indeno[1,2-b] oxirene, 2,3,4,5,6,7,7-heptachloro- 1a,1b,5,5a,6,6a-hexahydro-, (1a), 1b[, 2[, 5[, 5a[, 6[, 6a)]).	8080 1 8270 10
Hexachlorobenzene.....	118 - 74 - 1	Benzene, hexachloro-.....	8120 0.5 8270 10
Hexachlorobutadiene.....	87 - 68 - 3	1,3-Butadiene, 1,1,2,3,4,4-	8021 0.5

Common Name ²	CAS RN ³	Chemical abstracts service index name ⁴	Suggested PQL methods ⁵ (µg/L) ⁶
		hexachloro-	8120 5
			8260 10
			8270 10
Hexachlorocyclopentadiene.....	77 - 47 - 4	1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro-	8120 5
		hexachloro-	8270 10
Hexachloroethane.....	67 - 72 - 1	Ethane, hexachloro-.....	8120 0.5
			8260 10
			8270 10
Hexachloropropene.....	1888-71-7	1-Propene, 1,1,2,3,3,3-hexachloro-..	8270 10
2-Hexanone; Methyl butyl ketone.....	591 - 78 - 6	2-Hexanone.....	8260 50
Indeno(1,2,3-cd)pyrene.....	193 - 39 - 5	Indeno(1,2,3-cd)pyrene.....	8100 200
			8270 10
Isobutyl alcohol.....	78 - 83 - 1	1-Propanol, 2-methyl-.....	8015 50
			8240 100
Isodrin.....	465 - 73 - 6	1,4,5,8-Dimethanonaphthalene,1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a hexahydro-(1),4],4a[,5[,8[,8a]-.	8270 20
			8260 10
Isophorone.....	78 - 59 - 1	2-Cyclohexen-1-one, 3,5,5-trimethyl-	8090 60
			8270 10
Isosafrole.....	120 - 58 - 1	1,3-Benzodioxole, 5-(1-propenyl)-....	8270 10
Kepone.....	143 - 50 - 0	1,3,4-Metheno-2H-cyclobuta[cd]pentalen-2-one, 1,1a,3,3a,4,5,5,5a,5b,6-decachlorooctahydro-	8270 20
Lead.....	(Total) Lead.....		6010 400
			7420 1000
			7421 10
Mercury.....	(Total) Mercury.....		7470 2
Methacrylonitrile.....	126 - 98 - 7	2-Propenenitrile, 2-methyl-.....	8015 5
			8260 100
Methapyrilene.....	91 - 80 - 5	1,2-Ethanediamine, N.N-dimethyl-N\1\2-pyridinyl-N1/2-thienylmethyl)-.	8270 100
Methoxychlor.....	72 - 43 - 5	Benzene,1,1 ¹ -(2,2,2,trichloroethylidene)bis[4-methoxy-	8080 2
			8270 10
Methyl bromide; Bromomethane.....	74 - 83 - 9	Methane, bromo-.....	8010 20
			8021 10
Methyl chloride; Chloromethane.....	74 - 87 - 3	Methane, chloro-.....	8010 1
			8021 0.3
3-Methylcholanthrene.....	56 - 49 - 5	Benz[j]aceanthrylene, 1,2-dihydro-3-methyl-	8270 10
Methyl ethyl ketone; MEK; 2-Butanone	78 - 93 - 3	2-Butanone.....	8015 10
			8260 100
Methyl iodide; Iodomethane.....	74 - 88 - 4	Methane, iodo-.....	8010 40
			8260 10
Methyl methacrylate.....	80 - 62 - 6	2-Propenoic acid, 2-methyl-, methyl	8015 2

Common Name ²	CAS RN ³	Chemical abstracts service index name ⁴	Suggested PQL methods ⁵ (µg/L) ⁶
		ester.	8260 30
Methyl methanesulfonate.....	66 - 27 - 3	Methanesulfonic acid, methyl ester..	8270 10
2-Methylnaphthalene.....	91 - 57 - 6	Naphthalene, 2-methyl-.....	8270 10
Methyl parathion; Parathion methyl...	298 - 00 - 0	Phosphorothioic acid, 0,0-dimethyl..	8140 0.5
			8141 1
			8270 10
4-Methyl-2-pentanone; Methyl isobutyl ketone.	108 - 10 - 1	2-Pentanone, 4-methyl-.....	8015 5
			8260 100
Methylene bromide; Dibromomethane..	74 - 95 - 3	Methane, dibromo-.....	8010 15
			8021 20
			8260 10
Methylene chloride; Dichloromethane..	75 - 09 - 2	Methane, dichloro-.....	8010 5
			8021 0.2
			8260 10
Naphthalene.....	91 - 20 - 3	Naphthalene.....	8021 0.5
			8100 200
			8260 5
			8270 10
1,4-Naphthoquinone.....	130 - 15 - 4	1,4-Naphthalenedione.....	8270 10
1-Naphthylamine.....	134 - 32 - 7	1-Naphthalenamine.....	8270 10
2-Naphthylamine.....	91 - 59 - 8	2-Naphthalenamine.....	8270 10
Nickel.....	(Total) Nickel.....		6010 150
			7520 400
o-Nitroaniline; 2-Nitroaniline.....	88 - 74 - 4	Benzenamine, 2-nitro-.....	8270 50
m-Nitroaniline; 3-Nitroaniline.....	99 - 09 - 2	Benzenamine, 3-nitro-.....	8270 50
p-Nitroaniline; 4-Nitroaniline.....	100 - 01 - 6	Benzenamine, 4-nitro-.....	8270 20
Nitrobenzene.....	98 - 95 - 3	Benzene, nitro-.....	8090 40
			8270 10
o-Nitrophenol; 2-Nitrophenol.....	88 - 75 - 5	Phenol, 2-nitro-.....	8040 5
			8270 10
p-Nitrophenol; 4-Nitrophenol.....	100 - 02 - 7	Phenol, 4-nitro-.....	8040 10
			8270 50
N-Nitrosodi-n-butylamine.....	924 - 16 - 3	1-Butanamine, N-butyl-N-nitroso-....	8270 10
N-Nitrosodiethylamine.....	55 - 18 - 5	Ethanamine, N-ethyl-N-nitroso-.....	8270 20
N-Nitrosodimethylamine.....	62 - 75 - 9	Methanamine, N-methyl-N-nitroso-...	8070 2
N-Nitrosodiphenylamine.....	86 - 30 - 6	Benzenamine, N-nitroso-N-phenyl-....	8070 5
N-Nitrosodipropylamine; N-Nitroso-N-dipropylamine; Di-n-propylnitrosamine.	621 - 64 - 7	1-Propanamine, N-nitroso-N-propyl..	8070 10
N-Nitrosomethylethylamine.....	10595-95-6	Ethanamine, N-methyl-N-nitroso-.....	8270 10
N-Nitrosopiperidine.....	100 - 75 - 4	Piperidine, 1-nitroso-.....	8270 20
N-Nitrosopyrrolidine.....	930 - 55 - 2	Pyrrolidine, 1-nitroso-.....	8270 40
5-Nitro-o-toluidine.....	99 - 55 - 8	Benzenamine, 2-methyl-5-nitro-.....	8270 10
Parathion.....	56 - 38 - 2	Phosphorothioic acid, 0,0-diethyl 0-(4-nitrophenyl) ester.	8141 0.5
			8270 10
Pentachlorobenzene.....	608 - 93 - 5	Benzene, pentachloro-.....	8270 10
Pentachloronitrobenzene.....	82 - 68 - 8	Benzene, pentachloronitro-.....	8270 20

Common Name ²	CAS RN ³	Chemical abstracts service index name ⁴	Suggested PQL methods ⁵ (µg/L) ⁶
Pentachlorophenol.....	87 - 86 - 5	Phenol, pentachloro-.....	8040 5 8270 50
Phenacetin.....	62 - 44 - 2	Acetamide, N-(4-ethoxyphenyl).....	8270 20
Phenanthrene.....	85 - 01 - 8	Phenanthrene.....	8100 200 8270 10
Phenol.....	108 - 95 - 2	Phenol.....	8040 1
p-Phenylenediamine.....	106 - 50 - 3	1,4-Benzenediamine.....	8270 10
Phorate.....	298 - 02 - 2	Phosphorodithioic acid, 0,0-diethyl S-[(ethylthio)methyl] ester.	8140 2 8141 0.5 8270 10
Polychlorinated biphenyls; PCBs; Aroclors.	See Note 9	1,1'-Biphenyl, chloro derivatives...	8080 50 8270 200
Pronamide.....	23950-58-5	Benzamide, 3,5-dichloro-N-(1,1-dimethyl-2-propynyl)-.	8270 10
Propionitrile; Ethyl cyanide.....	107 - 12 - 0	Propanenitrile.....	8015 60 8260 150
Pyrene.....	129 - 00 - 0	Pyrene.....	8100 200 8270 10
Safrole.....	94 - 59 - 7	1,3-Benzodioxole, 5-(2-propenyl)-...	8270 10
Selenium.....	(Total)	Selenium.....	6010 750 7740 20 7741 20
Silver.....	(Total)	Silver.....	6010 70 7760 100 7761 10
Silvex; 2,4,5-TP.....	93 - 72 - 1	Propanoic acid, 2-(2,4,5-trichlorophenoxy)-.	8150 2
Styrene.....	100 - 42 - 5	Benzene, ethenyl-.....	8020 1 8021 0.1 8260 10
Sulfide.....	18496-25-8	Sulfide.....	9030 4000
2,4,5-T; 2,4,5-Trichlorophenoxyacetic acid.	93 - 76 - 5	Acetic acid, (2,4,5-trichlorophenoxy)-.	8150 2
1,2,4,5-Tetrachlorobenzene.....	95 - 94 - 3	Benzene, 1,2,4,5-tetrachloro-.....	8270 10
1,1,1,2-Tetrachloroethane.....	630 - 20 - 6	Ethane, 1,1,1,2-tetrachloro-.....	8010 5 8021 0.05 8260 5
1,1,2,2-Tetrachloroethane.....	79 - 34 - 5	Ethane, 1,1,2,2-tetrachloro-.....	8010 0.5 8021 0.1 8260 5
Tetrachloroethylene; Tetrachloroethene; Perchloroethylene.	127 - 18 - 4	Ethene, tetrachloro-.....	8010 0.5 8021 0.5 8260 5
2,3,4,6-Tetrachlorophenol.....	58 - 90 - 2	Phenol, 2,3,4,6-tetrachloro-.....	8270 10
Thallium.....	(Total)	Thallium.....	6010 400 7840 1000 7841 10

Common Name ²	CAS RN ³	Chemical abstracts service index name ⁴	Suggested PQL methods ⁵ (µg/L) ⁶	
Tin.....	(Total) Tin.....		6010	40
Toluene.....	108 - 88 - 3	Benzene, methyl-.....	8020	2
			8021	0.1
			8260	5
o-Toluidine.....	95 - 53 - 4	Benzenamine, 2-methyl-.....	8270	10
Toxaphene.....	See Note 10	Toxaphene.....	8080	2
1,2,4-Trichlorobenzene.....	120 - 82 - 1	Benzene, 1,2,4-trichloro-.....	8021	0.3
			8120	0.5
			8260	10
			8270	10
1,1,1-Trichloroethane; Methylchloroform.	71 - 55 - 6	Ethane, 1,1,1-trichloro-.....	8010	0.3
			8021	0.3
			8260	5
1,1,2-Trichloroethane.....	79 - 00 - 5	Ethane, 1,1,2-trichloro-.....	8010	0.2
			8260	5
Trichloroethylene; Trichloroethene...	79 - 01 - 6	Ethene, trichloro-.....	8010	1
			8021	0.2
			8260	5
Trichlorofluoromethane; CFC - 11.....	75 - 69 - 4	Methane, trichlorofluoro-.....	8010	10
			8021	0.3
			8260	5
2,4,5-Trichlorophenol.....	95 - 95 - 4	Phenol, 2,4,5-trichloro-.....	8270	10
2,4,6-Trichlorophenol.....	88 - 06 - 2	Phenol, 2,4,6-trichloro-.....	8040	5
			8270	10
1,2,3-Trichloropropane.....	96 - 18 - 4	Propane, 1,2,3-trichloro-.....	8010	10
			8021	5
			8260	15
0,0,0-Triethyl phosphorothioate.....	126 - 68 - 1	Phosphorothioic acid, 0,0,0-triethylester.	8270	10
sym-Trinitrobenzene.....	99 - 35 - 4	Benzene, 1,3,5-trinitro-.....	8270	10
Vanadium.....	(Total)	Vanadium.....	6010	80
			7910	2000
			7911	40
Vinyl acetate.....	108 - 05 - 4	Acetic acid, ethenyl ester.....	8260	50
Vinyl chloride; Chloroethene.....	75 - 01 - 4	Ethene, chloro-.....	8010	2
			8021	0.4
			8260	10
Xylene (total).....	See Note 11	Benzene, dimethyl-.....	8020	5
			8021	0.2
			8260	5
Zinc.....	(Total) Zinc.....		6010	20
			7950	50
			7951	0.5

Notes

¹The regulatory requirements pertain only to the list of substances; the right hand columns (Methods and PQL) are given for informational purposes only. See also footnotes 5 and 6.

²Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

³Chemical Abstracts Service registry number. Where "Total" is entered, all species in the ground water that contain this element are included.

⁴CAS index are those used in the 9th Collective Index.

⁵Suggested Methods refer to analytical procedure numbers used in EPA Report SW - 846 "Test Methods for Evaluating Solid Waste", third edition, November 1986, as revised, December 1987. Analytical details can be found in SW - 846 and in documentation on file at the agency. CAUTION: The methods listed are representative SW - 846 procedures and may not always be the most suitable method(s) for monitoring an analyte under the regulations.

⁶Practical Quantitation Limits (PQLs) are the lowest concentrations of analytes in groundwaters that can be reliably determined within specified limits of precision and accuracy by the indicated methods under routine laboratory operating conditions. The PQLs listed are generally stated to one significant figure. PQLs are based on 5 mL samples for volatile organics and 1 L samples for semivolatile organics. CAUTION: The PQL values in many cases are based only on a general estimate for the method and not on a determination for individual compounds; PQLs are not a part of the regulation.

⁷This substance is often called Bis(2-chloroisopropyl) ether, the name Chemical Abstracts Service applies to its noncommercial isomer, Propane, 2,2"-oxybis[2-chloro- (CAS RN 39638 - 32 - 9).

⁸Chlordane: This entry includes alpha-chlordane (CAS RN 5103 - 71 - 9), beta-chlordane (CAS RN 5103 - 74 - 2), gamma-chlordane (CAS RN 5566 - 34 - 7), and constituents of chlordane (CAS RN 57 - 74 - 9 and CAS RN 12789 - 03 - 6). PQL shown is for technical chlordane. PQLs of specific isomers are about 20 ug/L by method 8270.

⁹Polychlorinated biphenyls (CAS RN 1336 - 36 - 3); this category contains congener chemicals, including constituents of Aroclor 1016 (CAS RN 12674 - 11 - 2), Aroclor 1221 (CAS RN 11104 - 28 - 2), Aroclor 1232 (CAS RN 11141 - 16 - 5), Aroclor 1242 (CAS RN 53469 - 21 - 9), Aroclor 1248 (CAS RN 12672 - 29 - 6), Aroclor 1254 (CAS RN 11097 - 69 - 1), and Aroclor 1260 (CAS RN 11096 - 82 - 5). The PQL shown is an average value for PCB congeners.

¹⁰Toxaphene: This entry includes congener chemicals contained in technical toxaphene (CAS RN 8001 - 35 - 2), i.e., chlorinated camphene.

¹¹Xylene (total): This entry includes o-xylene (CAS RN 96 - 47 - 6), m-xylene (CAS RN 108 - 38 - 3), p-xylene (CAS RN 106 - 42 - 3), and unspecified xylenes (dimethylbenzenes) (CAS RN 1330 - 20 - 7). PQLs for method 8021 are 0.2 for o-xylene and 0.1 for m- or p-xylene. The PQL for m-xylene is 2.0 ug/L by method 8020 or 8260.