



U.S. Army Corps  
of Engineers  
Construction Engineering  
Research Laboratories



# Environmental Compliance Assessment System (ECAS)

*Rhode Island Supplement*

**U.S. Army**

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In response to the growing number of environmental laws and regulations worldwide, the U.S. Army has adopted an environmental compliance program that identifies compliance problems before they are cited as violations by the U.S. Environmental Protection Agency (USEPA).

Beginning in 1985, Major Army Commands (MACOMs) were required to conduct comprehensive environmental assessments at all installations on a 4-year cycle. The installations must also conduct a mid-cycle internal assessment. Because each MACOM was developing a separate assessment system, the Army mandated through Army Regulation 200-1, one unified Army-wide assessment mechanism. The resulting system combines Federal, Department of Defense (DOD), and Army environmental regulations, along with good management practices and risk management information, into a series of checklists that show (1) legal requirements and (2) which specific items or operations to review. Each assessment protocol lists a point of contact to help assessors review the checklist items as effectively as possible. The Environmental Compliance Assessment System (ECAS) manual incorporates existing checklists from USEPA and private industry.

The Rhode Island Supplement was developed to be used in conjunction with the U.S. ECAS manual, using existing Rhode Island state environmental legislation and regulations as well as suggested management practices.

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## FOREWORD

This work was performed for the U.S. Army Environmental Center (USAEC), under military inter-departmental purchase request number 1223, *Environmental Compliance Assessment System (ECAS)*, dated 5 August 1993. The USAEC technical monitor was Curt Williams, SFIM-AEC-ECC.

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## NOTICE

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## **RHODE ISLAND SUPPLEMENT**

This Rhode Island Environmental Compliance Assessment System (ECAS) Manual contains the protocols necessary for determining compliance with Rhode Island environmental rules and regulations. This manual is a supplement to the U.S. ECAS manual; it does not replace it.

The following Rhode Island agencies issue regulations and administer programs:

- Department of Environmental Management - regulates many of the state's environmental programs through several divisions:
  - Division of Air and Hazardous Materials - has authority for all Federally required programs. The U.S. Environmental Protection Agency (USEPA) maintains the right to enforce the provision of the new source performance standards (NSPSs) and rules for prevention of significant deterioration (PSD). This division issues licenses for solid waste facilities and permits for hazardous waste facilities.
  - Division of Agriculture - responsible for administration of pesticide regulations.
  - Division of Fish and Wildlife - responsible for administration of the endangered species program.
  - Division of Groundwater and Freshwater Wetlands - responsible for administration of underground tank storage, spill prevention, and injection well programs.
- Department of Health - administers the infectious waste program and the drinking water program.
- Department of Transportation - the Division of Motor Vehicles is responsible for vehicle noise requirements and the Division of Airports is responsible for aviation requirements.
- Historic Preservation Commission - responsible for issuing archaeological field investigation permits and administering the state historic preservation program.



## Rhode Island Supplement Acronym List

API	American Petroleum Institute
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
AST	aboveground storage tank
CAA	<i>Clean Air Act</i>
CAS	Chemical Abstract Service
CERCLA	<i>Comprehensive Environmental Response, Compensation, and Liability Act</i>
CFCs	chlorinated fluorocarbons
CFR	Code of Federal Regulations
CPSC	Consumer Product Safety Commission
CWA	<i>Clean Water Act</i>
dB	decibel
dBA	decibels using A-weighting network
dBC	decibels using C-weighting network
DCR	discharge cleanup and removal plan
DEQ	Department of Environmental Quality
DGW	discharge to groundwater
DOD	Department of Defense
DPCC	discharge prevention, containment, and countermeasure plan
DSW	discharge to surface water
DTW	domestic treatment works
EC	effective concentration
ECAS	Environmental Compliance Assessment System
EPM	Environmental Program Management
FIFRA	<i>Federal Insecticide, Fungicide, and Rodenticide Act</i>
FR	Federal Register
FRP	fiberglass-reinforced plastic
FY	fiscal year
GLRI	General Laws of Rhode Island
HDPE	high density polyethylene
HPC	heterothropic bacteria plate count
ICRU	International Commission on Radiological Units and Measurements
MBtu	million British thermal unit
MCL	maximum contaminant level
MSDS	material safety data sheets
NAAQS	National Ambient Air Quality Standards
NAD	North American Datum
NBS	National Bureau of Standards
NEPA	<i>National Environmental Policy Act</i>
NFPA	National Fire Protection Association
NHPA	<i>National Historic Preservation Act</i>
NOAA	National Oceanic and Atmospheric Administration
NPDES	national pollutant discharge elimination system
NTNC	nontransient noncommunity water system
OSHA	Occupational Safety and Health Administration
PCB	polychlorinated biphenyl
PLM	Polarized Light Microscopy
POTW	publicly owned treatment works
POU	point of use treatment device

## Rhode Island Supplement Acronym List

PSD	prevention of significant deterioration
RCRA	<i>Resource Conservation and Recovery Act</i>
RCRA-C	<i>Resource Conservation and Recovery Act - Subtitle C</i>
RCRA-D	<i>Resource Conservation and Recovery Act - Subtitle D</i>
RCRA-I	<i>Resource Conservation and Recovery Act - Subtitle I</i>
RIDEM	Rhode Island Department of Environmental Management
RIPR	Rhode Island Pesticide Rule
RRSFM	Rhode Island Rules and Regulations of the State Fire Marshal
SARA	<i>Superfund Amendments and Reauthorization Act</i>
SDWA	<i>Safe Drinking Water Act</i>
SPCC	spill prevention countefmeasure and control (plan)
SPL	sound pressure level
SWDA	<i>Solid Waste Disposal Act</i>
SWF	solid waste facility
TDS	total dissolved solids
THM	trihalomethane
TNTC	too numerous to count
TPH	total petroleum hydrocarbons
TSCA	<i>Toxic Substance Control Act</i>
TSD	treatment, storage, and disposal
TSDF	treatment, storage, and disposal facility
TTHM	total trihalomethanes
TVOS	toxic volatile organic substance
UL	Underwriter's Laboratories'
USDA	U.S. Department of Agriculture
USDW	underground source of drinking water
USEPA	U.S. Environmental Protection Agency
USLE	universal soil loss equation
UST	underground storage tank
VOC	volatile organic chemical
VOS	volatile organic substance
WPCF	water pollution control facilities



## Abbreviations

bbbl	barrel	$\mu$ N	micronewtons
C	Celsius	min	minute
cm	centimeter	MJ	MegaJoule
cm <sup>2</sup>	square centimeter	mL	milliliter
cm <sup>3</sup>	cubic centimeter	mo	month
F	Fahrenheit	mm	millimeter
ft	foot	Mg	megagram
ft <sup>2</sup>	square feet	mrem	millirem
ft <sup>3</sup>	cubic feet	MW	megawatt
g	gram	ng	nanogram
gal	gallon	NTU	nephelometric turbidity unit
gJ	gigaJoule	oz	ounce
gr	grain	pCi	picoCuries
h	hour	ppm	parts per million
hp	horsepower	ppb	parts per billion
in.	inch	psi	pounds per square inch
J	Joule	psia	pounds per square inch absolute
kg	kilogram	psig	pounds per square inch gauge
km	kilometer	qt	quart
kPa	kiloPascal	s	second
L	liter	scf	standard cubic feet
lb	pound	scm	standard cubic meter
m	meter	V	volt
m <sup>2</sup>	square meter	yd	yard
m <sup>3</sup>	cubic meter	yd <sup>2</sup>	square yard
mg	milligram	yd <sup>3</sup>	cubic yard
mi	mile	yr	year
$\mu$ g	microgram	mm Hg	millimeters of mercury
$\mu$ m	micrometer	mgd	milligrams per day
$\mu$ Pa	micropascals		

## Chemicals

CO	carbon monoxide
CO <sub>2</sub>	carbon dioxide
Hg	mercury
NO <sub>x</sub>	nitrogen oxide
SO <sub>2</sub>	sulfur dioxide
NO <sub>2</sub>	nitrogen dioxide



## Metric Conversion Table

1 in.	=	25.4 mm
1 ft	=	0.305 m
1 kip	=	4448 N
1 psi	=	6.89 kPa
1 psi	=	89.300 g/cm <sup>2</sup>
1 lb	=	0.453 kg
1 lb/h	=	0.126 g/s
1 cu ft	=	0.028 m <sup>3</sup>
1 mi	=	1.61 km
1 sq ft	=	0.093 m <sup>2</sup>
1 gal	=	3.78 L
°F	=	(°C + 17.78) × 1.8
°C	=	0.55(°F-32)
1 yd	=	0.9144 m
1 Btu/lb	=	0.556 cal/g



**SECTION 1**

**CLEAN AIR ACT (CAA)**

**Rhode Island Supplement**

**SECTION 1**  
**CLEAN AIR ACT (CAA)**  
**Rhode Island Supplement**

**Definitions**

These definitions were obtained from the following sections of the Rhode Island Department of Environmental Management (RIDEM), Division of Air and Hazardous Materials, Air Pollution Control Regulations: 1.1, 2.1, 3.1, 4.1, 8.1, 9.1.2, 12.1, 13.1, 14.1, 18.1, 20.1, 21.1, and 25.

- *Actual Emissions* - the actual rate of emissions of a pollutant from an emissions unit, as determined in accordance with Subsections (a) through (c) below:
  1. In general, actual emissions as of a particular date shall equal the average rate, in tons per year, at which the unit actually emitted the pollutant during a 2-yr period that precedes the particular date and which is representative of normal source operation. The Director shall allow the use of a different time period upon a determination that it is more representative of normal source operation. Actual emissions shall be calculated using the unit's actual operating hours, production rates, and types of materials processed, stored, or combusted during the selected time period.
  2. The Director may presume that source-specific, allowable emissions for the unit are equivalent to actual emissions of the unit.
  3. For any emissions unit that has not begun normal operations on the particular date, actual emissions shall equal the emission potential of the unit on that date.
  
- *Aerodynamic Downwash* - the rapid descent of a plume to ground level with little dilution and dispersion due to alteration of background air flow characteristics caused by the presence of buildings or other obstacles in the vicinity of the emission point.
  
- *Aggregate Seal* - see chip seal.
  
- *Air Pollution Control System* - a system, device, or equipment designed and installed primarily for the purpose of reducing or eliminating the emission of air contaminants to the atmosphere.
  
- *Allowable Emissions* - the emission rate of a stationary source calculated using the maximum rated capacity of the source unless the source is subject to Federally enforceable limits that restrict the operating rate or hours of operation, or both, and the most stringent of the following:
  1. applicable standards as set forth in 40 Code of Federal Regulations (CFR) 60 and 61
  2. any applicable State Implementation Plan (SIP) emission limitations, including those with a future compliance date
  3. the emission rate specified as a Federally enforceable permit condition, including those with a future compliance date.
  
- *Alternative Fuel* - any materials, other than fuel oil, natural gas, coal, or wood residue that is burned for the purpose of creating useful heat. Types of alternative fuels include, but are not limited to, waste oil and hazardous waste. This definition does not include refuse derived fuel (RDF).
  
- *Anthracite* - a hard, black, lustrous coal containing a high percentage of fixed carbon and a low percentage of volatile matter.

- *Approved Stack Gas Cleaning Process* - a process, approved by the Director of the Rhode Island Department of Environmental Management, that removes SO<sub>2</sub> from the combustion products of fossil fuel.
- *Asphalt* - a dark brown cementitious material which is solid, semisolid, or liquid in consistence and in which the predominating constituents are bitumens that occur in nature or that are obtained as residue in refining petroleum.
- *Azeotropic Device* - an air pollution control device wherein the dryer exhaust from a dry cleaning machine is routed to a tank where the perchloroethylene vapor is conditioned with water to form a low boiling point perchloroethylene/water vapor azeotrope. The conditioned perchloroethylene/water vapor stream is then ducted back to the dryer to increase perchloroethylene vaporization from the garments. The perchloroethylene vapor is then condensed by the dryer's cooling coils. The air stream is cycled between the azeotropic tank and the dryer for 4 to 6 min.
- *Chip Seal or Aggregate Seal* - a single application of liquefied asphalt to an existing paved surface followed by a single layer of aggregate.
- *Coke* - bituminous coal from which the volatile constituents have been driven off by heat, so that the fixed carbon and the ash are fused together.
- *Cold Cleaning* - the batch process of cleaning and removing contaminants or water from surfaces by spraying, brushing, flushing, or immersing while maintaining the solvent below its boiling point. Wipe cleaning is not included in this definition.
- *Construction* - any physical change or change in the method of operation, including fabricating, erecting, locating, modification, or demolition of an emissions unit, which would result in a change in actual emissions.
- *Conveyorized Cleaning* - the continuous process of cleaning and removing contaminants or water from surfaces using either cold or vaporized solvents. This definition includes conveyorized degreasing and drying.
- *Cutback Asphalt* - asphalt cement that has been liquefied by blending with petroleum solvents (dilutents).
- *Dense Graded Aggregate* - a dense aggregate containing sand, stone, and fines which has small void spaces, resulting in a compacted mixture.
- *Dry Sludge* - the total solids residue determined in accordance with 224 G. Method for Solid and Semisolid Samples, *Standard Method for the Examination of Water and Wastewater*, Thirteenth Edition, (American Public Health Association, Inc., New York, New York, 1971), pp. 539-541, as amended, such that:
  1. evaporating dishes shall be ignited to at least 103 °C rather than the 550 °C step 3 (a) (1)
  2. determination of volatile residue, step 3 (b) may be deleted.
- *Emergency or Standby Basis* - the unit is available for use for limited periods of time only in the case of sudden and unavoidable failure of other generating units.
- *Emissions Unit* - any part of a stationary source which emits or would have the potential to emit any air pollutant, including fugitive emissions.

- **Emulsified Asphalt** - an emulsion of asphalt cement and water that contains a small amount of an emulsifying agent.
- **Equivalent Control** - a control system which may be substituted for the required control system(s). The facility applying to use an equivalent control must demonstrate to the satisfaction of the Director and U.S. Environmental Protection Agency (USEPA) that the emission reductions achieved are equal to or greater than the emission reductions required by the regulation. Appropriate test methods or other replicable criteria in accordance with RIDEM and USEPA guidance must be used to demonstrate equivalence.
- **Facility** - all pollutant emitting activities located in a building or buildings on one or more adjacent properties owned or operated by the same person.
- **Federally Enforceable** - all limitations and conditions which are enforceable by the Administrator of the USEPA, including those requirements developed pursuant to 40 CFR 60 and 61, requirements within the State Implementation Plan, those requirements in operating permits issued pursuant to 40 CFR 71 or under regulations approved pursuant to 40 CFR 70, and any requirements established under Air Pollution Control Regulation No. 9.
- **Flexographic Printing** - the application of words, designs, and/or pictures to a substrate by means of a roll-printing technique in which the pattern to be applied is raised above the printing roll and the image carrier is made of rubber or other elastomeric materials.
- **Freeboard Height** - the distance from the top of the vapor zone to the top of the vapor cleaning unit; for cold cleaning units, it is the distance from the top of the liquid level to the top of the unit.
- **Freeboard Ratio** - the freeboard height divided by the width of the organic solvent cleaning unit.
- **Fuel Burning Device** - any device engineered to burn fuel for the primary purpose (as determined by the Director) of producing steam, heat, or power.
- **Fuel Burning Equipment** - any furnace, boiler, apparatus, stack, and all appurtenances used in the process of burning fuel for the primary purpose of producing heat or power.
- **Fuel Oil** - any virgin distillate oil, virgin residual oil, or a blend of these.
- **Fugitive Emissions** - emissions that could not reasonably pass through a stack, chimney, vent, or other functionally equivalent opening.
- **Good Engineering Practice** - with respect to stack heights, the height necessary to ensure that emissions from the stack do not result in excessive concentrations of any air pollutant in the immediate vicinity of the source as a result of aerodynamic downwash, eddies, and wakes which may be created by the source itself, nearby structures, or nearby terrain obstacles, as calculated according to the Rhode Island Guideline for Air Quality Modeling.
- **Halogenated Solvents** - halogenated solvents include the following:
  1. methyl chloroform (1,1,1-trichloroethane)
  2. CFC-113 (trichlorotrifluoroethane)
  3. methylene chloride
  4. CFC-11 (trichlorofluoromethane)
  5. CFC-12 (dichlorodifluoromethane)
  6. CFC-22 (chlorodifluoromethane)
  7. CFC-23 (trifluoromethane)



8. CFC-114 (dichlorotetrafluoroethane)
9. CFC-115 (chloropentafluoroethane)
10. HCFC-123 (dichlorotrifluoroethane)
11. HFC-134a (tetrafluoroethane)
12. HCFC-141b (dichlorofluoroethane)
13. HCFC-142b (chlorodifluoroethane).

- **Hazardous Air Pollutant** - any air pollutant listed pursuant to Subsection 112(b) of the *Clean Air Act* (CAA) as amended in 1990.
- **Hazardous Material** - any material or combination of materials of a solid, liquid, contained gaseous, or semisolid form that because of quantity, concentration, or physical, chemical, or other characteristics may:
  1. cause or significantly contribute to an increase in mortality or an increase in serious irreversible or incapacitating reversible illness
  2. pose a substantial present or potential hazard to human health or the environment.

Such materials include, but are not limited to, those that are: toxic, corrosive, flammable, irritants, strong sensitizers, and substances that are assimilated or concentrated in and are detrimental to tissue or that generate pressure through decomposition or chemical reaction.

- **Hazardous Waste** - any waste or combination of wastes of a solid, liquid, gaseous, or semi-solid form that is defined as a hazardous waste in the Rhode Island Rules and Regulations for Hazardous Waste, Generation, Transportation, Treatment, Storage, and Disposal.
- **Hazardous Waste Disposal Facility** - real and personal property acquired, constructed, or operated for the purpose of the disposal of hazardous waste.
- **High Sulfur Fuel** - any fuel except fuel oil containing more than 0.55 lb of sulfur per million British thermal unit (MBtu) heat release potential or fuel oil containing more than 1.0 percent sulfur by weight.
- **Large Incinerator** - an incinerator having a capacity of 2000 lb or more per hour operated for the thermal degradation of Types 0, 1, 2, and 3 refuse.
- **Long Life Stockpile Storage** - the storage of cutback asphalt paving mixtures for 30 days or longer.
- **Low Sulfur Fuel** - any fuel except fuel oil containing 0.55 lb or less of sulfur per MBtu heat release potential or fuel oil containing 1.0 percent sulfur or less by weight.
- **Major Modification** - any physical change or change in the method of operation of a major stationary source that would result in a significant net emission increase of any air pollutant. Any net emission increase that is considered significant for volatile organic compounds (VOCs) or nitrogen oxides ( $\text{NO}_x$ ) will be considered significant for ozone. A physical change or change in the method of operation does not include:
  1. routine maintenance, repair, and replacement.
  2. an increase in the hours of operation or in the production rate, unless such change is prohibited by conditions of any Federally enforceable permit issued after 21 December 1976 pursuant to 40 CFR 52.21 (prevention of significant deterioration (PSD)) or under Air Pollution Control Regulation No. 9 or under regulations approved pursuant to 40 CFR 70.
  3. any change in ownership at a stationary source.

4. use of an alternative fuel or raw material by reason of an order under Sections 2 (a) and (b) of the *Energy Supply and Environmental Coordination Act* of 1974 (or any superseding legislation) or by reason of a natural gas curtailment plan pursuant to the *Federal Power Act*
  5. use of an alternative fuel at a steam generating unit to the extent that the fuel is generated from municipal solid waste
  6. use of an alternative fuel or raw material by a stationary source that:
    - a. was capable of accommodating before 6 January 1975 unless such change would be prohibited under any Federally enforceable permit condition which was established after 6 January 1975 pursuant to 40 CFR 52.21 or under Air Pollution Control Regulation No. 9 or under operating permits issued pursuant to 40 CFR 71 or under regulations approved pursuant to 40 CFR 70
    - b. is approved for use under any permit issued under 40 CFR 52.21 or under Air Pollution Control Regulation No. 9.
- *Major Source Permit* - an approval or permit issued by the Division for the construction or installation of a major stationary source or major modification.
  - *Medium Curing Cutback Asphalt* - a cutback asphalt composed of asphalt cement and a kerosene-type diluent of medium volatility, that meets the specifications of the American Society for Testing and Materials (ASTM) Designation D-2027 for Medium-Curing Asphalt, or the American Association of State Highway and Transportation Officials (AASHTO) Designation M82.
  - *Minor Source Permit* - an approval or permit issued by the Division for the construction, installation, or modification of a stationary source that is neither a major stationary source nor a major modification.
  - *Modify* - any physical or operational change to any machine, equipment, device, article, or facility which may result in an increased emission rate to the atmosphere of any air contaminant. The following are not considered a modification:
    1. routine maintenance, repair, and replacement of any machine, equipment, device, article, or facility, or parts thereof of a minor source
    2. increase in production rate of any machine, equipment, device, article, or facility defined as a minor source, based solely on the capabilities of existing process equipment
    3. increase in hours of operation up to the maximum hours allowed in any Federally enforceable permit.
    4. use of an alternative fuel or raw material if the machine, equipment, device, article, or facility was designed and approved to accommodate that alternative use.
  - *Nitrogen Oxides (NO<sub>x</sub>)* - nitric oxide (NO) and nitrogen dioxide (NO<sub>2</sub>), expressed as molecular weight of NO<sub>2</sub>.
  - *Opacity* - the degree to which air contaminants reduce the transmission of light and obscure a contrasting background.
  - *Open Fire* - any fire from which the products of combustion are emitted directly into the open air without passing through a stack.
  - *Open Graded Aggregate* - aggregate containing little or no mineral filler or in which the void spaces in the compacted aggregate are large.
  - *Organic Solvent Cleaning* - the process of cleaning contaminants or water from surfaces by cold cleaning, vapor cleaning, or conveyORIZED cleaning using VOCs.

- **Organic Solvents** - volatile organic compounds that are liquids at standard conditions and that are used as solvers, viscosity reducers, diluents, thinners, reagents, or cleaning agents.
- **Packaging Rotogravure Printing** - rotogravure printing on paper, paper board, metal foil, plastic film, or other substrates, which are, in subsequent operations, formed into packaging products and labels for articles to be sold.
- **Pathological Incinerator** - an incinerator designed for the thermal degradation of pathological waste (Type 4 refuse).
- **Penetrating Prime Coat** - the application of low-viscosity liquid asphalt to an absorbent base surface before applying an asphalt surface.
- **Perchloroethylene Dry Cleaning Facility** : a facility engaged in the cleaning of fabrics by means of one or more washes in perchloroethylene, extraction of excess perchloroethylene by spinning, and drying by tumbling in an airstream. The facility includes, but is not limited to, any washer, dryer, filter and purification system, waste disposal system, holding tank, pump, air pollution control equipment and attendant piping, valves, and stacks.
- **Potential to Emit** - the maximum capacity of a stationary source to emit a pollutant under its physical or operational design. Any physical or operational limitation on the capacity of a source to emit a pollutant, including air pollution control equipment and restrictions on the hours of operation, or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design only if the limitation or the effect it would have on emissions is Federally enforceable. Secondary emissions do not count in determining the potential of a stationary source to emit.
- **Printing Press** - equipment used to apply words, pictures, or graphic designs to either a continuous substrate or a sheet. A continuous substrate consists of paper, plastic, or other material that is unwound from a roll, passed through coating or ink applicators, and any associated drying areas. The press includes all coating and ink applicators, and drying areas between unwind and rewind of the continuous substrate. A sheet consists of paper, plastic, or other material that is carried through the process on a moving belt. The press includes all coating and ink applicators and drying operations between the time that the sheet is put on the moving belt until it is taken off.
- **Process Weight** - the total weight of all materials introduced into any specific process, except liquid and gaseous fuels and combustion air, which may cause any emissions of particulate matter into the atmosphere.
- **Publication Rotogravure Printing** - rotogravure printing on paper which is subsequently formed into books, magazines, catalogues, brochures, directories, newspaper supplements, or other types of printed materials.
- **Reasonably Available Control Technology (RACT)** - the lowest emission limitation that a particular piece of equipment or pollutant-emitting activity is capable of meeting by using measures that are reasonably available in terms of technological and economic feasibility.
- **Refrigerated Chiller** - a control device mounted above the water jacket and the primary condenser coils, consisting of secondary coils that carry a refrigerant to provide a chilled air blanket above the solvent vapor to reduce emissions from the degreaser bath.
- **Roll Printing** - the application of words, designs, and/or pictures to a substrate by means of a series of hard rubber or steel rolls, each with only partial coverage.

- **Rotary Cup Burner** - any unit which provides atomization by centrifugally dispersing the fuel from a rotating cup and utilizes natural draft as a secondary air supply.
- **Rotogravure Printing** - the application of words, designs, and/or pictures to a substrate by means of a roll-printing technique, in which the pattern to be applied by the printing roll is accomplished by an intaglio or recessed image areas in the form of cells.
- **Seal Coat** - a thin, liquefied asphalt surface treatment used to waterproof and improve the texture of an asphalt wearing surface.
- **Secondary Air** - air which is introduced to the furnace (as compared to primary air which is introduced with the fuel at the burner).
- **Sewage Sludge Incinerator** - an incinerator designed for the thermal degradation of the sludge produced by municipal sewage treatment facilities.
- **Single Chamber Flue-fed Incinerator** - an incinerator with one combustion chamber and a single flue that serves as both the charging chute and the flue to transport products of combustion to the atmosphere.
- **Small Incinerator** - an incinerator having a capacity of less than 2000 lb/h operated for the thermal degradation of Types 0, 1, 2, and 3 refuse.
- **Solid Waste Management Facility** - any plant, structure, equipment, and other real and personal property acquired, constructed, or operated for the purpose of processing, treating, or disposing of solid wastes but not segregated solid waste.
- **Special Incinerator** - an incinerator designed for the thermal degradation of Types 5 and 6 refuse.
- **Specialty Printing** - all other rotogravure and flexographic printing operations, excluding publication printing and packaging printing.
- **Stationary Source** - any building, structure, or facility that emits or may emit any air pollutant. A stationary source may consist of one or more emission units. A stationary source does not include emissions resulting directly from an internal combustion engine for transportation purposes or emissions from a nonroad engine or nonroad vehicle.
- **Type 0 Refuse** - trash, consisting of a mixture of highly combustible refuse such as paper, cardboard, cartons, wood boxes, and combustible floor sweepings; containing approximately 10 percent moisture and 5 percent incombustible solids; having a heating value of approximately 8500 Btu/lb as fired; and deriving from commercial and industrial activities. The mixture contains up to 10 percent by weight of plastic bags, coated paper, laminated paper, treated corrugated cardboard, oily rags, and plastic or rubber scraps.
- **Type 1 Refuse** - rubbish, consisting of a mixture of combustible refuse such as paper, cardboard, cartons, wood scraps, foliage, and combustible floor sweepings; containing approximately 25 percent moisture and 10 percent incombustible solids; having a heating value of approximately 6500 Btu/lb as fired; and deriving from domestic, commercial, and industrial activities. The mixture contains up to 20 percent by weight of restaurant or cafeteria refuse but contains little or no treated paper, plastic or rubber refuse.

- **Type 2 Refuse** - refuse, consisting of an approximately even mixture of rubbish and garbage by weight, containing up to 50 percent moisture and approximately 7 percent incombustible solids, and having a heating value of approximately 4500 Btu/lb as fired, and commonly deriving from apartment and residential occupancy.
- **Type 3 Refuse** - garbage, consisting of animal and vegetable refuse, containing up to 70 percent moisture and up to 5 percent incombustible solids, and having a heating value of approximately 2500 Btu/lb as fired, and deriving from restaurants, cafeterias, hotels, hospitals, markets, and like facilities.
- **Type 4 Refuse** - human and animal remains, consisting of carcasses, organs, and solid organic refuse from hospitals, laboratories, abattoirs, animal pounds, and similar sources and any matter involving or pertaining to disease or disease-producing organisms, including infectious agents and helminths.
- **Type 5 Refuse** - gaseous, liquid, or semiliquid by-product refuse from industrial operations, not defined as a hazardous material.
- **Type 6 Refuse** - solid by-product refuse from industrial operations, not defined as hazardous material.
- **Vapor Cleaning** - the batch process of cleaning and removing contaminants or water from surfaces by condensing hot solvent vapor on the colder pieces. This definition includes conveyORIZED degreasing and drying.
- **Volatile Organic Compound (VOC)** - any organic compound which participates in atmospheric photochemical reactions. This includes all organic compounds with the exception of the following, which have been determined to have negligible photochemical reactivity:
  1. methane
  2. ethane
  3. methyl chloroform (1,1,1-trichloroethane)
  4. CFC-113 (1,1,1-trichloro 2,2,2-trifluoroethane)
  5. methylene chloride (dichloromethane)
  6. CFC-11 (trichlorofluoromethane)
  7. CFC-12 (dichlorodifluoromethane)
  8. CFC-22 (chlorodifluoromethane)
  9. CFC-23 (trifluoromethane)
  10. CFC-114 (1,2-dichloro 1,1,2,2-tetrafluoroethane)
  11. CFC-115 (chloropentafluoroethane)
  12. HCFC-123 (1,1,1-trifluoro 2,2-dichloroethane)
  13. HCFC-124 (2-chloro-1,1,1,2-tetrafluoroethane)
  14. HFC-125 (pentafluoroethane)
  15. HFC-134 (1,1,2,2-tetrafluoroethane)
  16. HFC-134a (1,1,1,2-tetrafluoroethane)
  17. HCFC-141b (1,1-dichloro 1-fluoroethane)
  18. HCFC-142b (1-chloro 1,1-difluoroethane)
  19. HFC-143a (1,1,1-trifluoroethane)
  20. HFC-152a (1,1-difluoroethane)
  21. the perfluorocarbon compounds which fall into these classes:
    - a. cyclic, branched, or linear, completely fluorinated alkanes
    - b. cyclic, branched, or linear, completely fluorinated ethers with no unsaturations
    - c. cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations
    - d. sulfur containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine.

- **Waste Oil** - used or spent oil of any kind, including but not limited to those oils from automotive, industrial, aviation, and other source categories.
- **Wood Residue** - a waste by-product of the pulp and paper industry which consists of bark, sawdust, slabs, chips, shavings, and mill trim.



**CLEAN AIR ACT (CAA)**  
**GUIDANCE FOR RHODE ISLAND CHECKLIST USERS**

<b>Applicability:</b>	<b>Refer to Checklist Items:</b>
Permits	1-1
Visible Emissions	1-2
Handfiring of Soft Coal	1-3
Particulate Emissions From Industrial Processes	1-4
Open Fires	1-5
Fugitive Dust	1-6
Emission of Detrimental Air Contaminants	1-7
Sulfur Content of Fuels	1-8
Air Pollution Episodes	1-9
Incinerators	1-10 and 1-11
Fossil Fuel Fired Steam or Hot Water Generating Units	1-12
Recordkeeping and Reporting	1-13
Odorous Emissions	1-14
Organic Solvent Cleaning	1-15 through 1-19
Recordkeeping	1-20
Burning of Alternative Fuels	1-21 and 1-22
Printing Operations	1-23 through 1-25
Air Toxics	1-26 and 1-27
Cutback and Emulsified Asphalt	1-28 through 1-30
Organic Solvent Emissions	1-31

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**COMPLIANCE CATEGORY:  
CLEAN AIR ACT (CAA)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>PERMITS</b></p> <p><b>1-1.</b> Installations are required to obtain a permit before constructing or modifying any stationary source (RIDEM 9.2.1, 9.3.1(a) through (f), (g)(2),(5),(7), and (h), and 9.3.2).</p>	<p>Determine if the installation operates a stationary source.</p> <p>Verify that the installation has obtained a Minor Source Permit for the construction or modification of the following:</p> <ul style="list-style-type: none"> <li>- any fuel burning device designed to burn:               <ul style="list-style-type: none"> <li>- residual oil or solid fossil fuels having a heat input capacity of 1 MBtu or more per hour</li> <li>- all other liquid fuels having a heat input capacity of 5 MBtu or more per hour</li> <li>- gaseous fuel having a heat input capacity of 10 MBtu or more per hour</li> <li>- alternative fuels, including but not limited to, wood chips, hazardous wastes or waste oil having a heat input capacity of 1 MBtu or more per hour</li> </ul> </li> <li>- liquid petroleum storage tanks, reservoirs, and containers with a capacity of 40,000 gal or more used for the storage of petroleum liquids having a true vapor pressure greater than 1.52 psia at 69 °F</li> <li>- any incinerator, except those constructed, modified, or used in owner-occupied dwellings having less than three units</li> <li>- any stationary source having the potential to emit 5 tons/yr or more of lead</li> <li>- any stationary source that emits or has the potential to emit, in the aggregate, 10 tons/yr or more of any hazardous air pollutant or 25 tons/yr or more of any combination of hazardous air pollutants</li> <li>- any stationary source which has the potential to increase emissions of a listed toxic air contaminant by greater than the minimum quantity for that contaminant, as specified in Appendix 1-1</li> <li>- any other stationary source or process, except for those fuel burning devices outlined previously, having the potential to emit 100 lb or more per day, or 10 lb or more per hour of any air contaminant or combination of air contaminants into the atmosphere, including but not limited to the following categories:               <ul style="list-style-type: none"> <li>- metal cleaning or surface preparation, degreasing, bright dipping, stripping, galvanizing, and chrome plating</li> <li>- the production of asphalt concrete, including rotary dryers, screening, and conveying systems and mixers</li> <li>- the transfer of petroleum products having a true vapor pressure greater than 1.52 psia at 69 °F from the storage facility to or from a mobile vessel</li> </ul> </li> <li>- any air pollution control system and appurtenances.</li> </ul>

<p align="center"><b>COMPLIANCE CATEGORY: CLEAN AIR ACT (CAA) Rhode Island Supplement</b></p>	
<p><b>REGULATORY REQUIREMENTS:</b></p>	<p><b>REVIEWER CHECKS:</b></p>
<p><b>1-1. (continued)</b></p>                       <b>VISIBLE EMISSIONS</b> <p><b>1-2.</b> Installations are required to restrict visible emissions (RIDEM 1.2 and 1.4).</p>                       <b>HANDFIRING OF SOFT COAL</b> <p><b>1-3.</b> Installations are prohibited from using or consuming soft coal under specific circumstances (RIDEM 2.2 and 2.3).</p>	<p>(NOTE: This regulation does not apply to the construction or modification of any air pollution control system or appurtenances where:</p> <ul style="list-style-type: none"> <li>- emission of air contaminants in the absence of the air pollution control system complies with all applicable state and Federal air pollution control rules and regulations</li> <li>- emission of air contaminants in the absence of the air pollution control system does not exceed any of the thresholds outlined above</li> <li>- the air pollution control system is used to treat emission of air contaminants generated from a groundwater cleanup operation and the air pollution control system will reduce emissions of VOCs by at least 95 percent.)</li> </ul> <p>(NOTE: Any air pollution control system and appurtenances exempted from the requirement to obtain a permit must file a registration form with the Division before the construction or modification of the system.)</p> <p>Verify that the installation has obtained a Major Source Permit for the proposed major stationary source or major modification.</p>                       Verify that the installation does not emit into the atmosphere from any source any air contaminant for a period or periods aggregating more than 3 min in any 1 h with an opacity greater than or equal to 20 percent. <p>(NOTE: Where the presence of uncombined water is the only reason for failure to meet the regulation outlined above, such failure is not considered a violation of this regulation.)</p>                       Verify that the installation does not use or consume in a hand-fired facility any solid fossil fuel other than coke or anthracite coal. <p>(NOTE: Any coal other than anthracite may be used only in mechanically-fired facilities.)</p> <p>(NOTE: This regulation does not apply to private residences.)</p>

**COMPLIANCE CATEGORY:  
CLEAN AIR ACT (CAA)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>PARTICULATE EMISSIONS FROM INDUSTRIAL PROCESSES</b></p> <p><b>1-4.</b> Installations are required to restrict the emission of particulate matter from industrial processes (RIDEM 3.2).</p> <p><b>OPEN FIRES</b></p> <p><b>1-5.</b> Installations are prohibited from burning any material in an open fire under specific circumstances (RIDEM 4.2 and 4.3(a), (b), and (d)).</p>	<p>Verify that the installation does not emit into the atmosphere in any one hour from any source particulate matter in excess of the amounts listed in Appendix 1-2.</p> <p>Determine if the installation engages in any of the following types of open burning, which are exempt from this regulation:</p> <ul style="list-style-type: none"> <li>- open burning for weed abatement or pest control after receiving written approval from the Director</li> <li>- bonfires composed of clean, untreated wood or cellulose derivatives for festive occasions conducted by an installation</li> <li>- open burning of combustible material after demonstration to the satisfaction of the Director that no alternative and practical method of disposal of said material is available.</li> </ul> <p>(NOTE: Alternative disposal methods may include chipping, cutting for forest products, landfilling, piling for protective cover for wildlife and others. Persons or institutions wishing to burn must receive written approval from the Director and demonstrate that approval has been granted by the municipality in which burning is to take place. Such burning must be conducted during periods of good atmospheric ventilation, without causing a nuisance, and with smoke minimizing starters if starters or starting aids are used.)</p> <p>Verify that the installation does not burn any material in an open fire at a solid waste management facility and/or hazardous waste disposal facility or in connection with any salvage, industrial, commercial, or institutional operation.</p>



**COMPLIANCE CATEGORY:  
CLEAN AIR ACT (CAA)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>SULFUR CONTENT OF FUELS</b></p> <p><b>1-8.</b> Installations are prohibited from using high sulfur fuel (RIDEM 8.2, 8.3.1, 8.3.2, 8.3.3, and 8.3.4.1).</p>	<p>Verify that the installation does not use or store high sulfur fuel, unless one of the following conditions is met:</p> <ul style="list-style-type: none"> <li>- the Director declares that a shortage of low sulfur fuel exists</li> <li>- the Director approves the use of high sulfur fuel when combined with an approved stack gas cleaning process, provided the sulfur compound emissions (expressed as SO<sub>2</sub>) from the stack do not exceed 1.1 lb/MBtu actual heat input, and that the emissions do not exceed the requirements stated above</li> <li>- the fuels are included in an emissions bubble and do not exceed the following emission limitations: <ul style="list-style-type: none"> <li>- 1.1 lb/MBtu actual heat input for sulfur compound emissions</li> <li>- 1.21 lb of sulfur per MBtu heat release potential for the sulfur content of any fuel used within the bubble</li> <li>- 0.10 lb/MBtu actual heat input for particulate emissions</li> <li>- 0.15 lb/MBtu actual heat input for particulate emissions from any single fuel burning device within the bubble.</li> </ul> </li> </ul> <p>(NOTE: In an emissions bubble, the operator of a source with more than one fuel burning device, each of which is subject to specific emission requirements under the applicable regulations, may propose to meet the total emission control requirements of the applicable regulations for a given pollutant, through a different mix of control technology than that mandated by existing regulations.)</p> <ul style="list-style-type: none"> <li>- the Department authorizes the use of high sulfur fuel oil for a period of up to 30 mo in any fuel burning device with an energy input capacity of less than 250 MBtu/h</li> <li>- any fuel burning device with a rated energy input capacity of 250 MBtu/h or more may use high sulfur fuel provided that: <ul style="list-style-type: none"> <li>- the high sulfur fuel is coal</li> <li>- the average sulfur content does not exceed 1.21 lb/MBtu heat release potential in any 30-day period of 2.31 lb/MBtu in any 24-h period</li> <li>- the stack height, where emissions resulting from the burning of the high sulfur fuel exit, meets or exceeds good engineering practice</li> <li>- emissions resulting from the use of the high sulfur fuel does not violate any National Ambient Air Quality Standard (NAAQS) of any applicable prevention of significant deterioration (PSD) increment and will not have a significant impact on any nonattainment area.</li> </ul> </li> </ul>

**COMPLIANCE CATEGORY:  
CLEAN AIR ACT (CAA)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>AIR POLLUTION EPISODES</b></p> <p><b>1-9.</b> Installations are required to develop an emission reduction plan to be implemented in the event of an air pollution episode (RIDEM 10.1 and 10.2).</p> <p><b>INCINERATORS</b></p> <p><b>1-10.</b> Installations are required to restrict the emission of particulate matter from incinerators (RIDEM 12.2, 12.3, and 12.4.1).</p> <p><b>1-11.</b> Installations are prohibited from constructing or using single chamber flue-fed incinerators (RIDEM 12.6).</p>	<p>Verify that the emission reduction plan contains detailed steps that will be taken by the installation to reduce air contaminant emissions during each stage of an air pollution episode.</p> <p>(NOTE: The four stages of air pollution episodes are: forecast, alert, warning, and emergency.)</p> <p>(NOTE: This regulation applies to any incinerator, except for residential incinerators and those used for the degradation of hazardous materials.)</p> <p>Verify that the installation does not construct or use any small incinerator that will emit more than 0.16 gr/dscf (0.36 g/dscm) of particulate matter corrected to 12 percent CO<sub>2</sub>, maximum 2-h average.</p> <p>Verify that the installation does not construct or use any large, pathological, or special incinerator that will emit more than 0.08 gr/dscf (0.18 g/dscm) of particulate matter corrected to 12 percent CO<sub>2</sub>, maximum 2-h average.</p> <p>Verify that the installation does not construct or use any sewage sludge incinerator that will emit more than 1.30 lb of particulate matter per ton of dry sludge input.</p> <p>Verify that the installation does not construct or use any incinerator unless it is a type approved by the Director for being an effective means of air pollution control.</p> <p>Verify that the installation does not construct or use any single chamber flue-fed incinerator.</p>

**COMPLIANCE CATEGORY:  
CLEAN AIR ACT (CAA)  
Rhode Island Supplement**

**REGULATORY  
REQUIREMENTS:**

**REVIEWER CHECKS:**

**FOSSIL FUEL  
FIRED STEAM OR  
HOT WATER  
GENERATING UNITS**

**1-12.** Installations are required to restrict the emission of particulate matter from fossil fuel fired steam or hot water generating units (RIDEM 13.2 and 13.4).

Verify that the installation does not allow the emissions from a fossil fuel or wood residue-fired steam or hot water generating unit having a maximum rated heat input capacity of 1 MBtu/h or more of particulate matter to exceed 0.10 lb/MBtu actual heat input.

(NOTE: The emissions limitation outlined above does not apply to generating units that have received an approval under the provisions found elsewhere in this manual governing the sulfur content of fuels. The following provisions apply for the duration of such an approval:

- the average particulate emission rate in any 24-h period for all fuel burning devices included in the approved emissions bubble do not exceed 0.1 lb/MBtu actual heat input
- if a source is approved to burn high sulfur fuel oil, then the particulate emissions do not exceed 0.15 lb/MBtu actual heat input while high sulfur fuel oil is being burned.)

Verify that the installation does not construct or modify a fossil fuel or wood residue-fired steam or hot water generating unit designed to burn residual oil or wood residue that has a heat input capacity of 1 MBtu/h or more which uses a burner or burners of a design not approved by the Director.

Verify that the installation does not operate a fossil fuel-fired steam or hot water generating unit burning residual oil and having a heat input capacity of 1 MBtu/h or more which uses a rotary cup burner or burners of a design not approved by the Director.

(NOTE: The above rule does not apply to generating units for which a demonstration is made to the satisfaction of the Director that they are used only in an emergency or standby basis, or are able to maintain compliance with applicable regulations.)

**RECORDKEEPING  
AND REPORTING**

**1-13.** Installations that operate sources that emit VOCs or NO<sub>x</sub> are required to keep specific records (RIDEM 14.3.1).

Determine if the installation operates any source that emits VOCs or NO<sub>x</sub> which has or has had actual emissions of 25 tons/yr or more of either pollutant in 1990 or any year thereafter.

Verify that the installation submits annually an emission statement that includes both pollutants, within 45 days of the end of the calendar year.



**COMPLIANCE CATEGORY:  
CLEAN AIR ACT (CAA)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>ODOROUS EMISSIONS</b></p> <p><b>1-14.</b> Installations are prohibited from emitting odorous emissions (RIDEM 17.1).</p> <p><b>ORGANIC SOLVENT CLEANING</b></p> <p><b>1-15.</b> Installations are required to restrict the emissions of VOCs from organic solvent cleaning processes (RIDEM 18.2.1 and 18.2.2).</p> <p><b>1-16.</b> Installations that use cold cleaners are required to meet specific equipment standards (RIDEM 18.3).</p>	<p>Verify that the installation does not emit into the atmosphere any air contaminant or combination of air contaminants which creates an objectionable odor beyond the property line of said installation.</p> <p>(NOTE: Volatile organic compound or VOC include volatile organic compounds and halogenated organic compounds or VOCs and HOCs.)</p> <p>Determine if the installation uses organic solvent cleaning processes.</p> <p>Verify that the installation employs the following procedures to control VOC emissions from such processes:</p> <ul style="list-style-type: none"> <li>- solvent is stored in covered containers</li> <li>- waste solvent transferral or disposal allows less than 20 percent of the waste solvent (by weight) to evaporate into the atmosphere</li> <li>- leaks are repaired immediately or the organic solvent cleaning unit is shut down</li> <li>- equipment used in organic solvent cleaning displays a conspicuous summary of proper operating procedures consistent with minimizing emissions of VOCs</li> <li>- equipment covers are closed when the organic solvent cleaning unit is not being used</li> <li>- a record of solvent consumption is maintained and reported to the Division of Air and Hazardous Materials on an annual basis</li> <li>- equipment covers and dipping or rotating baskets are constructed of nonporous or nonabsorbent material</li> <li>- covers are constructed so that they form a tight seal with the sides of the tank and have no gaps or holes</li> <li>- any solvent spray is a solid, fluid stream delivered at a pressure which does not cause excessive splashing and is no greater than 10 psi as measured at the pump outlet</li> <li>- when the degreaser cover is open, drafts at the same elevation as the tank lip may not be greater than 40 m/min (130 ft/min) when measured 1 to 2 m (3 to 7 ft) upwind.</li> </ul> <p>Determine if the installation uses cold cleaners.</p> <p>Verify that the cold cleaner meets the following equipment specifications:</p> <ul style="list-style-type: none"> <li>- the cleaner is equipped with a cover that can be easily operated with one hand</li> <li>- the cleaner is equipped with a facility for draining cleaned parts constructed so that parts are enclosed under cover while draining</li> </ul>

**COMPLIANCE CATEGORY:  
CLEAN AIR ACT (CAA)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>1-16. (continued)</b></p> <p><b>1-17. Installations that use vapor cleaners are required to meet specific equipment standards (RIDEM 18.3.2 and 18.6.1(a)).</b></p>	<ul style="list-style-type: none"> <li>- one of the following control devices is used:               <ul style="list-style-type: none"> <li>- adequate freeboard that gives a freeboard ratio greater than or equal to 0.75</li> <li>- water cover of at least 4 in. in depth if the solvent is insoluble in and heavier than water</li> <li>- another system of equivalent control, such as refrigerated chiller or carbon adsorption, which has been approved by the Director.</li> </ul> </li> </ul> <p>Determine if the installation uses vapor cleaners.</p> <p>Verify that the vapor cleaner is equipped with a cover that can be easily operated without disturbing the vapor zone.</p> <p>(NOTE: If the open top degreaser is equipped with a lip exhaust, the cover is to be located below the lip exhaust.)</p> <p>Verify that the vapor clearer is equipped with the following safety switches:</p> <ul style="list-style-type: none"> <li>- a condenser flow switch and thermostat to shut off the heat to the solvent if the condenser coolant is not circulating</li> <li>- a vapor level control thermostat to shut off the heat when the vapor level rises above the height of the primary cooling coils</li> <li>- if the degreaser is equipped with a spray apparatus, a spray safety switch to shut off the spray pump if the vapor level drops more than 10 cm (4 in.) from the bottom of the primary condenser coil, and to prevent spraying outside the vapor level</li> <li>- a low solvent level safety switch to shut off the heating element if it should become exposed.</li> </ul> <p>Verify that the vapor degreaser is equipped with one of the following control devices:</p> <ul style="list-style-type: none"> <li>- adequate freeboard to give a freeboard ratio greater than or equal to 0.75, and a power or mechanically assisted cover</li> <li>- refrigerated chiller which meets the specifications outlined in Appendix 1-2 based on the width of the degreaser</li> <li>- carbon adsorption system with ventilation greater than or equal to 50 cfm/ft<sup>2</sup> of open top area and exhausting less than 25 ppm of solvent by volume averaged over a complete adsorption cycle or a 24-h period, whichever is shorter</li> <li>- an equivalent control system.</li> </ul> <p>(NOTE: Open top vapor cleaners with an open area smaller than 10 ft<sup>2</sup> are exempt from this rule.)</p>

COMPLIANCE CATEGORY: CLEAN AIR ACT (CAA) Rhode Island Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>1-17. (continued)</p> <p>1-18. Installations that use conveyORIZED cleaning are required to meet specific equipment standards (RIDEM 18.3.3 and 18.6.1(b)).</p>	<p>Verify that any vapor cleaner in which trichloroethylene, perchloroethylene, or methylene chloride is used as a solvent, uses adequate freeboard and one of the following control devices:</p> <ul style="list-style-type: none"> <li>- a refrigerated chiller that removes a minimum of 400 Btu/h/ft of perimeter</li> <li>- a carbon adsorption system with ventilation greater than or equal to 50 cfm/ft<sup>2</sup> of open top area which captures and recovers at least 95 percent of the organic input to the bed</li> <li>- an equivalent control system.</li> </ul> <p>Determine if the installation uses conveyORIZED cleaning.</p> <p>Verify that the conveyORIZED cleaner meets the following equipment specifications:</p> <ul style="list-style-type: none"> <li>- one of the following control devices is used:             <ul style="list-style-type: none"> <li>- refrigerated chiller that removes a minimum heat rate as defined in Appendix 1-3</li> <li>- carbon adsorption system with ventilation greater than or equal to 50 cfm/ft<sup>2</sup> of air/vapor interface and exhausting less than 25 ppm of solvent by volume averaged over a complete adsorption cycle or a 24-h period, whichever is shorter</li> <li>- an equivalent control system</li> </ul> </li> <li>- the cleaner is equipped with a drying tunnel, a rotating (tumbling) basket, or other devices sufficient to prevent cleaned pieces from carrying solvent liquid or vapor out of the unit</li> <li>- the following safety switches are provided:             <ul style="list-style-type: none"> <li>- a condenser flow switch to shut off the heat to the solvent if the condenser coolant is not circulating</li> <li>- a vapor level control thermostat to shut off the heat when the vapor level rises above the height of the primary cooling coils</li> <li>- if the degreaser is equipped with a spray apparatus, a spray safety switch to shut off the spray pump or conveyor if the vapor level drops more than 10 cm (4 in.) from the bottom of the primary condenser coil and to prevent spraying outside the vapor level</li> <li>- a low solvent level safety switch to shut off the heating element if it should become exposed</li> </ul> </li> <li>- minimize openings during operations so that entrances and exits will silhouette workloads with a clearance of less than 4 in. per side between the largest pieces and the edge of the cleaner opening or less than 10 percent of the width of the opening</li> <li>- downtime covers over entrances and exits of the conveyORIZED cleaner are in place at all times when the conveyors and exhausts are not being operated</li> </ul>

**COMPLIANCE CATEGORY:  
CLEAN AIR ACT (CAA)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>1-18. (continued)</b></p> <p><b>1-19.</b> Installations that use organic solvent cleaners are required to meet specific operating procedures (RIDEM 18.4).</p>	<ul style="list-style-type: none"><li>- for any conveyORIZED cleaner in which trichloroethylene, perchloroethylene, or methylene chloride is used as a solvent, use the following control devices:<ul style="list-style-type: none"><li>- a carbon adsorption system with ventilation greater than or equal to 50 cfm/ft<sup>2</sup> of air/vapor interface which captures and recovers at least 95 percent of the organic input to the bed</li><li>- a drying tunnel vented to the carbon adsorber</li><li>- an equivalent control system.</li></ul></li></ul> <p>(NOTE: ConveyORIZED cleaners with an air/vapor interface smaller than 21.5 ft<sup>2</sup> are exempt from this rule.)</p> <p>Determine if the installation uses cold cleaners.</p> <p>Verify that the clean pieces are drained under cover at least 15 s or until dripping ceases, whichever is longer.</p> <p>Determine if the installation uses vapor cleaners.</p> <p>Verify that the installation employs the following operating procedures:</p> <ul style="list-style-type: none"><li>- minimize solvent carryout emissions by:<ul style="list-style-type: none"><li>- racking pieces to allow complete drainage</li><li>- moving pieces into and out of the cleaner at a rate less than 2 in./s</li><li>- holding pieces in the vapor zone at least 30 s or until condensation ceases, whichever is longer</li><li>- tipping cleaned pieces to spill any pools of solvent from them before removing them from the vapor zone</li><li>- allowing pieces to dry within the unit for at least 15 s or until visually dry, whichever is longer</li><li>- degreasing or drying only nonporous or nonabsorbent material</li><li>- workload does not occupy more than half of the cleaner's open top area</li><li>- spraying only within the vapor zone</li><li>- operating the cleaner so water is not visually detectable in solvent exiting the water separator</li><li>- exhaust ventilation rate does not exceed 20 m<sup>3</sup>/min/m<sup>2</sup> (65 cfm/ft<sup>2</sup>) of degreaser open area, unless necessary to meet the Occupational Safety and Health Administration (OSHA) requirements</li><li>- vapor level does not drop more than 10 cm (4 in.) when the workload enters or is removed from the vapor zone</li><li>- if a refrigerated chiller is being operated, the chilled air blanket temperature measured at the centroid of the degreaser at the coldest point is no greater than 30 percent of the solvent's boiling point in degrees Fahrenheit.</li></ul></li></ul>

**COMPLIANCE CATEGORY:  
CLEAN AIR ACT (CAA)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>1-19. (continued)</b></p> <p><b>RECORDKEEPING</b></p> <p><b>1-20.</b> Installations that use carbon adsorbers are required to keep specific records (RIDEM 18.7).</p> <p><b>BURNING OF ALTERNATIVE FUELS</b></p> <p><b>1-21.</b> Installations are prohibited from burning alternative fuels without first obtaining written approval from the Director (RIDEM 20.3).</p>	<p>Determine if the installation uses conveyORIZED cleaners.</p> <p>Verify that the installation employs the following operating procedures:</p> <ul style="list-style-type: none"><li>- exhaust ventilation rate does not exceed 20 m<sup>3</sup>/min/m<sup>2</sup> (65 cfm/ft<sup>2</sup>) of degreaser open area, unless necessary to meet OSHA requirements</li><li>- minimize solvent carryout emissions by:<ul style="list-style-type: none"><li>- racking pieces for best drainage</li><li>- maintaining the vertical conveyor rate less than 2 in./s</li></ul></li><li>- operate the cleaner so water is not visually detectable in solvent exiting the water separator</li><li>- if a refrigerated chiller is being operated, the chilled air blanket temperature measured at the centroid of the degreaser at the coldest point is no greater than 30 percent of the solvent's boiling point in degrees Fahrenheit.</li></ul> <p>Determine if the installation uses a carbon adsorber.</p> <p>Verify that the installation keeps records which contain the following information:</p> <ul style="list-style-type: none"><li>- when the carbon bed is desorbed and when it is changed</li><li>- any equipment malfunction or leak and when it is repaired</li><li>- when and why any safety switch is triggered</li></ul> <p>(NOTE: These switches should be tested semiannually and the results recorded.)</p> <ul style="list-style-type: none"><li>- solvent consumption for each degreaser, recorded no less than monthly.</li></ul> <p>Verify that these records are available for inspection by RIDEM or USEPA personnel.</p> <p>(NOTE: This regulation applies to any installation burning alternative fuels in fuel burning equipment with a heat input capacity of 1 MBtu/h or greater (RIDEM 20.2).)</p> <p>Determine if the installation uses fuel burning equipment with a heat input capacity of 1 MBtu/h or greater.</p> <p>Verify that the installation has obtained written approval from the Director before burning alternative fuels.</p>

**COMPLIANCE CATEGORY:  
CLEAN AIR ACT (CAA)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>1-22.</b> Installations that operate a source burning alternative fuels are required to maintain specific records (RIDEM 20.9.1 and 20.10).</p> <p><b>PRINTING OPERATIONS</b></p> <p><b>1-23.</b> Installations are required to restrict the emission of VOCs from rotogravure, flexographic, or specialty printing processes (RIDEM 21.2.2, 21.2.4, 21.3.1, and 21.3.2).</p>	<p>Verify that the installation maintains, for a period of 3 yr, records that contain the following information:</p> <ul style="list-style-type: none"> <li>- the feed rate of alternative fuels</li> <li>- the total fuel feed rate</li> <li>- the date and hour deliveries or additions to the fuel storage tanks are made and the quantity</li> <li>- the date and hour samples are taken</li> <li>- the time that burning of the alternative fuel commenced and ceased, or was interrupted, including the date and hour</li> <li>- the name and address of the supplier of the alternative fuel.</li> </ul> <p>(NOTE: This regulation does not apply to installations that blend alternative fuels with their primary fossil fuel where the maximum amount of alternative fuel as a percent by volume of the primary fossil fuel is less than or equal to one. This exemption does not apply to alternative fuels containing greater than 50 ppm polychlorinated biphenyls (PCBs), nor does it exempt any installation from compliance with the Department's Hazardous Waste Rules and Regulations.)</p> <p>(NOTE: This regulation applies to all roll, specialty, rotogravure, and flexographic printing operations whose potential to emit VOCs is, or ever has been, equal to or greater than 50 tons/yr. Printing operations include, but are not limited to, drying, mixing, and any other functions associated with printing (RIDEM 21.2.1).)</p> <p>(NOTE: Wherever the term volatile organic compound or VOC appears in this section, read this to mean volatile organic compounds and halogenated organic compounds or VOCs and HOCs (RIDEM 21.2.3).)</p> <p>Determine if the installation operates a rotogravure, flexographic, or specialty printing process.</p> <p>Verify that the installation does not operate a printing process employing solvent containing ink, unless one of the following conditions is met:</p> <ul style="list-style-type: none"> <li>- the volatile fraction of ink, as it is applied to the substrate, contains not more than 25 percent by volume of organic solvent and not less than 75 percent by volume of water</li> <li>- the ink, as it is applied to the substrate, less water, contains not less than 60 percent by volume of nonvolatile material (solids)</li> <li>- the use of one or more approved VOC control device(s) is certified to achieve at least a 90 percent reduction efficiency as measured across each control device</li> <li>- an alternative measure is employed which has been demonstrated to the satisfaction of the Director to have a VOC emission reduction at least equivalent to the amounts listed above.</li> </ul>

**COMPLIANCE CATEGORY:  
CLEAN AIR ACT (CAA)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>1-23. (continued)</b></p>          <p><b>1-24.</b> Installations are required to comply with these regulations by a specific date (RIDEM 21.4.2(d) and (e)).</p>          <p><b>1-25.</b> Installations are required to keep specific records concerning printing processes (RIDEM 21.7(a) through (d)).</p>	<p>Verify that the installation uses a capture system in conjunction with the emission control device(s) discussed above which provides for an overall reduction in VOCs emissions at each printing press of at least the following amounts:</p> <ul style="list-style-type: none"><li>- 75 percent where publication rotogravure printing process is employed</li><li>- 65 percent where packaging rotogravure printing process or specialty printing process is employed</li><li>- 60 percent where flexographic printing process is employed.</li></ul> <p>(NOTE: This regulation does not apply to any equipment used exclusively for chemical or physical analysis or determination of product quality and commercial acceptance, provided that the operation of the equipment is not an integral part of the production process and the total actual emissions from all such equipment do not exceed 204 kg (450 lb) in any calendar month.)</p> <p>(NOTE: Sources with potential yearly emissions of 50 tons or more of VOCs, but with actual emissions not exceeding 50 tons/yr VOCs since 1 January 1990, may apply to the Director for exemption from this regulation.)</p> <p>Verify that installations with printing operations which have or have ever had potential yearly emissions of 50 tons or more of VOCs since 1 January 1990, achieve compliance by 31 May 1995.</p> <p>Verify that installations with printing operations which become a potential 50 ton/ yr VOCs source after 28 January 1993, achieve compliance by 31 May 1995 or 18 mo after the date the facility first becomes a potential 50 ton/yr VOCs facility, whichever is later.</p> <p>Verify that the installation maintains the following information onsite at all times:</p> <ul style="list-style-type: none"><li>- printing coating press number</li><li>- hours of operation per day or per year</li><li>- method of application</li><li>- number and types of ink coats applied to the substrate</li><li>- drying method</li><li>- substrate type</li><li>- for each ink coating, indicate the following:<ul style="list-style-type: none"><li>- supplier name, ink coating name, and identification number</li><li>- ink coating density (lb/gal)</li><li>- total volatile content of ink coating as supplied (vol %)</li><li>- water content of ink coating as supplied (wt %)</li><li>- exempt solvent content of ink coating as supplied (wt %)</li><li>- solids content of ink coating as supplied (wt %)</li><li>- name of diluent, if any</li></ul></li></ul>

**COMPLIANCE CATEGORY:  
CLEAN AIR ACT (CAA)  
Rhode Island Supplement**

**REGULATORY  
REQUIREMENTS:**

**REVIEWER CHECKS:**

**1-25. (continued)**

- identification number of diluent
- diluent solvent density (lb/gal)
- VOC content of diluent (wt %)
- exempt solvent content of diluent (wt %)
- diluent/coating ratio (gal diluent/gal coating).

Verify that the installation keeps the following records onsite for each printing coating press on a daily basis:

- printing coating press number
- time period
- ink coating identification number
- amount of ink coating used (gal)
- diluent identification number
- amount of diluent used (gal).

Verify that the installation keeps the above information current and makes it available to the RIDEM or USEPA upon request.

Verify that the installation maintains all records and reports for a minimum of 5 yr.



**COMPLIANCE CATEGORY:  
CLEAN AIR ACT (CAA)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>AIR TOXICS</b></p> <p><b>1-26.</b> Installations are required to obtain a construction permit before constructing or modifying stationary sources that emit toxic air contaminants (RIDEM 22.2.2 (a) and 22.3.1).</p> <p><b>1-27.</b> Installations that emit toxic air contaminants are required to register with the Director under specific circumstances (RIDEM 22.4).</p> <p><b>CUTBACK AND EMULSIFIED ASPHALT</b></p> <p><b>1-28.</b> Installations are required to restrict the emission of VOCs from cutback asphalt (RIDEM 25.3.1, 25.3.2, and 25.3.6).</p>	<p>Determine if the installation operates or uses any of the following, which are exempt from this requirement:</p> <ul style="list-style-type: none"> <li>- any pesticide or herbicide regulated under authority of the <i>Federal Insecticide, Fungicide, Rodenticide Act</i> (FIFRA) or the <i>Rhode Island Pesticide Control Act</i>, with the exception of the use of ethylene oxide for fumigation or sterilization</li> <li>- gasoline filling stations</li> <li>- fossil fuel burning solely for the use of producing heat.</li> </ul> <p>Verify that the installation has obtained an approved construction permit before constructing or modifying any stationary source which has the potential to increase emissions of a listed toxic air contaminant by greater than the minimum quantity for that contaminant, as specified in Appendix 1-3.</p> <p>Verify that the installation files a registration form with the Director on or before 1 March of each year if either of the following conditions are met:</p> <ul style="list-style-type: none"> <li>- the installation operates any stationary source which used or emitted greater than the minimum quantity, as specified in Appendix 1-3, of any listed toxic substance in the previous calendar year</li> <li>- the installation intends to use or emit greater than the minimum quantity, as specified in Appendix 1-3, of any listed toxic substance during the present calendar year.</li> </ul> <p>Verify that the installation that operates any stationary source which initiates use of greater than the minimum quantity, as specified in Appendix 1-3, per year of a listed toxic substance registers with the Director before first use of that substance.</p> <p>(NOTE: Compliance with this regulation is required on and after 1 May 1994.)</p> <p>(NOTE: Volatile organic compound or VOC includes volatile organic compounds and halogenated organic compounds or VOCs and HOCs.)</p> <p>Verify that the installation does not allow the mixing, storage, use, or application of cutback asphalt between 1 May and 14 October, except under the following circumstances:</p> <ul style="list-style-type: none"> <li>- use of medium curing cutback asphalt in patching mixtures for pavement repairs when long life stockpile storage is necessary</li> <li>- application of a penetrating prime coat, with written approval of the Director.</li> </ul>

**COMPLIANCE CATEGORY:  
CLEAN AIR ACT (CAA)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>1-28.</b> (continued)</p> <p><b>1-29.</b> Installations are required to restrict the emission of VOCs from emulsified asphalt (RIDEM 25.3.3 and 25.3.4).</p> <p><b>1-30.</b> Installations are required to keep specific records concerning asphalt use (RIDEM 25.5).</p>	<p>(NOTE: Medium curing cutback asphalt used for the manufacture of patching mixtures or as a penetrating prime coat must have less than 5 percent of the total solvent evaporate at a temperature up to and including 500 °F.)</p> <p>Verify that the installation does not allow the mixing, storage, use, or application of cutback asphalt between 15 October and 30 April, except under the following circumstances:</p> <ul style="list-style-type: none"> <li>- use of medium curing cutback asphalt solely as a penetrating prime coat</li> <li>- use of medium curing cutback asphalt for the manufacture and use of patching mixtures for pavement repairs when long life stockpile storage is necessary</li> <li>- use of medium curing cutback asphalt of which less than 5 percent of the total solvent evaporates at a temperature up to and including 500 °F.</li> </ul> <p>Verify that the installation does not allow the mixing, storage, use, or application of emulsified asphalt that has been diluted with a petroleum solvent or another VOC or that has a VOC content greater than the following, between 1 May and 14 October:</p> <ul style="list-style-type: none"> <li>- maximum VOC content 3 percent by weight, for use as a seal coat</li> <li>- maximum VOC content 3 percent by weight, for use as a chip seal when dusty or dirty aggregate is used</li> <li>- maximum VOC content 8 percent by weight, when mixing with open graded aggregate that is not well washed</li> <li>- maximum VOC content 12 percent by weight, when mixing with dense graded aggregate.</li> </ul> <p>Verify that the VOC content of any emulsified asphalt mixed, stored, used, or applied between 15 October and 30 April is limited as follows:</p> <ul style="list-style-type: none"> <li>- maximum VOC content 3 percent by weight, for use as a seal coat</li> <li>- maximum VOC content 3 percent by weight, for use as a chip seal when dusty or dirty aggregate is used</li> <li>- maximum VOC content 8 percent by weight, when mixing with open graded aggregate that is not well washed</li> <li>- maximum VOC content 12 percent by weight, when mixing with dense graded aggregate.</li> </ul> <p>Verify that the installation maintains records of the mixing, storage, use, or application of any asphalt which contains VOC between 1 May and 14 October.</p> <p>Verify that these records are maintained for a minimum of 3 yr.</p>

**COMPLIANCE CATEGORY:  
CLEAN AIR ACT (CAA)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>ORGANIC SOLVENT EMISSIONS</b></p> <p><b>1-31.</b> Installations are required to restrict VOC emissions from all pollution-emitting equipment or activities (RIDEM 15.2.1, 15.2.2, 15.2.3(a), (b), (d), 15.3.1 through 15.3.4, and 15.3.10(a)).</p>	<p>(NOTE: This regulation applies to installations that have or have had VOC emissions from all pollutant-emitting equipment or activities of at least (a) 100 tons/yr actual emissions of VOCs since 1 January 1985; (b) 100 tons/yr potential emissions of VOCs since 10 December 1989; or (c) 50 tons/yr potential emissions of VOCs since 1 January 1990.)</p> <p>(NOTE: VOC includes VOCs and halogenated organic compounds (HOCs).)</p> <p>Determine if the installation operates or participates in any of the following types of pollution-emitting equipment or activities, which are exempt from this regulation:</p> <ul style="list-style-type: none"> <li>- organic solvent cleaning</li> <li>- printing operations</li> <li>- perchloroethylene drycleaning</li> <li>- asphalt paving</li> <li>- spraying or other employment of insecticides, pesticides, or herbicides</li> <li>- the blending of distillate or residual fuel oils</li> <li>- coatings used to meet U.S. military performance specifications if said coatings have one or more properties which cannot be satisfactorily duplicated by any sort of complying formulation and/or cannot be feasibly controlled, and documentation of such is made to the Director.</li> </ul> <p>Verify that the installation which, prior to 30 November 1993, ever had actual emissions of VOCs equal of 100 tons/yr or more operates in compliance with RACT.</p> <p>Verify that the installation which has or ever had potential emissions of VOCs of 50 tons/yr or more, since 1 January 1990, meets the following requirements:</p> <ul style="list-style-type: none"> <li>- implements a plan to reduce VOC emissions by 31 May 1995</li> <li>- submits an inventory of all VOC-emitting equipment to the Division by 28 January 1994.</li> </ul>

## Appendix 1-1

### Emission Limitations For Particulate Matter From Industrial Processes (RIDEM 3.2)

Process Weight Rate		Rate of Emission	Process Weight Rate		Rate of Emission
lb/h	tons/h	lb/h	lb/h	tons/h	lb/h
100	0.05	0.551	16,000	8.00	16.5
200	0.10	0.877	18,000	9.00	17.9
400	0.20	1.40	20,000	10.00	19.2
600	0.30	1.83	30,000	15.00	25.2
800	0.40	2.22	40,000	20.00	30.5
1000	0.50	2.58	50,000	25.00	35.4
1500	0.75	3.38	60,000	30.00	40.0
2000	1.00	4.10	70,000	35.00	41.3
2500	1.25	4.76	80,000	40.00	42.5
3000	1.50	5.38	90,000	45.00	43.6
3500	1.75	5.96	100,000	50.00	44.6
4000	2.00	6.52	120,000	60.00	46.3
5000	2.50	7.58	140,000	70.00	47.8
6000	3.00	8.56	160,000	80.00	49.0
7000	3.50	9.49	200,000	100.00	51.2
8000	4.00	10.40	1,000,000	500.00	69.0
9000	4.50	11.20	2,000,000	1,000.00	77.6
10,000	5.00	12.0	6,000,000	3,000.00	92.7
12,000	6.00	13.6			



## Appendix 1-2

### Specifications For Refrigerated Chiller (RIDEM 18.3.2(c)(2))

Degreaser Width	Minimum Cooling Capacity (Btu/h/ft of perimeter)
less than 3.5 ft	200
greater than or equal to 3.5 ft, but less than 6.0 ft	300
greater than or equal to 6.0 ft, but less than 8.0 ft	400
greater than or equal to 8.0 ft, but less than 10.0 ft	500
greater than or equal to 10.0 ft	600



## Appendix 1-3

### Minimum Quantities Allowed for Toxic Air Contaminants

(RIDEM 9.3.1(f) and 22.3.1)

	Pounds Per Hour	Pounds Per Year
Acrylonitrile	0.0005	5
Aniline	0.04	300
o-Anisidine	0.001	10
Antimony & antimony compounds	1.14	10,000
Arsenic & arsenic compounds	0	0
Benzene	0.005	50
Benzidene	0	0
Benzotrichloride	0	0
Benzyl chloride	0.001	10
Cadmium & cadmium compounds	0	0
Carbon tetrachloride	0.002	23
Chloroform	0.002	20
Chromium & chromium compounds	0	0
3,3'-Dichlorobenzidene	0.0004	4
Diocetyl phthalate (DOP, DEHP)	0.02	180
Diphenyl (biphenyl)	0.02	200
Diphenylamine	1.14	10,000
Epichlorohydrin	0.04	400
Ethylene dichloride (1,2 dichloroethane)	0.002	20
Ethylene oxide	0.0006	5
Hydrazine	0	0
Hydrogen chloride	1.14	10,000
Hydrogen fluoride	0.1	1000
Manganese & manganese compounds	0.01	100
Methyl cellosolve	1.14	10,000
Methylene bisphenyl isocyanate (MDI)	0.003	30
4,4'-Methylene bis(2-chloroaniline) (MOCA)	0.05	500
Methylene chloride (dichloromethane)	0.1	1000
Nickel & nickel compounds	0.0001	1
5-Nitro (o-anisidine)	0.004	40
2-Nitropropane	0.01	100
Perchloroethylene (tetrachloroethylene)	0.002	20
Styrene	1.14	10,000
Toluene	1.14	10,000
Toluene-2,4-diisocyanate (TDI)	0.001	10
o-Toluidine	0.002	20
1,1,2-Trichloroethane	0.3	3000
Trichloroethylene	0.02	200
Triethylamine	1.14	10,000
Xylenes	1.14	10,000





<b>INSTALLATION:</b>	<b>COMPLIANCE CATEGORY:</b> <b>CLEAN AIR ACT (CAA)</b> <b>Rhode Island Supplement</b>	<b>DATE:</b>	<b>REVIEWER(S):</b>
<b>STATUS</b> NA C RMA	<b>REVIEWER COMMENTS:</b>		

**SECTION 2**

**CLEAN WATER ACT (CWA)**

**Rhode Island Supplement**

## SECTION 2

### CLEAN WATER ACT (CWA)

#### Rhode Island Supplement

#### Definitions

These definitions were taken from the following:

- Regulations for the Rhode Island Pollutant Discharge Elimination System (RRIPDES), Rule 3 and 31(b)(15).
- Rhode Island Pretreatment Regulations (RIPR), Rules 5 and 18.
- Rhode Island Water Quality Regulations for Water Pollution Control (RIWQRWPC), Section 5.
- Rules and Regulations for Groundwater Quality (RRGQ), Section 7.
- Oil Pollution Control Regulations (OPCR), Section 5.
- Rules and Regulations Pertaining to the Treatment, Disposal, Utilization and Transportation of Wastewater Treatment Facility Sludge (RRPTDUTWTFSS), Section 3.
- Underground Injection Control Program Rules and Regulations, Section 2.
  
- *Act - Federal Water Pollution Control Act* also known as the *Clean Water Act (CWA)* as amended, 33 USC 1251, et. seq.
  
- *Agricultural Lands* - those lands utilized for or having the potential for the production of food chain crops.
  
- *Animal Feeding Operation* - a lot or facility (other than an aquatic animal production facility) where:
  1. animals (other than aquatic animals) have been, or will be stabled or confined and fed or maintained for a total of 45 days or more in any 12-mo period
  2. crops, vegetation, forage, growth or post harvest residues are not sustained in the normal growing season over any portion of the lot or facility. Two or more animal feeding operations under common ownership are considered, for the purposes of these regulations, to be a single animal feeding operation if they adjoin each other or if they use a common area or system for the disposal of pollutants.
  
- *Aquaculture Project* - a defined managed water area that uses discharges of pollutants into that designated area for the maintenance or production of harvestable freshwater, estuarine or marine plants and animals. Designated Area, as used in this definition, means the portions of the waters of the state within which the permittee or permit applicant plans to confine the cultivated species, using a method or plan of operation (including physical confinement), that on the basis of reliable scientific evidence, is expected to ensure that specific individual organisms comprising an aquaculture crop will enjoy increased growth attributable to the discharge of pollutants, and be harvestable within a defined geographic area.
  
- *Biological Additives* - microbiological cultures, enzymes, or nutrient additives that are deliberately introduced into an oil discharge for the specific purpose of encouraging biodegradation to mitigate the effects of the discharge.
  
- *Burning Agents* - those additives that, through physical or chemical means, improve the combustibility of the materials to which they are applied.
  
- *Bypass* - the intentional diversion of wastes from any portion of a wastewater treatment facility.

- **CFR** - the Code of Federal Regulations.
- **Chemical Agents** - those elements, compounds, or mixtures that coagulate, disperse, dissolve, emulsify, foam, neutralize, precipitate, reduce, solubilize, oxidize, concentrate, congeal, entrap, fix, make the pollutant mass more rigid or viscous, or otherwise facilitate the mitigation of deleterious effects or removal of the pollutant from the water.
- **Clean Water Act** - the Federal law enacted under 33 USC. section 125 and any amendments thereto.
- **Composting** - the biological method of stabilizing organic residues through an aerobic self-heating process.
- **Composted Sludge** - the reduced pathogen, humus-like material resulting from the composting process that is suitable for soil conditioning.
- **Construction** - any placement, assembly or installation of facilities, equipment or treatment works, sites preparation work, including clearing, excavation, removal or modification of existing buildings, structures or facilities that are necessary for the placement, assembly or installation of new source facilities, equipment or treatment works, or entering into a binding contractual obligation for the purchase of facilities or equipment that are intended to be used in it operation within a reasonable time. Options to purchase or contracts that can be terminated or modified without substantial loss and contracts for feasibility, engineering and design studies do not constitute a contractual obligation for the purpose of this definition.
- **Contiguous Zone** - the entire zone established by the United States under Article 24 of the Convention on the Territorial Sea and the Contiguous Zone.
- **Daily Discharge** - the *discharge of a pollutant* (see definition) measured during a calendar day or any 24-h period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the average measurement of the pollutant over the day.
- **Degradation** - a deterioration or decline in groundwater quality.
- **Department** - the Rhode Island Department of Environmental Management (RIDEM).
- **Director** - the Director of the Rhode Island Department of Environmental Management or any subordinate or subordinates to whom he delegated the powers and duties vested in him.
- **Discharge** - the addition of any pollutant to the waters from any point source or placement where it is likely to enter waters of the state.
- **Discharge of a Pollutant** - any addition of any pollutant or combination of pollutants to waters of the state from any point source.
- **Discharge to Groundwater** - the intentional, negligent, accidental, or other release of any pollutant onto or beneath the land surface, in a location where it is likely to enter the groundwater of the state.
- **Discharge Monitoring Report (DMR)** - the USEPA uniform national form, including any subsequent additions, revisions, or modifications, for the reporting of self-monitoring results by permittees.

- **Discharge Zone** - a Departmentally designated, three-dimensional zone within which the pollutant concentrations resulting from an active discharge to groundwater are allowed to be greater than the groundwater quality standards.
- **Discharger** - any person, corporation, municipality, sewerage authority, or legal entity, who causes, knows of, or should have reason to know of, or allows, any discharge.
- **Dispersants** - those chemical agents that emulsify, disperse or solubilize oil into the water column, or promotes the surface spreading of oil slicks to facilitate dispersal of the oil into the water column.
- **Domestic Sewage** - wastewaters originating from residential dwellings and consisting primarily of human and household wastes.
- **Effluent** - liquid that is discharged from a facility.
- **Effluent Limitations** - any restriction imposed by the Director on quantities, discharge rates, and concentrations of pollutants that are discharged from point sources into waters of Rhode Island, the United States, the contiguous zone or the ocean.
- **Effluent Limitations Guidelines** - a regulation published by the Administrator under Section 304(b) of the CWA to adopt or revise effluent limitations.
- **Facility** -
  1. (as defined by Oil Pollution Control Regulations) - any parcel of real estate or a contiguous series or parcels of real estate together with any and all structures, facility components, improvements, fixtures and other appurtenances located herein that constitutes a distinct geographic or commercial unit and at which petroleum products and/or oil are stored.
  2. (as defined by the Regulations for the Rhode Island Pollutant Discharge Elimination System) - any point source or any other activity (including land or appurtenances thereto) that is subject to regulation under the RIPDES permit program.
  3. (as defined by the Rules and Regulations Pertaining to the Treatment, Disposal, Utilization and Transportation of Wastewater Treatment Facility Sludge) - any publicly or privately owned treatment works that produces or disposes of sludge, composted sludge, or products derived from sludge.
- **Food Chain Crops** - crops, including tobacco, consumed by humans and crops grown for animals whose products are consumed by humans.
- **Freshwater Wetlands** - marshes, swamps, bogs, ponds, rivers, river and stream flood plains and banks, areas subject to flooding or storm flowage, emergent and submergent plant communities in any body of freshwater including rivers and streams, and that area of land within 50 ft of the edge of any bog, marsh, swamp, or pond.
- **General Permit** - a RIPDES permit authorizing a category of discharges within a geographic area.
- **Groundwater** - water found underground that completely fills the open spaces between particles of sediment and within rock formations, or water below the land surface in a zone of saturation.

- ***Groundwater Quality Classification*** - the categorization of groundwater as usable for particular purposes on the basis of its physical, chemical, and hydrogeologic characteristics. Also, the particular class (GAA, GA, GB, or GC) assigned to a particular volume of groundwater within specific geographic boundaries.
- ***Hazardous Material*** - any material or combination or mixture of materials containing any hazardous substance in an amount and concentration that when discharged to groundwater will or may reasonably be expected to cause acute or chronic adverse effects on human health or the environment. Hazardous material also includes any material that contains a hazardous waste.
- ***Hazardous Substance*** - any substance designated as hazardous by 40 CFR 300.5.
- ***Incorporated Into the Soil*** - the injection of sludge beneath the surface of the soil or the mixing of sludge with the surface soil.
- ***Individual Sewage Disposal System*** - any system of piping, tanks, disposal areas, alternative toilets, or other facilities designed to function as a unit to convey, store, treat, and/or dispose of sanitary sewage by means other than discharge into a public sewer system.
- ***Indirect Discharge*** - the introduction of pollutants into a POTW from any nondomestic source regulated under section 307(b), (c) or (d) of the CWA.
- ***Industrial User*** - a source of indirect discharge.
- ***Interference*** - an inhibition or disruption of the POTW, its treatment processes or operations, or its sludge processes, use, or disposal which is a cause of or significantly contributes to either a violation of any requirement of the POTW's RIPDES permit (including an increase in the magnitude or duration of a violation) or to the prevention of sewage sludge use or disposal by the POTW in accordance with the following statutory provisions and regulations or permits issued thereunder (or more stringent state or local regulations): Section 405 of the CWA, the *Solid Waste Disposal Act (SWDA)* (including *Resource Conservation and Recovery Act (RCRA)* and the Rhode Island Rules and Regulations Pertaining to the Disposal and Utilization of Wastewater Treatment Facility Sludge), the CAA, and the *Toxic Substances Control Act (TSCA)*. An industrial user significantly contributes to such a permit violation or prevention of sludge use or disposal in accordance with above-cited authorities whenever the user:
  1. discharges a daily pollutant loading in excess of that allowed by contract with the POTW or by Federal, state, or local law
  2. discharges wastewater that substantially differs in nature or constituents from the user's average discharge
  3. knows or has reason to know that its discharge, alone or in conjunction with dischargers from other sources, would result in a POTW permit violation or prevent sewage sludge use or disposal in accordance with the above-cited authorities as they apply to the POTW's selected method of sludge management.
- ***Large Municipal Separate Storm Sewer System*** - all municipal separate storm sewers that are owned or operated by a municipality and that are designated by the Director as part of the large or medium municipal separate storm sewer system.
- ***Maximum Daily Discharge Limitation*** - the highest allowable daily discharge.

- **Medium Municipal Separate Storm Sewer System** - all municipal separate storm sewers that are either:
  1. located in Providence
  2. owned or operated by a municipality other than Providence and that are designated by the Director as part of a large or medium municipal separate storm sewer system.
- **Monitoring Report Form** - the RIDEM standard form, including any subsequent additions, revisions or modifications for the reporting of self-monitoring results by permittees.
- **Monitoring Well** - a well that is specifically located, designed, constructed, and emplaced to sample groundwater quality; the monitoring well may also be used to measure water table elevation.
- **Monitoring Well Abandonment** - to remove a monitoring well from service so that vertical movement of water within the well bore and within the annular space surrounding the well casing is effectively and permanently prevented.
- **Municipal Separate Storm Sewer** - a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains) meeting all of the following criteria:
  1. owned or operated by a city, town, or the state, district association, or other public body (created by or according to state law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under state law such as a sewer district, flood control district or drainage district, similar entity, an Indian tribe, an authorized Indian tribal organization, or a designated and approved management agency under section 208 of CWA that discharges to the waters of the state
  2. designed or used for collecting or conveying stormwater
  3. that is not a combined sewer
  4. that is not part of a POTW.
- **Municipality** - a city, town, borough, county, parish, district, quasi-governmental corporation, association, other public body created by or under state law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes or a designated and approved management agency under Section 208 of the CWA.
- **National Pollutant Discharge Elimination System (NPDES)** - the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under Sections 307, 402, 318, and 405 of the CWA. The term includes any state program that has been approved by the Administrator.
- **New Source** - any building, structure, facility, or installation from which there is or may be a discharge of pollutants, the construction of which commenced after the publication of proposed pretreatment standards under Section 307(c) of the CWA.
- **Nonattainment** - groundwater, designated by the Director, that has pollutant concentrations greater than the groundwater quality standards for the classification.
- **Oil** - petroleum, gasoline, tar, asphalt, or any product or mixture thereof, or any substance refined from petroleum or crude oil.
- **Oil Spill Cleanup Debris** - waste resulting from the cleanup of oil debris caused by spilling, depositing, releasing, or placing of oil onto the land or waters of the state and include but not be limited to soil, absorbent material, or any other material contaminated with oil.



- **Outfall** - a point source at the point where a municipal separate storm sewer discharges to waters of the state and does not include open conveyances connecting two municipal separate storm sewers, or pipes, tunnels, or other conveyances that connect segments of the same stream or other waters of the state and are used to convey waters of the state.
- **Pass Through** - the discharge of pollutants through the POTW into navigable waters in quantities or concentrations that are a cause of or significantly contribute to a violation of any requirement of the POTW's RIPDES permit (including an increase in the magnitude or duration of a violation). An industrial user significantly contributes to such permit violation where it:
  1. discharges a daily pollutant loading in excess of that allowed by contract with the POTW or by Federal, state, or local law
  2. discharges wastewater that substantially differs in nature and constituents from the user's average discharge
  3. knows or has reason to know that its discharge, alone or in conjunction with dischargers from other sources, would result in a permit violation
  4. knows or has reason to know that the POTW is, for any reason, violating its final effluent limitations in its permit and that such industrial user's discharge from other sources, increases the magnitude or duration of the POTW's violations.
- **Permit** - an authorization, license or equivalent control document issued by the Department to implement the requirements of the regulations of the RIDEM and the CWA, or previously issued by the USEPA prior to delegation of the NPDES program to the State of Rhode Island. Permit includes a general permit, but does not include any document that has not yet been the subject of final Department action, such as a draft permit or proposed permit.
- **Person** - an individual, trust, firm, joint stock company, corporation (including a quasi-governmental corporation), partnership, association, syndicate, municipality, municipal or state agency, fire district, club, nonprofit agency, or any subdivision, commission, department, bureau, agency or department of state or Federal government (including quasi-governmental corporation), or any interstate or international body, or any agent or employee thereof.
- **Piezometer** - a well with a short screen that allows measurement of the water level at a particular depth in the aquifer.
- **Point of Compliance** - any location, described by depth and/or distance from a facility, at which the groundwater quality is sampled to determine whether a preventive action limit or groundwater quality standard is met as a result of activities occurring at the facility.
- **Point Source** - any discernible, confined, and discrete conveyance, including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel, or other floating craft, from which pollutants are or may be discharged, excluding return flows from irrigated agriculture.
- **Pollutant** - any material or effluent that may alter the chemical, physical, biological, or radiological characteristics and/or integrity of water, including dredged soil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, cellar dirt or industrial, municipal, agricultural, or other waste or material, and petroleum or petroleum products (including oil).

- *Pretreatment* - the reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater prior to or in lieu of discharging or otherwise introducing such pollutants into a POTW. The reduction or alteration may be obtained by physical, chemical or biological processes, process changes, or by other means, except those specifically prohibited.
- *Pretreatment Requirements* - any limitation or prohibition on quantities, quality, rates, and/or concentrations of pollutants directly or indirectly discharged into or transported by truck or rail or otherwise introduced into a POTW that are imposed by Federal or state regulation or by POTW.
- *Pretreatment Standard* - any regulation containing pollutant discharge limits promulgated by USEPA in accordance with Section 307(b) and (c) of the CWA that applies to industrial users.
- *Preventive Action Limit* - a specified percentage of a numerical groundwater quality standard.
- *Private Drinking Water Supply Well* - any well established for the purpose of meeting all or part of a person's potable water needs, provided said well does not supply a public drinking water supply.
- *Privately Owned Treatment Works* - any facility for the treatment of pollutants owned by a private individual or private party or corporation or other private entity. This definition includes sewers, pipes if they convey wastewater to a wastewater treatment facility as well as any equipment, buildings, or machinery used in the treatment operation. Any device or system that is used to treat wastes from any facility whose operator is not the operator of the treatment works and not a POTW.
- *Public Drinking Water Supply Well* - any well supplying a water system with piped water for human consumption, provided that such a system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days of the year.
- *Public Well* - a well that serves a public water system.
- *Publicly Owned Treatment Works (POTW)* - a treatment works that is owned by a state or municipality. This definition includes any devices and systems used in the storage, treatment, recycling, and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes, and other conveyance only if they convey wastewater to a POTW treatment plant. The term also means the municipality that has jurisdiction over the indirect discharges to and the discharges from such a treatment works.
- *Release* - any spilling, leaking, pumping, pouring, emitting, emptying, injecting, escaping, leaching, dumping, or disposing of any pollutant onto or below the land surface. Any storage, disposal, or abandonment of any substance or material in a manner that presents a substantial threat of release.
- *Remediation* - prevention and control of pollutant migration to, within, or from the groundwater and/or the removal of a pollutant from the groundwater.
- *Residual Zone* - a Departmentally designated, three-dimensional zone within which the pollutant concentrations remaining in the groundwater after remediation activities are allowed to be greater than the groundwater quality standards.
- *Rhode Island Pollutant Discharge Elimination System (RIPDES)* - the Rhode Island system for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing discharge permits, and imposing and enforcing pretreatment requirements.

- **Sanitary Sewage** - wastewater associated with human hygiene, routine cleaning, and janitorial activities that is discharged from sanitary conveniences.
- **Schedule of Compliance** - a schedule of remedial measures included in a permit, including an enforceable sequence of interim requirements (for example, actions, operations, or milestone events) leading to compliance with all applicable state and Federal laws and regulations.
- **Separate Storm Sewer** - a conveyance or system of conveyances (including pipes, conduits, ditches, and channels) primarily suited for collecting stormwater runoff and that is either:
  1. located in an urbanized area as designated by the Bureau of the Census according to the criteria in 39 FR 15202 (1 May 1974)
  2. not located in an urbanized area but designated by the Director.
- **Sewage from Vessels** - human body wastes and the wastes from toilets and other receptacles intended to receive or retain body wastes that are discharged from vessels, and regulated under Section 312 of the CWA or under Rhode Island law.
- **Sewage Sludge** - the solids, residues, and precipitate separated from or created in sewage by the processes of a POTW. Sewage as used in this definition means any wastes, including wastes from human households, commercial establishments, industries and stormwater runoff, that are discharged to or otherwise enter a POTW.
- **Significant Materials** - includes:
  1. finished materials such as metallic products
  2. raw materials used in food processing or production
  3. hazardous substances designated under Section 101(14) of the *Comprehensive Environmental Response Compensation Act (CERCLA)*
  4. any chemical the facility is required to report by Section 313 of Title 3 of *Superfund Amendments and Reauthorization Act (SARA)*
  5. fertilizers
  6. pesticides
  7. waste products such as ashes, slag, and sludge that have the potential to be released with stormwater discharges.
- **Silviculture** - the growing or cultivation of forests.
- **Sinking Agents** - those additives applied to oil discharges to sink floating pollutants below the water surface.
- **Site** - the land or water area where any water pollution control facility or activity is physically located or conducted, including adjacent land used in connection with the facility or activity.
- **Sludge** - residue, whether partially solid or solid, treated or untreated, resulting from the treatment of sewage, including residues from the cleaning of sewers, by processes such as settling, flotation, filtration, and centrifugation, and not a hazardous waste.
- **Sludge Site** - land used for the treatment, disposal or utilization of sludge or composted sludge or products derived from sludge.
- **Solid Waste** - garbage, refuse, and other discarded solid materials generated by residential, institutional, commercial, industrial, and agricultural sources but does not include solids or dissolved material in domestic sewage or sewage sludge, nor does it include hazardous waste. Also includes nonhazardous liquid, semi-solid, and containerized gaseous waste.

- **State** - the State of Rhode Island.
- **Static Water Table** - the water table under natural, nonpumping conditions.
- **Storm Sewer** - a sewer intended to carry only stormwater.
- **Stormwater** - stormwater runoff, snow melt runoff, and surface runoff and drainage.
- **Stormwater Discharge Associated With Industrial Activity** - the discharge from any conveyance that is used for collecting and conveying stormwater to separate storm sewers and/or directly to a water body and that is directly related to manufacturing, processing, or raw materials storage areas at an industrial plant. The term does not include discharges from facilities or activities excluded from the RIPDES program under 40 CFR 122. For the categories of industries below, the term includes stormwater discharges from:
  1. industrial plant yards
  2. immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility
  3. material handling sites
  4. refuse sites
  5. sites used for the application or disposal of process waste waters
  6. sites used for the storage and maintenance of material handling equipment
  7. sites used for residual treatment, storage, or disposal
  8. shipping and receiving areas
  9. manufacturing buildings
  10. storage areas (including tank farms) for raw materials, and intermediate and finished products
  11. areas where industrial activity has taken place in the past and significant materials remaining are exposed to stormwater.

For the category of light industries, the term includes only stormwater discharges from all the areas (except access roads and rail lines) that are listed in the previous sentence where material handling equipment or activities, raw materials, intermediate products, final products, waste materials, by-products, or industrial machinery are exposed to stormwater.

For the purposes of this definition, material handling activities include the storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, finished product, by-product or waste product.

The term excludes areas located on plant lands separate from the plant's industrial activities, such as office buildings and accompanying parking lots as long as the drainage from the excluded areas is not mixed with stormwater drained from the above described areas.

Industrial facilities (including industrial facilities that are federally, state, or municipally owned or operated that meet the description of the facilities listed below include those facilities designated by the Director.

The following categories of facilities are considered to be engaging in industrial activity for purposes of this section:

1. facilities subject to stormwater effluent limitations guidelines, new source performance standards, or toxic pollutant effluent standards under 40 CFR subchapter N (except facilities with toxic pollutant effluent standards that are exempted below in light industry)
2. facilities classified as Standard Industrial Classifications 24 (except 2434), 26 (except 265 and 267), 28 (except 283), 29, 311, 32 (except 323), 33, 3441, 373 are considered heavy industry

3. hazardous waste treatment, storage, or disposal facilities, including those that are operating under interim status or a permit under subtitle C of RCRA
  4. landfills, land application sites, and open dumps that receive or have received any industrial wastes (waste that is received from any of the facilities described in this section) including those that are subject to regulation under subtitle D of RCRA
  5. facilities involved in the recycling of materials, including metal scrap yards, battery reclaimers, salvage yards, and automobile junk yards, including but limited to those classified as Standard Industrial Classification 5015 and 5093
  6. steam electric power generating facilities, including coal handling sites
  7. transportation facilities classified as Standard Industrial Classifications 40, 41, 42 (except 4221-25), 43, 44, 45, and 5171 that have vehicle maintenance shops, equipment cleaning operations, or airport deicing operations. Only those portions of the facility that are either involved in vehicle maintenance (including vehicle rehabilitation, mechanical repairs, painting, fueling, and lubrication), equipment cleaning operations, airport deicing operations, or that are otherwise identified above and below are associated with industrial activity
  8. treatment works treating domestic sewage or any other sewage sludge or wastewater treatment device or system, used in the storage treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludge that are located within the confines of the facility, with a design flow of 1.0 million gallons per day or more, or required to have an approved pretreatment program under 40 CFR 403. Not included are farm lands, domestic gardens or lands used for sludge management where sludge is beneficially reused and that are not physically located in the confines of the facility, or areas that are in compliance with section 405 of CWA
  9. construction activity including clearing, grading and excavation activities except operations that result in the disturbance of less than five acres of total land area that are not part of a larger common plan of development or sale
  10. light industries are facilities under Standard Industrial Classifications 20, 21, 22, 23, 2434, 25, 265, 267, 27, 283, 285, 30, 31 (except 311), 323, 34 (except 3441), 35, 36, 37 (except 373), 38, 39, 4221-25, (and that are not otherwise included above).
- *Surface Collecting Agents* - those chemical agents that form a surface film to control the layer thickness of oil.
  - *Surface Water* - any body of water including brooks, streams, rivers, ponds, lakes, bays, and wetlands.
  - *Terminal* - an onshore facility or an onshore structure used or intended to be used as a port or facility for the transfer or other handling of oil. A ship repair yard is a terminal.
  - *Toxic Pollutant* - those pollutants, or combinations of pollutants, including disease causing agents, that after discharge and upon exposure, ingestion, inhalation, or assimilation into any organism, either directly or indirectly but ingestion through food chains, may, on the basis of information available to the Director cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions including malfunctions in reproduction, or physical deformation, in these organisms or their offspring. Toxic pollutants include those pollutants identified in Section 307 of the CWA.
  - *Underground Storage Tank (UST)* - any one or combination of tanks (including underground pipes connected thereto) that is used to contain an accumulation of petroleum product or hazardous material, and the volume of which (including the volume of the underground pipes connected thereto) is 10 percent or more beneath the surface of the ground.

- **Upset** - an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the installation. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
- **Vector** - a carrier, usually an animal, capable of transmitting a pathogen from one organism to another.
- **Wastewater** - any direct or indirect discharge of a pollutant from residences, businesses, institutions, and industries or any combination of the above.
- **Water Quality Standards** - the physical, chemical, biological, and aesthetic characteristics of a water body as described by state water quality criteria or the water quality that would result from existing discharges under design conditions, whichever is more stringent as determined by the Department.
- **Water Table** - the upper surface of the saturated zone in an unconfined aquifer.
- **Waters of the State or Water** - all surface water and groundwater of the State of Rhode Island, including all tidewaters, territorial seas, wetlands, land masses partially or wholly submerged in water, and both inter- and intrastate bodies of water that are, have been, or will be used in commerce, by industry, for the harvesting of fish and shellfish or for recreational purposes.
- **Water Use Classification** - the waters of the state are assigned to one of the following classes:
  1. Freshwater, Classes A, B, C, D, and E
  2. Seawater, Classes SA, SB, and SC.
- **Well** - a bored, drilled, or driven shaft or a dug hole, with a depth that is greater than its largest surface dimension, through which groundwater flows, has flowed, or may flow under natural or induced pressure.
- **Well Injection** - the subsurface emplacement of fluids through a well.
- **Wellhead Protection Area** - a three-dimensional zone, designated by the Director, surrounding a public well or wellfield through which water will move toward and reach such well or wellfield.
- **Wetlands** - those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.



**CLEAN WATER ACT (CWA)**  
**GUIDANCE FOR RHODE ISLAND CHECKLIST USERS**

<b>Applicability:</b>	<b>Refer to Checklist Items:</b>
RIPDES Permit	2-1 through 2-8
Stormwater Discharge Permits	2-9
Publicly Owned Treatment Works (POTWs)	2-10 through 2-21
Surface Water Quality	2-22 through 2-24
Groundwater Quality	2-25 through 2-29
Notification Requirements of Groundwater Quality Violations	2-30 and 2-31
Groundwater Quality Certification	2-32
Monitoring Well Abandonment	2-33
Storage and Transportation of Oil	2-34
Boiler Rooms and Remote Fill Tanks	2-35
Aboveground Storage Tanks (ASTs)	2-36 through 2-43
AST Groundwater Monitoring	2-44 through 2-47
New and Modified ASTs	2-48 through 2-54
Repairing and Reconditioning ASTs	2-55 and 2-56
Oil and Waste Release Response	2-57 and 2-58
Spill Prevention and Emergency Plans	2-59
Sludge	2-60 through 2-73
Injection Wells	2-74





**COMPLIANCE CATEGORY:  
CLEAN WATER ACT (CWA)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>RIPDES PERMIT</b></p> <p><b>2-1.</b> Installations that discharge pollutants into the waters must have a valid Rhode Island Pollutant Discharge Elimination System (RIPDES) permit RRIPDES Rules 8(a), (b), 9, 10(a), and 13 (a)).</p>	<p>Determine if the installation meets any of the following criteria for discharges that are exempt from RIPDES permit requirements:</p> <ul style="list-style-type: none"> <li>- any discharge of sewage from vessels, effluent from properly functioning marine engines, laundry, shower, and galley sink wastes, or any other discharge incidental to the normal operation of a vessel except for rubbish, trash, garbage, or other materials discharged overboard</li> <li>- any discharge of dredged or fill material into waters of the United States that are federally regulated by the <i>Clean Water Act</i> (CWA)</li> <li>- any discharge in compliance with the instruction of an On-Scene Coordinator</li> <li>- any introduction of pollutants from nonpoint source agricultural and silvicultural activities, including runoff from orchards, cultivated crops, pastures, range lands, and forest lands, excluding:             <ul style="list-style-type: none"> <li>- discharges from concentrated animal feeding operations</li> <li>- discharges from concentrated aquatic animal production facilities</li> <li>- discharges to aquaculture projects</li> <li>- discharges from irrigated agriculture</li> <li>- return flows from irrigated agriculture</li> <li>- discharges of pollutants into a privately owned treatment works</li> <li>- discharges covered by a general permit</li> <li>- the introduction of sewage, industrial wastes, or other pollutants into POTWs by indirect discharge</li> <li>- approved discharges or disposal of pollutants into an underground or subsurface disposal well.</li> </ul> </li> </ul> <p>Verify that installations that discharge pollutants into the waters and are not exempt have a valid permit.</p> <p>Verify that installations with a NPDES permit prior to 9 February 1993, have applied for a RIPDES permit either 180 days before the scheduled expiration date of the NPDES permit, or if the schedule expiration date has already passed, then within 60 days of receiving written notification from the Department that a RIPDES permit application is due.</p> <p>(NOTE: The Director may require installations with discharges authorized by a general permit to obtain an individual RIPDES permit.)</p> <p>(NOTE: The conditions of an NPDES permit or an expired RIPDES permit are continued in force until the effective date of a new RIPDES permit if the installation has submitted a timely and complete application for a RIPDES permit or an application for a renewal of the permit, and the Department, through no fault of the installation, does not issue a new permit with an effective date on or before the expiration date of the previous permit.)</p>



**COMPLIANCE CATEGORY:  
CLEAN WATER ACT (CWA)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>2-4.</b> Installations with discharge permits must meet specific record keeping standards (RRIPDES, Rules 14.12 and 14.13).</p>	<p>Verify that the installation retains records of all monitoring information for at least 5 yr from the date of the sample, measurement, report, or application, including:</p> <ul style="list-style-type: none"> <li>- all calibration and maintenance records</li> <li>- all original strip chart recordings for continuous monitoring instrumentation</li> <li>- copies of all reports required by this permit</li> <li>- records of all data used to complete the application for this permit.</li> </ul> <p>Verify that records of monitoring information include:</p> <ul style="list-style-type: none"> <li>- the date, exact place, and time sampling measurements were taken</li> <li>- the individual(s) who performed the sampling</li> <li>- the date(s) analyses were performed</li> <li>- the individual(s) who performed the analyses</li> <li>- the analytical techniques or methods used</li> <li>- the results of the analyses</li> <li>- the volume of effluent discharged at the time of sampling or measurement.</li> </ul>
<p><b>2-5.</b> Installations with discharge permits must meet with specific reporting standards (RRIPDES, Rules 14.17(a) through (c), and (e)).</p>	<p>Verify that the installation gives notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility.</p> <p>Verify that the installation gives reasonable advance notice to the Department of any planned changes in the permitted facility that may result in noncompliance with permit requirements.</p> <p>(NOTE: The permit is not transferable to any person until after notice is given to the Department.)</p> <p>Verify that monitoring results are reported at intervals specified in the permit.</p> <p>Verify that reports of noncompliance with, or any progress reports on interim and final requirements contained in any compliance schedule of this permit are submitted no later than 14 days following each schedule date.</p>
<p><b>2-6.</b> Installations with discharge permits that experience any noncompliance that may endanger health or the environment must meet reporting standards (RRIPDES, Rules 14.18 (a), (b), 14.19, and 14.22).</p>	<p>Verify that the installation immediately reports any noncompliance that may endanger health or the environment.</p> <p>Verify that any information is provided orally when the installation becomes aware of the circumstances by calling RIDEM.</p>



**COMPLIANCE CATEGORY:  
CLEAN WATER ACT (CWA)  
Rhode Island Supplement**

**REGULATORY  
REQUIREMENTS:**

**REVIEWER CHECKS:**

**2-7. (continued)**

(NOTE: This condition is not satisfied if the installation could have installed adequate backup equipment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance.)

- the installation submitted notices as previously mentioned.

(NOTE: The Director may approve an anticipated bypass.)

**2-8.** Installations with existing manufacturing, commercial and silvicultural discharges and research facilities must meet additional notification standards (RRIPDES, Rule 16.01).

Determine if the installation has existing manufacturing, commercial, and silvicultural discharges or research facilities.

Verify that the installation notified the Department as soon as they had reason to believe that any activity occurred or will occur that would result in the discharge of any toxic pollutant that is not limited in the permit, if that discharge will exceed the highest of the following notification levels:

- 100 µg/L
- 200 µg/L for acrolein and acrylonitrile
- 500 µg/L for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol
- 1 mg/L for antimony
- five times the maximum concentration value reported for the pollutant on the permit application.

Verify that all existing manufacturing, commercial, and silvicultural dischargers and research facilities notify the Department as soon as they have reason to believe that they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant that was not reported in the permit application.

**STORMWATER  
DISCHARGE  
PERMITS**

**2-9.** Certain stormwater discharges require a RIPDES permit (RRIPDES, Rule 31 (a)(1)(i)-(ii), (a)(5), and (c)).

Verify that installations with discharges composed entirely of stormwater that meet the following criteria have a valid RIPDES permit:

- discharges that a permit has been issued for prior to 4 February 1987
- discharges associated with industrial activity
- discharges from a large or medium municipal separate storm sewer system
- discharges determined by the Director.

**COMPLIANCE CATEGORY:  
CLEAN WATER ACT (CWA)  
Rhode Island Supplement**

**REGULATORY  
REQUIREMENTS:**

**REVIEWER CHECKS:**

**2-9. (continued)**

Verify that installations with stormwater discharge associated with industrial activity which discharges through a large or medium municipal separate storm sewer system have submitted to the operator of the municipal separate storm sewer system receiving the discharge (180 days before commencing a new discharge) the following:

- the name of the facility
- a contact person and phone number
- the location of the discharge
- a description, including Standard Industrial Classification, that best reflects the principal products or services provided by each facility
- any existing RIPDES permit number.

**PUBLICLY OWNED  
TREATMENT WORKS  
(POTWs)**

**2-10.** Installations that introduce pollutants into a POTW by a nondomestic source must not pass through the POTW or interfere with the operation or performance of the works RIPR, Rule 7(a) and 7(b)).

Verify that the installation does not introduce pollutants into a POTW that pass through or interfere with the operation or performance of the works.

Verify that the installation does not introduce pollutants with the following characteristics into a POTW:

- pollutants that create a fire or explosion hazard in the POTW
- pollutants that cause corrosive structural damage to the POTW
- pollutants with a pH lower than 5.0 unless the works is specifically designed to accommodate such a discharge
- solid or viscous pollutants in amounts that cause obstruction to the flow in the POTW and result in interference
- any pollutant, including O<sub>2</sub> demanding pollutants (Biological Oxygen Demand (BOD), etc.) released in a discharge at a flow rate and/or pollutant concentration that cause interference with the POTW
- heat in amounts that inhibit biological activity in the POTW and result in interferences
- heat in quantities that the temperature at the POTW treatment plant exceeds 104 °F (40 °C) without approval from the POTW and the approval authority.

**COMPLIANCE CATEGORY:  
CLEAN WATER ACT (CWA)  
Rhode Island Supplement**

**REGULATORY  
REQUIREMENTS:**

**REVIEWER CHECKS:**

**2-11.** Installations with specific types of POTWs are required to meet POTW pretreatment program standards (RIPR, Rule 10(a), (b), and (c)).

Determine if the installation has a POTW that meets either of the following criteria:

- a total design flow greater than 5 mgd; and receives pollutants from industrial users that pass through or interfere with the operation of the POTW
- are otherwise subject to pretreatment standards.

Verify that the POTW has established a POTW pretreatment program.

Verify that the POTW has received approval of the POTW pretreatment program no later than 3 yr after the reissuance or modification of an existing RIPDES permit.

(NOTE: Approved pretreatment programs may be incorporated into RIPDES permits. The Department may require POTWs with a design flow of 5 mgd or less to have an approved POTW Pretreatment Program.)



<b>COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) Rhode Island Supplement</b>	
<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>2-12.</b> Installations with POTWs must meet notification standards (RRIPDES, Rule 16.02).</p> <p><b>2-13.</b> Installations with POTWs must meet specific pretreatment standards (RRIPDES, Rule 16.04).</p> <p><b>2-14.</b> Installations with large or medium municipal separate storm sewer systems or a municipal separate storm sewer must meet reporting standards (RRIPDES, Rule 16.10).</p>	<p>Verify that all POTWs provide adequate notice to the Department of the following:</p> <ul style="list-style-type: none"> <li>- any new introduction of pollutants into the POTW from an indirect discharger that would be subject to Sections 301 or 306 of the CWA, if it were directly discharging those pollutants</li> <li>- any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of the permit issuance.</li> </ul> <p>Verify that the adequate notice includes information on the quality and quantity of effluent introduced into the POTW, and any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.</p> <p>Verify that indirect dischargers into a POTW subject to pretreatment standards under Section 307(b) of CWA, 40 CFR 403, and Rhode Island Pretreatment Regulations, are identified in terms of character and volume of pollutants.</p> <p>Verify that the Department is notified in advance of the quality and quantity of all new introduction of pollutants into a facility and of any substantial change in the pollutants introduced into a facility by an existing user of the facility, except for introductions of nonindustrial pollutants that the Department has exempted.</p> <p>Verify that notifications include an estimate of the effect of these changes on the effluents to be discharged from the facility.</p> <p>Verify that POTWs establish an effective regulatory program, alone or in conjunction with the operators of sewage collection systems, that will assure compliance and monitor progress toward compliance by industrial users of the facility standards and pretreatment standards.</p> <p>Verify that as actual flows to the facility approach design flow or design loading limits, POTWs submit to the Department for approval, a program that the installation and the persons responsible for building and maintaining the contributory system will pursue to prevent the overload of the facilities.</p> <p>Verify that installations with large or medium municipal separate storm sewer system or a municipal separate storm sewer that has been designated by the Director submits an annual report by the anniversary of the date of the issuance of the permit for the system.</p> <p>Verify that the annual report include the following:</p> <ul style="list-style-type: none"> <li>- the status of implementing the components of the stormwater management program that are established as permit conditions</li> <li>- proposed changes to the stormwater management programs that are established as permit conditions</li> </ul>

**COMPLIANCE CATEGORY:  
CLEAN WATER ACT (CWA)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>2-14. (continued)</b></p> <p><b>2-15.</b> Installations with POTW and industrial users must meet reporting standards (RIPS, Rule 14(a), (b), and (f)).</p> <p><b>2-16.</b> Industrial users with a compliance schedule for meeting categorical pretreatment standards must meet specific reporting standards (RIPS, Rule 14(c)(3)).</p>	<ul style="list-style-type: none"> <li>- revisions, if necessary, to the assessment of controls and the fiscal analysis reported in the permit application</li> <li>- a data summary, including monitoring data, that is accumulated throughout the reporting year</li> <li>- projected annual expenditures and budget for year following each annual report</li> <li>- a summary describing the number and nature of enforcement actions, inspections, and public education programs</li> <li>- identification of water quality improvements or degradation.</li> </ul> <p>(NOTE: For all reporting requirement protocols, the term Control Authority refers to:</p> <ul style="list-style-type: none"> <li>- the POTW, if the POTW's pretreatment program has been approved</li> <li>- the Director, if the POTW's pretreatment program has not been approved.)</li> </ul> <p>Determine if the installation has any existing or new source industrial users subject to categorical pretreatment standards and discharging to a POTW.</p> <p>Verify that industrial users submit a report to the Control Authority within either 180 days after the effective date of a categorical pretreatment standard or 180 days after the final administrative decision made on a category determination submission, whichever is later.</p> <p>Verify that existing and new source industrial users submit a report to the Control Authority that contains:</p> <ul style="list-style-type: none"> <li>- the name and address of the facility</li> <li>- a list of environmental control permits held</li> <li>- a description of operations</li> <li>- flow measurements</li> <li>- measurement of pollutants.</li> </ul> <p>Verify that existing industrial users include the following additional information in the report to the Control Authority:</p> <ul style="list-style-type: none"> <li>- certification statement</li> <li>- compliance schedules, if required.</li> </ul> <p>Verify that industrial users have notified the POTW immediately of any slug loading.</p> <p>Verify that no later than 14 days following each date in the schedule and the final date for compliance, the industrial user submits a progress report to the control authority.</p>

**COMPLIANCE CATEGORY:  
CLEAN WATER ACT (CWA)  
Rhode Island Supplement**

**REGULATORY  
REQUIREMENTS:**

**REVIEWER CHECKS:**

**2-17.** Industrial users subject to pretreatment standards and requirements must meet specific reporting standards (RIPS, Rule 14(d) and (e)).

Determine if the installation has industrial users subject to pretreatment standards and requirements.

Verify that the industrial user submit a report to the Control Authority within 90 days following the date for final compliance with applicable categorical pretreatment standards, or, in the case of new sources, 90 days following the commencement of the introduction of wastewater into the POTW.

Verify that the report includes the following information that are limited by pretreatment standards and requirements:

- the nature and concentration of all pollutants in the discharge from the regulated process
- the average and maximum daily flow for these process units in the industrial user.

Verify that industrial users who are subject to a categorical pretreatment standard after the compliance date of the pretreatment standard (or in the case of new sources, after the commencement of the discharge into the POTW) submit periodic reports on continued compliance to the control authority.

Verify that the periodic reports are submitted during the months of June and December unless required more frequently by the standard, Control Authority, or the Director.

**2-18.** POTWs with a compliance schedule must meet specific reporting standards (RIPS, Rule 14(h)).

Determine if the installation has a POTW with a compliance schedule.

Verify that POTWs submit a progress report to the Director no later than 14 days following each date in the compliance schedule and the final date for compliance.

Verify that the progress report contains information regarding whether or not the POTW has complied with the increment of progress required to be met, and if not, contains the date of expected compliance, the reason for the delay, and the steps being taken.

Verify that no more than 9 mo elapse between progress reports to the Director.

**COMPLIANCE CATEGORY:  
CLEAN WATER ACT (CWA)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>2-19.</b> Installations with POTWs that have received approved removal allowance must meet reporting standards (RIPS, Rule 14(i) and (j)).</p> <p><b>2-20.</b> Installations with industrial users and POTWs must meet record-keeping standards (RIPS, Rule 14(n)).</p> <p><b>2-21.</b> Industrial users that have had an upset occur must meet specific reporting standards (RIPS, Rule 18(c)(3)).</p>	<p>Determine if the POTW has received authorization to modify categorical pretreatment standards for pollutants removed by the POTW.</p> <p>Verify that the POTW has submitted to the Director a report on compliance with the approved removal allowances initially within 60 days after the effective date the modified Pretreatment Standard and at 6-mo intervals thereafter unless required more frequently by the Director.</p> <p>Verify that the report contains the following information:</p> <ul style="list-style-type: none"> <li>- consistent removal data</li> <li>- data on sludge characteristics</li> <li>- description of sludge management.</li> </ul> <p>Verify that a minimum of one sample per month is taken during the reporting period.</p> <p>Verify that installations with industrial users and POTWs subject to reporting standards maintain records of all information resulting from any monitoring activities.</p> <p>Verify that the records for all samples include the following:</p> <ul style="list-style-type: none"> <li>- the date, exact place, method, and time of sampling and the names of the person(s) taking the samples</li> <li>- the dates analyses were performed</li> <li>- who performed the analyses</li> <li>- the analytical techniques/methods used</li> <li>- the results of the analyses.</li> </ul> <p>Verify that industrial users or POTWs subject to the reporting requirements maintain any records of monitoring activities and the results for a minimum of 3 yr.</p> <p>(NOTE: The period of record retention may be extended by the Director or the Regional Administrator.)</p> <p>Verify that industrial users submit the following information to the POTW and Control Authority within 24 h of becoming aware of an upset:</p> <ul style="list-style-type: none"> <li>- a description of the indirect discharge and the cause of noncompliance</li> <li>- the period of noncompliance, including exact dates and times or, if not corrected, the anticipated duration of the noncompliance</li> <li>- steps being taken and/or planned to reduce, eliminate and prevent recurrence of the noncompliance.</li> </ul> <p>Verify that if the upset report information is provided orally, a written submission is provided to the POTW and the Control Authority within 5 days.</p>

**COMPLIANCE CATEGORY:  
CLEAN WATER ACT (CWA)  
Rhode Island Supplement**

**REGULATORY  
REQUIREMENTS:**

**REVIEWER CHECKS:**

**SURFACE WATER  
QUALITY**

**2-22.** Installations with waters of the state must meet general water quality standards (RIWQRWPC, Section 6.3).

Verify that installations with waters of the state are free of pollutants in concentrations or combinations that:

- adversely effect the composition of bottom aquatic life
- adversely effect the physical or chemical nature of the bottom
- interfere with the propagation of fish and shellfish
- undesirably alter the qualitative and quantitative character of the biota
- settle to form objectionable deposits
- float as debris, scum, or other matter to form nuisances
- produce objectionable odor, color, taste, or turbidity
- result in the dominance of nuisance species.

Verify that installations with waters of the state meet the following minimum criteria unless more stringent criteria is applicable:

- levels of radioactive substances are not in concentrations or combinations that are harmful to human, animal, or aquatic life, or result in concentrations in organisms producing undesirable conditions
- nutrients do not exceed the site-specific limits necessary to control accelerated or cultural eutrophication, and best management practices are used to control sedimentation and erosion
- thermal mixing zones allowed by the Director are limited to no more than one-quarter of the cross sectional area and/or volume of river flow, stream, or estuary, leaving at least three-quarters free as a zone of passage
- nonthermal mixing zones meet Director-determined limits.

**2-23.** Installations must meet the specific water quality criteria for surface waters with water use classifications (RIWQRWPC, Section 6.32 and 6.33).

(NOTE: The waters of the state are assigned one of the following water use classifications:

- freshwaters, classes A, B, C, D, E
- seawater, classes, SA, SB, SC.)

Determine if the installation has surface waters with water use classifications.

Verify that the installation's surface water meets the class specific criterias of Appendixes 2-1 and 2-2.

**COMPLIANCE CATEGORY:  
CLEAN WATER ACT (CWA)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>2-24.</b> Installations must not violate prohibited discharge standards (RIWQRWPC, Section 10.3 through 10.6).</p> <p><b>GROUNDWATER QUALITY</b></p> <p><b>2-25.</b> Installations must meet groundwater protection standards RRGQ, Sections 8 and 19.01).</p>	<p>Verify that the installation does not place or discharge pollutants into any sewer designed to contain only stormwater.</p> <p>Verify that the installation does not place or discharge stormwater, silty water from construction dewatering efforts, gutter runoff, sump discharges, or street runoff to a treatment works designed to receive only sewage or waterborne industrial waste.</p> <p>Verify that the installation does not place or discharge hazardous waste or hazardous substances into any waters of the state or into a wastewater treatment works unless the waste has received the required pretreatment.</p> <p>Verify that the installation does not place or discharge oil, petroleum products, or industrial solvents into treatment works designed to treat or control only sewage or stormwater unless it conforms with applicable pretreatment requirements.</p> <p>Verify that the installation does not place or discharge oil or petroleum products into the waters of the state unless the oil or petroleum products receive the required pretreatment.</p> <p>Verify that installations do not violate any of the following groundwater prohibitions:</p> <ul style="list-style-type: none"> <li>- take actions that violate or cause violations of groundwater standards</li> <li>- cause or allow a discharge of any pollutant to groundwater without the approval of the Director</li> <li>- take action to cause or allow groundwater designated as nonattainment to be further degraded</li> <li>- operate or maintain a facility in a manner that is likely to result in a discharge of any pollutant to groundwater without the approval of the Director</li> <li>- discharge hazardous materials to the groundwaters of the state</li> <li>- install underground storage tanks (USTs) in new locations within the wellhead protection area of community water supply wells.</li> </ul> <p>(NOTE: The prohibition of installing USTs does not apply to the replacement or upgrading of existing USTs installed before 29 May 1992.)</p> <p>Verify that solid waste landfills and facilities for the disposal of hazardous waste are not in areas where the groundwater is classified GAA.</p>

**COMPLIANCE CATEGORY:  
CLEAN WATER ACT (CWA)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>2-26.</b> Installations with groundwater classified as GAA and GA must meet specific requirements (RRGQ, Sections 10.02 and 10.03).</p>	<p>Verify that pollutants are not in groundwater classified GAA or GA, in any concentration that will either:</p> <ul style="list-style-type: none"> <li>- adversely affect the groundwater as a source of potable water</li> <li>- adversely affect other beneficial uses of the groundwater, including recreational, agricultural, and industrial uses and the preservation of fish and wildlife habitat through the maintenance of surface water quality.</li> </ul> <p>(NOTE: Pollutants within an approved discharge zone or residual zone are exempt from the above requirement and are covered below.)</p> <p>Verify that class GAA and class GA groundwater resources meet the numerical groundwater quality standards and the preventive actions limits for specific substances in Appendix 2-3.</p> <p>Verify that groundwater classified as GAA or GA meets Director- determined surface water quality standards.</p> <p>Verify that groundwater classified as GB and GC meets the following Director-determined standards:</p> <ul style="list-style-type: none"> <li>- does not threaten public health and/or the environment</li> <li>- does not violate or have a substantial likelihood to cause a violation of surrounding groundwater quality standards</li> <li>- does not adversely impact or have a substantial likelihood to adversely impact current or proposed uses of the facility, groundwater, or surface water within the facility boundary or of surrounding property</li> <li>- does not violate or have any reasonable potential to cause a violation of surface water quality standards.</li> </ul>
<p><b>2-27.</b> Installations required by the Director to monitor groundwater quality must have an approved groundwater quality program (RRGQ, Section 12.02 (a)).</p>	<p>(NOTE: Groundwater monitoring done in compliance with the following Department regulations and Federal programs are exempt from the following requirement:</p> <ul style="list-style-type: none"> <li>- Rhode Island Oil Pollution Control Regulations</li> <li>- Rhode Island Regulations for Underground Storage Facilities Used for Petroleum Products and Hazardous Materials</li> <li>- Rhode Island Rules and Regulations Pertaining to the Treatment, Disposal, Utilization, and Transportation of Wastewater Treatment Facility Sludge</li> <li>- Rhode Island Rules and Regulations for Solid Waste Management Facilities</li> <li>- Rhode Island Rules and Regulations for Hazardous Waste Generation, Transportation, Treatment, Storage, and Disposal</li> <li>- Rhode Island Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases</li> <li>- Federal CERCLA</li> <li>- Federal RCRA.)</li> </ul>

**COMPLIANCE CATEGORY:  
CLEAN WATER ACT (CWA)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>2-27. (continued)</b></p> <p><b>2-28.</b> Installations must meet minimum groundwater monitoring standards (RRGQ, Section 12.02(d), (e), (g), and (i)).</p> <p><b>2-29.</b> Installations that terminate groundwater monitoring required by the Director must meet specific standards (RRGQ, Section 12.03(a)).</p>	<p>Verify that all facilities required by the Director to monitor groundwater implement a groundwater monitoring program approved by the Director.</p> <p>Verify that the static water table elevation is recorded at the time of monitoring.</p> <p>Verify that the installation maintains onsite a log containing static water table elevations and the sample analyses.</p> <p>Verify that copies of sample results and water table measurements were submitted to the Director within 30 days of the receipt of this information by the installation.</p> <p>Verify that any change in a groundwater monitoring program first receives Director approval.</p> <p>Verify that installations that terminate groundwater monitoring have prior approval from the Director and meet one of the following conditions:</p> <ul style="list-style-type: none"> <li>- for discharges to groundwater: <ul style="list-style-type: none"> <li>- the discharge must cease</li> <li>- the discharge system must be closed in accordance with the appropriate state and Federal regulations</li> <li>- there has been no violation of a preventive action limit or groundwater quality standard at the points of compliance for the number of samples and the time period established by the Director</li> </ul> </li> <li>- at sites of groundwater remediation, there has been no violation of groundwater quality standards at the point of compliance for the number of samples and the time period established by the Director</li> <li>- at sites of suspected or potential discharges to groundwater and any other sites required by the Director to monitor groundwater quality, there has been no violation of the groundwater quality standards at the points of compliance for the number of samples and the time period established by the Director.</li> </ul>



**COMPLIANCE CATEGORY:  
CLEAN WATER ACT (CWA)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>NOTIFICATION REQUIREMENTS OF GROUNDWATER QUALITY VIOLATIONS</b></p> <p><b>2-30.</b> Installtions with violations of preventive action limits and groundwater quality standards must meet notification standards (RRGQ, Sections 14.01 through 14.03 and 14.05 through 14.07).</p>	<p>(NOTE: The following are exemptions to the requirements:            - installations that notified the Department before 29 May 1992, that groundwater quality discovered at their facility did not comply with groundwater quality standards            - persons with knowledge of analytical test results from private wells that serve properties used exclusively for residential purposes.)</p> <p>Verify that installations with groundwater quality that do not comply with groundwater quality standards have been reported to the Department by 29 November 1992.</p> <p>Verify that installations that discharge to groundwater or have had a discharge or release to groundwater notify the Department when:</p> <ul style="list-style-type: none"> <li>- a preventive action limit has not been met at any point of compliance at a facility that is required by the Director to monitor groundwater quality, and where the groundwater is classified GAA or GA</li> <li>- a groundwater quality standard has not been met at any point of compliance at a facility in any groundwater classification</li> <li>- an alternative notification level established under an approved groundwater monitoring program</li> <li>- the installation has reasonable cause to believe that a discharge or release has occurred that may result in the violation of a preventive action limit and/or groundwater quality standard.</li> </ul> <p>(NOTE: The first three points above constitute confirmed releases. The last point constitutes a suspected release.)</p> <p>Verify that the Department is notified within 15 days after discovery of the occurrence.</p> <p>Verify that notification includes:</p> <ul style="list-style-type: none"> <li>- name, address, and telephone number of person notifying the Department and of the facility operator</li> <li>- date and time of the discovery and the circumstances surrounding the discovery of the occurrence requiring notification</li> <li>- groundwater classification of the site</li> <li>- location of the occurrence and a legal description of the site (plat and lot)</li> <li>- concentration of the pollutant(s) identified in the groundwater when notification is made of a confirmed release</li> <li>- identification of the pollutant(s) in the discharge or release when notification is made of a suspected release</li> <li>- initial determination of the source of the pollutant(s) and an estimate of the extent of the pollution</li> </ul>

<b>COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) Rhode Island Supplement</b>	
<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>2-30. (continued)</b></p> <p><b>2-31.</b> Installations must comply with specific requirements when violations of preventive action limits or groundwater quality standards are discovered (RRGQ, Sections 15.01, 15.02, 15.06 (a), (b), 15.07 (a), and (b)).</p> <p><b>GROUNDWATER QUALITY CERTIFICATION</b></p> <p><b>2-32.</b> Groundwater quality certification is required for proposed facilities and activities that have an actual or potential adverse impact on groundwater quality, including certain facilities and activities with no designed discharge to groundwater (RRGQ, Sections 5.05, 16.03, 17.01(a) through (f), and 17.04).</p>	<ul style="list-style-type: none"> <li>- measures taken or proposed at the time of notification</li> <li>- a statement signed by an authorized representative of the installation certifying to the best of their knowledge that the notification is complete and accurate.</li> </ul> <p>Verify that when a preventive action limit has not been met, the installation takes action, subject to the approval of the Director, to meet the following objectives at the point of compliance:</p> <ul style="list-style-type: none"> <li>- minimize the concentration of the pollutant in the groundwater where technically and economically feasible</li> <li>- regain and maintain compliance with the preventive action limit, unless the Director determines that it is not technically or economically feasible to attain the preventive action limit concentration, in which case the installation must achieve compliance with the lowest possible concentration that is technically and economically feasible</li> <li>- ensure that the groundwater quality standard is met at any point of compliance.</li> </ul> <p>Verify that when a groundwater quality standard has not been met, the installation takes action, subject to the approval of the Director, to regain and maintain compliance with the groundwater quality standard at the point of compliance.</p> <p>Verify that the groundwater assessment report is prepared by a person with appropriate qualifications.</p> <p>Verify that groundwater remediation plans comply with the following groundwater quality certification requirements, including those prepared according to any of the following laws:</p> <ul style="list-style-type: none"> <li>- Rhode Island Rules and Regulations for Groundwater Quality</li> <li>- Rhode Island Regulations for Underground Storage Facilities Used for Petroleum Products and Hazardous Materials</li> <li>- Rhode Island Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases</li> <li>- Federal CERCLA</li> <li>- Federal RCRA.</li> </ul> <p>Verify that sewage disposal systems designed to treat 10,000 gpd or more comply with the following groundwater quality certification requirements.</p>

**COMPLIANCE CATEGORY:  
CLEAN WATER ACT (CWA)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>2-32. (continued)</b></p>	<p>(NOTE: Individual sewage disposal systems that are designed to treat less than 10,000 gpd, that are used solely for the disposal of sanitary sewage, and are designed, installed, and operated in compliance with the Department's Rules and Regulations Establishing Minimum Standards Relating to Location, Design, Construction, and Maintenance of Individual Sewage Disposal Systems, are exempt from all of these requirements.)</p> <p>Verify that groundwater quality certification is obtained for the following approvals, licenses, and certifications:</p> <ul style="list-style-type: none"> <li>- solid waste disposal licenses (Rhode Island Rules and Regulations for Solid Waste Management Facilities)</li> <li>- hazardous waste treatment, storage, and disposal licenses (Rhode Island Rules and Regulations for Hazardous Waste Generation, Transportation, Treatment, Storage, and Disposal)</li> <li>- Department approvals for land disposal, land application, and composting of sewage sludge (Rhode Island RRPTDUTWTF5)</li> <li>- Department approvals for individual sewage disposal systems designed to treat 10,000 gpd or more (Rhode Island Rules and Regulations Establishing Minimum Standards Relating to Location, Design, Construction, and Maintenance of Individual Sewage Disposal Systems)</li> <li>- water quality certification for upland dredge disposal (Rhode Island Water Quality Regulations for Water Pollution Control).</li> </ul> <p>Verify that groundwater quality certification is obtained for all proposed groundwater remediation plans prepared according to any state and Federal regulations.</p> <p>(NOTE: Groundwater remediation activities and groundwater remediation plans approved by the Director in writing before 29 May 1992, are exempt from the requirement to obtain groundwater quality certification.)</p> <p>Verify that groundwater quality certification is obtained for proposed termination of groundwater remediation activities and for the following proposed changes in an active groundwater remediation plan:</p> <ul style="list-style-type: none"> <li>- establishment of a residual zone</li> <li>- any change in the operation of remediation activities that will result in pollutant concentrations in groundwater greater than that concentration proposed in the original or most recent groundwater remediation plan</li> <li>- any change in the operation of remediation activities that will result in groundwater quality achieving the desired pollutant concentrations over a longer period than what was proposed in the original or most recent groundwater remediation plan.</li> </ul>



**COMPLIANCE CATEGORY:  
CLEAN WATER ACT (CWA)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>2-34. (continued)</b></p>  <p><b>BOILER ROOMS AND REMOTE FILL TANKS</b></p> <p><b>2-35. Boiler rooms and remote fill tanks must comply with specific requirements (OPCR, Section 9(a) through (c)).</b></p>	<ul style="list-style-type: none"> <li>- boat or ship repair or maintenance, including dry dock operations</li> <li>- drainage from underground pipe gallery used as a conduit for oil pipes</li> <li>- drainage to unauthorized underground injection wells or lagoons.</li> </ul> <p>(NOTE: This does not prohibit the compliant discharge into any public sewer system.)</p> <p>Determine if the installation has boiler rooms or remote fill tanks.</p> <p>Verify that the installations meet the following criteria:</p> <ul style="list-style-type: none"> <li>- oil traps or manually operated drain valves are installed, or drains from boiler rooms are eliminated</li> <li>- adequately maintain and clean all oil traps</li> <li>- maintain in the closed position all drain valves except when the operator is in the process of draining oil-free clean water.</li> </ul> <p>Verify that all aboveground and underground storage tanks with a remote fill and a capacity greater than or equal to 500 gal are equipped with a high level warning alarm system.</p> <p>Verify that all tanks with a capacity greater than 500 gal are equipped with spill containment around fill areas.</p>

**COMPLIANCE CATEGORY:  
CLEAN WATER ACT (CWA)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>ABOVEGROUND STORAGE TANKS (ASTs)</b></p> <p><b>2-36.</b> AST facilities with a combined storage capacity of over 500 gal must comply with specific requirements (OPCR, Section 10(a), (b)(1), and (4) through (6)).</p>	<p>(NOTE: This AST section applies to aboveground oil storage facilities with a combined capacity of over 500 gal.)</p> <p>Verify that the operator, when on the premises or when in control of an oil transfer, is responsible for transfer activities.</p> <p>Verify that if the operator is not on the premises or is not in control of an oil transfer, the carrier is responsible for transfer activities.</p> <p>Verify that the operator or carrier employs practices for preventing transfer spills and accidental discharges.</p> <p>Verify that before the transfer, the operator or carrier determines that the receiving tank has available capacity to receive the volume of oil to be transferred.</p> <p>Verify that the operator or carrier monitors every aspect of the delivery and takes immediate action to stop the flow of oil when the working capacity of the tank has been reached or in the case of an equipment failure or emergency.</p> <p>Verify that all aboveground oil tanks are equipped with a gauge that accurately shows the level of product in the tank.</p> <p>Verify that the gauge is accessible to the operator and installed so it can be conveniently read.</p> <p>Verify that the design capacity, working capacity, and identification number of the tank are clearly marked on the tank and at the gauge.</p> <p>(NOTE: A high level warning alarm, a high level liquid pump cutoff controller, or equivalent device may be used in lieu of the gauge required above.)</p> <p>Verify that all fill pipes leading to a pump-filled oil tank are equipped with a properly functioning check valve or equivalent device that provides automatic protection against backflow.</p> <p>(NOTE: A check valve is required only when the piping arrangement of the fill pipe is such that backflow from the receiving tank is possible.)</p> <p>Verify that each tank connection through which oil normally flows is equipped with an operating valve to control flow.</p>

**COMPLIANCE CATEGORY:  
CLEAN WATER ACT (CWA)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>2-37.</b> AST remote pumping units must comply with specific requirements (OPCR, Section 10(b)(2) and (3)).</p> <p><b>2-38.</b> AST secondary containment systems must comply with specific requirements (OPCR, Section 10(c)).</p>	<p>Verify that all dispensers of motor fuel under pressure from a remote pumping system are equipped with a shear valve (impact valve) that is located in the supply line at the inlet of the dispenser and is designed to close automatically in the event that the dispenser is accidentally dislodged from the inlet pipe.</p> <p>Verify that all tanks which cause a gravity head on a dispenser of motor fuels are equipped with a device such as a solenoid valve that is positioned adjacent to and downstream from the operating valve and is installed and adjusted so that liquid cannot flow by gravity from the tank in case of piping or dispenser hose failure.</p> <p>Verify that a secondary containment system is installed around all ASTs.</p> <p>Verify that the secondary containment system is constructed so that spills of oil and chemical components of oil will not permeate, drain, infiltrate, or otherwise escape to the groundwater or surface water before cleanup can occur.</p> <p>(NOTE: The secondary containment system may consist of a combination of dikes, liners, pads, impoundments, curbs, ditches, sumps, receiving tanks, or other equipment capable of containing the product stored.)</p> <p>Verify that the capacity of the containment system is at least 110 percent of the volume of the tank or 110 percent of the largest tank in a multiple tank containment system.</p> <p>Verify that if soil is used for the secondary containment system, it is of such character that any spill onto the soil will be readily recoverable and will result in a minimal amount of soil contamination.</p> <p>Verify that stormwater that collects within the secondary containment system is removed by a manually operated pump or siphon, or a gravity drain pipe that has manually controlled dike valves.</p> <p>Verify that all pumps, siphons, and valves are properly maintained and kept in good condition.</p> <p>Verify that if gravity drain pipes are used, all dike valves are locked in the closed position except when the operator is in the process of draining clean water from the diked area.</p>

**COMPLIANCE CATEGORY:  
CLEAN WATER ACT (CWA)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>2-39.</b> AST facilities must meet monthly inspection standards (OPCR, Section 10(d)(1) and (5)).</p> <p><b>2-40.</b> AST facilities must meet 10 yr inspection standards (OPCR, Section 10(d)(2)).</p>	<p>Verify that AST facilities are inspected at least monthly.</p> <p>Verify that the exterior surfaces of tanks, pipes, valves, and other equipment are inspected for leaks, maintenance deficiencies, and any other equipment deficiency.</p> <p>Verify that efforts are made to identify cracks, areas of wear, corrosion and thinning, poor maintenance and operating practices, excessive settlement of structures, separation or swelling of tank insulation, malfunctioning equipment, and structural and foundation weaknesses.</p> <p>Verify that efforts are made to inspect and monitor all leak detection systems, cathodic protection monitoring equipment, or other monitoring or warning systems that may be in place at the facility.</p> <p>Verify that any portion of a facility that is not inspected is taken out of service.</p> <p>Determine if the installation has any of the following 10 yr exempt tanks, which are exempt from all 10 yr inspection requirements:</p> <ul style="list-style-type: none"> <li>- tanks storing No. 5 or No. 6 fuel oil or tanks storing asphalt products</li> <li>- tanks installed in conformance with standards for new construction (as set forth in the following protocol section New and Substantially Modified Facilities</li> <li>- tanks that are entirely aboveground, such as tanks on racks, cradles, or stilts.</li> </ul> <p>Verify that a detailed inspection of any AST with a capacity of 10,000 gal or more is performed.</p> <p>(NOTE: The initial inspection must be performed by the time the tank is 10 yr old, or by December 1995, whichever comes first. Any tank that is of unknown age must be inspected by December 1995. If a tank is due for an initial inspection but has previously been inspected in a manner consistent with the criteria set forth, within a 10-yr period to the due date, the Director may accept this previous inspection.)</p>



**COMPLIANCE CATEGORY:  
CLEAN WATER ACT (CWA)  
Rhode Island Supplement**

**REGULATORY  
REQUIREMENTS:**

**REVIEWER CHECKS:**

**2-40. (continued)**

Verify that reinspection is performed no later than 10 yr from the date of the previous inspection.

Verify that a 10-yr inspection consists of an appropriate tightness test of the tank and connecting piping or an inspection that consists of:

- cleaning the tank in accordance with generally accepted practices
- removal, transportation, and disposal of sludge in a manner consistent with all applicable state and Federal regulations
- inspecting the tank shell for soundness and testing all welds and seams on the tank bottom for porosity and tightness.

(NOTE: The test must be consistent with accepted industry testing and inspection practices. This may include one or a combination of the following: a tightness test, an air pressure, hydrostatic, or vacuum test, a penetrant dye test, and a nondestructive test to detect thinning of the tank.)

- visual inspection of the internal surface of the tank for corrosion or failure
- inspection of internal coatings for any sign of failure of the coating system such as cracks, bubbles, blisters, peeling, curling, or separation
- a tightness test of any connecting underground pipes.

**2-41. Installations must meet reporting standards for monthly and 10-yr AST inspections (OPCR, Section 10(d)(3)).**

Verify that reports for each monthly inspection and 10-yr inspection are maintained for a period of 10 yr.

Verify that an annual report, comprising the monthly inspection reports completed in the previous 12 mo, is submitted to the Department of Environmental Management by 31 December of each year.

Verify that the reports include:

- identification number for tank(s) inspected
- date of inspection
- results of inspection, including specific procedures, any deficiencies, and corrective actions
- certification by the inspector that the inspection has been performed in accordance with these requirements
- signature and address of the inspector.

**2-42. Remedial actions must be taken in response to AST inspection reports (OPCR, Section 10(d)(4)).**

Verify that if an inspection reveals a tank equipment failure, monitoring equipment failure, or excessive thinning of a tank shell that would indicate structural weakness when the tank contains oil, remedial measures are taken promptly to eliminate any leak potential.

**COMPLIANCE CATEGORY:  
CLEAN WATER ACT (CWA)  
Rhode Island Supplement**

**REGULATORY  
REQUIREMENTS:**

**REVIEWER CHECKS:**

**2-43.** Storage tanks or facilities that are out of service must be closed (OPCR, Section 10(e) and (f)).

Verify that all storage tanks or facilities closed for 30 days or more meet the following temporary closure standards:

- all product is removed from the tank and the piping systems
- any waste product removed from the tank is disposed of in accordance with all applicable state and Federal requirements
- all manways are locked or bolted securely
- all fill lines, gauge openings, or pump lines are capped, plugged, or blanked.

Verify that all ASTs or facilities closed for 180 days or more meet the following permanently closed standards:

- liquid sludge is removed from the tank and connecting lines
- any waste product is disposed of in accordance with all applicable state and Federal requirements
- the tank is rendered free of oil vapors
- all connecting lines are disconnected or blanked
- manways are securely fastened
- tanks are stenciled with the date of permanent closure.

(NOTE: Storage tanks or facilities that have not been closed as above must meet facility inspection protocols.)

**AST GROUNDWATER  
MONITORING**

**2-44.** Installations with AST facilities of a specific size and location must meet groundwater monitoring standards (OPCR, Section 10(h)).

Determine if the installation has any AST facilities with a combined storage capacity greater than or equal to 50,000 gal, or any facility with a storage capacity greater than or equal to 5000 gal that is located in an environment with GAA classified groundwater.

Verify that these AST facilities implement a groundwater monitoring program approved by the RIDEM.

Verify that the monitoring program consists of a sufficient number of wells to detect the release of hydrocarbon product from storage tanks, pumping facilities, manifolds, and other appurtenances.

**COMPLIANCE CATEGORY:  
CLEAN WATER ACT (CWA)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>2-45.</b> AST monitoring wells must meet certain standards (OPCR, Section 10(h)(1)).</p> <p><b>2-46.</b> AST site monitoring must meet certain reporting and inspection requirements (OPCR, Section 10(h)(2)).</p> <p><b>2-47.</b> AST groundwater monitoring that discovers free phase product must meet notification standards (OPCR, Section 10(h)(3)).</p>	<p>Verify that wells are screened above and below the water table.</p> <p>Verify that the screened interval is sufficient to detect free phase product during seasonal fluctuations of the water table.</p> <p>Verify that the minimum inside well diameter is 2 in.</p> <p>Verify that each well is equipped with a locking tamper-proof cover.</p> <p>Verify that a locus map and site plan is submitted to the Department with the locations of the monitoring wells, the well casing elevations, and the location of all significant site structures.</p> <p>Verify that well completion logs are submitted to the Department with the site plans.</p> <p>Verify that AST monitoring wells are checked monthly for the presence of a discernible layer of hydrocarbon product in the wells.</p> <p>Verify that the static water table elevation is recorded at the site of monitoring.</p> <p>Verify that a log is maintained at the facility.</p> <p>Verify that the log contains the static water table measurements, the free-phase product elevation and the product thickness for each monitoring well.</p> <p>Verify that an annual report of the AST groundwater monitoring program is submitted to the Department.</p> <p>Verify that upon the discovery of free-phase product in a monitoring well, the operator notifies the Department verbally within 24 h, and submits a written report within 10 working days.</p> <p>Verify that the operator submits to the Department a site assessment plan within 30 days of the discovery of free-phase product in a monitoring well.</p>

**COMPLIANCE CATEGORY:  
CLEAN WATER ACT (CWA)  
Rhode Island Supplement**

**REGULATORY  
REQUIREMENTS:**

**REVIEWER CHECKS:**

**NEW AND  
MODIFIED ASTs**

**2-48.** New and substantially modified AST facilities must meet certain design and construction requirements (OPCR 10 (i) (1)).

(NOTE: Used tanks that are removed and do not meet the following requirements for new and substantially modified tanks are prohibited from being reused for the purpose of oil storage.)

Verify that new AST facilities are constructed of steel and meet or exceed one of the following design and manufacturing standards:

- Underwriter's Laboratories (UL) No. 142
- UL No. 58
- American Petroleum Institute (API) Standards No. 650
- API Standards NO. 620
- CAN4-S601-M84
- CAN4-S630-M84.

Verify that aboveground oil storage tanks that do not comply with the above requirements, such as a riveted or bolted steel tank, a tank constructed of wood, concrete, aluminum, or fiberglass reinforced plastic, is constructed in accordance with all applicable manufacturing standards and is designed for the aboveground storage of oil products, and has the prior approval of the Director.

**COMPLIANCE CATEGORY:  
CLEAN WATER ACT (CWA)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>2-49.</b> New and substantially modified AST facilities must meet cathodic protection standards for the tank bottom (OPCR, Section 10(i)(2)).</p> <p><b>2-50.</b> Exterior surfaces of new and substantially modified ASTs must be painted (OPCR, Section 10(i)(3)).</p> <p><b>2-51.</b> Impermeable barriers must be used under the tank bottom of new and substantially modified ASTs (OPCR, Section 10(i)(4)).</p> <p><b>2-52.</b> Secondary containment for new ASTs must meet certain requirements (OPCR, Section 10(i)(5)).</p>	<p>Verify that bottoms of new tanks that rest on or in the ground are cathodically protected with sacrificial anodes or an impressed current system that is designed, fabricated, and installed in accordance with recognized engineering practices.</p> <p>Verify that a cathodic protection system is designed to provide a minimum of 30 yr of protection.</p> <p>Verify that a qualified engineer or corrosion specialist supervises the installation of the cathodic protection system where this is necessary to assure that the system has been installed as designed.</p> <p>Verify that each cathodic protection system has a monitor that enables the operator to check on the adequacy of cathodic protection.</p> <p>Verify that the exterior surfaces of all new ASTs are protected by a primer coat, a bond coat, and two or more final coats of paint or have an equivalent surface coating system designed to prevent corrosion and deterioration.</p> <p>Verify that any new stationary tank that is designed to rest on the ground is constructed with a double bottom or underlain by an impervious barrier such as a concrete pad or a cutoff barrier.</p> <p>Verify that if a barrier is used, it must have a water permeability rate equal to or less than <math>1 \times 10^{-6}</math> cm/s and must not deteriorate in an underground environment or in the presence of oil.</p> <p>Verify that a secondary containment system is installed around any AST.</p> <p>Verify that the secondary containment system is constructed so that spills of oil and chemical components of oil will not permeate, drain, infiltrate, or otherwise escape to the groundwater or surface water before cleanup can occur.</p> <p>(NOTE: The secondary containment system may consist of a combination of dikes, liners, pads, impoundments, curbs, ditches, sumps, receiving tanks, or other equipment capable of containing the product stored.)</p> <p>Verify that the minimum capacity of the containment system is 110 percent of the volume of the tank or 110 percent of the largest tank in a multiple tank containment system.</p> <p>Verify that the secondary containment system is constructed with a water permeability rate equal to or less than <math>1 \times 10^{-6}</math> cm/s.</p>

**COMPLIANCE CATEGORY:  
CLEAN WATER ACT (CWA)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>2-53.</b> Monitoring systems for new ASTs must meet certain requirements (OPCR, Section 10(i)(6)).</p> <p><b>2-54.</b> New ASTs must meet safety standards (OPCR, Section 10(i)(7) through (9)).</p> <p><b>REPAIRING AND RECONDITIONING ASTs</b></p> <p><b>2-55.</b> Repairing and reconditioning of ASTs must meet specific requirements (OPCR, Section 11(a) through (d)).</p>	<p>Verify that all new ASTs have equipment for monitoring between the tank bottom and the impermeable barrier, including perforated gravity collection pipes or channels in a concrete foundation pad that may be monitored for the presence of oil visually, electronically, or by other satisfactory methods.</p> <p>(NOTE: Observation wells or other systems that monitor the oil or groundwater beneath the impermeable barrier do not satisfy the leak detection requirements of this section.)</p> <p>Verify that new aboveground tanks are supported on a well-drained, stable foundation that prevents movement, rolling, or settling of the tank and is designed to minimize corrosion of the tank bottom.</p> <p>Verify that new aboveground tanks, pipes, and distribution equipment is not located along highway curves or otherwise exposed to traffic hazards.</p> <p>Verify that before placing in service, all tanks are tested for tightness and inspected in accordance with requirements outlined in API Standard 650.</p> <p>Verify that if a pneumatic test is used, all fittings, welds, and joints are coated with a soap solution and inspected for air leaks.</p> <p>Verify that all repairs of ASTs are permanent in nature and equal to or better than the standards of original construction.</p> <p>Verify that all welds associated with the repair of a AST are inspected and tested for tightness before the tank is returned to service.</p> <p>(NOTE: Linings, coatings, grouts, and other sealing materials that are chemically compatible with the oil product being stored may be used in conjunction with a permanent steel tank repair, but are not by themselves acceptable permanent repairs.)</p> <p>Verify that before repair, a AST is cleaned in accordance with generally accepted practices.</p> <p>Verify that sludge that has accumulated on the bottom of the AST is removed, transported, and disposed of in a manner consistent with all applicable state and Federal requirements for solid waste disposal.</p>

**COMPLIANCE CATEGORY:  
CLEAN WATER ACT (CWA)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>2-56.</b> ASTs that are repaired or reconditioned must meet coating (lining) standards (OPCR, Section 11(e)).</p>	<p>Verify that the coating of the AST consists of noncorrodible epoxy-based resins, isophthalic polyester-based resins, or equivalent coating that is bonded firmly to the interior surfaces.</p> <p>Verify that the coating is applied as soon as possible, but not later than 8 h after sandblasting and cleaning the internal surface.</p> <p>Verify that visible rust, moisture, or foreign matter is not present.</p> <p>Verify that the coating is of sufficient thickness, density, and strength to form a hard impermeable shell that will not crack, soften, or separate from the interior surface of the tank.</p> <p>Verify that the coating when applied to properly prepared steel maintains a permanent bond to the tank.</p> <p>Verify that the coating's coefficient of thermal expansion is compatible with steel so that stress due to temperature changes will not be detrimental to the soundness of the coating.</p> <p>Verify that the coating is chemically compatible with oil products and product additives.</p> <p>Verify that the coating material is applied and cured in strict accord with manufacturer's specifications.</p> <p>Verify that coatings used to protect the bottom of the tank extend up the side of the tank a minimum of 18 in.</p> <p>Verify that the coating is checked for blisters, air pockets, and electrically tested for pinholes.</p> <p>Verify that the coating thickness is checked to assure compliance with manufacturer's specifications.</p> <p>Verify that any defects are repaired.</p> <p>Verify that an interior coating is installed under the direction of the lining manufacturer or a certified representative.</p> <p>Verify that the manufacturer or representative guarantees to the installation in writing that the coating will not leak the product specified in storage for the period specified in the coating product warranty.</p> <p>Verify that a copy of the guarantee is kept by the installation for the life of the tank.</p>





**COMPLIANCE CATEGORY:  
CLEAN WATER ACT (CWA)  
Rhode Island Supplement**

**REGULATORY  
REQUIREMENTS:**

**REVIEWER CHECKS:**

**2-58. (continued)**

- representative composite samples are immediately taken and analyzed for oil and grease, lead, PCB, and flammability unless otherwise specified by an authorized RIDEM representative
- samples are analyzed and the results are submitted to the RIDEM Division of Groundwater within 30 days of sample collection
- if the sample results show the material to be a hazardous waste, the installation must take immediate measures to properly store and dispose of the material in accordance with state and Federal hazardous waste regulations
- the temporary storage of the oil spill cleanup debris must not exceed 30 days unless the installation demonstrates to RIDEM in writing that there is good cause for extending temporary storage and the RIDEM issues written authorization for extended temporary storage.

Verify that oil spill cleanup debris is removed from the site only in secured drums or cannisters or in a vehicle that is covered.

Verify that oil spill cleanup debris is removed only to one of the following facilities:

- special facilities constructed within a licensed sanitary landfill designed and constructed in accordance with the Regulations for Solid Waste Management Facilities
- asphalt manufacturers or others that are licensed as solid waste management facilities and approved by RIDEM to accept oil spill debris
- any out-of-state facility that will agree to take the material and that is allowed to accept the material by the state in which it is located.

Verify that within 10 days of removal of the oil spill cleanup debris from the site, the installation submits to the RIDEM documentation showing when the material was removed, and where it was taken.

**COMPLIANCE CATEGORY:  
CLEAN WATER ACT (CWA)  
Rhode Island Supplement**

**REGULATORY  
REQUIREMENTS:**

**REVIEWER CHECKS:**

**SPILL PREVENTION  
AND EMERGENCY  
PLANS**

**2-59.** Installations with terminals and installations with outdoor oil tanks must comply with specific spill prevention and emergency plan requirements (OPCR, Section 14(a), (b), and (d)).

(NOTE: This section is not applicable to tanks with a capacity of 500 gal or less storing heating oil.)

Verify that installations have an emergency plan, including:

- up-to-date schematic diagrams showing the location of all outdoor tanks and piping used for the storage and conveyance of oil, including the location of all emergency shutoff valves
- a description of onsite emergency containment and cleanup equipment
- a description of offsite auxiliary emergency equipment that can be readily obtained, including a listing of cleanup contractors to contact for this equipment
- emergency telephone numbers of local, state, and Federal officials who should be contacted in case of an oil spill.

(NOTE: Emergency plans or other similar spill prevention control plans required under other Federal or state requirements may be substituted for the plan required by this section provided the plan contains, at a minimum, the above information.)

**SLUDGE**

**2-60.** Installations that produce, treat, dispose, or utilize sludge, composted sludge, or products derived from sludge must have a valid Order of Approval (RRPTDUTWTFS, Section 6(a), (d), and (g)).

Determine if the installation has either of the following:

- a treatment works that produces or disposes of sludge, composted sludge, or products derived from sludge
- land used for the treatment, disposal, or use of sludge, composted sludge, or products derived from sludge.

Verify that the installation has a valid Order of Approval before the implementation of the treatment, utilization method, or disposal.

Verify that the installation meets the terms and conditions of the Order of Approval.

Verify that transfers of the Order of Approval are approved by the Director.

**COMPLIANCE CATEGORY:  
CLEAN WATER ACT (CWA)  
Rhode Island Supplement**

**REGULATORY  
REQUIREMENTS:**

**REVIEWER CHECKS:**

**2-61.** Installations that produce, treat, dispose, or utilize sludge, composted sludge, or products derived from sludge must meet specific operating standards (RRPTDUTWIFS, Sections 7(g), (i), (k), 9(h), 16, and 18).

Verify that sludge, composted sludge, or the products derived from sludge are not discharged or disposed of into the waters of the state.

Verify that all applicable air regulations pertaining to odors are met.

Verify that the operation of a facility or site is limited to those hours specified in the approved operating plan.

Verify that groundwater is monitored and analyzed as required by the Director.

Verify that all sludge is transported in vehicles that are properly sealed, watertight, and covered while in transit so that leakage or dropping of sludge is prevented.

Verify that no sludge or composted sludge is land-applied to frozen, flooded, or snow-covered ground unless appropriate erosion and runoff control measures are provided.

**COMPLIANCE CATEGORY:  
CLEAN WATER ACT (CWA)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>2-62.</b> Installations with treatment works that produces or disposes of sludge, composted sludge, or products derived from sludge must meet specific notification standards (RRPTDUTWIFS, Sections 5(d), (e), 6(c), and Section 17).</p>	<p>Verify that installations with publicly or privately owned treatment works notify the Division in writing at least 90 days before the following:</p> <ul style="list-style-type: none"><li>- alteration or modification of the facility</li><li>- change in the disposal, use, or transportation practices of the facility</li><li>- activities that may result in noncompliance.</li></ul> <p>Verify that installations with publicly or privately owned treatment works with any substantial change in the volume or composition of sludge resulting from the introduction of pollutants into the treatment works from any discharger, notify the Division of:</p> <ul style="list-style-type: none"><li>- the quantity of sludge</li><li>- composition of sludge</li><li>- source of new pollutants or efforts made to discover the source</li><li>- any impacts on sludge use or disposal practices resulting from the change.</li></ul> <p>Verify that facilities or sites apply for a modification of the Order of Approval at least 90 days before any change in the treatment, disposal, or utilization methods, or additions.</p> <p>Verify that the Division is notified as follows before closing a facility or site:</p> <ul style="list-style-type: none"><li>- land disposal facilities or sites notify the Division in writing at least 90 days before the closing</li><li>- all other facilities or sites notify the Division in writing at least 30 days before the closing.</li></ul>
<p><b>2-63.</b> Installations that dispose of sludge or composted sludge or products derived from sludge by burial must meet specific sludge condition standards (RRPTDUTWIFS, Sections 7(a)).</p>	<p>Verify that sewage sludge that is land disposed is treated by either process listed in Appendix 2-4 or Appendix 2-5.</p>

**COMPLIANCE CATEGORY:  
CLEAN WATER ACT (CWA)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>2-64.</b> Installations that dispose of sludge or composted sludge or products derived from sludge by burial must meet specific water protection standards (RRPTDUTWIFS, Section 7(b), (c), (d), and (g)).</p> <p><b>2-65.</b> Installations that dispose of sludge or composted sludge or products derived from sludge by burial must meet specific placement and safety standards (RRPTDUTWIFS, Section 7(e), (f), (h), (j), and (l)).</p>	<p>Verify that a minimum of 5 ft of soil is between the lowest level of deposited sludge and the highest water table level as established by the Department.</p> <p>Verify that a minimum of 5 ft of soil is between the highest level of bedrock and the lowest level of deposited sludge.</p> <p>Verify that no sludge is land disposed within 200 ft of any body of surface water or freshwater wetland.</p> <p>Verify that no sludge is land disposed within 1200 ft from the center line of Ashaway, Beaver, Blackstone, Chepachet, Clear, Falls, Flat, Hunt, Moshassuck, Moosup, Narrow, Pawcatuck, Pascoag, Pawtuxet, and Wood Rivers.</p> <p>Verify that no sludge is disposed of in the watershed of any surface water used as public drinking water supply.</p> <p>Verify that no sludge is disposed within 1000 ft of any private drinking water supply well or within the wellhead protection area.</p> <p>Verify that groundwater analyses are reported to the Division on a quarterly basis.</p> <p>Verify that no sludge is disposed within 600 ft of any domestic, commercial, or industrial structure not associated with the proposed sludge disposal site.</p> <p>Verify that no sludge is disposed within 200 ft of a property line.</p> <p>Verify that sludge is deposited so that surface water runoff is minimized onto and into the fill to drain off rainwater falling on the fill and to prevent the collection of standing water.</p> <p>Verify that a soil cover of at least 6 in. is applied to all sludge deposits daily to control disease vectors and nuisance conditions.</p> <p>Verify that final cover in terminating the use of a disposal site is 2 ft in depth.</p> <p>Verify that all sludges intended for land disposal are tested at least annually using the Toxicity Characteristic Leaching Procedure (TCLP) for the parameters listed in Appendix 2-6 and that the results are submitted to the Division.</p>

<b>COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) Rhode Island Supplement</b>	
<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>2-66.</b> Installations that utilize sludge for land application onto agricultural or silvicultural lands must meet specific testing and treatment standards (RRPTDUTWTFS, Section 9(a) and (d)).</p> <p><b>2-67.</b> Installations that utilize sludge for land application onto agricultural or silvicultural lands must meet specific safety standards (RRPTDUTWTFS, Section 9(e) through (g)).</p>	<p>Determine if the installation uses sludge for land application, incorporation of sludge into the soil, or onto agricultural or silvicultural lands.</p> <p>Verify that sludges used for land application are tested annually using the TCLP for the parameters listed in Appendix 2-6 and that the results of the analysis are submitted to the Division.</p> <p>Verify that the sludge does not exceed the limits specified in Appendix 2-7 for metals and organic compounds.</p> <p>Verify that the soil from the land application site, with the exception of silvicultural lands, is tested for metals and organic compounds listed in Appendix 2-7 and for:</p> <ul style="list-style-type: none"><li>- pH</li><li>- soil density</li><li>- depth of sample</li><li>- moisture content (%).</li></ul> <p>Verify that sewage sludge used for land application meets the following treatment standards:</p> <ul style="list-style-type: none"><li>- sludge used for silvicultural purposes meets the treatment criteria specified in Appendix 2-4</li><li>- sludge used for all other purposes meets the treatment criteria specified in Appendix 2-5.</li></ul> <p>Verify that sludge applied to sites used for growing food chain crops meet the following criteria:</p> <ul style="list-style-type: none"><li>- a complete growing season including a winter season has passed since the last application of sewage sludge</li><li>- soil pH is maintained equal to or greater than 6.5.</li></ul> <p>Verify that public access to the land application site is prohibited until vegetative growth is established on the site.</p> <p>Verify that 60 consecutive days have passed since the last application of sewage sludge before animals whose products are consumed by humans are allowed to graze on land application sites.</p>

**COMPLIANCE CATEGORY:  
CLEAN WATER ACT (CWA)  
Rhode Island Supplement**

**REGULATORY  
REQUIREMENTS:**

**REVIEWER CHECKS:**

**2-68.** Installations that utilize sludge for land application onto agricultural or silvicultural lands must meet specific placement standards (RRPTDUTWTF5, Section 9(j) through and (n)).

**2-69.** Installations that compost sludge must meet specific standards (RRPTDUTWTF5, Section 11(1)(a) through (i)).

Verify that a minimum of 1.5 ft of soil is between the lowest level of applied sludge and the highest water table level as established by the Department.

Verify that a minimum of 1.5 ft of soil is between the highest level of bedrock and the lowest level of applied sludge.

Verify that no sludge is land applied within 200 ft of any body of surface water or freshwater wetland.

Verify that no sludge is applied to land within the watershed of any surface water used as a public drinking water supply.

Verify that no sludge is land applied within 1000 ft of any private drinking water supply well or within the wellhead protection area.

Verify that no sludge is land applied within 400 ft of any domestic, commercial, or industrial structure not associated with the proposed land application project.

Verify that no sludge is land applied within 100 ft of a property line.

Determine if the installation composts sludge.

Verify that a minimum of 1.5 ft of soil is between the composting surface and the highest water table level as established by the Department.

Verify that a minimum of 1.5 ft of soil is between the highest level of bedrock and the composting surface.

Verify that no sludge is land applied within 200 ft of any body of surface water or freshwater wetland.

Verify that no sludge is applied to land within the watershed of any surface water used as a public drinking water supply.

Verify that no sludge is land applied within 1000 ft of any private drinking water supply well or within the wellhead protection area.

Verify that no sludge is land applied within 400 ft of a property line.

Verify that sludge is not stockpiled at composting facility before composting is begun.

Verify that all composted sludges and bulking agents are tested at least annually using TCLP for the parameters listed in Appendix 2-6 and that the results are submitted to the Division.





**COMPLIANCE CATEGORY:  
CLEAN WATER ACT (CWA)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>2-72.</b> Installations that utilize composted sludge as a fertilizer and/or soil amendment to enhance nonagricultural lands must meet specific standards.</p>	<p>Verify that all composted sludge used as a fertilizer and/or soil amendment meets the limits established in Appendix 2-7 for total metals, organic compounds, and other characteristics.</p> <p>Verify that public access to the land application site is prohibited until vegetative growth is established on the site.</p> <p>Verify that a minimum of 1.5 ft of soil is between the composted sludge and the highest water table level as established by the Department.</p> <p>Verify that a minimum of 1.5 ft of soil is between the highest level of bedrock and the lowest level of composted sludge.</p> <p>Verify that no sludge is land applied within 200 ft of any body of surface water or freshwater wetland or within 500 ft of any body of surface water or freshwater wetland within the watershed of a public drinking water supply.</p> <p>Verify that no sludge is land applied within 200 ft of any private drinking water supply well or within 500 ft of any public drinking water supply well.</p> <p>Verify that no sludge is land applied within the following distance of a property line:</p> <ul style="list-style-type: none"><li>- composted sludge that meets the criteria of Appendix 2-8, 100 ft</li><li>- all other composted sludge, 400 ft.</li></ul>
<p><b>2-73.</b> Installations that utilize composted sludge at solid waste landfills must meet specific standards (RRPTDUTWFS, Section 11(4)).</p>	<p>Determine if the installation uses composted sludge at solid waste landfills.</p> <p>Verify that all applicable solid waste regulations are met.</p> <p>Verify that the installation has a valid Order of Approval.</p> <p>Verify that the terms and conditions of the Order of Approval are met.</p> <p>Verify that the composted sludge used as a landfill cover meets the limits for TCLP established in Appendix 2-6 and is tested for the metals and organic compounds listed in Appendix 2-7.</p>

**COMPLIANCE CATEGORY:  
CLEAN WATER ACT (CWA)  
Rhode Island Supplement**

**REGULATORY  
REQUIREMENTS:**

**REVIEWER CHECKS:**

**INJECTION WELLS**

**2-74.** Installations that install, construct, alter, or repair an injection well must have written approval from the Director (Underground Injection Control Program Rules and Regulations Sections 3, 5.03, and 6).

(NOTE: Injection well regulations do not apply to:

- injection wells or subsurface disposal systems used to dispose of individual or single family residential domestic waste
- the disposal of domestic waste discharged to a subsurface disposal system except in the case of utilization of a well, septic tank, or cesspool, or any other means that meets the definition of a bored, drilled, or driven shaft, or a dug hole of a depth greater than the largest surface dimension.)

Determine if the installation has any:

- injection wells
- subsurface disposal systems of a nondomestic nature
- multiple dwelling, community, or regional systems for the injection of domestic wastes.

Verify that the installation has obtained an Order of Approval from the Director before injecting fluid into the ground.

Verify that the installation has a written approval of the plans and work specifications from the Director before installing, constructing, altering, or repairing an injection well.

Verify that the installation has obtained an Order of Approval from the Director before disposing of fluid through subsurface disposal.

Verify that the installation has obtained written approval of the plans and work specifications from the Director before installing, constructing, altering, or repairing any subsurface disposal system used to dispose of waste of a nondomestic nature.

Verify that the installation does not operate any facility that pollutes or endangers the groundwater quality of the state.



## Appendix 2-1

### Class-Specific Criteria for Fresh Water (Rhode Island Water Quality Regulations for Water Pollution Control, Section 6.32)

Criteria	Class A	Class B	Class C	Class D
Dissolved oxygen	75% saturation 16 h/day, but not less than 5 mg/L at any time, except as naturally occurs.	75% saturation 16 h/day, but not less than 5 mg/L at any time or place except as naturally occurs.	Minimum 5 mg/L any time. Normal seasonal and diurnal variations above 5 mg/L must be maintained.	Minimum of 2 mg/L at any time or place except as naturally occurs.
Sludge deposits- solid refuse- floating solids- oils-grease-scum	none allowable	none allowable	***	***
Color and turbidity	None other than of natural origin. Not to exceed 5 NTU over background when the background is 50 NTU or less, or have more than a 10% increase in turbidity when the background is more than 50 NTU.	None in such concen- trations that would impair any usages specifi- cally assigned to this class. Not to exceed 10 NTU over background when the background is 50 NTU or less, or have more than a 20% increase in turbidity when the background is more than 50 NTU.*	None in such concen- trations that would impair any usages specifically assigned to this class. Not to exceed 10 NTU over background when the background is 50 NTU or less, or have more than a 20% increase in turbidity when the background is more than 50 NTU.*	None in such concen- tration that would impair any usages specifically assigned to this class.
Total coliform bacteria (100 mL)	Not to exceed a median value of 100 and not more than 10% of the samples exceed 500.	Not to exceed a median value of 1000, and not more than 20% of the samples exceed 2400.	none*	none*
Fecal coliform bacteria (100 mL)	Not to exceed a median value of 20 and not more than 10% of the samples exceed 200.	Not to exceed a median value of 200, and not more than 20% of the samples exceed 500.	N/A	N/A
Taste and odor	None other than of natural origin.	None in such concentrations that would impair any usages specifically assigned to this class nor cause taste and odor in edible portions of fish.	None in such concentrations that would impair any usages specifically assigned to this class nor cause taste and odor in edible fish.	None in such concentrations that would impair any usages specifi- cally assigned to this class.
pH	as naturally occurs	6.5 - 8.0 or as naturally occurs.	6.0 - 8.5	6.0 - 9.0

Appendix 2-1 (continued)

Criteria	Class A	Class B	Class C	Class D
Allowable temperature increase	None other than of natural origin.	Only such increases that will not impair any usages specifically assigned to this class.	Only such increases that will not impair any usages specifically assigned to this class or cause the growth of unfavorable species of biota.	None except where the increase will not exceed the recommended limits on the most sensitive water use and in no case exceed 90 °F.

NOTES

- \* None in such concentrations that would impair any uses specifically assigned to this class.
- \*\* The temperature increase must not raise the temperature of the receiving waters above the recommended limit on the most sensitive receiving water use and in no case exceed 83 °F, receiving water temperature raised more than 4 °F. Heated discharges into designated coldwater habitats must not raise the temperature above 68 °F outside an established thermal mixing zone.
- \*\*\* Sludge deposits, floating solids, oils, grease, and scum shall not be allowed except for such small amounts that may result from the discharge of appropriately treated sewage or industrial waste effluents.

## Appendix 2-2

### Class-Specific Criteria for Seawater (Rhode Island Water Quality Regulations for Water Pollution Control, Section 6.33)

Criterion	Class SA	Class SB	Class SC
Dissolved oxygen	Not less than 6 mg/L at any time.	Not less than 5 mg/L at any time.	Not less than 5 mg/L during at least 16 h of any 24-h period, not less than 4 mg/L at any time.
Sludge deposits- solid refuse- floating solids- oils-grease-scum	None allowable.	None allowable.	None except that amount that may result from the discharge from a compliant waste treatment facility.
Color & turbidity	(a)	(a)	(a)
Coliform bacteria per 100 mL	Not to exceed a median MPN of 70 and not more than 10% of the samples exceed a MPN of 230.	Not to exceed a median value of 700, and not more than 10% of the samples exceed 2300.	(a)
Fecal coliform median per 100 mL	Not to exceed a median value of 15, and not more than 10% of the samples exceed 50.	Not to exceed a median value of 50, and not more than 10% of the samples exceed 500.	
Taste and odor	None allowable	(b)	(b)
pH	6.8 - 8.5	6.8 - 8.5	6.5 - 8.5
Temperature increase	(c)	(c)	(c)

**NOTES:**

- a. None in such concentrations that would impair any usages specifically assigned to this Class.
- b. None in such concentrations that would impair any usages specifically assigned to this class and none that would cause taste or odor in edible fish or shellfish.
- c. None except where the increase will not exceed the recommended limit on the most sensitive receiving water use and in no case exceed 83 °F or in any case raise the normal temperature more than 1.6 °F, 15 June through September and not more than 4 °F from October through 15 June. All measurements are to be taken at the boundary of the mixing zones or as approved by the Director.



## Appendix 2-3

### Numerical Groundwater Quality Standards and Preventive Action Limits for Class GAA and Class GA (Rules and Regulations for Groundwater Quality, Table 1)

Substance	Groundwater Quality Standard (mg/L, except as noted)	Preventive Action Limit
<b>A. Inorganic Chemicals</b>		
Arsenic	0.05	0.025
Barium	1	0.5
Cadmium	0.01	0.005
Chromium (hexavalent)	0.05	0.025
Fluoride	4	2
Lead	0.05	0.025
Mercury	0.002	0.001
Nitrate (as N)	10	5
Selenium	0.01	0.005
Silver	0.05	0.025
<b>B. Organic Chemicals</b>		
Aldicarb (Temik)	0.003	0.0015
Aldicarb Sulfone	0.002	0.001
Aldicarb Sulfoxide	0.004	0.002
Endrin	0.0002	0.0001
Lindane	0.004	0.002
Methoxychlor	0.1	0.05
Toxaphene	0.005	0.0025
2,4-D	0.1	0.05
2,4,5-TP (Silvex)	0.01	0.005
Total Trihalomethanes	0.1	0.05
Benzene	0.005	0.0025
Carbon Tetrachloride	0.005	0.0025
p-Dichlorobenzene	0.075	0.0375
1,2-Dichloroethane	0.005	0.0025
1,1-Dichloroethylene	0.007	0.0035
Methyl Tertiary Butyl Ether (MTBE)	0.04	0.02
Tetrachloroethylene	0.005	0.0025
1,1,1-Trichloroethane	0.2	0.1
Trichloroethylene (TCE)	0.005	0.0025
Vinyl Chloride	0.002	0.001



Appendix 2-3 (continued)

**C. Microbiological**

Total Coliform Bacteria	zero	zero
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**D. Radionuclides**

Gross Alpha Particle Activity	15 pCi/L	7.5 pCi/L
Gross Beta Particle Activity	4 mrem/yr	2 mrem/yr
Radium 226 and Radium 228 combined	5 pCi/L	2.5 pCi/L

NOTE: The numerical groundwater quality standards in these regulations are based primarily on the maximum contaminant levels promulgated by the Rhode Island Department of Health in the Rules and Regulations Pertaining to Public Drinking Water, December 1990, and amendments thereto. As additional or revised maximum contaminant levels are adopted by the Rhode Island Department of Health, the new or revised maximum contaminant levels are incorporated herein by reference as groundwater quality standards for class GAA and class GA.

## **Appendix 2-4**

### **Processes to Significantly Reduce Pathogens (Rules and Regulations Pertaining to the Treatment, Disposal, Utilization, and Transportation of Wastewater Treatment Facility Sludge, Appendix II)**

- **Aerobic Digestion:** The process is conducted by agitating sludge with air or oxygen to maintain aerobic conditions at residence times ranging from 60 days at 15 °C to 40 days at 20 °C with a volatile solids reduction of at least 38 percent.
- **Air Drying:** Liquid sludge is allowed to drain and/or dry on or under drained sand beds, or paved or unpaved basins in which the sludge is applied in one application to a maximum depth of 23 cm. A minimum of 3 mo is needed, 2 mo of which temperatures average on a daily basis above 0 °C.
- **Anaerobic Digestion:** The process is conducted in the absence of air at residence times ranging from 60 days at 20 °C to 15 days at 35 °C to 55 °C, with a volatile solids reduction of at least 38 percent.
- **Lime Stabilization:** Sufficient lime is added to produce a pH of 12 after 2 h of contact.
- **Other methods:** Other methods or operating conditions if accepted by the USEPA may be used if pathogens and vectors attraction of the waste (volatile solids) are reduced to an extent equivalent to the reduction achieved by any of the above methods.



## **Appendix 2-5**

### **Processes To Further Reduce Pathogens**

**(Rules and Regulations Pertaining to the Treatment, Disposal, Utilization, and Transportation of Wastewater Treatment Facility Sludge, Appendix 3)**

**Composting:** Using the within-vessel composting method, the solid waste is maintained at operating conditions of 55 °C or greater for 3 days. Using the static aerated pile composting method, the solid waste is maintained at operating conditions of 55 °C or greater for 3 days. Using the windrow composting method, the solid waste attains a temperature of 55 °C or greater for at least 15 days during the composting period. Also, during the high temperature period, there will be a minimum of five turnings of the windrow.

**Heat drying:** Dewatered sludge cake is dried by direct and indirect contact with hot gases, and moisture content is reduced to 10 percent or lower. Sludge particles reach temperatures well in excess of 80 °C, or the wet bulb temperature of the gas stream in contact with the sludge at the point where it leaves the dryer is in excess of 80 °C.

**Heat treatment:** Liquid sludge is heated to temperatures of 180 °C for 30 min.

**Thermophilic Aerobic Digestion:** Liquid sludge is agitated with air or oxygen to maintain aerobic conditions at residence times of 10 days at 55 to 60 °C, with a volatile solids reduction of at least 38 percent.

**Other methods:** Other methods or operating conditions if accepted by the USEPA may be used if pathogens and vector attraction of the waste (volatile solids) are reduced to an extent equivalent to the reduction achieved by any of the above methods.

Any of the processes listed below, if added to the processes described in Appendix 2-4, further reduce pathogens. Because the processes listed below, on their own, do not reduce the attraction of disease vectors, they are only add-on in nature.

**High energy electron irradiation:** Sludge is irradiated with energized electrons from an accelerator at dosages of at least 1.0 megarad at room temperature (ca. 20 °C).

**Gamma ray irradiation:** Sludge is irradiated with gamma rays from certain isotopes, such as 60 Cobalt and 137 Cesium, at dosages of at least 1.0 megarad at room temperature (ca. 20 °C).

**Pasteurization:** Sludge is maintained for at least 30 min at a minimum temperature of 70 °C.

**Other methods:** Other methods or operating conditions if acceptable by the USEPA may be used if pathogens are reduced to an extent equivalent to the reduction achieved by any of the above add-on methods.



## Appendix 2-6

### Maximum Concentration of Contaminants for the Toxicity Characteristic Leachate Procedure

(Rules and Regulations Pertaining to the Treatment, Disposal, Utilization,  
and Transportation of Wastewater Treatment Facility Sludge, Appendix V)

USEPA Hazardous Waste Number	Contaminant	Regulatory Level (mg/L)
D004	Arsenic	5.0
D005	Barium	100.0
D018	Benzene	0.5
D006	Cadmium	1.0
D019	Carbon tetrachloride	0.5
D020	Chlordane	0.03
D021	Chlorobenzene	100.0
D022	Chloroform	6.0
D007	Chromium	5.0
D023	o-Cresol	200.0
D024	m-Cresol	200.0
D025	p-Cresol	200.0
D026	Cresol	200.0
D016	2,4-D	10.0
D027	1,4-Dichlorobenzene	7.5
D028	1,2-Dichloroethane	0.5
D029	1,1-Dichloroethylene	0.7
D030	2,4-Dinitrotoluene	0.13
D012	Endrin	0.02
D031	Heptachlor (and its hydroxide)	0.008
D032	Hexachlorobenzene	0.13
D033	Hexachlorobutadiene	0.5
D034	Hexachloroethane	3.0
D008	Lead	5.0
D013	Lindane	0.4
D009	Mercury	0.2
D014	Methoxychlor	10.0
D035	Methyl ethyl ketone	200.0
D036	Nitrobenzene	2.0
D037	Pentachlorophenol	100.0
D038	Pyridine	5.0
D010	Selenium	1.0
D011	Silver	5.0
D039	Tetrachloroethylene	0.7
D015	Toxaphene	0.5
D040	Trichloroethylene	0.5
D041	2,4,5-Trichlorophenol	400.0
D042	2,4,6-Trichlorophenol	2.0
D017	2,4,5-TP (Silvex)	1.0
D043	Vinyl chloride	0.2



## Appendix 2-7

### Sludge Or Composted Sludge Analysis (Rules and Regulations Pertaining to the Treatment, Disposal, Utilization, and Transportation of Wastewater Treatment Facility Sludge, Appendix VII)

#### Metals

Cadmium	15 mg/kg (dry weight)
Chromium	400 mg/kg (dry weight)
Copper	1000 mg/kg (dry weight)
Lead	500 mg/kg (dry weight)
Mercury	5 mg/kg (dry weight)
Nickel	200 mg/kg (dry weight)
Zinc	2000 mg/kg (dry weight)

#### Organic Compounds

PCB	0.1 mg/kg (dry weight)
Endrin	0.1 mg/kg (dry weight)
Toxaphene	0.1 mg/kg (dry weight)
2,4,5-T	0.1 mg/kg (dry weight)
2,4,5-TP Silvex	0.1 mg/kg (dry weight)

#### Characteristics

Ratio of Sludge to Bulking Agent  
Density of Compost  
Moisture Content (%)  
Total Volatile Solids (%)  
Ammonia Nitrogen (%)  
Nitrate Nitrogen (%)  
Total Nitrogen (%)  
Available Phosphoric Acid (%)  
Soluble Potash (%)  
Specific Conductivity  
pH





## Appendix 2-8

### Composted Sludge and Sludge Product Analysis (Rules and Regulations Pertaining to the Treatment, Disposal, Utilization, and Transportation of Wastewater Treatment Facility Sludge, Appendix VI)

#### Metals

Arsenic	80 mg/kg (dry weight)
Barium	50 mg/kg(dry weight)
Cadmium	4 mg/kg (dry weight)
Chromium	70 mg/kg (dry weight)
Copper	1000 mg/kg (dry weight)
Lead	10 mg/kg (dry weight)
Mercury	0.2 mg/kg (dry weight)
Nickel	100 mg/kg (dry weight)
Selenium	400 mg/kg (dry weight)
Zinc	2000 mg/kg (dry weight)

#### Organic Compounds

PCB	0.1 mg/kg (dry weight)
Endrin	0.1 mg/kg (dry weight)
Aldrin/Dieldrin	0.006 mg/kg (dry weight)
DDD	0.1 mg/kg (dry weight)
DDE	0.1 mg/kg (dry weight)
DDT	0.1 mg/kg (dry weight)
2,4,5-T	0.1 mg/kg (dry weight)
2,4,5-TP Silvex	0.1 mg/kg (dry weight)

#### Pathogens

Salmonella Sp.	3 per g of volatile suspended solids
Protozoan	1 per g of volatile suspended solids
Helminth Egg	1 per g of volatile suspended solids



<b>INSTALLATION:</b>	<b>COMPLIANCE CATEGORY:</b> <b>CLEAN WATER ACT (CWA)</b> <b>Rhode Island Supplement</b>	<b>DATE:</b>	<b>REVIEWER(S):</b>
<b>STATUS</b> NA C RMA	<b>REVIEWER COMMENTS:</b>		

**SECTION 3**

**SAFE DRINKING WATER ACT (SDWA)**

**Rhode Island Supplement**

**SECTION 3**  
**SAFE DRINKING WATER ACT (SDWA)**  
**Rhode Island Supplement**

**Definitions**

These definitions were taken from the State of Rhode Island Rules and Regulations Pertaining to Public Drinking Water (R46-13-DWQ-01):

- *Best Available Technology (BAT)* - the best technology, treatment techniques, or other means which the U.S. Environmental Protection Agency (USEPA) finds, after examination for efficiency under field conditions and not solely under laboratory conditions, that are available.
- *Certified Laboratory* - a laboratory where physical, instrumental, procedural, and personnel capabilities have been approved by either the USEPA or the Rhode Island Department of Health.
- *Coagulation* - a process using coagulant chemicals and mixing by which a colloid and suspended material are destabilized and agglomerated into a floc.
- *Community Water System* - a public water system that serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-around residents.
- *Conventional Filtration Treatment* - a series of processes including coagulation, flocculation, sedimentation, and filtration resulting in substantial particulate removal.
- *CT* - the product of the residual disinfectant concentration "C" (measured in mg/L) and the disinfectant contact time(s), "T" (measured in minutes).
- *Diatomaceous Earth Filtration* - a process resulting in substantial particulate removal in which a pre-coat cake of diatomaceous earth filter media is deposited on a support membrane, and while the water is passing through the cake on the septum, additional filter media known as body feed is continuously added to the feed water to maintain the permeability of the filter cake.
- *Direct Filtration* - a series of processes including coagulation and filtration, but excluding sedimentation, that result in substantial particulate removal.
- *Director* - the Director of the Rhode Island Department of Public Health or its authorized agents or representatives.
- *Domestic or Other Non-Distribution System Plumbing Problem* - a coliform contamination problem in a public water system with more than one service connection that is limited to the specific service connection from which the coliform-positive sample was taken.
- *Dose Equivalent* - the product of the absorbed dose from ionizing radiation and such factors that account for differences in biological effectiveness due to the type of radiation and its distribution in the body as specified by the International Commission on Radiological Units and Measurements (ICRU).
- *Filtration* - a process for removing particulate matter from water through porous media.

- **Flocculation** - a process to enhance agglomeration or collection of smaller particles into larger, more easily settleable particles through gentle stirring by hydraulic or mechanical means.
- **Gross Alpha Particle Activity** - the total radioactivity due to alpha particle emission as inferred from measurement on a dry sample.
- **Gross Beta Particle Activity** - the total radioactivity due to a beta particle emission as inferred from measurement on a dry sample.
- **Groundwater Under the Direct Influence of Surface Water** - any water beneath the surface of the ground with:
  1. significant occurrences of insects or other macroorganisms, algae, or large-diameter pathogens such as *Giardia lamblia*
  2. significant and relatively rapid shifts in water characteristics such as turbidity, temperature, conductivity, or pH which closely correlates to surface water conditions.
- **Legionella** - a genus of bacteria, some species of which have caused a type of pneumonia called Legionnaires Disease.
- **Manmade Beta Particle and Photon Emitters** - all radionuclides emitting beta particles and/or photons listed on Maximum Permissible Body Burdens and Maximum Permissible Concentration of Radionuclides in Air or Water for Occupational Exposure, NBS Handbook 69, except the daughter products of thorium-232, uranium-235, and uranium-238.
- **Maximum Contamination Level (MCL)** - the maximum allowable level of a contaminant in a water delivered to users of a public water system, (except in the case of turbidity where the maximum allowable level is measured at the point of entry into a distribution system. Contaminants occurring in the water resulting from circumstances controlled by the water user except those resulting from corrosion of piping and plumbing caused by water are excluded from this definition.)
- **Near the First Service Connection** - at one of the 20 percent of service connections in the entire system that are near the water supply treatment system, as measured by the water transport time within the distribution system.
- **Noncommunity Water System** - a waterworks that is not a community waterworks, but operates at least 60 days out of the year.
- **Nontransient Noncommunity Water System (NTNC)** - a waterworks that is not a community waterworks and regularly serves at least 25 of the same persons over 6 mo out of the year.
- **Person** - includes any individual, corporation, association, firm or partnership, municipal, state, or Federal agency, or joint stock company, and includes any receiver, special master, trustee, assignee, or other similar representative thereof.
- **PicoCurie (pCi)** - the quantity of radioactive material producing 2.22 nuclear transformations per minute.
- **Point of Disinfection Application** - the point where disinfectant is applied and water downstream of that point is not subject to recontamination by surface water runoff.

- *Point of Entry Treatment Device (POE)* - the treatment device applied to the drinking water entering a house or building for the purpose of reducing contaminants in the drinking water distributed throughout the house or building.
- *Point of Use Treatment Device (POU)* - a treatment device applied to a single tap used for the purpose of reducing contaminants in drinking water at that one tap.
- *Public Water System* - a system for providing piped water to the public for human consumption, if such a system has more than 15 service connections or supplies water to a public or commercial establishment which operates a total of at least 60 days per year.
- *REM* - the unit dose equivalent from ionizing radiation to the total body or any internal organ or organ system. A millirem is one one-thousandth of a REM.
- *Sedimentation* - a process for removal of solids before filtration by gravity or separation.
- *Slow Sand Filtration* - a treatment process involving passage of raw water through a bed of sand at low velocity (generally less than 235 gal/ft<sup>2</sup> per day) resulting in substantial particulate removal by physical and biological mechanisms.
- *Surface Water* - all water that is open to the atmosphere and subject to surface water runoff.
- *System with a Single Service Connection* - a system that supplies drinking water to a consumer via a single service line.
- *Total Trihalomethanes (TTHM)* - the arithmetic sum of the concentrations per liter of trihalomethane (THM) compounds (trichloromethane, dibromochloromethane, bromodichloromethane, and tribromomethane) rounded to two significant figures.
- *Too Numerous to Count (TNTC)* - the total number of bacterial colonies exceeds 200 on a 47 mm diameter membrane filter used for coliform bacteria detection.
- *Trihalomethanes (THM)* - the family of organic halogen compounds resulting from the displacement of three of the four hydrogen atoms in methane with chlorine, bromide, or iodine atoms in the molecular structure.
- *Turbidity* - a measure of the cloudiness of water caused by suspended particles. The units of measure for turbidity are nephelometric turbidity units (NTU).
- *Waterborne Disease Outbreak* - the significant occurrence of acute infectious illness, epidemiologically associated with the ingestion of water from a public water system that is deficient in treatment, as determined by the Division.
- *Volatile Organic Chemical (VOC)* - a manufactured, carbon-based chemical that vaporizes quickly at standard pressure and temperature.
- *Virus* - a virus of fecal origin which is infectious to humans by waterborne transmission.





**SAFE DRINKING WATER ACT (SWDA)**  
**GUIDANCE FOR RHODE ISLAND CHECKLIST USERS**

<b>Applicability:</b>	<b>Refer to Checklist Items:</b>
New Construction	3-1 and 3-2
Filtration and Disinfection	3-3 through 3-11
Cross Connections	3-12
Water Tanks	3-13
Community Water Systems - Inorganic Chemicals	3-14
Community Water Systems - Organic Chemicals	3-15
Community Water Systems - Turbidity	3-16
Community Water Systems - Bacteriological Contamination	3-17 through 3-19
Community Water Systems - Radioactivity	3-20
Community Water Systems - Sanitary Survey	3-21
Community Water Systems - Volatile Organic Chemicals	3-22
Community Water Systems - Unregulated Contaminants	3-23
Community Water System - Public Notice	3-24
Community Water System - Records	3-25
Noncommunity Water Systems - Bacteriological Contamination	3-26 through 3-28
Noncommunity Water Systems - Nitrate	3-29
Noncommunity Water Systems - Turbidity	3-30
Noncommunity Water Systems - Volatile Organic Chemicals	3-31
Noncommunity Water Systems - Unregulated Contaminants	3-32
Noncommunity Water System - Public Notice	3-33
Noncommunity Water System - Records	3-34
Operator Certification	3-35
Wells	3-36



**COMPLIANCE CATEGORY:  
SAFE DRINKING WATER ACT (SDWA)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>NEW CONSTRUCTION</b></p> <p><b>3-1.</b> Installations must meet requirements for new water sources, State of Rhode Island Rules and Regulations Pertaining to Public Drinking Water (R46-13-DWQ-3).</p> <p><b>3-2.</b> Installations must meet requirements for new construction or modification of water system (R46-13-DWQ-4).</p>	<p>Verify that any new or proposed water source has a set of plans prepared by a professional engineer and approved by the Director.</p> <p>Verify that any new or proposed construction to the treatment works, pumping facilities, or distribution system, has a set of plans prepared by a professional engineer and approved by the Director.</p>
<p><b>FILTRATION AND DISINFECTION</b></p> <p><b>3-3.</b> Installations that provide filtration must meet specific disinfection requirements (R46-13-DWQ-5.1).</p> <p><b>3-4.</b> Installations must meet water quality standards for water sources (R46-13-DWQ-5.2.5.6).</p>	<p>Verify that water systems using surface water or groundwater under the direct influence of surface water achieve the following:</p> <ul style="list-style-type: none"> <li>- at least 99.9 percent (3-log) removal and/or inactivation of giardia lamblia cysts between a point where the raw water is not subject to recontamination by surface water runoff and a point downstream before or at the first customer</li> <li>- at least 99.99 percent (4-log) removal and/or inactivation of viruses between a point where the raw water is not subject to recontamination by surface water runoff and a point downstream before or at the first customer.</li> </ul> <p>Verify that public water systems that use groundwater as a source meet the following requirements:</p> <ul style="list-style-type: none"> <li>- fecal coliform contamination does not exceed 20/100 mL</li> <li>- total coliform contamination does not exceed 100/100 mL</li> <li>- turbidity does not exceed 5 NTU at a point immediately prior to disinfection.</li> </ul>
	<p>Verify that the water system maintains a watershed control program that at a minimum:</p> <ul style="list-style-type: none"> <li>- characterizes the watershed hydrology and land ownership</li> <li>- identifies the watershed characteristics and activities that may have an adverse effect on sourcewater quality</li> <li>- monitors the occurrence of activities that may have an effect on sourcewater quality.</li> </ul>

**COMPLIANCE CATEGORY:  
SAFE DRINKING WATER ACT (SDWA)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>3-4. (continued)</b></p> <p><b>3-5. Installations must meet specific requirements for the disinfection of drinking water (R46-13-DWQ-5.3).</b></p>	<p>(NOTE: The water system must show through land ownership or written agreement with land owners that it can control all human activities that may have an adverse effect on the microbiological quality of the source-water.)</p> <p>Verify that water systems that do not provide filtration meet the following disinfection requirements:</p> <ul style="list-style-type: none"> <li>- at least 99.9 percent (3-log) removal and/or inactivation of <i>Giardia lamblia</i> cysts every day the water system serves water to the public, except one day per month</li> <li>- daily calculation of the CT value for the water systems, treatment parameters</li> <li>- at least 99.99 percent (4-log) removal and/or inactivation of viruses every day the water system serves water to the public, except one day per month.</li> </ul> <p>Verify that the water system maintains the following equipment in the disinfection system:</p> <ul style="list-style-type: none"> <li>- redundant components to include auxiliary power supply with automatic startup and alarm</li> <li>- automatic shutoff of water delivery to the distribution system when the disinfection residual falls below 0.2 mg/L.</li> </ul> <p>Verify that a disinfection residual of at least 0.2 mg/L is maintained.</p> <p>(NOTE: The disinfection residual must not be less than 0.2 mg/L for more than 4 h.)</p> <p>Verify that water systems that do not provide filtration meet the following disinfection requirements:</p> <ul style="list-style-type: none"> <li>- at least 99.9 percent (3-log) removal and/or inactivation of <i>Giardia lamblia</i> cysts</li> <li>- at least 99.99 percent (4-log) removal and/or inactivation of viruses</li> <li>- a disinfection residual of at least 0.2 mg/L must be maintained</li> </ul> <p>(NOTE: The disinfection residual must not be less than 0.2 mg/L for more than 4 h.)</p> <ul style="list-style-type: none"> <li>- water in the distribution system must have a heterotrophic bacteria plate count of less than or equal to 500/mL</li> <li>- the value of V in the formula listed in Appendix 3-1 must not exceed 5 percent in 1 mo, for 2 consecutive months.</li> </ul>
<p><b>3-6. Installations that provide filtration must meet specific disinfection requirements (R46-13-DWQ-5.36).</b></p>	<p>Verify that water systems that do provide filtration meet the following disinfection requirements:</p> <ul style="list-style-type: none"> <li>- at least 99.9 percent (3-log) removal and/or inactivation of <i>Giardia lamblia</i> cysts</li> </ul>



**COMPLIANCE CATEGORY:  
SAFE DRINKING WATER ACT (SDWA)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>3-8. (continued)</b></p> <p><b>3-9. Installations that provide filtration must conduct specific monitoring (R46-13-DWQ-5.7).</b></p> <p><b>3-10. Installations that do not provide filtration must meet specific reporting and recordkeeping requirements (R46-13-DWQ-5.8.1).</b></p>	<p>(NOTE: The total inactivation ratio is calculated based on the CT 99.9 values. The parameters necessary to calculate the inactivation ratio are: temperature, pH of disinfected water, residual chlorine value, and disinfection contact time.)</p> <p>Verify that the residual disinfectant concentration in the water entering the distribution system is monitored continuously.</p> <p>Verify that the residual disinfectant does not drop below 0.2 mg/L for more than 4 h.</p> <p>(NOTE: Water systems may be allowed to take grab samples in lieu of continuous monitoring.)</p> <p>Verify that turbidity measurements are taken every 4 h.</p> <p>Verify that the residual disinfectant concentration of the water entering the distribution system is monitored.</p> <p>Verify that public water systems that use groundwater under the influence of surface water or a surface water source report the following source water quality information to the Director monthly:</p> <ul style="list-style-type: none"> <li>- the cumulative number of months for which the results are reported</li> <li>- the number of fecal and/or total coliform samples and the date of collection</li> <li>- the date(s) the turbidity exceeded 1 NTU</li> <li>- the number of sample(s) that had equal to or less than 20/100 mL fecal coliforms or 100/100 mL total coliforms</li> <li>- the cumulative number of fecal or total coliform samples taken</li> <li>- the cumulative number of samples that had equal to or less than 20/100 mL fecal coliforms or 100/100 mL total coliforms</li> <li>- the percentage of samples that had equal to or less than 20/100 mL fecal coliforms or 100/100 mL total coliforms</li> <li>- the maximum turbidity level recorded during the previous month</li> <li>- the date any measurement for turbidity exceeded 5 NTU and the dates that the occurrences were reported to the Director.</li> </ul> <p>(NOTE: There are special recordkeeping requirements for water systems that have installed filtration systems in the last 12 mo.)</p>

**COMPLIANCE CATEGORY:  
SAFE DRINKING WATER ACT (SDWA)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>3-10. (continued)</b></p>	<p>Verify that water systems that do not provide filtration report the following disinfection information to the Director within 10 days after the end of the month:</p> <ul style="list-style-type: none"> <li>- for each day, the lowest measurement of residual disinfectant concentration in mg/L for water entering the distribution system</li> <li>- the date and duration the residual disinfectant concentration entering the distribution system falls below 0.2 mg/L</li> <li>- the daily residual disinfectant concentration (in mg/L) and disinfectant contact time (in minutes) used for calculating the CT value(s)</li> <li>- if chlorine is used, the daily measurement of pH of disinfected water following each point of chlorine disinfection</li> <li>- the daily measurement of water temperature in degrees centigrade following each point of disinfection</li> <li>- the daily CT calc and CT calc/CT 99.9 values for each disinfectant measurement or sequence and the sum of all CT calc/CT 99.9 values before or at the first customer</li> <li>- the daily determination of whether disinfection achieves adequate Giardia cyst and virus inactivation is at least 1.0 (or other Director approved indicators)</li> <li>- the number of instances where the residual disinfection concentration is measured</li> <li>- the number of instances where the heterotrophic bacteria plate count (HPC) is measured instead of the residual disinfectant concentration</li> <li>- the number of instances where residual disinfectant concentration is measured, but not detected and no HPC is measured</li> <li>- the number of instances where the residual disinfectant concentration is detected and where HPC is greater than 500/mL</li> <li>- the number of instances where the residual disinfectant concentration is not measured and HPC is greater than 500/mL</li> <li>- for the current and previous month, the value of V as a measurement of the disinfectant concentration in the formula listed in Appendix 3-1.</li> </ul> <p>Verify that an annual report summarizing compliance with watershed control program requirements is supplied to the Director.</p> <p>Verify that the water system provides a report of the annual onsite inspection to the Director.</p> <p>Verify that the water system reports to the Director any outbreak potentially attributable to the water system no later than the end of the next business day.</p> <p>Verify that the water system reports to the director any time when the turbidity exceeds 5 NTU in the system, no later than the next business day.</p> <p>Verify that the water system reports any time the residual disinfectant concentration falls below 0.2 mg/L, no later than the end of the next business day.</p>



**COMPLIANCE CATEGORY:  
SAFE DRINKING WATER ACT (SDWA)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>3-11.</b> Installations with public water systems must meet additional reporting requirements (R46-13-DWQ-5.8.2).</p>	<p>Verify that public water systems that use a surface water source or groundwater under the direct influence of surface water, report the following turbidity measurements to the Director on a monthly basis:</p> <ul style="list-style-type: none"> <li>- total number of filtered water turbidity measurements taken during the month</li> <li>- the number and percentage of turbidity measurements taken during the month</li> <li>- the date and value of any turbidity measurement which exceeds 5 NTU</li> <li>- for each day, the lowest measurement of residual disinfectant concentration in mg/L for water entering the distribution system</li> <li>- the date and duration the residual disinfectant concentration entering the distribution system falls below 0.2 mg/L</li> <li>- for each day, the lowest measurement of residual disinfectant concentration(s), in mg/L, and the disinfectant contact time used in calculating the CT value(s)</li> <li>- if chlorine is used, the daily measurement(s) of pH of the disinfected water, following each point of chlorine application</li> <li>- the daily measurement of water temperature in degrees centigrade</li> <li>- the daily CT cal and CT calc/CT 99.9 values and the sum of all CT cal and CT calc/CT 99.9 values before or at the first service connection</li> <li>- the date and duration the residual disinfectant concentration entering the distribution system falls below 0.2 mg/L</li> <li>- the number of instances where no disinfectant concentration is measured and where no HPC is measured</li> <li>- the number of instances where no residual disinfectant concentration is detected and where the HPC count is greater than 500/mL</li> <li>- the number of instances where no residual disinfectant concentration is detected and where the HPC count is greater than 500/mL.</li> </ul>
<p><b>CROSS CONNECTIONS</b></p> <p><b>3-12.</b> Installations must not maintain cross connections in the service connections (RI 355-18-006).</p>	<p>Verify that the water system does not maintain a physical connection joining a public water system to any other water system.</p> <p>Verify that any existing or proposed connections between public water systems and any other water supply are approved by the Director.</p>

**COMPLIANCE CATEGORY:  
SAFE DRINKING WATER ACT (SDWA)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>WATER TANKS</b></p> <p><b>3-13.</b> Installations must meet requirements for water storage tanks (R46-13-DWQ-7 and 8).</p> <p><b>COMMUNITY WATER SYSTEMS - INORGANIC CHEMICALS</b></p> <p><b>3-14.</b> Installations with community water systems must monitor for inorganic chemical contamination (R46-13-DWQ-16.1).</p>	<p>Verify that connections to a tank found by the Director to be unsafe are maintained open to atmospheric pressure, and the public water supply pipe terminates at least 2 pipe diameters above the maximum level of water in the tank.</p> <p>Verify that the tank overflow is adequate in size to fix the maximum level of the tank.</p> <p>Verify that the water storage tanks are constructed and maintained to prevent contaminants from gaining access to the tank interior.</p> <p>Verify that the water system does not exceed the maximum contaminant levels listed in Appendix 3-3.</p> <p>Verify that the water system monitors annually for inorganic chemical contamination.</p> <p>Verify that a fluoride concentration determination is made daily on each source where fluoride concentration is mechanically adjusted.</p> <p>Verify that the following actions are taken for a violation of the MCL for nitrate:</p> <ul style="list-style-type: none"> <li>- notification of the Director within 7 days of determination of violation</li> <li>- collection of a second sample within 24 h and notification to the Director if the mean of the two analyses exceeds the MCL for nitrate</li> <li>- collection of three additional samples from the same sampling point within the next month.</li> </ul> <p>(NOTE: When the average of four analyses, rounded to four significant figures, exceeds the MCL for nitrate, the water system must notify the Director and initiate public notification.)</p>

**COMPLIANCE CATEGORY:  
SAFE DRINKING WATER ACT (SDWA)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>COMMUNITY WATER SYSTEMS - ORGANIC CHEMICALS</b></p> <p><b>3-15.</b> Installations with community water systems must monitor for organic chemical contamination (R46-13-DWQ-16.2).</p>	<p>Verify that the water system does not exceed the MCLs listed in Appendix 3-4.</p> <p>Verify that the water system monitors at least every 36 mo for inorganic chemical contamination.</p> <p>Verify that water systems serving more than 10,000 persons monitor for TTHMs in the following way:</p> <ul style="list-style-type: none"> <li>- 4 samples are taken per quarter per treatment plant</li> <li>- all samples are collected on the same day</li> <li>- 25 percent of the samples must reflect a maximum storage time in the distribution system</li> <li>- 75 percent of the samples taken at representative points in the distribution system</li> <li>- all samples taken in any quarter are averaged.</li> </ul> <p>(NOTE: Only water systems that practice disinfection must monitor for THMs.)</p>
<p><b>COMMUNITY WATER SYSTEMS - TURBIDITY</b></p> <p><b>3-16.</b> Installations with a community water system must meet standards for turbidity (R46-13-DWA-16.3).</p>	<p>Verify that the water system does not exceed a monthly average of 1 NTU for turbidity.</p> <p>Verify that the water system does not exceed 5 NTU for two or more consecutive days.</p> <p>Verify that all samples for turbidity are taken at representative points in the distribution system.</p> <p>Verify that public water systems using surface water or groundwater under the influence of surface water collect at least one sample for coliform contamination testing near the first service connection on every day the turbidity level exceeds 1 NTU.</p>

**COMPLIANCE CATEGORY:  
SAFE DRINKING WATER ACT (SDWA)  
Rhode Island Supplement**

**REGULATORY  
REQUIREMENTS:**

**REVIEWER CHECKS:**

**COMMUNITY WATER  
SYSTEMS -  
BACTERIOLOGICAL  
CONTAMINATION**

**3-17.** Installations with community water systems must monitor for bacteriological contamination (R46-13-DWQ-16.4).

Verify that the water system samples for bacteriological contamination are taken at the minimum frequency listed in Appendix 3-5.

(NOTE: Community water systems serving less than 1000 persons may test quarterly when the results of a sanitary survey show the source to be protected and free from significant sanitary defects.)

Verify that the samples are collected throughout the distribution system according to a written sampling plan.

(NOTE: Public water systems must take the samples throughout the month. However, water systems using only groundwater and serving 4900 persons or less may be permitted by the Director to take samples all in the same day, provided they are representative of the water in the system and are taken from different sites.)

Verify that water systems that do not practice filtration meet the following requirements:

- at least one sample is collected for coliform contamination testing near the first service connection every day the turbidity exceeds 1 NTU
- the coliform sample is collected within 24 h of the first hour of the violation.

Verify that if a routine or repeat sample is total coliform positive, the water system analyze the total coliform positive culture medium to determine if fecal coliform or *Escherichia coli* are present in the sample.

Verify that public water systems conduct total coliform analysis using one of the following analytical methods:

- Multiple Tube Fermentation Method
- Membrane Filter Technique
- Presence Absence Coliform Test
- Fecal coliform/*E. coli* confirmation.

(NOTE: Microbiological test procedures are to be conducted in accordance with *Standard Methods for Examination of Water and Wastewater*.)

**3-18.** Installations must conduct additional and repeat monitoring of bacteriological samples (R46-13-DWQ-16.2,d).

Verify that the water system collects repeat samples within 24 h of determining that a routine sample is coliform positive.

(NOTE: The Department may grant a waiver to the 24-h time period. The waiver must be requested and granted before the original 24 h has elapsed.)

**COMPLIANCE CATEGORY:  
SAFE DRINKING WATER ACT (SDWA)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>3-18. (continued)</b></p>	<p>Verify that the water system collects a total of at least four repeat samples on the same day that the routine sample was determined to be coliform positive.</p> <p>Verify that at least one repeat sample is taken from the site where the coliform positive sample was detected.</p> <p>Verify that at least one of the repeat samples is taken from a tap within five service connections upstream and five service connections downstream of the original sample site.</p> <p>Verify that if one or more of the repeat samples is coliform positive that the water system collects an additional set of repeat samples within 24 h of being notified of the positive results.</p> <p>(NOTE: This process of taking repeat samples is to continue until the water system is in compliance with the standards for coliform)</p> <p>Verify that water systems that collect fewer than five routine samples per month and that have at least one routine sample turns out coliform positive, collect at least five routine samples in the following month.</p> <p>(NOTE: If any routine or repeat sample is fecal coliform or <i>E. coli</i> positive, the system is in violation of the MCL for total coliforms. The Director must be notified by the end of the next business day.)</p>
<p><b>3-19.</b> Installations must meet specific requirements for the reporting of results of tests conducted on water samples (R46-13-DWQ-16.4).</p> <p><b>COMMUNITY WATER SYSTEMS - RADIOACTIVITY</b></p> <p><b>3-20.</b> Installations with community water systems must meet water quality standards for radioactive contamination (R46-13-DWQ-16.5).</p>	<p>Verify that the water system reports to the Director any failure to comply with a MCL for total coliform, within 48 h of the failure or violation.</p> <p>Verify that the water system reports to the Director any failure to comply with a water quality standard or a monitoring requirement for total coliform, within 10 days of the failure or violation.</p> <p>Verify that the MCLs for gross alpha particle, radium-226, and radium-228 radioactive contamination, listed in Appendix 3-6, are not violated.</p> <p>Verify that community water systems monitor for natural radioactive contamination every 36 mo regardless of source.</p> <p>Verify that community water systems serving more than 100,001 persons monitor for manmade radioactive contamination every 48 mo.</p> <p>Verify that if the gross alpha particle activity is detected at a level greater than 5 pCi/L, the same sample is tested for radium-226.</p>

**COMPLIANCE CATEGORY:  
SAFE DRINKING WATER ACT (SDWA)  
Rhode Island Supplement**

**REGULATORY  
REQUIREMENTS:**

**REVIEWER CHECKS:**

**3-20. (continued)**

Verify that if radium-226 is detected at a level greater than 3 pCi/L, the same sample is tested for radium-228.

**(NOTE: The test for radioactive contamination is done by averaging four quarterly samples. Noncommunity water systems are not required to sample for natural radioactive contamination. Water systems that serve less than 100,001 persons, and water systems that use groundwater as a sole source do not have to monitor for manmade radioactive contamination.)**

Verify that community water systems serving a population greater than 100,000 persons do not exceed the standards for manmade radioactive contamination, listed in Appendix 3-6.

**(NOTE: Compliance with Appendix 3-6, Manmade Radioactive Contamination, is assumed without further analysis if the average annual concentration of gross beta activity is less than 50 pCi/L and the average annual concentration of tritium and strontium is less than those listed in Appendix 3-7.)**

Verify that the average annual concentration of beta particle and photon activity from manmade radionuclides in the drinking water does not produce an annual dose equivalent to the total body or any internal organ greater than 4 mrem/yr.

**COMMUNITY WATER  
SYSTEMS -  
SANITARY SURVEY**

**3-21. Installations must conduct a sanitary survey of the water system and sources (R46-113-DWQ-16.4).**

Verify that public water systems that collect fewer than five bacteriological samples per month conduct sanitary surveys at the frequency listed below:

- community water systems are to complete the initial survey by 29 June 1994 and conduct subsequent surveys once every 5 yr
- noncommunity water systems are to complete the initial survey by 29 June 1999 and conduct subsequent surveys once every 5 yr.

**(NOTE: Noncommunity water systems that use only protected and disinfected groundwater sources must the sanitary survey once every 10 yr rather than once every 5 yr.)**

**COMPLIANCE CATEGORY:  
SAFE DRINKING WATER ACT (SDWA)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>COMMUNITY WATER SYSTEMS - VOLATILE ORGANIC CHEMICALS</b></p> <p><b>3-22.</b> Installations must meet minimum monitoring requirements for volatile organic chemicals (R46-13-DWQ-16.6).</p>	<p>Verify that the water system does not exceed the maximum levels listed in Appendix 3-7.</p> <p>Verify that the water system samples for VOCs once every 3 mo, unless a reduced monitoring frequency has been allowed by the Director.</p> <p>Verify that the water system monitors for vinyl chloride at a frequency specified by the Division if any of the contaminants listed in Appendix 3-7, Vinyl Chloride Indicators, are detected.</p> <p>(NOTE: Compliance for a primary MCL for volatile organic compounds is based on a running annual average.)</p>
<p><b>COMMUNITY WATER SYSTEMS - UNREGULATED CONTAMINANTS</b></p> <p><b>3-23.</b> Installations must monitor for unregulated organic contaminants (R46-13-DWQ-16.7).</p>	<p>Verify that the water system monitors for the unregulated organic contaminants listed in Appendix 3-8 at least once every 60 mo.</p> <p>Verify that the samples are based on four consecutive quarterly samples taken at entry points into the distribution system.</p> <p>Verify that the water system gives public notice of the availability of the analytical results from unregulated contaminant testing, and a point of contact for further information.</p>
<p><b>COMMUNITY WATER SYSTEM - PUBLIC NOTICE</b></p> <p><b>3-24.</b> Installations must give public notice for violations in state drinking water regulations (R46-13-DWQ-16.8).</p>	<p>Verify that public notice is given when a community water system violates any requirement, variance, or monitoring schedule set by the state.</p> <p>Verify that public notice is given by the following means:</p> <ul style="list-style-type: none"> <li>- by publication in a general circulation newspaper or newspapers in the area served by the water system within 14 days of the violation</li> <li>- by mail or hand delivery within 45 days of a violation determined by the Director to be acute in nature</li> </ul>

**COMPLIANCE CATEGORY:  
SAFE DRINKING WATER ACT (SDWA)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>3-24. (continued)</b></p> <p><b>COMMUNITY WATER SYSTEM - RECORDS</b></p> <p><b>3-25.</b> Installations must keep records of analysis required by the state (R46-13-DWQ-16.9).</p>	<ul style="list-style-type: none"><li>- once every 3 mo for the duration of the noncompliance.</li><li>- by radio or television serving the area served by the water system, within 72 h of a violation of the MCL for nitrate or any other MCL that would pose an acute threat to human health.</li></ul> <p>Verify that the Director is sent a copy of the public notice sent to consumers within 10 days of issuance.</p> <p>Verify that long-term violations are reported to the public every 3 mo by mail or hand delivery for as long as the violation occurs.</p> <p>Verify that the public notices contain the mandatory health effects language.</p> <p>Verify that the records for each sample analyzed for contaminants contains the following information:</p> <ul style="list-style-type: none"><li>- the date, time, and place of sampling</li><li>- the name of the person taking the sample</li><li>- the date of the analysis</li><li>- the laboratory and person responsible for performing the analysis</li><li>- the analytical technique or method used</li><li>- the results of the analysis.</li></ul> <p>(NOTE: The records are to be kept onsite or at a convenient location near the site.)</p> <p>Verify that the following records are kept for the specified length of time:</p> <ul style="list-style-type: none"><li>- records of bacteriological analysis for 5 yr</li><li>- records of chemical analysis, radiological, and turbidity measurements for 10 yr</li><li>- copies of written reports, summaries or communications relating to sanitary surveys for at least 10 yr</li><li>- records of action taken by the system to correct violations of primary drinking water regulations for a period not less than 3 yr after the last action was taken with respect to the particular violation</li><li>- records relating to a variance or exception for at least 5 yr following the expiration date of the variance or exception.</li></ul>





**COMPLIANCE CATEGORY:  
SAFE DRINKING WATER ACT (SDWA)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>3-27. (continued)</b></p>	<p>Verify that the water system collects a total of at least four repeat samples on the same day as determining a routine sample was coliform-positive.</p> <p>Verify that at least one repeat sample is taken from the site where the coliform-positive sample was detected.</p> <p>Verify that at least one repeat sample is taken from a tap within five service connections upstream and five service connection downstream of the original sample site.</p> <p>Verify that if one or more of the repeat samples is coliform positive that the water system collects an additional set of repeat samples within 24 h of being notified of the positive results.</p> <p>(NOTE: This process of taking repeat samples is to continue until the water system is in compliance with the standards for coliform.)</p> <p>Verify that water systems collecting fewer than five routine samples per month and that have at least one routine sample coliform positive sample collect at least five routine samples in the following month.</p> <p>(NOTE: If any routine or repeat sample is fecal coliform or <i>E. coli</i> positive, the system is in violation of the MCL for total coliforms. The Director must be notified by the end of the next business day.)</p>
<p><b>3-28. Installations must meet specific requirements for the reporting of results of tests conducted on water samples (R46-13-DWQ-17.1,b).</b></p>	<p>Verify that the water system reports to the Director any failure to comply with an MCL for total coliform within 48 h of the failure or violation.</p> <p>Verify that the water system reports to the Director any failure to comply with a water quality standard or a monitoring requirement for total coliform within 10 days of the failure or violation.</p>
<p><b>NONCOMMUNITY WATER SYSTEMS - NITRATE</b></p>	
<p><b>3-29. Installations must meet standards for nitrate (R46-13-DWA-17.2).</b></p>	<p>Verify that the water system does not exceed the MCL of 10 mg/L for nitrate.</p> <p>Verify that the water system takes a second sample within 24 h if the first sample indicates that the MCL for nitrate has been violated.</p> <p>Verify that the water system monitors each active source at least once every 12 mo.</p>

**COMPLIANCE CATEGORY:  
SAFE DRINKING WATER ACT (SDWA)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>NONCOMMUNITY WATER SYSTEMS - TURBIDITY</b></p> <p><b>3-30.</b> Installations must meet standards for turbidity (R46-13-DWA-17.3).</p>	<p>Verify that the water system does not exceed a monthly average of 1 NTU for turbidity.</p> <p>Verify that the water system does not exceed 5 NTU for 2 or more consecutive days.</p> <p>Verify that all samples for turbidity are taken at representative points in the distribution system.</p> <p>Verify that public water systems using surface water or groundwater under the influence of surface water collect at least one sample for coliform contamination testing near the first service connection every day the turbidity level exceeds 1 NTU.</p>
<p><b>NONCOMMUNITY WATER SYSTEMS - VOLATILE ORGANIC CHEMICALS</b></p> <p><b>3-31.</b> Installations must meet minimum monitoring requirements for VOCs (R46-13-DWQ-17.4).</p>	<p>Verify that noncommunity and nontransient water systems monitor for the VOCs listed in Appendix 3-7.</p> <p>Verify that the water system does not exceed the MCLs listed in Appendix 3-7.</p> <p>Verify that the water system samples for VOCs once every 3 mo, unless a reduced monitoring frequency has been allowed by the Director.</p> <p>Verify that the water system monitors for vinyl chloride at a frequency specified by the Divisor, if any of the contaminants listed in Appendix 3-7, Vinyl Chloride Indicators, are detected.</p> <p>(NOTE: Compliance for a primary MCL for VOCs is based on a running annual average.)</p>

**COMPLIANCE CATEGORY:  
SAFE DRINKING WATER ACT (SDWA)  
Rhode Island Supplement**

**REGULATORY  
REQUIREMENTS:**

**REVIEWER CHECKS:**

**NONCOMMUNITY  
WATER SYSTEMS -  
UNREGULATED  
CONTAMINANTS**

**3-32.** Installations must monitor for unregulated organic contaminants (R46-13-DWQ-17.5).

Verify that noncommunity and nontransient water systems monitor for the unregulated organic contaminants listed in Appendix 3-8 at least once every 60 mo.

Verify that the samples are based on four consecutive quarterly samples taken at entry points in the distribution system.

Verify that the water system gives public notice of the availability of the analytical results from unregulated contaminant testing, and a point of contact for further information.

**NONCOMMUNITY  
WATER SYSTEM -  
PUBLIC NOTICE**

**3-33.** Installations must give public notice for violations in state drinking water regulations (R46-13-DWQ-17.6).

Verify that public notice is given when a community water system violates any requirement, variance, or monitoring schedule set by the state.

Verify that public notice is given by the following means:

- by publication in general circulation newspaper or newspapers in the area served by the water system within 14 days of the violation
- by mail or hand delivery within 45 days of a violation determined by the Director to be acute in nature
- once every 3 mo for the duration of the noncompliance
- by radio or television serving the area served by the water system within 72 h of a violation of the MCL for nitrate or any other MCL that would pose an acute threat to human health.

Verify that the Director is sent a copy of the public notice as sent to consumers, within 10 days of issuance.

Verify that long-term violations are reported to the public every 3 mo by mail or hand delivery for as long as the violation occurs.

Verify that the public notices contain the mandatory health effects language.

**COMPLIANCE CATEGORY:  
SAFE DRINKING WATER ACT (SDWA)  
Rhode Island Supplement**

**REGULATORY  
REQUIREMENTS:**

**REVIEWER CHECKS:**

**NONCOMMUNITY  
WATER SYSTEM -  
RECORDS**

**3-34.** Installations must keep records of analysis required by the state (R46-13-DWQ-17.7).

Verify that the records for each sample analyzed for contaminants contains the following information:

- the date, time, and place of sampling
- the name of the person taking the sample
- the date of the analysis
- the laboratory and person responsible for performing the analysis
- the analytical technique or method used
- the results of the analysis.

(NOTE: The records are to be kept onsite or at a convenient location near the site.)

Verify that the following records are kept for the specified length of time:

- records of bacteriological analysis for 5 yr
- records of nitrate analysis and turbidity measurements for 10 yr
- copies of written reports, summaries, or communications relating to sanitary surveys for at least 10 yr
- records of action taken by the system to correct violations of primary drinking water regulations for a period not less than 3 yr after the last action was taken with respect to the particular violation
- records relating to a variance or exception for at least 5 yr following the expiration date of the variance or exception.

**OPERATOR  
CERTIFICATION**

**3-35.** Operators of water systems are required to be certified by the state (R46-13-DWQ-18.5).

Verify that the operators of the water system using surface water or groundwater under the influence of surface water possess a certificate equal to or greater than the grade or classification of the treatment facility.

**COMPLIANCE CATEGORY:  
SAFE DRINKING WATER ACT (SDWA)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>WELLS</b></p> <p><b>3-36.</b> Installations with drinking water wells must meet specific standards (Rules and Regulations Governing the Enforcement of Chapter 46-13.2 Relating to the Drilling of Drinking Water Wells, Sections 4.01, 6.01, and 9.01).</p>	<p>Verify that contractors who construct, alter, or abandon a drinking water well have a valid registration, as a well contractor by the Department.</p> <p>Verify that well drillers, upon completion of construction, alteration, or abandonment of a well, submit a well completion report to the department.</p> <p>Verify that wells that are temporarily removed from service or temporarily abandoned are capped with a watertight seal, watertight welded steel cap, or threaded cap.</p>



### Appendix 3-1

#### Determination of V (R46-13-DWQ-5.3.5)

$$V = \frac{C+D+E}{A+B} \times 100$$

- A = The number of instances where the residual disinfectant concentration is measured.
- B = The number of instances where the residual disinfectant concentration is not measured but heterothropic bacteria plate count (HPC) is measured.
- C = The number of instances where the residual disinfectant concentration is measured but not detected and no HPC is measured.
- D = The number of instances where no residual disinfectant concentration is detected and where the HPC is greater than 500/mL.
- E = The number of instances where the residual disinfection concentration is not measured and the HPC is greater than 500/mL.





**Appendix 3-2**

**Monitoring Requirements for  
Systems That Do Not Provide Filtration  
(R46-13-DWQ-5.6)**

<b>System Size (Number of People Serving)</b>	<b>Samples per Week</b>
less than 500	1
501 to 3,000	2
3,301 to 10,000	3
10,001 to 25,000	4
greater than 25,000	5



### Appendix 3-3

#### Maximum Contamination Levels for Inorganic Chemicals (R46-13-DWQ-16.1)

Contaminant	MCL (mg/L)
Arsenic (as As)	0.05
Barium (as Ba)	1
Cadmium (as Ca)	0.010
Chromium (as Cr)	0.05
Fluoride (as F)	4.0
Lead (as Pb)	0.05
Mercury (as Hg)	0.002
Nitrate (as N)	10
Selenium (as Se)	0.01
Silver (Ag)	0.05
Sodium (Na)	*

\* monitoring is only required



### Appendix 3-4

#### Primary Maximum Contamination for Organic Chemicals (R46-13-DWQ-16.2)

Substance	MCL (mg/L)
Endrin	0.0002
Lindane	0.004
Methoxychlor	0.1
Toxaphene	0.005
Chlorophenoxyl Herbicides	
2,4-Dichlorophenoxyacetic Acid (2,4-D)	0.1
2,4,5-Trichlorophenoxypropionic Acid (2,4, 5-TP or Silvex)	0.01
Total Trihalomethanes	0.10



### Appendix 3-5

#### Minimum Number of Routine Coliform Sampling Requirements (R46-13-DWQ-16.4)

Population Served During Month	Number of Samples
25-1000	1
1001-2500	2
2501-3300	3
3301-4100	4
4101-4900	5
4901-5800	6
5801-6700	7
6701-7600	8
7601-8500	9
8501-12,900	10
12,901-17,200	15
17,201-21,500	20
21,501-25,000	25
25,001-33,000	30
33,001-41,000	40
41,001-50,000	50
50,001-59,000	60
59,001-70,000	70
70,001-83,000	80
83,001-93,000	90
93,001-130,000	100
130,001-220,000	120
220,001-320,000	150
320,001-450,000	180
450,001-600,000	210
600,001-780,000	240
780,001-970,000	270
970,001-1,230,000	300
1,230,001-1,520,000	330
1,520,001-1,850,000	360
1,850,001-2,270,000	390
2,270,001-3,020,000	420
3,020,001-3,960,000	450
3,960,001 or more	480





### Appendix 3-6

## Maximum Contamination Levels for Radioactive Contamination (R46-13-DWQ-16.5)

### Natural Radioactive Contamination

Substance	MCL (pCi/L)
Combined Radium-226 and Radium-228	5
Gross Alpha Particle Activity (excluding Radon Uranium)	15

### Manmade Radioactive Contamination

Radionuclide	Critical Organ	pCi/L
Tritium	Total Body	20,000
Strontium-90	Bone Marrow	8
Gross Beta Particle Activity		50,000 (average annual concentration)



### Appendix 3-7

#### Maximum Contamination Levels for Volatile Organic Chemicals (R46-13-DWQ-16.6)

Substance	PMCL (mg/L)
Benzene	0.005
Vinyl Chloride	0.002
Carbon Tetrachloride	0.005
1,2 Dichloroethane	0.005
Trichloroethylene	0.005
1,1-Dichloroethylene	0.007
1,1,1-Trichloroethane	0.20
para-Dichlorobenzene	0.075
Vinyl Chloride	*

\* All water systems are required to monitor for vinyl chloride if their source sampling has verified one or more of the following:

#### VINYL CHLORIDE INDICATORS

Trans-1,2-Dichloroethylene  
Cis-1,2-Dichloroethylene  
1,1-Dichloroethylene  
1,2-Dichloroethane  
1,1,1-Trichloroethane  
Trichloroethylene  
Tetrachloroethylene



### Appendix 3 - 8

#### Unregulated Contaminants

(Source: R46-13-DWQ-16.7)

Chloroform	1,2,3-Trichloropropane
Bromodichloromethane	1,1,1,2-Tetrachloroethane
Chlorodibromomethane	Chloroethane
Bromoform	1,1,2-Trichloroethane
Trans-1,2-Dichloroethylene	2,2-Dichloropropane
Chlorobenzene	o-Chlorotoluene
m-Dichlorobenzene	p-Chlorotoluene
Dichloromethane	Bromobenzene
cis-1,2-Dichloroethylene	1,3-Dichloropropene
o-Dichlorobenzene	Ethylene dibromide (EDB)
Dibromoethane	1,2-Dibromo-3-chloropropane (DBCP)
1,1-Dichloropropene	1,2,4-Trimethylbenzene
Tetrachloroethylene	1,2,4-Trichlorobenzene
Toluene	1,2,3-Trichlorobenzene
p-Xylene	n-Propylbenzene
o-Xylene	n-Butylbenzene
m-Xylene	Naphthalene
1,1-Dichloroethane	Hexachlorobutadiene
1,2-Dichloropropane	1,3,5-Trimethylbenzene
1,1,2,2-Tetrachloroethane	p-Isopropyltoluene
Ethylbenzene	Isopropylbenzene
1,3-Dichloropropane	Tert-butylbenzene
Styrene	Sec-butylbenzene
Chloromethane	Fluorotrichloromethane
Bromomethane	Dichlorodifluoromethane
Bromochloromethane	



<b>INSTALLATION:</b>	<b>COMPLIANCE CATEGORY:</b> <b>SAFE DRINKING WATER ACT (SDWA)</b> <b>Rhode Island Supplement</b>	<b>DATE:</b>	<b>REVIEWER(S):</b>
<b>STATUS</b> NA C RMA	<b>REVIEWER COMMENTS:</b>		



**SECTION 4**

**RESOURCE CONSERVATION AND RECOVERY ACT,**

**SUBTITLE C (RCRA-C)**

**Rhode Island Supplement**

**SECTION 4**  
**RESOURCE CONSERVATION AND**  
**RECOVERY ACT, SUBTITLE C (RCRA-C)**  
**Rhode Island Supplement**

The State of Rhode Island is responsible for permitting waste handling facilities. In many areas of regulation, the state requires compliance with specific sections of the Federal regulation as specified in this protocol. See the U.S. ECAS Manual for Department of Defense (DOD) and Federal Requirements.

**Definitions**

These definitions were obtained from the Rhode Island Department of Environmental Management (RIDEM), Division of Air and Hazardous Materials, Rules and Regulations for Hazardous Waste Management 1992.

- *Department* - the Rhode Island Department of Environmental Management.
- *Designated Facility* - a hazardous waste treatment, storage, or disposal facility that has received a U.S. Environmental Protection Agency (USEPA) permit (or a facility with interim status), a permit from a state, and that has been designated on the manifest by the generator.
- *Director* - the Director of the Rhode Island Department of Environmental Management.
- *Generator* - any person (including the state and Federal Government or any agency or subdivision), by site, who produces hazardous waste, or imports hazardous waste from a foreign country, or whose act or process produces hazardous waste or whose act first causes a hazardous waste to become subject to regulation.
- *Household Hazardous Waste* - waste that has been segregated from household waste and would otherwise meet any definition of a hazardous waste. This definition does not include hazardous waste generated in households as part of a business, wastes from hotels or motels, bunkhouses, ranger stations, crews quarters, campgrounds, picnic grounds, and day-use recreation areas, except for those wastes ordinarily left behind by guests or other users of such institutions.
- *Manifest* - the Rhode Island Uniform Hazardous Waste manifest provided by the Department or any other manifest approved by the USEPA for identifying (but not limited to) the quantity, composition, type and the origin, routing, and destination of hazardous waste from the point of generation to the point of treatment, storage, or disposal.
- *Rhode Island Wastes* - any waste meeting any of the following definitions. These waste codes are in addition to the Federal definitions of hazardous waste and they are to be used only when the waste does not meet any of the Federal criteria, except for purposes of determining if the waste is prohibited from being transported on roads where hazardous waste transport is not allowed.

(NOTE: The waste codes indicated in parentheses are only to be used when the waste does not meet any of the Federal definitions of a hazardous waste.)

*Rhode Island Hazardous Wastes (continued)*

*Type IA - Highly Toxic Waste (R001)* - a waste that meets any of the following criteria:

1. the elutriate obtained by applying the Toxicant Extraction Procedure to a representative sample of the waste has an acute oral LD50 in the rat of 0 to 50 mg/kg of body weight determined using a recognized reference or a reference source approved by the Director.
2. a quantitative analysis of a liquid waste reveals that it contains a substance which in concentration present causes the waste to have a waste LD50 of 50 mg/kg or less, as listed in a reference source approved by the Director.

*Type IB - Moderately Toxic Waste (R001)* - a waste that meets any of the following criteria:

1. the elutriate obtained by applying the Toxicant Extraction Procedure to a representative sample of the waste has an acute oral LD50 in the rat of greater than 50 but not less than 500 mg/kg of body weight calculated using a recognized reference.
2. a quantitative analysis of a liquid waste reveals that it contains a substance which in the concentration present in the waste causes the waste to have a waste LD50 of greater than 50 mg/kg but less than 500 mg/kg of body weight as listed in a reference source approved by the Director.

*Type IC - Slightly Toxic Waste (R001)* - a waste that meets any of the following criteria:

1. the elutriate obtained by applying the Toxicant Extraction Procedure to a representative sample of the waste has an acute oral LD50 in the rat of greater than 500 but less than 5000 mg/kg of body weight as calculated using a recognized reference.
2. a quantitative analysis of a liquid waste reveals that it contains a substance which in concentration present in the waste causes the waste to have a waste LD50 of greater than 500 but less than 5000 mg/kg body weight as listed in a reference source approved by the Director.

*Type 2A - Highly Reactive Waste (R002)* - a waste that in itself is readily capable of initiating a detonation, or of explosive decomposition, or of a reaction at normal temperature and pressure, or that reacts explosively with water, or that is a forbidden explosive as defined in 49 CFR 173.51, or a Class A or Class B explosive.

*Type 2B - Moderately Reactive Waste (R002)* - a waste that in itself is capable of initiating a detonation or explosive reaction, but requires a strong initiating source, or which must be heated under confinement before initiation, or which may react violently with water or oxidizable materials or which may form potentially explosive mixtures with water or oxidizable materials, or which may generate toxic fumes such as cyanide- and sulfide-bearing wastes.

*Type 2C - Slightly Reactive Waste (R002)* - a waste that in itself or when mixed with water is normally unstable or readily undergoes chemical change, but does not detonate or cause explosive reactions.

*Type 3A - Highly Flammable Waste (R003):*

1. any liquid or gaseous material that is a liquid while under pressure, having a flash point below 73 °F and a boiling point less than 100 °F
2. any compressed gas or mixture for which a mixture of 13 percent or less (by volume) with air forms a flammable mixture, or the flammable range with air is wider than 12 percent regardless of the lower limit
3. any nonliquid as described in 40 CFR 261.21(a)(2)
4. any ignitable compressed gas as described in 40 CFR 261.21(a)(3), or any oxidizer as described in 40 CFR 261.21(a)(4).

**Type 3B - Moderately Flammable Waste (R003)** - a liquid having a flash point less than 73 °F and a boiling point at or above 100 °F; and those having a flash point at or above 73 °F and a boiling point less than 100 °F; or a liquid that ignites spontaneously in dry or moist air at or below 130 °F, or any compressed flammable gas or mixture having in the container an absolute pressure exceeding 40 psi at 70 °F; or regardless of the pressure at 70 °F, having an absolute pressure exceeding 104 psi at 130 °F; or any liquid flammable materials having a vapor pressure exceeding 40 psi absolute at 100 °F.

**Type 3C - Slightly Flammable Waste (R003)** - liquids having a flash point at or above 73 °F, but not exceeding 200 °F; or solids and semi-solids which readily give off flammable vapors below 100 °F.

**Type 4 - Corrosive Waste (R004)** - any nonaqueous waste, when mixed 50 percent by weight with distilled water; or any gaseous material such as a 2 molar aqueous solution, yields a pH less than or equal to 2.0, or greater than or equal to 12.5, as measured with a pH meter using the protocol specified in the USEPA Test Methods for the Evaluation of Solid Waste.

**Type 5 - Rhode Island Special Hazardous Waste (R005)** - a waste that may not meet any of the other criteria set forth in this rule but which may still cause or significantly contribute to an increase in mortality or an increase in serious irreversible or incapacitating reversible illness or pose a substantial present or potential hazard to human health or the environment.

**Type 6 - Extremely Hazardous Waste (R006):**

1. contains any known carcinogen as designated in regulatory rule-making by any of the Federal agencies (Occupational Safety and Health Administration (OSHA), Food and Drug Administration (FDA), U.S. Environmental Protection Agency (USEPA), Consumer Product Safety Commission (CPSC)) or amounts at or above the Federally regulated level or at 1/10 of 1 percent (0.1 percent by weight, whichever is more stringent, of any solid or liquid mixture (except asbestos waste)
2. contains any teratogen as identified by OSHA's Industrial Hygiene Field Operation Manual in concentrations or amounts at or above the Federally regulated level or at 0.1 percent by weight, whichever is more stringent, of any solid or liquid mixture
3. contains any suspected human carcinogen as designated in regulatory rule-making by any of the Federal agencies in concentrations or amounts at or above the Federally regulated level or at 1 percent by weight, whichever is more stringent, of any solid or liquid mixture (except asbestos waste)
4. contains a substance that has an acute oral rat LD50 less than or equal to 2 mg/kg in a reference approved by the Director at or above 0.1 percent by weight of any solid or liquid mixture
5. contains any U.S. Department of Transportation Poison A or B except carbolic acid at or above 1 percent by weight of any solid or liquid mixture
6. contains Industrial Chemicals selected due to their serious cumulative effects from OSHA's Industrial Hygiene Field Operations Manual at or above 1 percent by weight of any solid or liquid mixture. However, if the industrial chemicals are less than 1 percent soluble, this rule only applies to these chemicals when they are soluble in the waste
7. any PCB's or PCB-contaminated material which meet this definition of extremely hazardous waste is designated R007 waste.

- **Waste Automotive Oil** - waste oil generated at such places as service stations and truck and bus repair stations; may include small, routine amounts of other petroleum distillates generated at the location. Any waste oil voluntarily managed as a hazardous waste, but not meeting any other Rhode Island characteristics, is designated R010 waste.



**RESOURCE CONSERVATION AND RECOVERY ACT,  
SUBTITLE C (RCRA-C)**

**GUIDANCE FOR RHODE ISLAND CHECKLIST USERS**

<b>Applicability:</b>	<b>Refer to Checklist Items:</b>
Hazardous Waste Generators - General Requirements	4-1
Hazardous Waste Generators - Waste Oil, Filters, and Industrial Sorbents	4-2 through 4-4
Hazardous Waste Transporters - General Requirements	4-5 through 4-8
Storage and Transfer Facilities	4-9
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDFs) - Permit Requirements	4-10
Hazardous Waste TSDFs - General Requirements	4-11 and 4-12



<b>COMPLIANCE CATEGORY:</b> Resource Conservation and Recovery Act - Subtitle C (RCRA-C) Rhode Island Supplement	
<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>HAZARDOUS WASTE GENERATORS - General Requirements</b></p> <p><b>4-1.</b> Installations that are generators of hazardous waste must meet specific requirements (Rhode Island Rules and Regulations for Hazardous Waste Management, Rule 5.00 through 5.04).</p>	<p>Determine if the installation is a generator of hazardous waste.</p> <p>(NOTE: Facilities that accept household hazardous waste only, for subsequent offsite management, are considered to be generators subject to the requirements of this section. Generators are not exempted by minimum generation limitations. Storage by a generator for a period not to exceed 90 days is termed temporary storage and is excluded from storage permit requirements provided that the waste is managed in accordance with 40 CFR 262.34 and 264.275, except for 262.34(d), (e), and (f).)</p> <p>Verify that the following requirements are met:</p> <ul style="list-style-type: none"> <li>- the installation has obtained a Federal or state hazardous waste identification number</li> <li>- hazardous waste is sent only to a designated facility for treatment, storage, or disposal with a properly prepared manifest</li> <li>- the installation submits a list to the Department of the names and signatures of all agents authorized to sign the manifest</li> <li>- the Division of Air and Hazardous Materials is notified immediately in the event of a spill or release and steps are taken to contain and/or clean up the spill or release</li> <li>- the following Federal Requirements are met: <ul style="list-style-type: none"> <li>- 40 CFR 262, Subpart C, Pre-Transport Requirements &amp; Accumulation Time</li> <li>- 40 CFR 262.23, Use of the Manifest</li> <li>- 40 CFR 262.41, Biennial Reports</li> <li>- 40 CFR 262.40, Recordkeeping</li> <li>- 40 CFR 262.11, Hazardous Waste Determination.</li> </ul> </li> </ul> <p>Verify that the generator determines if any wastes meet the definitions of Rhode Island waste types (see Definitions).</p>
<p><b>HAZARDOUS WASTE GENERATORS - Waste Oil, Filters, and Industrial Sorbents</b></p> <p><b>4-2.</b> Waste oil filters, if not destined for recycling, must be managed as a hazardous waste according to specific requirements (Rhode Island Hazardous Waste Management Act 1978).</p>	<p>Verify that waste oil filters not destined for recycling are managed in accordance with all hazardous waste generator requirements.</p> <p>Verify that waste oil filters are not disposed of in the trash.</p> <p>Verify that prior to recycling or offering for recycling, waste oil filters meet the following requirements:</p> <ul style="list-style-type: none"> <li>- they are either crushed or drained for a period of at least 24 h</li> <li>- any oil obtained from crushing and draining is treated as hazardous waste</li> </ul>



**COMPLIANCE CATEGORY:**  
**Resource Conservation and Recovery Act - Subtitle C (RCRA-C)**  
**Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>4-2. (continued)</b></p> <p><b>4-3.</b> Installations must handle all industrial sorbents soaked with material determined to be hazardous waste under state or Federal criteria, as a hazardous waste (<i>Rhode Island Hazardous Waste Management Act 1978</i>).</p> <p><b>4-4.</b> Installations must dispose of oil-contaminated soil according to specific guidelines (<i>Rhode Island Division of Air and Hazardous Materials Oil Contaminated Soil Policy</i>).</p>	<ul style="list-style-type: none"> <li>- receipts of the generator of waste oil filters are kept at least 3 yr</li> <li>- onsite storage of waste oil filters does not exceed 90 days.</li> </ul> <p>(NOTE: Vehicles transporting drained and/or crushed waste oil filters to a recycler do not need a hazardous waste transporter permit although the filters must be in Department of Transportation (DOT) approved containers. Manifest requirements are also waived.)</p> <p>Verify that any contaminated towels/sorbents which would allow the release of free liquids determined to be hazardous waste are managed and disposed of as hazardous waste.</p> <p>Verify that cloths, towels, and rags that may be contaminated with trace amounts of hazardous waste yet contain no free liquids, are handled in the following manner:</p> <ul style="list-style-type: none"> <li>- materials are laundered at a facility that meets the appropriate criteria to handle such material</li> <li>- the material is stored in labeled containers away from any source of ignition</li> <li>- no other wastes are mixed with the sorbents.</li> </ul> <p>(NOTE: Other processing of these wastes for disposal purposes are considered treatment of hazardous waste subject to regulation.)</p> <p>Verify that oil-contaminated soil is handled according to the following guidelines:</p> <ul style="list-style-type: none"> <li>- oil spill cleanup debris contaminated with virgin petroleum products is disposed of only at a special solid waste facility within a licensed sanitary landfill</li> <li>- excavated soil contaminated with material from unknown or waste petroleum products is disposed of out of state only</li> <li>- contaminated soil determined to be nonhazardous is not transported (for disposal within Rhode Island) using a hazardous waste manifest.</li> </ul>
<p><b>HAZARDOUS WASTE TRANSPORTERS - General Requirements</b></p> <p><b>4-5.</b> Installations that transport hazardous waste must have a permit (<i>RI Rule 6.01</i>).</p>	<p>Determine if the installation transports hazardous waste offsite.</p> <p>Verify that the transport of hazardous waste offsite is done in accordance with a valid permit.</p>

**COMPLIANCE CATEGORY:**  
**Resource Conservation and Recovery Act - Subtitle C (RCRA-C)**  
**Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>4-6.</b> Transporters of extremely hazardous waste are prohibited from using specific roads within the State of Rhode Island (RI Rule 6.03(B)).</p> <p><b>4-7.</b> Transporters of hazardous waste must meet specific requirements (RI Rule 6.03(C through O), 6.04 - 6.06).</p> <p><b>4-8.</b> Transporters of hazardous waste must meet specific safety requirements (RI Rule 6.08 through 6.13).</p>	<p>Verify that roads on which the transportation of extremely hazardous waste is prohibited is posted conspicuously in the cab of each vehicle registered to the permittee.</p> <p>(NOTE: Hazardous waste that is generated on roads where the transport of extreme<sup>1</sup>, hazardous waste is prohibited may only be transported on these roads with prior Director permission.)</p> <p>Verify that hazardous waste transporters meet the following requirements.</p> <ul style="list-style-type: none"> <li>- a description of procedures for responding to spills or other emergency situations is submitted to the Department</li> <li>- vehicles are marked on both sides and the back with the name and permit number of the transporter. The markings are in contrasting colors and visible from a distance of at least 50 ft</li> <li>- the official hazardous waste transporter sticker provided by the Department is kept clean and legible</li> <li>- transporters hauling septage maintain records indicating the source and estimated volume of septage picked up, the date of shipment, and the receiving publicly owned treatment works (POTW)</li> <li>- transporters inspect the hazardous waste before accepting it</li> <li>- copies of the manifest are retained for a period of 3 yr</li> <li>- waste automotive oil is transported only with a waste oil manifest</li> <li>- all records pertinent to the transport of hazardous waste are kept for a period of 3 yr</li> <li>- personnel are prevented from wearing clothing that is contaminated with hazardous waste</li> <li>- all equipment necessary for the safe transport of hazardous waste is provided and maintained in a manner so that it is fit for the use intended by the manufacturer.</li> </ul> <p>Verify that hazardous waste transporters meet the following Federal requirements:</p> <ul style="list-style-type: none"> <li>- 49 CFR 173, 178, and 179</li> <li>- 40 CFR 263.20, <i>Transport of Hazardous Waste</i></li> <li>- 40 CFR 263.22, <i>Rail Transport of Hazardous Waste.</i></li> </ul> <p>Verify that the following requirements are met:</p> <ul style="list-style-type: none"> <li>- transporters are equipped with safety equipment necessary to minimize the chance for fire, explosion, and to protect the health and safety of personnel</li> <li>- transporters have a suitable means of communication to summon aid in an emergency</li> <li>- an eyewash apparatus (at least 1 pt) per vehicle is available</li> <li>- protective clothing and equipment are used to enable personnel to work safely with the hazardous wastes being transported</li> <li>- first-aid supplies are readily available</li> </ul>

**COMPLIANCE CATEGORY:**  
Resource Conservation and Recovery Act - Subtitle C (RCRA-C)  
Rhode Island Supplement

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>4-8. (continued)</b></p> <p><b>STORAGE AND TRANSFER FACILITIES</b></p> <p><b>4-9.</b> Installations that operate storage and transfer facilities for hazardous waste must have a permit (RI Rule 6.14).</p> <p><b>HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES (TSDFs) - Permit Requirements</b></p> <p><b>4-10.</b> Installations that operate hazardous waste TSDFs must have a permit (RI Rule 7.00).</p>	<ul style="list-style-type: none"><li>- equipment used to handle hazardous waste is decontaminated before being serviced or used for transportation of nonhazardous waste</li><li>- waste water, solutions, or residues of decontamination procedures are collected and disposed of as hazardous waste</li><li>- hazardous waste in the form of dust, powder, or fine solid is handled, stored, transported, and disposed of in closed containers</li><li>- hazardous waste capable of releasing gases, mists, or vapors in excess of existing air quality standards are handled in closed containers</li><li>- absorbent mats or materials capable of absorbing 10 percent of the hazardous wastes in the event of a leak or spill are kept on the vehicle</li><li>- tank trucks have a shovel and absorbent material to absorb small leaks as may occur when hoses are disconnected.</li></ul> <p>Verify that the installation operates hazardous waste storage and transfer facilities in accordance with a valid permit.</p> <p>Verify that storage and transfer areas have secondary containment capabilities equivalent to those required by 40 CFR 265.193.</p> <p>(NOTE: Temporary storage of hazardous waste in the transporting vehicle for up to 72 h, excluding Sundays, is allowed only if the facility has been issued a Hazardous Waste Transporter's Temporary Storage and/or Transfer Area Letter of Authorization. Such a facility would not have to obtain a permit.)</p> <p>Determine if the installation operates a hazardous waste TSDF.</p> <p>Verify that the installation operates the facility in accordance with a valid permit.</p> <p>Verify that the permit is maintained and kept legible at the facility.</p>

<b>COMPLIANCE CATEGORY:</b> <b>Resource Conservation and Recovery Act - Subtitle C (RCRA-C)</b> <b>Rhode Island Supplement</b>	
<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>HAZARDOUS WASTE TSDFs - General Requirements</b></p> <p><b>4-11.</b> Installations that operate a hazardous waste TSDFs must meet specific requirements (RI Rule 9.01 through 9.23).</p> <p><b>4-12.</b> Installations that operate hazardous waste land disposal facilities must meet specific design and operational requirements (RI Rule 10.01 through 10.02).</p>	<p>Verify that the following requirements are met:</p> <ul style="list-style-type: none"> <li>- 40 CFR 264.13, <i>General Waste Analysis</i></li> <li>- 40 CFR 264.90-100, <i>Groundwater Monitoring</i></li> <li>- 40 CFR 264.14, <i>Security</i></li> <li>- 40 CFR 264.15, <i>Inspections</i></li> <li>- 40 CFR 264.16, <i>Personnel Training</i></li> <li>- 40 CFR 264.17 and Subpart C, <i>Flammable, Reactive, or Incompatible Wastes</i></li> <li>- 40 CFR 264 Subpart C, <i>Preparedness and Prevention</i></li> <li>- 40 CFR Subpart D, <i>Contingency Plan and Emergency Procedures</i></li> <li>- 40 CFR 264.71, <i>Manifests</i></li> <li>- 40 CFR 264.72, <i>Discrepancy Reports</i></li> <li>- 40 CFR 264.73, <i>Operating Record</i></li> <li>- 40 CFR 264.75, <i>Biennial Report</i></li> <li>- 40 CFR 264 Subpart G, <i>Closure and Post-Closure</i></li> <li>- 40 CFR Subpart I, <i>Use and Management of Containers</i></li> <li>- 40 CFR Subpart J, <i>Tank Construction and Design</i></li> <li>- 40 CFR 264.77, <i>Reporting Requirements.</i></li> </ul> <p>Verify that the following applicable requirements are met:</p> <ul style="list-style-type: none"> <li>- 40 CFR 264, <i>Appropriate Standards</i></li> <li>- 40 CFR 264.221 through 230, 265.222, and 265.229, <i>Surface Impoundment Standards</i></li> <li>- 40 CFR 264.250 through 258, <i>Waste Pile Standards</i></li> <li>- 40 CFR Subpart O, <i>Incinerator Standards</i></li> <li>- 40 CFR Subpart X, <i>Miscellaneous Unit Standards</i></li> <li>- 40 CFR 264.270 through 282 and 265.272, <i>Land Treatment Facility Standards</i></li> <li>- 40 CFR 264.300 through 316, 265.310 and 265.315, <i>Landfill Standards.</i></li> </ul> <p>Verify that landfills meet the following additional requirements:</p> <ul style="list-style-type: none"> <li>- landfills are designated as Class I, II, IIIA, or IIIB</li> <li>- there is a minimum distance of 500 ft between any active portion of the facility and any surface body of water or wetland</li> <li>- bottom liners have a minimum slope of 2 percent and lead to collection sumps at low points</li> <li>- the boundaries of all active portions of the facility are at least 500 ft from any private water supply or livestock water supply</li> <li>- erosion, landslides, and slumping are minimized</li> <li>- separate cells are provided for incompatible wastes</li> <li>- gas collection and venting systems are installed</li> <li>- Class I landfills meet the following requirements: <ul style="list-style-type: none"> <li>- a two-liner system is installed</li> </ul> </li> </ul>

<b>COMPLIANCE CATEGORY:</b> <b>Resource Conservation and Recovery Act - Subtitle C (RCRA-C)</b> <b>Rhode Island Supplement</b>	
<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<b>4-12. (continued)</b>	<ul style="list-style-type: none"> <li>- a leachate monitoring, collection, and removal system is installed</li> <li>- a minimum 6 in. of sand immediately overlaying and under the membrane liner</li> <li>- the landfill accepts only wastes permitted for that type (see Appendix 4-1)</li> <li>- 40 CFR Subpart G, <i>Closure and Post-Closure requirements.</i></li> </ul>

## **Appendix 4-1**

### **Hazardous Waste Landfill Restrictions (RI Rules 10.01(G))**

**Class I Landfills may not accept:**

- Type 6: Extremely Hazardous Waste
- Type 2A: Highly Reactive Waste
- Type 3A: Highly Flammable Waste

**Class II Landfills may not accept:**

- Type 6: Extremely Hazardous Waste
- Type IA: Highly Toxic Waste
- Type 2A: Highly Reactive Waste
- Type 2B: Moderately Reactive Waste
- Type 3A: Highly Flammable Waste
- Type 3B: Moderately Flammable Waste
- Type 5: Rhode Island Special Waste

**Class III Landfills may not accept:**

- Type 6: Extremely Hazardous Waste
- Type IA: Highly Toxic Waste
- Type IB: Moderately Toxic Waste
- Type 2A: Highly Reactive Waste
- Type 2B: Moderately Reactive Waste
- Type 3A: Highly Flammable Waste
- Type 3B: Moderately Flammable Waste
- Type 5: Rhode Island Special Waste



<b>INSTALLATION:</b>	<b>COMPLIANCE CATEGORY:</b> Resource Conservation and Recovery Act Subtitle C (RCRA-C) Rhode Island Supplement	<b>DATE:</b>	<b>REVIEWER(S):</b>
<b>STATUS</b> NA C RMA	<b>REVIEWER COMMENTS:</b>		



**SECTION 5**

**RESOURCE CONSERVATION AND RECOVERY ACT,**

**SUBTITLE D (RCRA-D)**

**Rhode Island Supplement**

**SECTION 5**  
**RESOURCE CONSERVATION AND**  
**RECOVERY ACT, SUBTITLE D (RCRA-D)**  
**Rhode Island Supplement**

**Definitions**

The following definitions were obtained from the Rhode Island Department of Environmental Management (RIDEM), Division of Air and Hazardous Materials, Rules and Regulations for Solid Waste Management Facilities (RIDEM 23-18.9-3). \*

- *Apparent Opening Size* - the number of the U.S. Bureau of Standards sieve, or its opening size in millimeters or inches, with openings closest in size to the diameter of uniform particles which will allow 5 percent or less by weight to pass through.
- *Aquifer* - a geologic formation, group of formations, or part of a formation that contains sufficient saturated, permeable material to yield significant quantities of water to wells and springs.
- *Ash Residue* - all the solid residue and any entrained liquids resulting from the combustion of solid waste, or solid waste in combination with fossil fuel at a solid waste incinerator, including bottom ash, boiler ash, fly ash, and the solid residue of any pollution control device used at a solid waste incinerator.
- *Base Flood* - a flood that has a 1 percent or greater chance of recurring in any year or a flood of magnitude equaled or exceeded once in 100 yr on the average over a significantly long period.
- *Battery* - batteries used in any vehicle, with a capacity of 6 V or more and of 150 lb or less in weight, and batteries meeting this description in stationary uses.
- *Bedrock* - solid rock, commonly called ledge, that forms the earth's crust.
- *Biologicals* - preparations made from living organisms and their products, including vaccines, cultures, etc., intended for use in diagnosing, immunizing, or treating humans or animals or in research.
- *Bird Hazard* - an increase in the likelihood of bird/aircraft collisions that may cause damage to the aircraft or injury to its occupants.
- *Blood Products* - any product derived from human blood, including but not limited to: blood plasma, platelets, red or white blood corpuscles, and other derived licensed products, such as interferon.
- *Body Fluids* - liquid emanating or derived from humans and limited to blood; cerebrospinal, synovial, pleural, peritoneal, and pericardial fluids; dialysate and amniotic fluids; and semen and vaginal secretions but excluding feces, urine, nasal secretions, sputum, sweat, tears, vomitus, saliva, and breast milk, unless any such excluded substance contains visible blood or its isolation waste.
- *Bottom Ash* - the ash residue remaining after combustion of solid waste, or solid waste in combination with fossil fuel in a solid waste incinerator that is discharged through and from the grates, combustor, or stoker.

- **Bulky Waste** - large items of solid waste, such as appliances, furniture, auto parts, stumps, etc.
- **Bypass Waste** - any solid waste that is either within the control of the operator of a solid waste incinerator or processing facility or within the control of another person, that requires treatment at the facility but cannot be so treated; includes **Downtime Waste and Excess Waste** .
- **Cell** - compacted solid wastes that are completely enclosed by natural soil or cover material.
- **Central Collection Point** - a location where a generator consolidates regulated medical waste brought together from original generation points prior to its transport offsite to a transfer facility, an intermediate handler, or a destination facility.
- **Coefficient of Permeability** - the rate of laminar flow of water through a unit cross-sectional area of a porous medium under a unit hydraulic gradient at a standard temperature. The units are expressed in centimeters per second.
- **Collection Station** - a solid waste management facility where refuse arrives by automobile or vehicles other than collection vehicles from sites separate from the collection station for transfer to another solid waste management facility.
- **Combined Ash** - the mixture of bottom ash and fly ash.
- **Combustion** - the thermal treatment of solid waste in a device which uses elevated temperatures as the primary means to change the chemical, physical, or biological character and composition of the waste.
- **Commercial Waste** - solid waste generated by stores, offices, institutions, restaurants, warehouses, and activities at industrial facilities.
- **Composting Facility** - a solid waste management facility used to provide aerobic, thermophilic decomposition of solid organic constituents of solid waste to produce a stable, humus-like material of commercial marketable quality.
- **Construction Certification Report** - a report submitted to the Department (RIDEM) upon completion of the construction of a solid waste management facility which includes the resulting information prepared in accordance with the requirements of this Rule and the license issue thereto.
- **Construction and Demolition Processing Facility** - a recyclables handling and recovery facility which receives and processes construction and demolition debris by any means, for the purpose of recovering recyclables and marketing them for value.
- **Construction Waste** - waste building material resulting from construction, remodeling and repair operations on houses, commercial buildings, pavements, and other structures.
- **Cover Material** - clean soil, earth, or other material approved by the Director that is used to cover compacted solid waste in a sanitary landfill.
- **Critical Habitat** - a threatened or endangered species as defined in Federal law and the State Species of Concern as identified by the Natural Heritage Program.
- **Decontamination** - the process of substantially reducing or eliminating the presence of harmful substances such as infectious agents, so as to substantially reduce the likelihood of disease transmission from those substances.

- *Demolition Waste* - solid waste generated from the razing of buildings and other manmade structures.
- *Department* - the Rhode Island Department of Environmental Management.
- *Destination Facility* - a facility that both treats and destroys regulated medical waste to which a consignment of medical waste is shipped.
- *Destroyed Regulated Medical Waste* - regulated medical waste that has been ruined, torn apart, or mutilated through processes so that it is no longer generally recognizable as medical waste.
- *Destruction or Adverse Modification* - a direct or indirect alteration of a critical habitat which appreciably diminishes the likelihood of the survival and recovery of the threatened or endangered species using that habitat.
- *Destruction Facility* - a facility that destroys regulated medical waste by ruining, mutilating, or tearing it apart.
- *Director* - the Director of the Rhode Island Department of Environmental Management and his or her designee.
- *Disposal* - the abandonment, discard, or final disposition of waste.
- *Domestic Sewage* - any human excremental liquid or substance; any putrescible vegetable matter, garbage, and filth which is disposed of by means of a septic system or sanitary sewer.
- *Downtime Waste* - any treatable or burnable solid waste accumulated during a scheduled or unscheduled maintenance period of the facility.
- *Endangered or Threatened Species* - as defined in the *Federal Endangered Species Act* and including the State Species of Concern as identified by the National Heritage Program.
- *Energy Recovery* - treatment by which energy is derived or extracted from solid waste.
- *Energy Recovery Incinerator* - an incinerator in which household waste and nonhazardous industrial/commercial waste are combusted for energy production.
- *Excess Waste* - solid waste which cannot be treated because the facility is operating at the approved design capacity.
- *Excluded Regulated Medical Wastes* - the following medical wastes are specifically excluded from the definition of regulated medical wastes:
  1. hazardous waste
  2. household medical waste
  3. incinerator ash and treatment/destruction
  4. human remains
  5. etiologic agents
  6. enforcement samples.
- *Final Cover* - cover material which will be permanently exposed to the environment.

- **Fly Ash** - the ash residue from the combustion of solid waste or solid waste in combination with fossil fuel that is entrained in the gas stream of a solid waste combustion facility and removed by the air pollution control equipment.
- **Friable Asbestos Material** - any material that contains more than 1 percent asbestos by weight and can be crumbled, pulverized, or reduced to powder when dry, by hand pressure.
- **Generator** - any person whose act or process produces a solid waste or whose act first causes solid waste to be subject to regulation under this title.
- **Geocomposite** - a manufactured material using geotextiles, geogrids, geomembranes, or combinations of same, in a laminated or composite form.
- **Geogrid** - a deformed or nondeformed netlike polymeric material used with foundation, soil, rock, earth, or any other geotechnical engineering-related material as an integral part of the man-made structure or system to provide reinforcement to soil slopes.
- **Geomembrane** - an essentially impermeable membrane used with foundation, soil, rock, earth, or any other geotechnical engineering-related material as an integral part of a man-made structure or system designed to limit the movement of liquid or gas in the system.
- **Geonet** - a type of geogrid that allows planar flow of liquids and serves as a drainage system.
- **Geosynthetics** - the generic classification of all synthetic materials used in geotechnical engineering application, including geotextiles, geogrids, geomembranes, and geocomposites.
- **Geotextiles** - any permeable textile used with foundation, soil, rock, earth, or any other geotechnical engineering-related material as an integral part of a man-made structure or system designed to act as a filter to prevent the flow of soil fines into drainage systems, to provide planar flow for drainage, or to serve as a cushion to protect geomembranes, or to provide structural support.
- **Geotextile Filter Openings** - sized in accordance with the following criteria that take into consideration the soil found in layers located adjacent to the geotextile filter:
  1.  $O_{95}$  of the geotextile<sub>85</sub> of this soil  $< 2$  and
  2.  $O_{95}$  of the geotextile<sub>15</sub> of this soil  $> 2$ .

The  $d_{85}$  is the soil particle size at which 85 percent of the particles are finer. The  $d_{15}$  is the soil particle size at which 15 percent of the particles are finer. The  $O_{95}$  is the apparent opening size of the geotextile at which 95 percent of the soil particles will pass.

- **Groundwater** - water found underground that completely fills the open spaces between particles of sediment and within rock formations.
- **Groundwater Recharge Area** - the land surface from which water is added to the zone of saturation. The recharge area for a particular well or aquifer, for instance, is that land surface from which water moves to a well or aquifer or may move to the well or aquifer under certain hydraulic conditions.
- **Groundwater Reservoir** - those stratified drift deposits having a saturated thickness greater than or equal to 40 ft and a transmissivity greater than or equal to 4000 ft<sup>2</sup>/day which have been determined by the Director to be potentially significant sources of water.

- **Hard-to-dispose Material** - Includes the following materials:

1. petroleum-based or synthetic lubricating oils
2. tires used on motorized vehicles and trailers
3. glycol-based antifreeze
4. organic solvents.

A petroleum-based or synthetic lubricating oil that is recycled and/or refined is not a hard-to-dispose material.

- **Hazardous Waste** - any waste defined under state or Federal law as hazardous.
- **Hydraulic Conductivity** - see Coefficient of Permeability.
- **Infectious Agent** - any organism that is capable of being communicated by invasion and multiplication in body tissues and capable of causing disease or adverse health impacts in humans.
- **Impermeable Liner** - a layer of natural or manmade material of sufficient thickness, density, and composition so as to impede the passage of a fluid to a degree that will satisfy that standards required by the Department. For natural materials, this standard should be  $1 \times 10^{-7}$  cm/s. For manmade materials, this standard should be  $1 \times 10^{-12}$  cm/s.
- **Incinerator** - an arrangement of chambers and equipment designed for burning solid, semi-solid, or gaseous combustible waste to a gas and residue. Incinerators used only for the combustion of solid waste generated onsite are not covered by this definition.
- **Initial Cover** - cover material that is spread and compacted on the top, side slopes, and the face of the compacted solid waste at least at the end of each operating day.
- **Intermediate Cover** - cover material that must resist erosion for a longer period of time because it is applied in areas where additional cells are not to be constructed for extended periods of time.
- **Intermediate Handler** - a facility that either treats medical wastes or destroys them but does not do both.
- **Landfill Cell** - a discrete volume of a landfill which uses a liner system to provide isolation of solid waste from adjacent cells of solid waste.
- **Landfill Gas Recovery Facility** - a facility in which gases produced from the decomposition of solid wastes are collected for the purpose of the control of landfill gas migration and/or for the recovery of energy.
- **Landfill Subgrade** - the uppermost *in-situ* soil layer or select fill that must be graded and prepared for landfill construction.
- **Leachate** - a liquid that has percolated through, or originated in solid waste, and is presumed by these regulations to contain dissolved or suspended materials from solid waste.
- **Licensing Agency** - the Rhode Island Department of Environmental Management.
- **Lift** - a compacted layer of solid waste plus its overlying cover material in a sanitary landfill.

- *Liner System* - a continuous layer of natural and manmade materials, beneath or on the sides of a surface impoundment, landfill, or landfill cell, which restricts the downward or lateral escape of solid waste, any constituents of such wastes, or leachate, and which complies with these regulations.
- *Low Permeability Barrier Soil Covers* - a layer of low permeability soil constructed to minimize precipitation migration into the landfill.
- *Lower Explosive Limit* - the lowest percent by volume of a mixture of explosive gases in the air that will propagate a flame at 25 degrees Celsius and atmospheric pressure.
- *Materials Recovery Facility or Intermediate Processing Facility* - a facility that accepts co-mingled recyclables from residents and mechanically separates recyclables for sale to brokers, manufacturers, or other market outlets. A minimum of 90 percent of the material received must be sold to market; no more than 10 percent of the material may be residual solid waste.
- *Medical Waste* - any solid waste which is generated in the diagnosis, treatment, immunization of human beings or animals, in research, or in the production or testing of biologicals.
- *Monofill* - a landfill or landfill cell into which only one homogeneous type of waste is placed.
- *Nonhazardous Liquid and Semi-Liquid Waste* - any discarded material that is liquid or semi-liquid, and which is not hazardous waste.
- *Notification Number* - the Medical Waste Transporter Notification Number issued by the State of Rhode Island for the transportation of regulated medical wastes.
- *Oil Spill Cleanup Debris* - waste resulting from the cleanup of debris caused by spilling, depositing, or placing of petroleum distillates, including but not limited to: crank case oil, lubricants, hydraulic oil, penetrant oils, tramp oils, quenching oils, kerosene, gasoline, aviation fuels, diesel, and Nos. 2, 4, and 6 heating oil, onto the land or into the waters of the state.
- *Open Burning* - the combustion of solid waste without the following:
  1. control of combustion air to maintain adequate temperature for efficient combustion
  2. containment of the combustion reaction in an enclosed device to provide sufficient residence time and mixing for complete combustion
  3. control of the emission of the combustion products.
- *Operating a Solid Waste Management Facility* - receiving solid waste at any facility, whether knowingly or unknowingly. For purposes of disposal, such receipt must be in an amount greater than 3 yd<sup>3</sup>.
- *Person* - an individual, firm, jointstock company, partnership, association, private or municipal corporation, government or quasi-governmental corporation, state, commission, political subdivision of a state, any interstate body, or the Federal government.
- *Petroleum Contaminated Soil* - soil that is contaminated from an aboveground or underground leak or spill of unused (virgin) petroleum products. The petroleum products include:
  1. unused distillate and residual oil including, but not limited to: gasoline, aviation fuels, kerosene, diesel, and Nos. 2, 4, and 6 heating oil
  2. unused crankcase oil, lubricants, hydraulic oils, penetrant oils, tramp oils, quench oils, and other industrial oils.

- **Pollutant** - any material or effluent which may alter the chemical, physical, biological, or radiological characteristics and/or integrity of water, including but not limited to: dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, cellar dirt, or industrial municipal, agricultural, or other waste, and petroleum or petroleum products, including but not limited to oil.
- **Pollution** - the entrance or discharge of any pollutant into any waters of the state including groundwaters, in such quantity, either by itself or in connection with other materials discharged, as to alter the physical, chemical, biological, or radiological characteristics and/or integrity of the waters, including change in temperature, taste, color, turbidity, or odor, and, to cause or to be likely to cause damage to the public, or to any person having a right to use the waters for human consumption, commercial or domestic uses, for boating, fishing, or other purposes, or owning property in, under, or bordering on these waters.
- **Prohibited Facilities** - the following facilities are prohibited from operating in the State of Rhode Island and must meet all applicable enforcement actions:
  1. facilities that accept or store co-mingled recyclables, including wood waste and construction and demolition debris, without the ability or equipment to process the material in accordance with all applicable regulations
  2. facilities that accumulate material speculatively and/or facilities that accept or store co-mingled recyclables and operate outside the confines of a closed structure.
- **Project Engineer** - the official representative of the permittee who is licensed to practice engineering in the State of Rhode Island, who is responsible for observing, documenting, and certifying that activities related to the quality assurance of the construction of the solid waste management facility conform to the engineering design contained in the permit to construct and the regulations specified in these regulations. All certifications must bear his/her seal, signature, and the date of certification.
- **Putrescible Waste** - solid waste which contains organic matter capable of being decomposed by microorganisms, is not being composted, and is of such character and proportion as to be putrid and/or capable of attracting or providing food for vectors or birds.
- **Quality Assurance** - the application of standards and procedures to ensure that a product or facility meets or exceeds desired performance criteria and has documentation to verify the results obtained. Quality assurance includes quality control and refers to actions taken to assure conformity of the construction with the Department-approved quality assurance plan, engineering plans, reports, and specifications.
- **Quality Control** - those actions which provide a means to measure and regulate the characteristics of an item or service to contractual and regulatory requirements. Quality control includes those actions taken before construction to ensure that the materials chosen and workmanship comply with the Department-approved quality control plan, engineering plans, reports, and specifications.
- **Recycling** - the reuse of recovered resources in manufacturing, agriculture, power production, or other processes.
- **Recyclable** - any material listed as recyclable in the Rhode Island commercial or municipal recycling regulations, the Rhode Island Battery Deposit and Control Regulations, or oil subject to the hard-to-dispose-of tax.
- **Recyclable Battery** - a battery that is not suitable for sale or for reconditioning to supply electrical power.



- **Refuse-Derived Fuel** - treated solid waste that is used as fuel.
- **Refuse-Derived Fuel Processing Facility** - the combination of structures, machinery, or devices used to reduce or alter the volume of mixed solid waste before delivery to a solid waste incinerator.
- **Regulated Medical Waste** - a special category of solid waste that includes specific types of medical waste subject to handling and tracking requirements. Regulated medical wastes mixed with nonhazardous solid wastes are considered regulated medical wastes. Regulated waste is any waste generated in the diagnosis, treatment, immunization of human beings or animals, in research, or in the preparation of human remains for burial or cremation, in the production or testing of biologicals, or in the development of pharmaceuticals. Regulated medical waste includes the following:
  1. cultures and stocks of infectious agents and associated biologicals
  2. pathological wastes
  3. human blood and blood products
  4. sharps that have been used in animal or human patient care or treatment
  5. animal waste
  6. isolation waste
  7. unused sharps
  8. spill/cleanup material
  9. mixtures.
- **Release** - any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment. Releases also include any storage, disposal, or abandonment of any substance or material in a manner which presents a substantial threat of release.
- **Residue** - any solid that remains after completion of solid waste processing including incineration products such as bottom ash, fly ash, and grate siftings.
- **Saleable Battery** - a new, reconditioned, or used battery that is offered for sale or is sold for use to supply electrical power.
- **Sanitary Landfill** - a licensed land disposal site employing an engineered method of disposal of solid waste in a manner that absolutely minimizes environmental hazards, including:
  1. spreading the solid waste in thin layers, compacting the solid waste to the smallest practical volume, and applying cover material at the end of each operating day, or at more frequent intervals as necessary.
- **Sanitary Sewer** - the collection system that transports domestic sewage and waste waters to a municipal treatment facility.
- **Segregated Solid Waste** - useful material that has been separated from the waste stream at the point of generation for the purpose of recovering and recycling these materials.
- **Septic Waste** - any solid, liquid, or semi-solid waste removed from septic tanks or cesspools, lagoons, trucks, or other sources.
- **Sewage Sludge** - a semi-liquid substance consisting of settled sewage solids combined with water and dissolved materials in varying amounts.

- **Solid Waste** - garbage, refuse, and other discarded solid materials generated by residential, institutional, commercial, industrial, and agricultural sources but does not include solids or dissolved material in domestic sewage or sewage sludge, nor does it include hazardous waste. For the purposes of these regulations, solid waste also includes nonhazardous liquid, semi-solid, and containerized gaseous wastes subject to any special conditions spelled out in these regulations.
- **Solid Waste Management Facility** - any plant, structure, equipment, real and personal property, except mobile equipment or incinerators with a capacity of less than 1000 lb/h, owned or operated for the purpose of processing, treating, or disposing of solid waste.
- **Spill** - any planned or unplanned release, leaking, pumping, pouring, emitting, or depositing of regulated medical waste.
- **State** - the State of Rhode Island.
- **Steam Sterilization** - a treatment method for regulated medical waste using saturated steam within a pressure vessel at time lengths and temperatures sufficient to kill infectious agents within the waste.
- **Surface Public Water Supply** - surface water that supplies piped water for human consumption by means of a system having at least 15 service connections or regularly serving at least 25 individuals for at least 60 days of the year.
- **Surface Water** - a body of water whose top surface is exposed to the atmosphere, including rivers, ponds, lakes, etc.
- **Toe** - the bottom of the working face or side slope of a land disposal site where deposited solid waste is in contact with virgin ground or a previous lift.
- **Tracking Form** - origin, routing, and destination of regulated medical wastes during transportation from the the Medical Waste Tracking Form used for identifying the quantity, composition, and the facility of generation to the point of transfer, disposal, treatment, destruction, or storage.
- **Transfer Station** - a solid waste management facility, other than a materials recovery facility or intermediate processing facility, that generates 10 percent or less residual solid waste, and that can have a combination of structures, machinery, or devices where solid waste is taken from collection vehicles and placed in other transportation units for movement to another solid waste management facility.
- **Treated Regulated Medical Waste** - regulated medical waste that has been treated to substantially reduce or eliminate its potential for causing disease, but which has not yet been destroyed.
- **Used Battery** - a battery which, by reconditioning, can be made salable.
- **Vector** - a carrier, usually an insect or rodent, that is capable of transmitting a pathogen from one organism to another.
- **Vehicle** - every vehicle which is self-propelled and designed for carrying persons or property, or which is used for the transportation of persons, including (but not limited to) buses, automobiles, trucks, boats, motorcycles, farm, lawn, and garden equipment, and snowmobiles.
- **Washout** - the carrying away of solid waste by waters of the base flood.
- **Waste** - discarded or abandoned solid, semi-solid, or liquid material.

- *Waste Category* - either untreated or treated regulated medical waste.
- *Waste Management* - actions taken to effectuate the receipt, storage, transportation, processing for resource recovery, recycling, and/or the ultimate disposal of solid waste.
- *Water Table* - the upper surface of the zone of saturation in an unconfined aquifer.
- *Wellhead Protection Area* - a three-dimensional zone, designated by the Director, surrounding a public well or wellfield through which water will move toward and reach such well or wellfield.
- *Working Face* - that portion of a land disposal site where solid waste is discharged by collection and/or hauling vehicles, and is spread and compacted before to placement of cover material.

# RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D (RCRA-D)

## GUIDANCE FOR RHODE ISLAND CHECKLIST USERS

<b>Applicability:</b>	<b>Refer to Checklist Items:</b>
Licensing	5-1
General Operating Standards	5-2 through 5-16
Sanitary Landfill Construction Standards	5-17 through 5-40
Sanitary Landfill Operating Standards	5-41 through 5-57
Incinerator and Resource Recovery Facility Design Standards	5-58 through 5-80
Incinerator and Resource Recovery Facility Operating Standards	5-81 through 5-93
Transfer Stations and Collection Stations Operating Standards	5-94 through 5-98
Waste Tire Storage and Recycling Facility Operating Standards	5-99 through 5-105
Petroleum Contaminated Soil Processing Facilities	5-106 through 5-110
Recycling	5-111 through 5-114
Medical Wastes - Generators	5-115 through 5-126
Medical Wastes - Transporters	5-127 through 5-135
Medical Wastes - Treatment, Destruction, and Destination Facilities	5-136 through 5-141



**COMPLIANCE CATEGORY:  
Resource Conservation and Recovery Act - Subtitle D (RCRA-D)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>LICENSING</b></p> <p><b>5-1.</b> Solid waste management facilities must obtain licenses from the appropriate licensing agency (RIDEM Section 23- 4.01).</p> <p><b>GENERAL OPERATING STANDARDS</b></p> <p><b>5-2.</b> Solid waste management facilities must not cause water pollution (RIDEM Section 23 - 4.02).</p> <p><b>5-3.</b> Solid waste management facilities must not cause air pollution (RIDEM Section 23 - 4.03).</p> <p><b>5-4.</b> Solid waste management facilities must not dispose of low level radioactive waste (RIDEM Section 23 - 4.04).</p>	<p>Determine if the facility is a solid waste management facility.</p> <p>Verify that the facility has a license to operate from the appropriate licensing agency.</p> <p>Verify that each type of solid waste management facility meets any additional licensing requirements specific to that type of facility.</p> <p>Verify that the license is posted in a conspicuous place at the facility and is legible and protected from the weather.</p> <p>Verify that the solid waste management facility does not violate the state or Federal water pollution requirements.</p> <p>Verify that the facility does not cause pollution of the groundwater beyond the licensed area of the facility.</p> <p>Verify that the facility meets all applicable requirements of the <i>Federal Clean Water Act</i> (CWA).</p> <p>Verify that the facility does not do any open burning.</p> <p>Verify that the facility does not violate the following air standard requirements:</p> <ul style="list-style-type: none"> <li>- appropriate state implementation plans</li> <li>- the <i>Federal Clean Air Act</i> (CAA)</li> <li>- the <i>State Air Pollution Control Act</i>.</li> </ul> <p>Verify that the facility does not emit or cause to be emitted into the atmosphere any air containment or combination of air contaminants which create an objectionable odor beyond the property line of the facility.</p> <p>Verify that the facility does not dispose of low-level radioactive waste.</p> <p>Verify that low-level radioactive waste is managed according to all applicable state requirements.</p>

<b>COMPLIANCE CATEGORY:</b> <b>Resource Conservation and Recovery Act - Subtitle D (RCRA-D)</b> <b>Rhode Island Supplement</b>	
<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>5-5.</b> Solid waste management facilities must meet specific access requirements (RIDEM Section 23-13.02).</p>	<p>Verify that access to the facility is limited to the hours in which authorized operating personnel are on duty.</p> <p>Verify that additional time is designated before and after normal operating hours to allow for housekeeping chores.</p> <p>(NOTE: There should be no access to the facility for the acceptance of solid waste during the time designated for housekeeping chores.)</p>
<p><b>5-6.</b> Solid waste management facilities must meet salvage requirements (RIDEM Section 23-13.03).</p>	<p>Verify that only controlled removal and handling of waste for use is permitted at the site.</p> <p>Verify that material to be salvaged is unloaded at a salvage area.</p> <p>Verify that the salvaging of refuse is conducted in a manner that does not impede the proper operation of the facility and ensures the health and safety of persons involved.</p>
<p><b>5-7.</b> Solid waste management facilities must meet specific requirements for processing bulky wastes (RIDEM Section 23-13.04).</p>	<p>Verify that all capacitors are removed before processing or disposal.</p> <p>Verify that the facility stores the removed capacitors in Department of Transportation (DOT)-approved 55-gal drums with attachable covers.</p> <p>Verify that the DOT-approved drums meet the following requirements:</p> <ul style="list-style-type: none"> <li>- contain 6 in. layer of an approved absorbent material at the bottom</li> <li>- secure the attachable drum cover at the end of each working day or before the drum is transported by any means.</li> </ul> <p>Verify that the storage, transportation, and final disposal of drums containing capacitors are in accordance with all applicable state and Federal regulations.</p> <p>Verify that the procedures for identifying, removing, storing, and disposing of chlorinated fluorocarbons (CFCs or freon) is outlined in the facility operating plan.</p> <p>(NOTE: Disposal facilities may contract with outside vendors to meet the applicable requirements. Details of the contract must be included in the facility operating plan.)</p>
<p><b>5-8.</b> Solid waste management facilities must take steps to control the vector population (RIDEM Section 23-13.05).</p>	<p>Verify that the onsite vector population is minimized by periodic application of cover material and other appropriate techniques that will protect the public health.</p> <p>Verify that sanitary conditions are maintained to prevent the harboring, feeding, and breeding of vectors.</p> <p>Verify that, where needed, insect and rodent control is effected by a program directed by a professional exterminator or other means approved by the Department.</p>

**COMPLIANCE CATEGORY:  
Resource Conservation and Recovery Act - Subtitle D (RCRA-D)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>5-9.</b> Solid waste management facilities must be posted with appropriate signs (RIDEM Section 23-13.06).</p> <p><b>5-10.</b> Solid waste management facilities must maintain a suitable means of communication (RIDEM Section 23-13.07).</p> <p><b>5-11.</b> Solid waste management facilities must take special care with endangered species (RIDEM Section 23-13.08).</p> <p><b>5-12.</b> Solid waste management facilities must take the appropriate measures to control dust (RIDEM Section 23-13.10).</p> <p><b>5-13.</b> Solid waste management facilities must take the appropriate measures to control litter (RIDEM Section 23-13.11).</p>	<p>Verify that a sign is erected at the entrance to the facility which clearly, legibly, and visibly displays the following information:</p> <ul style="list-style-type: none"> <li>- name of facility and operator</li> <li>- emergency phone number</li> <li>- restricted materials, if applicable</li> <li>- operating hours.</li> </ul> <p>Verify that the facility erects an adequate number of directional signs within the facility to do the following:</p> <ul style="list-style-type: none"> <li>- direct drivers to the appropriate unloading area</li> <li>- assist in traffic control</li> <li>- regulate speed.</li> </ul> <p>Verify that the facility maintains a suitable means of communication for the facility.</p> <p>Verify that the facility does not cause or contribute to the taking of any endangered or threatened species.</p> <p>Verify that the facility does not cause or contribute to the destruction or adverse modification of the critical habitat of endangered or threatened species.</p> <p>Verify that the facility meets all applicable state and Federal regulations with regards to endangered species and their habitats.</p> <p>Verify that the facility takes suitable measures to control dust at the facility, access roads to the facility, and all other areas related to the facility's operation.</p> <p>Verify that the dust control is accomplished by one of the following measures:</p> <ul style="list-style-type: none"> <li>- spraying small amounts of water over the dust-producing areas</li> <li>- applying suitable chemicals</li> <li>- applying paving materials on access roads.</li> </ul> <p>Verify that the facility takes the appropriate measures to eliminate the scattering of refuse.</p> <p>Verify that the facility provides for routine maintenance and general cleanliness in all areas related to operation.</p>



<b>COMPLIANCE CATEGORY:</b> <b>Resource Conservation and Recovery Act - Subtitle D (RCRA-D)</b> <b>Rhode Island Supplement</b>	
<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>5-14.</b> Solid waste management facilities must take necessary safety precautions (RIDEM Section 23-13.12).</p> <p><b>5-15.</b> Solid waste management facilities must operate according to all approved operating and engineering plans (RIDEM Section 23-13.13).</p> <p><b>5-16.</b> Solid waste management facilities must follow specific closure procedures (RIDEM Section 23-13.14).</p> <p><b>SANITARY LANDFILL CONSTRUCTION STANDARDS</b></p> <p><b>5-17.</b> Solid waste landfills must meet specific construction prohibitions (RIDEM 23-18.9-9.1(b)).</p>	<p>Verify that the facility is designed, operated, and maintained to protect the health and safety of others.</p> <p>Verify that the facility does not pose a bird hazard to aircraft.</p> <p>Verify that the facility operates according to all approved operating and engineering plans.</p> <p>Verify that any variances from the approved plans have prior written approval from the Director.</p> <p>Verify that the facility has an approved closure plan.</p> <p>Verify that the facility notifies the Department of its intent to close at least 3 mo before the anticipated closure date.</p> <p>Verify that the facility implements the approved closure plan.</p> <p>Verify that any requests for deviation from the approved plan are in writing and have received written approval from the Department before implementation.</p> <p>Verify that the facility notifies the Department after the full implementation of the closure plan.</p> <p>Verify that a professional engineer registered in the State of Rhode Island certifies that the facility is properly closed in accordance with the approved closure plan.</p> <p>Determine if the facility is a landfill.</p> <p>Verify that landfills are not constructed in the following areas:</p> <ul style="list-style-type: none"> <li>- watersheds of existing surface drinking water supplies</li> <li>- watersheds of the proposed Big River Reservoir</li> <li>- groundwater recharge areas</li> <li>- 100-yr flood plains</li> <li>- areas within 200 ft of the coast and/or coastal high hazard areas</li> <li>- areas designated by the National Oceanic and Atmospheric Administration (NOAA) of the U. S. Department of Commerce as a National Estuarine Sanctuary</li> </ul>

**COMPLIANCE CATEGORY:  
Resource Conservation and Recovery Act - Subtitle D (RCRA-D)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>5-17. (continued)</b></p> <p><b>5-18. Sanitary landfills must meet horizontal and vertical control standards (RIDEM Section 23-14.02).</b></p> <p><b>5-19. Sanitary landfills must meet specific liner system requirements (RIDEM Section 23-14.03).</b></p>	<ul style="list-style-type: none"> <li>- coastal barriers</li> <li>- wellhead protection areas as designated by the Director.</li> </ul> <p>Verify that the facility is located at least 1200 ft from the center line of freshwater rivers, as determined by the State Planning Council.</p> <p>Verify that 1 permanent survey benchmark of known elevation measured from the National Geodetic Vertical Datum of 1929 is established and maintained for each 25 acres of developed landfill.</p> <p>Verify that the benchmark is the reference point for establishing vertical elevation control.</p> <p>Verify that North American Datum (NAD) of 1983 Coordinates are established.</p> <p>Verify that horizontal control is established and one of its points is the benchmark of known NAD 1983 Coordinates.</p> <p>Verify that the liner system consists of one of the following:</p> <ul style="list-style-type: none"> <li>- for landfill slopes less than or equal to 25 percent: <ul style="list-style-type: none"> <li>- a double composite liner separated by a secondary leachate collection and removal system</li> </ul> </li> <li>- for landfill slopes greater than 25 percent: <ul style="list-style-type: none"> <li>- an upper geomembrane liner and a lower composite liner separated by a secondary leachate collection and removal system.</li> </ul> </li> </ul> <p>Verify that the composite liner consists of the following components:</p> <ul style="list-style-type: none"> <li>- an upper geomembrane liner</li> <li>- a low permeability soil layer.</li> </ul> <p>Verify that the double composite liner system includes a primary leachate collection and removal system.</p> <p>Verify that the primary leachate and collection system lies above the primary (upper) composite liner and consists of a 24-in. granular soil layer with a leachate collection pipe network.</p> <p>Verify that the primary composite liner consists of a geomembrane that directly overlays an 18-in. permeability soil layer.</p> <p>Verify that the secondary leachate collection and removal system consists of one of the following:</p> <ul style="list-style-type: none"> <li>- a leachate collection pipe network with a 12-in. granular soil layer</li> <li>- an effective layer of geosynthetic material.</li> </ul> <p>Verify that the secondary composite liner consists of a geomembrane that directly overlays a 24-in. low permeability soil layer.</p>

**COMPLIANCE CATEGORY:  
Resource Conservation and Recovery Act - Subtitle D (RCRA-D)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>5-20.</b> Sanitary landfills must design leachate collection and removal systems to meet specific requirements (RIDEM Section 23-14.04).</p>	<p>Verify that the means of assessing leachate flows in the primary and secondary leachate collection and removal systems are detailed in engineering plans and reports.</p> <p>Verify that the primary collection and removal system is hydraulically designed to remove leachate from the landfill and ensure that the leachate head over the primary composite liner does not exceed 1 ft at expected flow capacity, except during storm events.</p> <p>Verify that the secondary leachate collection and removal system is located between the upper and lower liner systems to effectively collect and rapidly remove leachate from the lower liner system.</p> <p>Verify that the leachate collection and removal systems are designed to allow for representative sampling of leachate.</p> <p>Verify that the leachate collection and removal systems are designed to operate without clogging during the effective site life and postclosure maintenance period of the facility.</p> <p>Verify that all pipes located in the primary leachate collection and removal system are designed to allow for accessibility of equipment for routine cleaning and maintenance.</p> <p>Verify that all leachate conveyance lines outside the double composite liner system are designed to have double containment and are constructed to provide for leak detection and collection.</p> <p>(NOTE: The double containment and leak detection provisions must be maintained along the entire length of conveyance line(s) handling only leachate or other liquid wastes associated with the design of the landfill.)</p> <p>Verify that the leachate collection and removal systems meet all applicable design and construction requirements.</p>
<p><b>5-21.</b> The landfill subgrade in a sanitary landfill must meet construction requirements (RIDEM Section 23-14.05).</p>	<p>Verify that a foundation analysis of the landfill subgrade is conducted to determine the structural integrity of the subgrade.</p> <p>Verify that the subgrade is free of organic material and consists of onsite soils, or other soils approved by the Department.</p> <p>Verify that the landfill subgrade is graded according to the engineering plans.</p> <p>Verify that the subgrade is constructed of material that is sufficiently dry and structurally sound to ensure adequate compaction.</p> <p>Verify that the project engineer visually inspects the exposed surface to ensure compliance with all applicable requirements before placing any material over the subgrade.</p>

<b>COMPLIANCE CATEGORY:</b> <b>Resource Conservation and Recovery Act - Subtitle D (RCRA-D)</b> <b>Rhode Island Supplement</b>	
<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>5-21. (continued)</b></p> <p><b>5-22.</b> The soil component of the liner system in a sanitary landfill must meet specific design and construction requirements (RIDEM Section 23-14.06).</p>	<p>Verify that the subgrade is proof-rolled according to Departmental requirements.</p> <p>Verify that the subgrade is tested for density and moisture content at a minimum frequency of five tests per acre.</p> <p>Verify that the soil component of the liner system is a continuous layer of low permeability soil constructed to control fluid migration.</p> <p>Verify that the primary composite liner is constructed in the following manner:</p> <ul style="list-style-type: none"> <li>- a minimum compacted thickness of 18 in.</li> <li>- the top 6 in. directly below and in contact with the upper geomembrane liner must have a maximum remolded coefficient of permeability of <math>1 \times 10^{-7}</math> cm/s</li> <li>- the lower 12 in. of soil must be compacted to achieve a maximum remolded coefficient of permeability of <math>1 \times 10^{-5}</math> cm/s</li> <li>- the lower 12 in. of the soil must be placed without damaging any geosynthetic or secondary leachate collection and removal system components below the primary composite liner</li> <li>- free of particles greater than 3 in. in any dimension.</li> </ul> <p>Verify that the secondary composite liner is constructed of the following manner:</p> <ul style="list-style-type: none"> <li>- at least 24 in. in compacted thickness</li> <li>- maximum remolded coefficient of permeability of <math>1 \times 10^{-7}</math> cm/s throughout its thickness</li> <li>- free of particles greater than 3 in. in dimension.</li> </ul> <p>Verify that the soil component of the liner system is placed on a slope of no less than 2 percent and no greater than 33 percent.</p> <p>Verify that compaction is performed by properly controlling the moisture content, lift thickness, and other necessary details to obtain satisfactory results.</p> <p>Verify that the maximum final compacted thickness of each lift of soil material is 6 in.</p> <p>(NOTE: When placing the first lift of the soil component of the liner system, the thickness may be increased to ensure adequate compaction and attain the desired permeability depending on the type and size of compaction equipment used and whether or not the liner and subgrade are of dissimilar materials. Any succeeding lifts of the soil component may be reduced in thickness, depending on the compaction equipment used.)</p>

**COMPLIANCE CATEGORY:  
Resource Conservation and Recovery Act - Subtitle D (RCRA-D)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>5-22. (continued)</b></p> <p><b>5-23.</b> The soil component of the liner system must meet specific certification requirements (RIDEM Section 23-14.06(c)).</p> <p><b>5-24.</b> Geomembrane liners in sanitary landfills must meet design requirements (RIDEM Section 23-14.07(a)).</p>	<p>Verify that the moisture content of the soil component is maintained within established ranges before and during compaction.</p> <p>Verify that the soil component meets the appropriate density ranges after compaction.</p> <p>Verify that the project engineer submits a construction certification report to the Department.</p> <p>Verify that the following information is approved by the project engineer before and during the construction of the soil component of the liner system:</p> <ul style="list-style-type: none"> <li>- 1 analysis of soil particle size for every 2500 yd<sup>3</sup> of soil liner materials placed</li> <li>- 1 Atterberg limits analysis of plastic and liquid limit and plasticity index for every 1500 yd<sup>3</sup> of soil liner material placed</li> <li>- 1 laboratory permeability test using a triaxial cell with back pressure for every 5000 yd<sup>3</sup> of material placed</li> <li>- 1 moisture content test for every 1000 yd<sup>3</sup> of material placed</li> <li>- a minimum of 1 comparison of the moisture-density-permeability relation for every 5000 yd<sup>3</sup> material placed</li> <li>- 1 comparison each time soil material changes are noted.</li> </ul> <p>Verify that the quality assurance testing includes at least the following:</p> <ul style="list-style-type: none"> <li>- at least five density tests per acre per lift of soil material placed</li> <li>- a minimum of five moisture content tests per acre per lift of soil material placed</li> <li>- 1 shelby tube sample for laboratory permeability testing per acre per lift.</li> </ul> <p>Verify that any tests resulting in penetration of the soil liner are repaired using bentonite or other Departmentally approved means.</p> <p>Verify that the geomembrane liners are low permeability geosynthetics and have a maximum coefficient of permeability of <math>1 \times 10^{-12}</math>.</p> <p>Verify that the geomembrane liner is constructed of material that has a demonstrated hydraulic conductivity less than <math>1 \times 10^{-12}</math> cm/s.</p> <p>Verify that the geomembrane liner material has chemical and physical resistance not adversely affected by waste placement or generated leachate.</p> <p>Verify that documentation is submitted to ensure chemical compatibility of the geomembrane liner material chosen, unless a Departmentally approved test method is used.</p>

**COMPLIANCE CATEGORY:**  
**Resource Conservation and Recovery Act - Subtitle D (RCRA-D)**  
**Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>5-25.</b> Geomembrane liners must meet specific construction requirements (RIDEM Section 23-14.07(b)).</p>	<p>Verify that the geomembrane liner is installed according to the requirements of the approved engineering plans, reports, specifications, and the manufacturer's recommendations.</p> <p>Verify that the project engineer ensures that the geomembrane installation meets all applicable requirements.</p> <p>Verify that the geomembrane has a minimum thickness of 45 mils in the primary composite liner and 36 mils in the secondary composite liner.</p> <p>(NOTE: Geomembranes consisting of high density polyethylene (HDPE) must be at least 80 mils thick in the primary composite liner and 60 mils thick in the secondary composite liner.)</p> <p>Verify that all geosynthetic materials are installed on a subgrade that has a minimum 2 percent slope to promote positive drainage.</p> <p>Verify that the design ensures that overall slope stability is maintained.</p> <p>Verify that the surface of the supporting soil below in which the geosynthetic material is installed is reasonably free of stones, organic matter, irregularities, protrusions, loose soil, and any abrupt changes in grade that could damage the geosynthetic.</p> <p>Verify that the anchor trench is excavated to the length and width prescribed on the approved design drawings.</p> <p>Verify that field seams are oriented parallel to the line of maximum slope.</p> <p>Verify that the number of field seams are minimized in corners and irregularly-shaped locations.</p> <p>Verify that no horizontal seam is less than 5 ft from the toe of the slope toward the upslope direction of the landfill.</p> <p>Verify that the materials are seamed using an appropriate Departmentally approved method.</p> <p>Verify that seam testing meets all applicable requirements.</p> <p>Verify that the seam area is free of moisture, dust, dirt, debris, and foreign material of any kind before seaming.</p>
<p><b>5-26.</b> Geomembrane liners must meet specific certification requirements (RIDEM Section 23-14.07(c)).</p>	<p>Verify that the project engineer submits a construction certification report.</p> <p>Verify that the project engineer supervises the quality assurance testing performed in the field.</p>

**COMPLIANCE CATEGORY:  
Resource Conservation and Recovery Act - Subtitle D (RCRA-D)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>5-27.</b> All soil material in the primary and secondary leachate collection and removal systems of the landfill must be constructed of specific materials (RIDEM Section 23-14.08(a)).</p> <p><b>5-28.</b> Soil material used in the leachate collection and removal systems of landfills must meet construction requirements (RIDEM Section 23-14.08(b)).</p> <p><b>5-29.</b> Soil material used in the leachate collection and removal systems of a landfill must meet certification requirements (RIDEM Section 23-14.08(c)).</p>	<p>Verify that the soil materials used to construct a drainage layer are designed to ensure that the hydraulic leachate head on the primary liner system will not exceed 1 ft at the expected flow capacity from the drainage area, except during storm events.</p> <p>Verify that the soil drainage area is free of any organic material.</p> <p>Verify that the soil drainage area has less than 5 percent of the material by weight pass the No. 200 sieve.</p> <p>Verify that soil material testing meets all applicable requirements.</p> <p>Verify that the soil drainage layer is constructed and graded in a manner that meets all applicable engineering plans, reports, and specifications.</p> <p>Verify that the minimum thickness of the soil drainage layer in the primary leachate collection and removal system is:</p> <ul style="list-style-type: none"> <li>- 24 in.</li> <li>- provides adequate protection to all liner materials and piping placed within the primary leachate collection system</li> <li>- has a minimum coefficient of permeability of <math>1 \times 10^{-2}</math> cm/s.</li> </ul> <p>Verify that the minimum thickness of the secondary leachate collection and removal system soil drainage layer is 12 in. and has a minimum coefficient of permeability of <math>1 \times 10^{-1}</math> cm/s.</p> <p>Verify that the soil drainage layer is designed and placed on a minimum slope of 2 percent to promote efficient positive drainage to the nearest leachate collection pipe and prevent ponding above the liner.</p> <p>Verify that the project engineer submits a construction certification report.</p> <p>Verify that the project engineer tests to ensure that the material is placed according to all plans and applicable requirements.</p>

<b>COMPLIANCE CATEGORY:</b> <b>Resource Conservation and Recovery Act - Subtitle D (RCRA-D)</b> <b>Rhode Island Supplement</b>	
<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>5-30.</b> Leachate collection pipes located in any soil or geosynthetic drainage layer must meet design and construction requirements (RIDEM Section 23-14.09(a-b)).</p>	<p>Verify that the leachate collection pipes located in any soil or geosynthetic drainage layer are hydraulically designed to do the following:</p> <ul style="list-style-type: none"> <li>- remove leachate from the landfill</li> <li>- provide conveyance to an appropriately designed and sized storage or treatment facility.</li> </ul> <p>Verify that the leachate collection pipe has a minimum diameter of 4 in.</p> <p>Verify that the facility submits documentation to the Department that demonstrates the chemical compatibility of the leachate collection pipe material.</p> <p>(NOTE: In the absence of appropriate documentation, chemical compatibility testing must be performed using a Departmentally acceptable method.)</p> <p>Verify that the piping has adequate structural strength to support the maximum static and dynamic loads and stresses that will be imposed by the overlying material.</p> <p>Verify that the specifications for the proposed leachate collection pipe network are submitted in the <i>engineering report</i>.</p> <p>Verify that the installation of the leachate collection pipes meets all applicable engineering reports, plans, and specifications.</p> <p>Verify that a leachate collection pipe size, spacing, and slope of at least 1 percent is designed to ensure that the leachate head on the primary liner does not exceed 1 ft at the expected flows from the drainage area, except during storm events.</p>
<p><b>5-31.</b> Leachate collection pipes in the soil drainage layer of a landfill must meet specific certification requirements (RIDEM Section 23-14.09(c)).</p>	<p>Verify that the project engineer submits a construction certification report.</p> <p>Verify that the testing protocols and procedures are approved by the Department and submitted according to all applicable requirements.</p>



**COMPLIANCE CATEGORY:**  
**Resource Conservation and Recovery Act - Subtitle D (RCRA-D)**  
**Rhode Island Supplement**

**REGULATORY REQUIREMENTS:**

**REVIEWER CHECKS:**

**5-32.** Geosynthetic drainage layers used in secondary leachate collection and removal systems of landfills must meet design and construction requirements (RIDEM Section 23-14.10(a-b)).

**5-33.** The installation of geosynthetic drainage layers must meet specific certification requirements (RIDEM Section 23-14.10(c)).

Verify that the geosynthetic drainage layer used in the secondary leachate collection and removal system of the landfill is designed and constructed to have an equivalent hydraulic transmissivity to that of a 1 ft sand layer with a minimum coefficient of permeability of  $1 \times 10^{-1}$  cm/s.

Verify that the hydraulic conductivity, transmissivity, and chemical physical resistance of the geosynthetic material is not adversely affected by waste placement or leachate generated by the landfill.

Verify that the facility submits the following documentation to the Department:

- demonstration of the chemical compatibility of the geosynthetic drainage layer material and the waste to be deposited
- demonstration of effective liquid removal throughout the active life of the facility
- maximum compressive load of the materials to be placed above the geosynthetic drainage layer does not impede transmissivity during the postclosure period.

Verify that the project engineer ensures that the geosynthetic drainage layers are installed according to the requirements of the approved engineering plans, reports, and specifications.

Verify that the geosynthetic drainage layer is designed and constructed to effectively remove leachate from the landfill's secondary leachate collection and removal system.

Verify that the project engineer submits a construction certification report.

Verify that the facility uses testing procedures and protocols accepted by the Department.

**COMPLIANCE CATEGORY:  
Resource Conservation and Recovery Act - Subtitle D (RCRA-D)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>5-34.</b> The filter layer of a landfill must meet specific criteria (RIDEM Section 23-14.11).</p>	<p>Verify that the filter layer is designed to:</p> <ul style="list-style-type: none"> <li>- prevent the migration of the fine soil particles into a coarse-grained material</li> <li>- allow water or gases to freely enter a drainage medium without clogging.</li> </ul> <p>Verify that the granular soil material used as a filter for graded cohesionless soil filters has no more than 5 percent by weight passing the No. 200 sieve and no particles larger than 3 in. in any dimension.</p> <p>Verify that geotextile filter material demonstrates that the hydraulic conductivity and chemical and physical resistance is not adversely affected by waste placement, any overlying material, or leachate generated at the landfill.</p> <p>Verify that an apparent opening size test is performed to ensure that geotextile filter openings are the appropriate size.</p> <p>Verify that the soil filters and geotextile filters are installed according to all applicable engineering plans, reports, and specifications.</p> <p>Verify that the project engineer submits a construction certification report.</p> <p>Verify that the facility uses Departmentally approved testing procedures and protocols.</p>
<p><b>5-35.</b> The final cover of a landfill must meet design and construction requirements (RIDEM Section 23-14.12).</p>	<p>Verify that the final cover is designed to minimize infiltration of precipitation into the landfill after closure.</p> <p>Verify that the final cover operates with minimum maintenance and promotes drainage from its surface while minimizing erosion.</p> <p>Verify that the final cover is designed in a manner that accommodates settling and subsidence to minimize the potential for disruption of continuity and function of the final cover.</p>
<p><b>5-36.</b> The bedding layer of a final cover system must meet specific criteria (RIDEM Section 23-14.12(a)).</p>	<p>Verify that the bedding layer of the final cover is located directly below the barrier layer and above the compacted waste layer.</p> <p>Verify that the bedding layer for the final cover system is free of organic material.</p> <p>Verify that the bedding layer consists of onsite soils or any select fill approved by the Department.</p> <p>Verify that the bedding material is free of particles greater than 3 in. in any dimension.</p>

<b>COMPLIANCE CATEGORY:</b> <b>Resource Conservation and Recovery Act - Subtitle D (RCRA-D)</b> <b>Rhode Island Supplement</b>	
<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>5-36. (continued)</b></p> <p><b>5-37.</b> The low-permeability covers of the final cover must meet specific requirements (RIDEM Section 2314-12(b)).</p> <p><b>5-38.</b> Soil material used in the drainage layer of the final cover system must meet construction requirements (RIDEM Section 23-14.12(c)).</p>	<p>Verify that the construction and grading of the bedding layer meets all applicable engineering plans, reports, and specifications.</p> <p>Verify that the minimum thickness of the bedding layer is 6 in.</p> <p>Verify that the project engineer submits a construction certification report.</p> <p>Verify that the facility uses testing procedures and protocols accepted by the Department.</p> <p>Verify that the low-permeability barrier soil cover consists of the same characteristics as the secondary composite liner.</p> <p>Verify that the construction of low permeability barrier soil covers meets the following construction requirements:</p> <ul style="list-style-type: none"> <li>- constructed according to all applicable requirements for the soil component of the liner system</li> <li>- placed on a slope of no less than 5 percent and no more than 33 percent.</li> </ul> <p>(NOTE: A geomembrane cover may be used as an alternative to the low permeability barrier soil cover.)</p> <p>Verify that the soil used to construct the drainage layer is free of any organic material and has less than 5 percent of the material by weight pass the No. 200 sieve.</p> <p>Verify that all soil material testing is performed in accordance with Department requirements.</p> <p>Verify that the soil drainage layer is constructed and graded according to the requirements of the engineering reports, plans, and specifications.</p> <p>Verify that the construction of the soil drainage layer meets the following additional requirements:</p> <ul style="list-style-type: none"> <li>- minimum thickness is 12 in.</li> <li>- minimum coefficient of permeability of <math>1 \times 10^{-3}</math> cm/s</li> <li>- final bottom slope of at least 5 percent</li> <li>- overlain by a graded granular or synthetic fabric filter that meets all applicable specifications</li> <li>- designed so that discharge flows freely in the lateral direction to minimize head on and flow through the low permeability layer.</li> </ul> <p>Verify that the drainage soil layer is certified.</p>

**COMPLIANCE CATEGORY:**  
**Resource Conservation and Recovery Act - Subtitle D (RCRA-D)**  
**Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>5-39.</b> The vegetated top cover of a final cover system must be designed and constructed to maintain vegetative growth over the landfill(RIDEM Section 23-14.12(d)and 23-18.9-9.1(9)).</p>	<p>Verify that the vegetative layer is suitable to maintain vegetative growth.</p> <p>Verify that the construction and grading of the vegetated top cover meets the following requirements:</p> <ul style="list-style-type: none"> <li>- at least 12 in. thick</li> <li>- support vegetation that will effectively minimize erosion without need for contingency application of fertilizers, irrigation, or other nonapplied materials</li> <li>- planted with persistent species that will effectively minimize erosion and that do not have a root system that will penetrate beyond the vegetative and drainage layer</li> <li>- final top slope a minimum between 3 and 5 percent after allowing for settling and subsidence and a maximum slope of 33 percent</li> <li>- a surface drainage system capable of conducting run-off across the cap without forming erosion rifts and gullies.</li> </ul> <p>(NOTE: For slopes exceeding 5 percent, the maximum erosion rate should not exceed 2.0 tons/acre/yr using the U.S. Department of Agriculture's (USDA's) universal soil loss equation (USLE)).</p> <p>Verify that the facility maintain a heavily vegetated buffer zone of at least 600 ft between the working face or excavated area and adjacent property.</p>
<p><b>5-40.</b> The submission of construction certification reports for all aspects of the sanitary landfill must meet specific requirements (RIDEM Section 23-14.13).</p>	<p>Verify that the project engineer has completed the construction certification report.</p> <p>Verify that the report is submitted to the Department within 45 days after the completion of landfill construction.</p> <p>Verify that the report includes the following information, at a minimum:</p> <ul style="list-style-type: none"> <li>- the information on quality assurance and quality control testing prepared in accordance with the application requirements</li> <li>- documentation of any failed test results</li> <li>- descriptions of procedures used to correct the improperly installed material</li> <li>- statements of all retesting performed</li> <li>- as-built drawings noting any deviation from the approved engineering plans and comprehensive analyses.</li> </ul> <p>(NOTE: The Department may approve alternative designs to the individual components of the primary composite liner.)</p>

**COMPLIANCE CATEGORY:**  
**Resource Conservation and Recovery Act - Subtitle D (RCRA-D)**  
**Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>SANITARY LANDFILL OPERATING STANDARDS</b></p> <p><b>5-41.</b> The working face of a sanitary landfill must meet specific criteria (RIDEM Section 23-15.02).</p> <p><b>5-42.</b> The lift height of the landfill must not exceed 12 ft (RIDEM Section 23-15.03).</p> <p><b>5-43.</b> Cover material for landfills must meet specific requirements (RIDEM Section 23-15.04).</p> <p><b>5-44.</b> Sanitary landfills must meet specific operating requirements with regards to water pollution (RIDEM Section 23-15.05).</p>	<p>Verify that the width of the working face of the landfill is kept as narrow as is consistent with the proper operation of trucks and equipment so that the area of waste material exposed during the operating day is minimal.</p> <p>Verify that the working face does not exceed 150 ft in width when measured across the operating surface of the fill.</p> <p>Verify that no more than one working face is used at any one time, unless separate areas are designated on the engineering design for specific wastes.</p> <p>Verify that the lift height of the landfill does not exceed 12 ft, unless approved by the Department.</p> <p>Verify that the initial cover has all top surfaces and faces of the working lift covered with 6 in. of cover material at least at the end of each working day.</p> <p>Verify that an additional 6-in. layer of cover material is applied within 1 week after the disposal of refuse to all top surface and faces if an additional lift is not to commence within 6 mo.</p> <p>Verify that a total thickness of 24 in. of cover material is maintained on all surfaces and faces when no additional lift is to be added for 1 yr.</p> <p>Verify that an area in which landfill operation is terminated is closed according to the approved closure plan.</p> <p>Verify that a 4-day supply of cover material is stored on the landfill property at all times.</p> <p>(NOTE: The cover material supply should be calculated on the basis of one part cover material to four parts compacted waste (1000 lb/yd<sup>3</sup>.)</p> <p>Verify that all applications of cover material are appropriately maintained by the operator of the facility.</p> <p>Verify that the operator of the landfill plants and maintains vegetative growth on all completed areas.</p> <p>Verify that the landfill is not operated in a manner that causes or would be likely to cause pollution of the groundwaters or surface waters of the state at or beyond the boundary of the licensed area of the landfill.</p> <p>Verify that a minimum of 5 ft of soil is between the highest water table level and the lowest level of the liner system.</p> <p>Verify that the landfill is not located within 400 ft of an existing public water supply well.</p>

**COMPLIANCE CATEGORY:  
Resource Conservation and Recovery Act - Subtitle D (RCRA-D)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>5-45.</b> Waste at a sanitary landfill must be handled according to specific operating requirements (RIDEM Section 23-15.06(a-c)).</p>	<p>Verify that the unloading of solid waste is controlled and restricted to an area in which the material can easily be incorporated into the working face.</p> <p>Verify that the solid waste is spread in layers of approximately 2 ft in depth and compacted with a minimum of four passes of the compaction equipment.</p> <p>Verify that windblown refuse is eliminated or controlled using fences or some other means.</p> <p>Verify that the sanitary landfill is kept free of windblown refuse at all times.</p>
<p><b>5-46.</b> Special wastes must meet additional disposal requirements (RIDEM Section 23-15.06(d)).</p>	<p>Verify that bulky wastes are disposed of at the toe of the working face and incorporated into the working cell or stored in a separate area of the landfill approved by the Department for the purpose of salvaging these items.</p> <p>Verify that any salvaged material is stored in closed-top containers for a period approved by the Department.</p> <p>Verify that all construction waste and demolition waste is disposed of by covering along with daily refuse.</p> <p>Verify that any brush accepted at the landfill is stored at a minimum distance of 200 ft from the working face or buried.</p> <p>Verify that all brush not buried is chipped within 1 week after arrival.</p> <p>(NOTE: Chipped brush may be stored indefinitely in this area.)</p> <p>Verify that nonhazardous liquid waste is not disposed of in the landfill without the approval of the Department.</p> <p>Verify that any nonhazardous liquid waste accepted for disposal is immediately covered.</p> <p>Verify that oil spill debris is disposed of only in a landfill with an appropriate liner system or at an alternate facility approved by the Department.</p> <p>Verify that friable asbestos material is not accepted for disposal without prior Department approval.</p> <p>Verify that asbestos material is placed at the bottom of the working face and immediately covered with either a minimum of 2 ft of refuse or a minimum of 6 in. of clean fill.</p> <p>Verify that there is not visible emissions of asbestos material from the landfill.</p>

**COMPLIANCE CATEGORY:**  
**Resource Conservation and Recovery Act - Subtitle D (RCRA-D)**  
**Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>5-47.</b> Landfills must meet certain equipment requirements (RIDEM Section 23-15.07).</p>	<p>Verify that the equipment meets the performance specifications necessary to operate the landfill appropriately.</p> <p>Verify that there are sufficient types and quantities of equipment for digging, spreading, compacting, and covering waste or applying cover material.</p> <p>Verify that each piece of equipment has a minimum basic weight without blade, bucket, or other accessories of 17,000 lb.</p> <p>Verify that written arrangements are made for emergency equipment in the event of equipment breakdown.</p> <p>Verify that emergency equipment is onsite within 24 h of the equipment breakdown.</p>
<p><b>5-48.</b> Sanitary landfills must meet gas control requirements (RIDEM Section 23-15.08).</p>	<p>Verify that the concentration of methane gas generated by the facility does not exceed 25 percent of the lower explosive limit for methane in facility structures, excluding gas control or recovery system components.</p> <p>Verify that the concentration of methane gas does not exceed 25 percent of the lower explosive limit for methane at the facility property boundary.</p> <p>Verify that the landfill implements a routine methane monitoring program, conducted at least quarterly.</p> <p>Verify that the facility takes the following action if methane gas levels exceed the specified limits:</p> <ul style="list-style-type: none"> <li>- notify the Department</li> <li>- immediately take all necessary steps to ensure protection of human health</li> <li>- place the methane gas levels detected and a description of the steps taken to protect human health in the operating plan within 7 days of detection</li> <li>- within 60 days of detection:               <ul style="list-style-type: none"> <li>- implement a remediation plan for the methane gas releases</li> <li>- place a copy of the plan in the operating plan</li> <li>- notify the Department that the plan has been implemented.</li> </ul> </li> </ul>
<p><b>5-49.</b> Sanitary landfills must meet fire protection standards (RIDEM Section 23-15.09).</p>	<p>Verify that the facility does not pose a hazard to the safety of persons or property from fire.</p> <p>Verify that the landfill has a written arrangement for a nearby fire department to provide emergency service whenever called.</p> <p>Verify that there is an adequate supply of water under pressure, or a stockpile of the equivalent of four days cover material for use exclusively in fighting fires within 1000 ft of the working face.</p> <p>Verify that all landfill equipment is supplied with fire extinguishers.</p>

<b>COMPLIANCE CATEGORY:</b> <b>Resource Conservation and Recovery Act - Subtitle D (RCRA-D)</b> <b>Rhode Island Supplement</b>	
<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>5-50.</b> Sanitary landfills must provide for adequate surface drainage (RIDEM Section 23-15.10).</p>	<p>Verify that the facility makes provisions to have the sanitary landfill site graded and provided with a drainage system.</p> <p>Verify that the surface drainage system is designed to control the water volume from a 24-h, 25-yr storm.</p> <p>Verify that measures are taken to prevent sedimentation associated with surface drainage from borrow areas and other disturbed areas.</p> <p>Verify that the top surface slope is not less than 3 percent.</p> <p>Verify that the maximum side slopes are not steeper than 3/1.</p>
<p><b>5-51.</b> Landfills must install monitoring wells (RIDEM Section 23-15.11).</p>	<p>Verify that the landfill installs monitoring wells at locations approved by the Department.</p> <p>Verify that the facility samples and analyzes the constituents designated by the Director.</p> <p>Verify that the operator notifies the Director at least 48 h before sampling groundwater monitoring wells.</p> <p>Verify that new sanitary landfills conduct preliminary sampling and analysis for constituents designated by the Director before commencing operation of the facility.</p>
<p><b>5-52.</b> Landfills must meet strict property line requirements (RIDEM Section 23-15.12).</p>	<p>Verify that no refuse is disposed of within 600 ft of any property line.</p>
<p><b>5-53.</b> Dumping solid waste after sunset is prohibited (RIDEM Section 23-15.13).</p>	<p>Verify that no solid waste is dumped at a landfill after a half hour past sunset.</p>
<p><b>5-54.</b> Sanitary landfills must meet requirements for deed and conservation easement (RIDEM Section 23-15.15).</p>	<p>Verify that the proper notations are made in the deed for the disposal site land prior to any waste disposal.</p> <p>Verify that the notation is amended as frequently as necessary to ensure that all sites are properly documented.</p> <p>Verify that the notation includes:</p> <ul style="list-style-type: none"> <li>- type of waste disposed of at the site</li> <li>- the exact location of the waste shown on a map with a legend</li> <li>- notice that excavation of previously filled areas requires prior written approval from the Department.</li> </ul>



**COMPLIANCE CATEGORY:  
Resource Conservation and Recovery Act - Subtitle D (RCRA-D)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>5-55.</b> Sanitary landfills must meet height monitoring requirements (RIDEM Section 23-15.16).</p> <p><b>5-56.</b> Excavation of previously filled areas of a landfill must have prior written approval from the Department (RIDEM Section 23-15.17).</p> <p><b>5-57.</b> Resource recovery and solid waste incinerator ash residue monofills must meet specific operating requirements (RIDEM Section 23-15.18).</p>	<p>Verify that an annual survey of the landfill height is taken by a properly licensed Rhode Island land surveyor or professional engineer.</p> <p>Verify that the survey is submitted to the Department within 30 days.</p> <p>Verify that the facility receives written approval from the Department before excavating previously filled areas of the landfill.</p> <p>Verify that all resource recovery and solid waste incinerator ash residue monofills meet the requirements for landfills with the exception of the gas venting requirements.</p>
<p><b>INCINERATOR AND RESOURCE RECOVERY FACILITY DESIGN STANDARDS</b></p> <p><b>5-58.</b> Incinerator and resource recovery facilities must meet onsite road and vehicle requirements (RIDEM Section 23-16.01).</p>	<p>Verify that the facility is designed in a manner that prevents traffic backups and related traffic hazards on access roads serving the facility.</p> <p>Verify that the onsite roadway design configuration and layout provides sufficient roadway for unobstructed vehicular passages.</p> <p>Verify that unobstructed vehicle passage is achieved and/or enhanced using the following:</p> <ul style="list-style-type: none"> <li>- parking areas</li> <li>- maneuvering space in loading and unloading areas</li> <li>- traffic control measures.</li> </ul> <p>Verify that all onsite roadways used by refuse and residue vehicles are constructed and surfaced according to the requirements for heavy truck usage.</p>

**COMPLIANCE CATEGORY:  
Resource Conservation and Recovery Act - Subtitle D (RCRA-D)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>5-59.</b> Equipment with the potential for explosion must be specially equipped (RIDEM Section 23-16.04).</p> <p><b>5-60.</b> Waste and residue storage areas must contain specific features (RIDEM Section 23-16.05).</p> <p><b>5-61.</b> The tipping floor must include an area that accepts prohibited wastes (RIDEM Section 23-16.06).</p> <p><b>5-62.</b> Incinerators and resource recovery facilities must be designed with sufficient waste storage capacity (RIDEM Section 23-16.07).</p> <p><b>5-63.</b> Incinerators and resource recovery facilities must design temporary holding and storage areas for non-processed waste (RIDEM Section 23-16.08).</p>	<p>Verify that all equipment with the potential for explosion due to the nature of its operation is designed and equipped with an effective explosion detection and suppression system.</p> <p>Verify that the explosion detection and suppression system is situated within the facility in such a manner as to prevent the explosion and/or directionalize the force of any explosion to minimize the possible damage to humans or the building.</p> <p>Verify that all tipping floors, sorting pads, waste or residue storage areas, bunkers, and pits where heavy vehicle usage will be employed are constructed of concrete or other similar quality material and will be able to maintain traction in wet and dry conditions.</p> <p>Verify that floor drains are provided in all such areas.</p> <p>Verify that surfaces are appropriately graded to facilitate washdown operations.</p> <p>Verify that floor drains are designed to recycle wastewater for appropriate uses or into a collection and treatment system approved by the Department.</p> <p>Verify that the base and sidewalls of waste or residue storage pits are sufficiently waterproofed to prevent groundwater intrusion.</p> <p>Verify that tipping floors are designed with suitable wheel stops to prevent vehicles overdriving the pit edge.</p> <p>Verify that the tipping floor includes an area designed to accept prohibited wastes or other waste that, for any reason, gets into the storage pit and needs to be unloaded.</p> <p>Verify that the facility is designed with sufficient internal storage areas for unprocessed incoming solid waste.</p> <p>Verify that the design accounts for maximum anticipated facility loading rate.</p> <p>Verify that the facility design includes temporary holding areas for hot loads and prohibited loads and temporary storage area of sufficient capacity and appropriate design for bypassed, separated, or recycled solid waste, where applicable.</p>

**COMPLIANCE CATEGORY:**  
**Resource Conservation and Recovery Act - Subtitle D (RCRA-D)**  
**Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>5-64.</b> An area in the facility design must be included for random inspection of incoming waste loads (RIDEM Section 23-16.09).</p> <p><b>5-65.</b> The facility design must include a hazardous waste storage area (RIDEM Section 23-16.10).</p> <p><b>5-66.</b> Incinerators and resource recovery facilities must control dust and odors (RIDEM Section 23-16.11).</p> <p><b>5-67.</b> Waste loading systems at the facility must be designed to avoid backfire into the feed hopper (RIDEM Section 23-16.12).</p> <p><b>5-68.</b> The combustion equipment of an incinerator or resource recovery facility must be specifically designed (RIDEM Section 23-16.13).</p> <p><b>5-69.</b> Incinerators and resource recovery facilities must be equipped with specific instrumentation and controls (RIDEM Section 23-16.14).</p>	<p>Verify that the facility design includes an area for random inspection of incoming waste loads.</p> <p>Verify that the facility design includes a temporary hazardous waste storage area.</p> <p>Verify that the hazardous waste storage area meets all applicable hazardous waste regulations for temporary storage areas for generators of hazardous waste.</p> <p>Verify that the storage areas for solid waste to be incinerated at the facility are designed with the capability of maintaining interior pressure below that of the exterior atmosphere.</p> <p>Verify that the storage areas for solid waste to be incinerated at the facility employ a system of delivery doors to minimize the potential for migration of odors and dust outside the confines of the waste receiving and storage building.</p> <p>Verify that air drawn off the storage areas as a result of maintaining negative pressure is directed to the combustion chamber.</p> <p>Verify that the waste loading system servicing the combustion chambers is designed and equipped in a manner that prevents the occurrence of backfire into the feed hopper.</p> <p>Verify that the feed hopper is designed to allow removal of refuse in case of equipment failure or plant shutdown.</p> <p>Verify that the combustion chambers and ancillary support equipment is designed with the capability of handling and effectively disposing of those wastes authorized for receipt at the proposed facility, taking into account the expected normal fluctuations in quantity, moisture content, heat release value, and chemical makeup of the wastes.</p> <p>Verify that the facility subsystem, where possible, is equipped with automatic process controls which contain the necessary instrumentation and related feedback mechanisms to ensure that process operational parameters are being met.</p> <p>Verify that automated systems are equipped with manual override capabilities.</p>

**COMPLIANCE CATEGORY:**  
**Resource Conservation and Recovery Act - Subtitle D (RCRA-D)**  
**Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>5-69. (continued)</b></p> <p><b>5-70.</b> Incinerators and resource recovery facilities must be equipped with certain redundant features (RIDEM Section 23-16.15).</p> <p><b>5-71.</b> Incinerators and resource recovery facilities must be equipped with the appropriate facility support equipment (RIDEM Section 23-16.16).</p> <p><b>5-72.</b> Incinerators and resource recovery facilities must be designed and equipped with the appropriate liquid spill control equipment (RIDEM Section 23-16.18).</p> <p><b>5-73.</b> Incinerator or resource recovery facilities must take appropriate fire protection steps (RIDEM Section 23-16.19).</p>	<p>Verify that instrumentation displays and related control mechanisms are positioned within the facility in an accessible and highly visible manner for monitoring purposes.</p> <p>Verify that redundant features or other system layout aspects are incorporated into the facility design to maximize online availability for the receipt of solid waste.</p> <p>Verify that mechanical components are constructed of materials that will withstand the rigors of facility operation and have a rated capacity that prevents backups and blockages within the related system.</p> <p>Verify that replacement equipment and parts for equipment that are subject to excess wear or frequent breakdown due to the nature of operation, are stored onsite to provide expedient repair.</p> <p>Verify that a properly sized parts storage area is included in the facility.</p> <p>Verify that the appropriate heavy equipment and other facility operational support equipment is provided at the facility.</p> <p>Verify that a storage area is designed for the equipment at the facility.</p> <p>Verify that the facility is designed and equipped with appropriate control mechanisms to minimize and contain the accidental spillage of reagents, lubricants, or other liquids used in the operation or maintenance of the facility, or any waste generated by such operation.</p> <p>Verify that the facility has adequate stationary and portable fire fighting equipment designed, sized, and located to provide protection throughout the facility.</p> <p>Verify that the facility is designed with alarm and fire protection systems capable of detecting, controlling, and extinguishing any and all fires that may occur during operation.</p>

**COMPLIANCE CATEGORY:  
Resource Conservation and Recovery Act - Subtitle D (RCRA-D)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>5-74.</b> Incinerator and resource recovery facilities must be equipped with specific types of communication systems (RIDEM Section 23-16.20).</p>	<p>Verify that the facility is equipped with adequate communication systems to support normal and emergency operating conditions.</p>
<p><b>5-75.</b> Incinerators and resource recovery facilities must be designed with fire walls (RIDEM Section 23-16.21).</p>	<p>Verify that the facility is designed with the appropriate fire-related walls as required by fire codes.</p> <p>Verify that the facility provides an adequate design for emergency evacuation routes.</p> <p>Verify that the solid waste storage area and tipping area is separated by a wall from the solid waste combustion equipment.</p>
<p><b>5-76.</b> Incinerators and resource recovery facilities must have an adequate water supply (RIDEM Section 23-16.22).</p>	<p>Verify that the facility water supply is sized and designed to meet potable, sanitary, irrigation, process, and firefighting needs.</p> <p>Verify that the facility water supply includes design redundancy to preclude interruption of water flow to the facility's internal firefighting water supply system.</p>
<p><b>5-77.</b> Incinerators and resource recovery facilities must provide backup power supplies (RIDEM Section 23-16.23).</p>	<p>Verify that the facility is designed with a backup power supply to ensure the ability to meet the facility's needs during facility outages and to provide adequate power during emergencies.</p>
<p><b>5-78.</b> Incinerators and resource recovery facilities must be laid out in a manner that maximizes accessibility (RIDEM Section 23-16.24).</p>	<p>Verify that the interior layout design of the facility provides for system installations that maximize accessibility for repairs, maintenance, and ease of cleaning, while affording employee safety.</p>
<p><b>5-79.</b> Incinerators and resource recovery facilities must not place a demand exceeding the remaining use capability of existing utilities (RIDEM Section 23-16.25).</p>	<p>Verify that the facility does not place a demand exceeding the remaining use capability of existing utilities including, but not limited to:</p> <ul style="list-style-type: none"> <li>- potable and nonpotable water supplies</li> <li>- wastewater and stormwater collection and treatment</li> <li>- energy supply and transmission</li> <li>- transportation systems</li> <li>- any other site related infrastructure subsystems.</li> </ul>

<b>COMPLIANCE CATEGORY:</b> <b>Resource Conservation and Recovery Act - Subtitle D (RCRA-D)</b> <b>Rhode Island Supplement</b>	
<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>5-79.</b> (continued)</p> <p><b>5-80.</b> Incinerators and resource recovery facilities must create buffer and setback areas (RIDEM Section 23-16.26).</p> <p><b>INCINERATOR AND RESOURCE RECOVERY FACILITY OPERATING STANDARDS</b></p> <p><b>5-81.</b> Incinerators and resource recovery facilities must meet special operating requirements with regards to traffic flow and the use of gates (RIDEM Section 23-17.01 and 17.04).</p> <p><b>5-82.</b> Incinerators and resource recovery facilities must screen and inspect wastes coming into the facility (RIDEM Section 23-17.05).</p> <p><b>5-83.</b> Incinerators and resource recovery facilities must meet additional brush handling requirements (RIDEM Section 23-17.06).</p>	<p>(NOTE: This demand restriction does not apply if plans have been developed or are being implemented to provide for the expansion of existing utility systems or the establishment of new utility systems which will meet the additional need.)</p> <p>Verify that the facility creates a buffer and setback area to allow for plant expansion or adequate planning for installation of pollution control equipment that may be required due to future advances.</p> <p>Verify that all structures that store or process solid waste are designed with a minimum setback of 200 ft from the facility's property line.</p> <p>Verify that all other structures are designed with a minimum setback of 100 ft from the facility's property line.</p> <p>Verify that the delivery of solid waste and the removal of residues and recovered products are scheduled in a manner that allows for fluid vehicular movement at the facility.</p> <p>Verify that gates are placed at all entrances to the facility.</p> <p>Verify that the gates are locked when the facility is unsupervised.</p> <p>Verify that the incoming wastestream is screened and inspected to prevent the acceptance of prohibited or unauthorized waste types.</p> <p>Determine the waste inspection and screening procedures from the operating plan.</p> <p>Verify that any brush accepted at the facility is chipped within 1 week after its arrival or transferred for disposal within 48 h of arrival.</p> <p>(NOTE: Chipped brush may be stored up to 1 week at the facility before use or disposal.)</p>

**COMPLIANCE CATEGORY:  
Resource Conservation and Recovery Act - Subtitle D (RCRA-D)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>5-84.</b> Incinerators and resource recovery facilities must meet special waste storage requirements (RIDEM Section 23-17.07).</p> <p><b>5-85.</b> Incinerators and resource recovery facilities must have written alternative methods of disposal for solid waste (RIDEM Section 23-17.08).</p> <p><b>5-86.</b> The handling of recyclables must not interfere with normal operations (RIDEM Section 23-17.09).</p> <p><b>5-87.</b> The storage of special solid wastes and recyclables must be approved by the Department (RIDEM Section 23-17.10).</p>	<p>Verify that unprocessed, incoming solid waste to be incinerated is stored in pits, bunkers, or similar containment vessels.</p> <p>Verify that stored, unprocessed, incoming solid waste is kept at levels that prevent spillage or overflow.</p> <p>Verify that all combustible and/or putrescible waste storage is conducted within the confines of a protective structure.</p> <p>Verify that the capacity of the storage pit is equivalent to at least the rated capacity of the incinerator/combustion chamber for 1 1/2 days of operation.</p> <p>Verify that no combustible solid waste is stored for more than 48 h at the facility, except for 3-day holiday weekends.</p> <p>Verify that the facility has a written agreement for an alternative method of disposal with another solid waste management facility for the handling of incoming solid waste.</p> <p>Verify that the removal and handling of wastes for use, salvage, or recycling does not interfere with the normal operations of the facility.</p> <p>Determine if the waste is one of the following:</p> <ul style="list-style-type: none"> <li>- oversized/bulky</li> <li>- unprocessable</li> <li>- nonputrescible recyclables.</li> </ul> <p>Verify that the facility has prior Departmental approval before storing any special solid wastes or recyclables.</p>

**COMPLIANCE CATEGORY:**  
**Resource Conservation and Recovery Act - Subtitle D (RCRA-D)**  
**Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>5-88.</b> Residues and recovered materials must be stored according to specific requirements (RIDEM Section 23-17.21).</p> <p><b>5-89.</b> Incinerators and resource recovery facilities must meet ash operating standards (RIDEM Section 23-17.22).</p> <p><b>5-90.</b> Incinerators and resource recovery facilities must meet inspection and maintenance requirements (RIDEM Section 23-17.23).</p> <p><b>5-91.</b> Incinerators and resource recovery facilities must meet fire and emergency support requirements (RIDEM Section 23-17.27-17.28).</p>	<p>Determine if the waste is one of the following:</p> <ul style="list-style-type: none"> <li>- facility ash residues</li> <li>- effluent material</li> <li>- recovered material.</li> </ul> <p>Verify that residues or recovered materials are stored in bunkers, pits, bins, or similar leakproof containment vessels.</p> <p>Verify that the storage mediums are kept at levels that prevent leakage, spillage, or overflow.</p> <p>Verify that the facility meets all ash operating standards required by the Department.</p> <p>Verify that the facility systems and equipment are maintained in a manner that facilitates proper operation and minimizes downtime.</p> <p>Verify that facility personnel begin routine inspections for operating effectiveness and equipment deterioration or malfunction immediately following the initiation of operation.</p> <p>Verify that written records of the inspections are maintained.</p> <p>Verify that a planned maintenance and overhaul schedule is executed for major equipment.</p> <p>Verify that the facility does not pose a fire hazard to persons or property.</p> <p>Verify that all buildings have a suitable quantity of water at sufficient pressures, on each floor, approved by the local fire authority as suitable for firefighting purposes.</p> <p>Verify that the facility has an agreement in writing with the following to provide emergency services:</p> <ul style="list-style-type: none"> <li>- fire authority</li> <li>- police</li> <li>- rescue team</li> <li>- medical services provider</li> <li>- hazardous waste emergency response company</li> <li>- hazardous waste transporter.</li> </ul>



**COMPLIANCE CATEGORY:**  
**Resource Conservation and Recovery Act - Subtitle D (RCRA-D)**  
**Rhode Island Supplement**

**REGULATORY REQUIREMENTS:**

**REVIEWER CHECKS:**

**5-92.** Incinerators and resource recovery facilities must meet personnel and training requirements (RIDEM Section 23-17.29-17.32).

Verify that the facility maintains sufficient personnel during each operating shift to assure the proper operation of all components and routine maintenance requirements.

Verify that the facility personnel has sufficient educational backgrounds, employment experience, and/or training to enable them to competently and safely perform their duties.

Verify that each operating shift has a designated shift supervisor or the equivalent.

Verify that all facility employees are provided a comprehensive training program covering:

- normal job responsibilities
- emergency situations
- procedures
- safety issues.

Verify that employees involved with operation and maintenance of the facility receive training at least annually using annually-updated, facility-specific training and operating manuals.

Verify that the manuals are kept in a readily accessible location.

Verify that an initial review of the training and operating manuals is conducted before personnel assume operational duties.

Verify that the chief facility operator and the shift supervisor for each operating shift obtain and keep current American Society of Mechanical Engineers (ASME) operator certification or an equivalent Departmentally approved certification.

Verify that a certified operator is present during facility operation.

**5-93.** Incinerators and resource recovery facilities must prepare contingency plans (RIDEM Section 23-17.33).

Verify that the facility, in conjunction with local authorities, prepared contingency plans and procedures to handle emergencies prior to facility operation.

Verify that periodical training and practice to handle such emergencies is provided during the operation of the facility.

<b>COMPLIANCE CATEGORY:</b> Resource Conservation and Recovery Act - Subtitle D (RCRA-D) Rhode Island Supplement	
<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>TRANSFER STATIONS AND COLLECTION STATIONS OPERATING STANDARDS</b></p> <p><b>5-94.</b> Transfer and collection stations must meet special requirements for waste storage and the disposal of wastewater and leachate (RIDEM Section 23-18.02-18.03).</p> <p><b>5-95.</b> Transfer and collection stations must meet fire protection requirements (RIDEM Section 23-18.04).</p> <p><b>5-96.</b> Transfer and collection operations must be conducted in a particular protective structure (RIDEM Section 23-18.05).</p> <p><b>5-97.</b> Transfer and collection stations must have an alternative method of disposal (RIDEM Section 23-18.06).</p> <p><b>5-98.</b> Transfer and collection stations must follow specific procedures for brush handling (RIDEM Section 23-18.07).</p>	<p>Verify that unprocessed, combustible solid waste is not stored at the facility for more than 48 h.</p> <p>Verify that all water used in processing the solid waste and cleaning the facility and that all leachate from the refuse collected in storage pits and transfer areas is disposed of in a manner that does not pollute any water source.</p> <p>Verify that the facility has a water supply under pressure, approved by the local Fire Chief or the Director to be suitable for firefighting purposes.</p> <p>Verify that all transfer operations, refuse storage, and collection stations are conducted within the confines of a protective structure.</p> <p>(NOTE: Nonputrescible salvaged material and bulk items may be stored in closed containers outside the station only with Departmental permission.)</p> <p>Verify that the facility has an agreement for an alternative method of disposal with another solid waste management facility for use in an emergency or forced shutdown.</p> <p>Verify that the Department approves the alternative method of disposal in writing.</p> <p>Verify that any brush accepted at the facility is chipped within 1 week of arrival or transferred for disposal within 48 h of arrival.</p> <p>(NOTE: Chipped brush may be stored at the site indefinitely.)</p>

**COMPLIANCE CATEGORY:**  
**Resource Conservation and Recovery Act - Subtitle D (RCRA-D)**  
**Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>WASTE TIRE STORAGE AND RECYCLING FACILITY OPERATING STANDARDS</b></p> <p><b>5-99.</b> Facilities that store or intend to store in excess of 400 tires for used tire recycling or recovery must meet the waste tire facility operating standards (RIDEM Section 23-19.02).</p> <p><b>5-100.</b> Waste tire storage facilities must meet storage requirements (RIDEM Section 23-19.03).</p> <p><b>5-101.</b> Waste tire facilities must meet sorting requirements (RIDEM Section 23-19.04).</p>	<p>Determine if the facility stores or intends to store more than 400 tires.</p> <p>Verify that existing waste tire storage facilities also meet the requirements for existing solid waste management facilities.</p> <p>Verify that the whole tire pile does not exceed the following dimensions:</p> <ul style="list-style-type: none"> <li>- 20 ft in height</li> <li>- 200 ft in length</li> <li>- 50 ft in width.</li> </ul> <p>Verify that the waste tire pile has a minimum separation distance of 50 ft between piles and between a pile and buildings and other structures.</p> <p>Verify that the waste tire pile has a minimum separation distance of 200 ft from property lines.</p> <p>Verify that the facility does not store waste tires in excess of the quantity for which the facility is licensed.</p> <p>Verify that tires that are chipped or shredded into pieces no larger than 8 in. in diameter and put in a pile do not exceed the following dimensions:</p> <ul style="list-style-type: none"> <li>- 200 ft in length</li> <li>- 150 ft in width</li> <li>- 20 ft in height.</li> </ul> <p>Verify that the waste tires are not stored longer than 6 mo.</p> <p>(NOTE: The facility must be able to demonstrate that, on a throughput basis, it is processing 75 percent of the total amount of tires onsite within a 6-mo period, or for each 6-mo period the facility is in operation.)</p> <p>Verify that the tires are unmounted.</p> <p>Verify that any solid waste resulting from facility operation is stored in Departmentally approved areas until it is removed from the facility.</p>

**COMPLIANCE CATEGORY:  
Resource Conservation and Recovery Act - Subtitle D (RCRA-D)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>5-102.</b> Waste tire facilities must process the tires according to specific requirements (RIDEM Section 23-19.05).</p> <p><b>5-103.</b> Waste tire facilities must meet fire prevention and control requirements (RIDEM Section 23-19.06).</p> <p><b>5-104.</b> Waste tire facilities must take specific actions to control vectors (RIDEM Section 23-19.07).</p>	<p>Verify that the waste tire recycling facility chips, pulverizes, or processes all waste tires within the departmentally approved time frame.</p> <p>Verify that a description of the facility's tire reduction/processing techniques are included in the facility's operating plan.</p> <p>Verify that approved roads to the facility and access roads within the facility are constructed for all weather conditions.</p> <p>Verify that approved roads to the facility and access roads within the facility are maintained in passable condition.</p> <p>Verify that the facility is maintained free from weeds, trees, and vegetation which may restrict access to or operation of the facility.</p> <p>Verify that the facility is constructed in a manner that prevents the uncontrolled collection and pooling of water on the facility.</p> <p>Verify that the facility has the following, at a minimum:</p> <ul style="list-style-type: none"> <li>- a soil stockpile of approximately 2000 yd<sup>3</sup> of soil available for each 4 acres of storage</li> <li>- fully charged large capacity CO<sub>2</sub> or dry chemical fire extinguishers located in strategically placed enclosures throughout the facility.</li> </ul> <p>Verify that the waste tire piles have access to a water supply such that any part of the pile can be reached using no more than 500 ft of hose, or another distance approved by the local fire fighting company.</p> <p>Verify that the waste tire pile is accessible on all sides to fire-fighting and emergency- response equipment.</p> <p>Verify that the waste tire pile is maintained in a manner that limits mosquito breeding potential and other vectors.</p> <p>Verify that the facility uses one or more of the following acceptable means of vector control:</p> <ul style="list-style-type: none"> <li>- covering by plastic sheets or other impermeable barriers, other than soil, to prevent the accumulation of precipitation</li> <li>- Departmentally approved chemical treating</li> <li>- mechanical tire size reduction into pieces no larger than 8 in. in diameter and storing the pieces in piles that allow complete water drainage.</li> </ul>

**COMPLIANCE CATEGORY:  
Resource Conservation and Recovery Act - Subtitle D (RCRA-D)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>5-105.</b> Waste tire facilities must have an acceptable security plan (RIDEM Section 23-19.08).</p> <p><b>PETROLEUM CONTAMINATED SOIL PROCESSING FACILITIES</b></p> <p><b>5-106.</b> Petroleum contaminated soil processing facilities must design the process equipment to meet applicable air pollution requirements (RIDEM Section 23-22.01).</p> <p><b>5-107.</b> The storage chamber must be specifically designed for incoming contaminated soil (RIDEM Section 23-22.02).</p>	<p>Verify that the facility is enclosed by a woven wire, chain-link, or other acceptable fence material at least 6 ft in height.</p> <p>Verify that access is controlled by lockable gates.</p> <p>Verify that fences are a minimum distance of 200 ft from tire piles and tire processing areas.</p> <p>Verify that the process equipment is designed to include the best available air pollution control equipment.</p> <p>Verify that an enclosed structure(s) and a permanent roof are provided.</p> <p>Verify that the soil rests on a permanent, impervious floor, sloped to channel any runoff petroleum products and water to a collection point or area.</p> <p>Verify that the structure is bermed to prevent inflow of rainwater and prevent runoff of petroleum contaminant/water from the storage piles onto soil outside the enclosure.</p> <p>Verify that adequate venting is provided to prevent the build-up of petroleum vapors.</p> <p>Verify that natural, rather than artificial lighting, is provided.</p> <p>Verify that electrical devices meet appropriate fire codes governing prevention of sparks.</p>

<b>COMPLIANCE CATEGORY:</b> <b>Resource Conservation and Recovery Act - Subtitle D (RCRA-D)</b> <b>Rhode Island Supplement</b>	
<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<b>5-107. (continued)</b>	<p>Verify that the facility use the following options for soil storage before the completion of the fingerprinting process:</p> <ul style="list-style-type: none"> <li>- storage in the enclosed structure(s) with provisions to allow for, at minimum, all loads from a given generator site to be segregated from loads from other sites until fingerprint sampling and testing has been completed and the loads have been accepted for processing</li> <li>- storage in covered trucks at the facility until the soil has been fingerprinted and accepted for processing.</li> </ul> <p>(NOTE: Fingerprinting acts as a check on the analysis and testing originally done on soil samples at the generator site. Fingerprinting, at a minimum, includes visual inspection of each incoming load, and appropriate sampling and testing of unprocessed soil. At a minimum, the tests must include soil flashpoint and a PCB test whenever the field sampling at the generator site include PCB testing and at the option of the processor.)</p> <p>Verify that sufficient capacity is provided for soil stored in enclosed structures and those that have been accepted and are awaiting transfer to the kiln for processing.</p>
<b>5-108.</b> The holding area for processed soil at the process facility site must be specifically designed (RIDEM Section 23-22.03).	<p>Verify that processed soil with a total petroleum hydrocarbon (TPH) concentration of 300 ppm or greater is stored on an impervious holding pad and adequately bermed to prevent runoff from the pile escaping to the surrounding soil.</p> <p>Verify that the facility has adequate erosion and sedimentation control to minimize the effect of any run-on:</p> <ul style="list-style-type: none"> <li>- prevent loss of soil or contaminants from the truck</li> <li>- prevent a spill of material.</li> </ul> <p>Verify that the facility uses the following recommended measures:</p> <ul style="list-style-type: none"> <li>- a secured cover placed over the soil</li> <li>- a gate sealing method to prevent leakage of any runoff of soil contaminant</li> <li>- a chain wrapped around the gate, as an additional securing feature.</li> </ul> <p>Verify that interstate transfers meet all applicable requirements of other states.</p>
<b>5-109.</b> Processed soil from petroleum contaminated soil processing facilities may only be used for Departmentally approved uses (RIDEM Section 23-21.06-21.07).	<p>Verify that material processed by RIDEM-licensed solid waste management facilities or by out-of-state facilities to be reused within Rhode Island is used for the following applications:</p> <ul style="list-style-type: none"> <li>- aggregate in asphalt production</li> <li>- road base material</li> <li>- landfill cover material in any licensed landfill.</li> </ul>

**COMPLIANCE CATEGORY:  
Resource Conservation and Recovery Act - Subtitle D (RCRA-D)  
Rhode Island Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p><b>5-109. (continued)</b></p> <p><b>5-110.</b> Facilities must conduct sampling and testing of the processed soil to determine extent of residual petroleum (RIDEM Section 23-21.08).</p> <p><b>RECYCLING</b></p> <p><b>5-111.</b> Solid waste management facilities must meet municipal recycling requirements (RIDEM Section 23 Part 4).</p>	<p>(NOTE: Approval from RIDEM must be obtained for each site or application where road base is used.)</p> <p>Verify that soil used as aggregate for asphalt production within Rhode Island meets the specifications of the appropriate party.</p> <p>Verify that periodic testing of the aggregate and/or asphalt is performed at the processing facility to demonstrate that the material meets specifications.</p> <p>Verify that soil used as landfill cover or road base material has TPH of 300 ppm or less and meets any other specification required by the given landfill or road base buyer.</p> <p>Verify that the landfill amends its RIDEM operating plan to show that it will accept this material for landfill cover.</p> <p>Verify that appropriate sampling and testing of the processed soil is performed to determine the extent of residual petroleum contaminant in the soil or meet the specifications of the accepting party.</p> <p>Verify that the facility employs <i>Departmentally approved sampling and testing strategies.</i></p> <p>Verify that the facility meets all applicable municipal recycling regulations.</p> <p>Verify that the following items are separated from the wastestream for the purpose of recycling:</p> <ul style="list-style-type: none"> <li>- aluminum</li> <li>- automobiles</li> <li>- coated, unbleached kraft beverage carriers</li> <li>- corrugated cardboard</li> <li>- glass food and beverage containers</li> <li>- HDPE milk and water containers</li> <li>- laser printer toner cartridges</li> <li>- newspaper</li> <li>- office paper</li> <li>- PET soft drink containers</li> <li>- steel and tinned steel food and beverage containers</li> <li>- used lubricating oil</li> <li>- vehicle batteries</li> <li>- white goods</li> <li>- wood waste</li> <li>- telephone directories</li> <li>- leaves and yard waste.</li> </ul>

<b>COMPLIANCE CATEGORY:</b> <b>Resource Conservation and Recovery Act - Subtitle D (RCRA-D)</b> <b>Rhode Island Supplement</b>	
<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>5-112.</b> Used oil must be recycled according to specific requirements (RIDEM 23-19.6-5).</p>	<p>Verify that the facility does not collect, transport, transfer, store, recycle, use, or dispose of used oil by the following means, unless the facility meets all applicable hazardous waste management, water pollution, and air pollution requirements:</p> <ul style="list-style-type: none"> <li>- discharge to sewers</li> <li>- discharge to drainage systems</li> <li>- discharge to surface or groundwater</li> <li>- discharge to watercourses</li> <li>- discharge to marine waters</li> <li>- incineration</li> <li>- deposit on land.</li> </ul>
<p><b>5-113.</b> Solid waste management facilities must meet special requirements for hard-to-dispose materials (RIDEM 37-15.1).</p>	<p>Verify that the facility does not discard or dispose of hard-to-dispose material on any public property of the state, in waters of the state, or upon their own private property unless one of the following is true:</p> <ul style="list-style-type: none"> <li>- the property is designated for the disposal of hard-to-dispose material</li> <li>- into a receptacle which has been approved by the Department for such a purpose.</li> </ul>
<p><b>5-114.</b> Batteries may only be disposed of at specific battery recycling facilities (RIDEM 23-60-4).</p>	<p>Determine if the facility is a licensed battery recycling facility.</p> <p>Verify that batteries are disposed of in one of the following manners:</p> <ul style="list-style-type: none"> <li>- transportation to an out-of-state recycling facility</li> <li>- delivery to a facility designated by the Solid Waste Management Corporation</li> <li>- delivery to a privately-operated, licensed, recycling facility within Rhode Island.</li> </ul>
<p><b>MEDICAL WASTES - Generators</b></p>	
<p><b>5-115.</b> Employees must be informed in writing of all Department requirements with regards to regulated medical waste (RIDEM 23-18.9-1-15).</p>	<p>Verify that all employees are informed in writing of Department regulated medical waste requirements.</p>
<p><b>5-116.</b> Generators of medical waste must determine if the waste is a regulated medical waste (RIDEM 23-18.9-6.02).</p>	<p>Determine if the medical waste is a regulated medical waste.</p> <p>Verify that any regulated medical wastes that meet the definition of hazardous waste are managed as hazardous waste.</p>



**COMPLIANCE CATEGORY:**  
**Resource Conservation and Recovery Act - Subtitle D (RCRA-D)**  
**Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>5-117.</b> Generators of medical waste must segregate regulated medical waste from the rest of the waste stream (RIDEM 23-18.9-6.03).</p> <p><b>5-118.</b> Regulated medical wastes must be properly packaged (RIDEM 23-18.9-7.01).</p> <p><b>5-119.</b> Regulated medical wastes must meet specific storage requirements prior to treatment, disposal, or transport (RIDEM 23-18.9-8).</p>	<p>Verify that regulated medical waste is segregated from the general waste stream.</p> <p>Verify that the regulated medical wastes are segregated into the following groups:</p> <ul style="list-style-type: none"> <li>- sharps and unused sharps</li> <li>- fluids in bulk quantities (greater than 20 cm<sup>3</sup>)</li> <li>- other regulated medical wastes.</li> </ul> <p>Verify that any solid waste mixed with regulated medical waste is managed as regulated medical waste.</p> <p>Verify that regulated medical wastes are placed in containers that meet the following requirements:</p> <ul style="list-style-type: none"> <li>- rigid</li> <li>- leak resistant</li> <li>- impervious to moisture</li> <li>- of sufficient strength to prevent tearing or bursting under normal conditions of use</li> <li>- sealed.</li> </ul> <p>(NOTE: Regulated medical wastes can be packaged in plastic bags that meet all necessary requirements.)</p> <p>Verify that all sharps are packaged in puncture-resistant containers without recapping, clipping, bending, or breaking.</p> <p>Verify that human blood, blood products, and bodily fluids in bulk quantities are packaged in break-resistant containers that are tightly lidded or stoppered and bear the Universal Biohazard Symbol.</p> <p>Verify that the regulated medical wastes are stored using a method approved by the Director.</p>

**COMPLIANCE CATEGORY:  
Resource Conservation and Recovery Act - Subtitle D (RCRA-D)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>5-120.</b> Generators must meet onsite transportation requirements for regulated medical wastes (RIDEM 23-18.9-10).</p> <p><b>5-121.</b> Containers of regulated medical wastes must meet labeling and marking requirements for offsite transport (RIDEM 23-18.9-11).</p>	<p>Verify that measures are taken to ensure the containment of the waste.</p> <p>Verify that the wastes are not subjected to violent mechanical stress during transport.</p> <p>Verify that wastes stored in plastic bags are not transported using mechanical devices, chutes, or dumb waiters unless they are designed to prevent accumulation of wastes in corners and can be easily cleaned.</p> <p>Verify that wheeled carts used for transport purposes are properly cleaned and disinfected after use.</p> <p>(NOTE: The compaction of packages and containers of regulated medical wastes before or during onsite transport is prohibited.)</p> <p>Verify that the containers are labeled with the universal biological hazard symbol or in another manner clearly identifying the material.</p> <p>Verify that each package or container of untreated regulated medical waste has a water-resistant label or the universal biohazard symbol.</p> <p>(NOTE: Red plastic bags used as inner packaging need not display a label.)</p> <p>Verify that the following information is marked on the outside of the package or container:</p> <ul style="list-style-type: none"> <li>- generator's or intermediate handler's name</li> <li>- generator's or intermediate handler's address</li> <li>- transporter's Rhode Island notification number</li> <li>- date of shipment</li> <li>- identification of contents as medical waste.</li> </ul> <p>Verify that each transporter, other than the transporter that accepted the waste from the generator, affixes an identification tag to the exterior of the package or container.</p> <p>Verify that any inner containers used are marked with the following information:</p> <ul style="list-style-type: none"> <li>- generator's or intermediate handler's name</li> <li>- generator's or intermediate handler's address</li> <li>- identification of type of contents of container as medical waste.</li> </ul>

**COMPLIANCE CATEGORY:**  
**Resource Conservation and Recovery Act - Subtitle D (RCRA-D)**  
**Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>5-122.</b> Generators that incinerate or steam sterilize regulated medical wastes must meet record-keeping requirements (RIDEM 23-18.9-12.03).</p>	<p>Determine if the generator uses incineration or steam sterilization.</p> <p>Verify that any generator that accepts regulated medical waste from other generators for treatment and/or destruction obtain a license from the Department.</p> <p>Verify that the generator keeps an operating log containing the following information at the incineration facility:</p> <ul style="list-style-type: none"><li>- date each incineration cycle began</li><li>- length of the incineration cycle</li><li>- total quantity of waste incinerated per incineration cycle</li><li>- estimate of the quantity of regulated medical waste incinerated per incineration cycle.</li></ul> <p>Verify that the operating log is retained for 3 yr.</p> <p>Verify that generators that accept regulated medical waste from other generators maintain the following information for each shipment of waste accepted:</p> <ul style="list-style-type: none"><li>- date the waste was accepted</li><li>- name and address of the generator that originated the shipment</li><li>- total weight of the regulated medical waste accepted</li><li>- signature of the individual accepting the waste.</li></ul> <p>Verify that copies of all tracking forms are retained for 3 yr from the date the waste was accepted.</p> <p>Verify that the onsite incineration facility submits an onsite incinerator report to the Department on the required form.</p>
<p><b>5-123.</b> Generators must meet operational requirements for steam sterilization (RIDEM 23-18.9-12.04).</p>	<p>Verify that the steam sterilizer is operated according to all applicable standards.</p> <p>Verify that the sterilizers are dedicated for waste only and are operated according to the manufacturer's specifications.</p> <p>Verify that the regulated medical waste is sterilized in its primary container.</p> <p>Verify that the temperature of the sterilization cycle is continuously monitored.</p> <p>(NOTE: Regulated medical waste will not be considered properly treated unless a temperature of at least 250 °F is reached during the sterilization process.)</p> <p>Verify that tests are performed at least once every 40 h of operation to evaluate the effectiveness of the sterilization process.</p>

**COMPLIANCE CATEGORY:**  
**Resource Conservation and Recovery Act - Subtitle D (RCRA-D)**  
**Rhode Island Supplement**

**REGULATORY REQUIREMENTS:**

**REVIEWER CHECKS:**

**5-123.** (continued)

**5-124.** Alternate onsite treatment and destruction methods must be approved by the Department (RIDEM 23-18.9-12.05).

**5-125.** Generators that transport regulated medical waste offsite must meet specific requirements (RIDEM 23-18.9-13-13.04).

Verify that a log is maintained for each sterilization unit to record the following information:

- date
- time
- operator
- type and approximate amount of regulated medical waste treated
- sterilization pressure reading
- post-sterilization reading.

Verify that the log is retained at least 3 yr from the date the waste was treated.

Verify that any method other than incineration or steam sterilization is approved by the Department.

Determine the quantity of regulated medical waste generated in a calendar month and the quantity transported or offered for transport offsite for treatment, destruction, or disposal.

(NOTE: Small quantity generators are those that generate less than 50 lbs of regulated medical waste per month.)

Verify that the generator only uses transporters that have a Rhode Island medical waste transporter notification number.

Verify that the generator prepares the appropriate number of tracking forms.

(NOTE: The appropriate number of tracking forms provides the generator, each transporter, and each intermediate handler with one copy and the designated facility with two copies.)

Verify that the generator meets all applicable tracking form requirements.

Determine if the generator is exempt from the tracking form requirements.

Verify that the generator maintains all required conditions to retain the exemption.

Verify that the destination facility for exported regulated medical waste shipments provides the generator with written confirmation that the waste was received.

(NOTE: The generator must submit an exception report if confirmation from the destination facility is not received within 45 days from the date the waste was accepted by the first transporter.)

**COMPLIANCE CATEGORY:  
Resource Conservation and Recovery Act - Subtitle D (RCRA-D)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>5-126.</b> Generators must maintain recordkeeping standards and submit the appropriate reports to the Department (RIDEM 23-18.9-13.05-13.08).</p>	<p>Verify that the generator retains a copy of each form for at least 3 yr:</p> <ul style="list-style-type: none"> <li>- each tracking form</li> <li>- all exception reports</li> <li>- shipment logs.</li> </ul> <p>Verify that generators exempt from the tracking form requirements maintain the following records:</p> <ul style="list-style-type: none"> <li>- a shipment log at the original generation point</li> <li>- a shipment log at the central collection point.</li> </ul> <p>Verify that generators that transported regulated medical waste through the U.S. Postal Service maintain the following records:</p> <ul style="list-style-type: none"> <li>- the original postal receipt</li> <li>- return mail receipt</li> <li>- shipment log.</li> </ul> <p>Verify that small quantity generators submit the appropriate semiannual reports to the Department within 45 days of the end of each reporting period.</p> <p>(NOTE: The reports should be submitted for the period covering 1 January through 30 June and the period covering 31 July through 31 December.)</p> <p>Verify that the facility submits any additional reports required by the Department.</p>
<p><b>MEDICAL WASTE - Transporters</b></p> <p><b>5-127.</b> Transporters must meet all USEPA and Rhode Island notification requirements (RIDEM 23-18.9-14.02-14.03).</p>	<p>Verify that the transporter meets all applicable USEPA notification requirements.</p> <p>Verify that the transporter has obtained a Rhode Island Notification Number from the Department.</p> <p>(NOTE: A notification number is not required for vehicles used in emergency situations.)</p>

**COMPLIANCE CATEGORY:  
Resource Conservation and Recovery Act - Subtitle D (RCRA-D)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>5-127. (continued)</b></p>	<p>Verify that the vehicle used for transport meets the following requirements:</p> <ul style="list-style-type: none"> <li>- has a fully enclosed, leak-resistant, cargo-carrying body in good sanitary condition</li> <li>- identification of the vehicle with the following:               <ul style="list-style-type: none"> <li>- name of transporter</li> <li>- transporter's State Notification number</li> <li>- universal biohazard sign or other suitable markings.</li> </ul> </li> </ul> <p>Verify that the transporter secures the cargo-carrying body if it is to be left unattended.</p> <p>Verify that the medical waste is not subjected to mechanical stress or compaction during loading, unloading, or transit.</p> <p>Verify that regulated medical waste is not transported in the same container as solid waste unless both are managed as regulated medical waste.</p> <p>Verify that the cargo-carrying compartment of the vehicle is only used to transport medical waste.</p> <p>(NOTE: Under specific conditions, hazardous waste can be transported with regulated medical waste.)</p>
<p><b>5-128.</b> Transporters must follow specific procedures when accepting regulated medical waste for transport (RIDEM 23-18.9-14.04).</p>	<p>Verify that any accepted waste is appropriately packaged and accompanied by a properly complete tracking form.</p> <p>Verify that the transporter does the following to accept waste accompanied by a tracking form:</p> <ul style="list-style-type: none"> <li>- verify that the form accurately reflects the waste to be shipped</li> <li>- sign and indicate the date the waste was accepted on all copies of the tracking form</li> <li>- return a copy of the form to the generator or prior transporter</li> <li>- retain one copy of the tracking form.</li> </ul>

**COMPLIANCE CATEGORY:**  
**Resource Conservation and Recovery Act - Subtitle D (RCRA-D)**  
**Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>5-129.</b> Transporters may consolidate or remanifest to a single tracking form all shipments of regulated medical waste that are less than 220 lb (RIDEM 23-18.9-14.05).</p> <p><b>5-130.</b> Transporters must meet specific requirements for the delivery of regulated medical wastes (RIDEM 23-18.9-14.07).</p> <p><b>5-131.</b> Transporters must meet specific requirements for the management of spills (RIDEM 23-18.9-14.08).</p>	<p>Determine if the shipment weighs less than 220 lb.</p> <p>Verify that the transporter compiles a consolidation log for all consolidated shipments.</p> <p>Verify that the transporter delivers the entire quantity of waste accepted.</p> <p>Verify that the transporter delivers the waste to one of the following:</p> <ul style="list-style-type: none"> <li>- the destination facility identified on the tracking form</li> <li>- the next transporter.</li> </ul> <p>Verify that the transporter uses the following procedures if the waste cannot be delivered to the destination facility or transporter:</p> <ul style="list-style-type: none"> <li>- contacts the generator for further directions</li> <li>- revises the tracking form accordingly</li> <li>- delivers the waste according to the generator's instructions.</li> </ul> <p>Verify that the transporter, intermediate handler, and destruction facility has an approved management plan for spills.</p> <p>Verify that the transporter, intermediate handler, and destruction facility has the appropriate equipment and supplies to clean up a spill of regulated medical wastes.</p> <p>Verify that the transporter uses approved disinfectants and routine decontamination procedures for soiled surfaces.</p> <p>Verify that the transporter takes the following actions:</p> <ul style="list-style-type: none"> <li>- promptly controls the spill</li> <li>- immediately notifies the Department of the spill</li> <li>- files an accident report with the Director within 48 h.</li> </ul> <p>Verify that the accident report is retained for 3 yr.</p>

**COMPLIANCE CATEGORY:**  
**Resource Conservation and Recovery Act - Subtitle D (RCRA-D)**  
**Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>5-132.</b> Medical waste transporters may store regulated medical waste in the same vehicle used to pick up and transport the waste, provided specific conditions are met(RIDEM 23-18.9-14.12).</p>	<p>Verify that the vehicle is parked at a location that:</p> <ul style="list-style-type: none"> <li>- is under the direct control of the transporter</li> <li>- has been approved for such use by the Director.</li> </ul> <p>Verify that the location where the vehicle is parked is secured from unauthorized access.</p> <p>Verify that the vehicle is parked at the location no longer than 48 h, excluding weekends and state holidays.</p> <p>Verify that no regulated medical waste is loaded on or off the vehicle during storage.</p> <p>Verify that the transporter notified the Department if temporary storage is required due to vehicle breakdown.</p> <p>Verify that the temporary storage facility keeps an accurate log of all regulated medical waste shipped in and out of the facility.</p>
<p><b>5-133.</b> Transporters must maintain certain recordkeeping standards (RIDEM 23-18.9-14.13.)</p>	<p>Verify that the transporter retains a copy of the following records for 3 yr:</p> <ul style="list-style-type: none"> <li>- each tracking form</li> <li>- each transporter-initiated tracking form and consolidation log</li> <li>- transporter report.</li> </ul>
<p><b>5-134.</b> Transporter must submit specific reports to the Department (RIDEM 23-18.9-14.14).</p>	<p>Verify that the transporter submits reports to the Department of the source and disposition of the waste.</p> <p>Verify that the transporter meets all applicable Federal reporting requirements.</p> <p>Verify that the transporter submits reports for the following periods within 45 days after the end of the reporting period:</p> <ul style="list-style-type: none"> <li>- 1 January through 30 June</li> <li>- 1 July through 31 December.</li> </ul>
<p><b>5-135.</b> Rail shipments of regulated medical waste must meet special requirements (RIDEM 23-18.9-14.15).</p>	<p>Determine if the waste was transported by rail.</p> <p>Verify that the rail transporter meets all applicable delivery requirements for rail transport with regards to tracking forms and shipping papers.</p>



**COMPLIANCE CATEGORY:**  
**Resource Conservation and Recovery Act - Subtitle D (RCRA-D)**  
**Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>MEDICAL WASTE - Treatment, Destruction, and Destination Facility</b></p> <p><b>5-136.</b> Treatment, destruction, and destination facilities must meet licensing requirements (RIDEM 23-18.9-15.01).</p> <p><b>5-137.</b> Treatment, destruction, and destination facilities must meet specific requirements for the acceptance of regulated medical wastes (RIDEM 23-18.9-15.02).</p>	<p>Verify that the treatment, destruction, and/or destination facility has the appropriate solid waste management license from the Department.</p> <p>Verify that the facility only accepts appropriately packaged and labeled waste.</p> <p>Verify that the facility only accepts wastes accompanied by the appropriate tracking form.</p> <p>Verify that the facility meets all applicable regulations for the treatment or destruction of the waste.</p> <p>Verify that the facility keeps a spill containment and cleanup kit in or near any storage area, loading and unloading area, decontamination area, and treatment area where the regulated medical waste is managed.</p> <p>Verify that the disinfectants used to clean up a spill have been registered with the USEPA as hospital disinfectants that are tuberculocidal, fungicidal, virucidal, and effective against HIV-1.</p> <p>Verify that the facility implements all necessary procedures to ensure the prompt cleanup of a spill of regulated medical waste.</p>

**COMPLIANCE CATEGORY:  
Resource Conservation and Recovery Act - Subtitle D (RCRA-D)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>5-138.</b> Treatment, destruction, and destination facilities must meet storage requirements (RIDEM 23-18.9-15.02(g)).</p>	<p>Verify that the waste is stored in a manner and location that maintains the integrity of the packaging.</p> <p>Verify that the facility maintains the regulated wastes in a nonputrescent state.</p> <p>Verify that outside storage areas are locked to prevent unauthorized access.</p> <p>Verify that unlocked storage areas are properly designated and labeled.</p> <p>Verify that the waste is stored in a manner and location that is not accessible to animals and does not provide a breeding place or food source for insects or rodents.</p> <p>Verify that regulated medical waste is not stored more than 14 days.</p> <p>Verify that not more than seven times the facility's total maximum daily capacity of all incinerators and/or autoclaves are stored for treatment.</p> <p>Verify that the facility has an approved treatment plan.</p>
<p><b>5-139.</b> Treatment, destruction, and destination facilities must make specific use of the tracking form (RIDEM 23-18.9-15.03-15.04).</p>	<p>Determine if the facility is a destination facility, an intermediate handler, or a rail shipper.</p> <p>Verify that the facility follows the tracking form requirements specific to its type of facility or shipment.</p> <p>Verify that intermediate handlers and destination facilities retain a copy of the tracking form for 3 yr from the date of acceptance of the regulated waste.</p> <p>Verify that the facility appropriately notes any discrepancies between the tracking form and the waste contained in the shipment.</p>
<p><b>5-140.</b> Treatment, Destruction, and destination facilities must meet specific recordkeeping and reporting requirements (RIDEM 23-18.9-15.05-15.06).</p>	<p>Verify that destination facilities or intermediate handlers maintain the following records for 3 yr from the date the waste was accepted:</p> <ul style="list-style-type: none"> <li>- copies of all tracking forms and logs</li> <li>- the name and address of each generator that delivered waste to the destination facility or intermediate handler</li> <li>- copies of all discrepancy reports.</li> </ul> <p>Verify that destination facilities or intermediate handlers maintain the following information for each shipment of regulated medical waste:</p> <ul style="list-style-type: none"> <li>- the date the waste was accepted</li> <li>- the name and address of the generator that originated the shipment</li> <li>- the total weight of the regulated medical waste accepted from the originating generator</li> <li>- the signature of the individual accepting the waste.</li> </ul>

**COMPLIANCE CATEGORY:  
Resource Conservation and Recovery Act - Subtitle D (RCRA-D)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>5-141.</b> Treatment, destruction, and disposal of regulated medical wastes must meet specific requirements (RIDEM 23-18.9-15.07).</p>	<p>Verify that the regulated medical waste meets all applicable state and Federal handling and management requirements until the waste is both treated and destroyed.</p> <p>(NOTE: The residue of treated and destroyed medical waste may be disposed of as nonregulated medical waste unless the residue meets the definition of hazardous waste.)</p> <p>Verify that the facility uses the best possible technology to treat and destroy the regulated medical waste to fulfill the Department requirements.</p> <p>Verify that the following acceptable treatment and destruction methods are used:</p> <ul style="list-style-type: none"> <li>- for liquid regulated medical wastes, including body fluids, human blood, and blood products: <ul style="list-style-type: none"> <li>- incineration</li> <li>- discharge into a sanitary sewer system that has a secondary wastewater treatment facility</li> </ul> </li> <li>- for human pathological wastes and animal pathological waste: <ul style="list-style-type: none"> <li>- incineration</li> <li>- chemical disinfection with or followed by grinding or shredding</li> <li>- steam sterilization followed by grinding or shredding</li> </ul> </li> <li>- for other regulated medical wastes: <ul style="list-style-type: none"> <li>- incineration</li> <li>- chemical disinfection with or followed by grinding or shredding</li> <li>- steam sterilization followed by grinding or shredding.</li> </ul> </li> </ul> <p>(NOTE: The Department may approve alternative forms of treatment and destruction.)</p>

<b>INSTALLATION:</b>	<b>COMPLIANCE CATEGORY:</b> Resource Conservation and Recovery Act Subtitle D (RCRA-D) Rhode Island Supplement	<b>DATE:</b>	<b>REVIEWER(S):</b>
<b>STATUS</b> NA C RMA	<b>REVIEWER COMMENTS:</b>		

**SECTION 6**

**RESOURCE CONSERVATION AND RECOVERY ACT,**

**SUBTITLE I (RCRA-I)**

**Rhode Island Supplement**

**SECTION 6**  
**RESOURCE CONSERVATION AND**  
**RECOVERY ACT, SUBTITLE I (RCRA-I)**  
**Rhode Island Supplement**

The aboveground storage tank (AST) requirements are taken from the Oil Pollution Control Regulations of December 1990, Rhode Island Department of Environmental Management (RIDEM), Site Remediation Division.

The underground storage tank (UST) requirements are taken from the Regulations for Underground Storage Facilities Used for Petroleum Products and Hazardous Materials, June 1992, under the authority of the General Laws of Rhode Island, 1956, as amended.

**Definitions**

The following definitions are taken from the Regulations for Underground Storage Facilities Used for Petroleum Products and Hazardous Materials, June 1992, under the authority of the General Laws of Rhode Island, 1956, as amended.

- *Abandonment* - the relinquishment or termination of possession, ownership, or control of USTs, by vacating or by disposition, without meeting the appropriate closure requirements; or the action of taking a UST or UST system out of operation for a period of greater than 180 consecutive days without the prior permission of the Director.
- *Aquifer* - a geologic formation, group of formations, or part of a formation that contains sufficient saturated permeable material to yield quantities of water to wells and springs in quantities that in the aggregate, are sufficient to supply the daily requirements of one or more persons.
- *Cathodic Protection* - a technique to prevent the corrosion of metal surfaces by making that surface the cathode of an electrochemical cell.
- *Cathodic Protection Tester* - a person who can demonstrate an understanding of the principles and measurements of all common types of cathodic protection systems as applied to buried or submerged metal piping and tank systems. At a minimum, these persons must have education and experience in soil resistivity and stray component electrical isolation measurements of buried metal piping and tank systems.
- *Closure* - the removal from service of any UST consistent with Rhode Island UST regulations.
- *Commenced Construction* - the owner or operator has obtained all governmental approvals or permits required to begin physical construction and has either begun a continuous onsite physical construction program, or has entered into contractual obligations that cannot be canceled or modified without substantial loss and are payable upon physical construction of the facility.
- *Compatible* - the ability of two or more substances to maintain their respective physical and chemical properties upon contact with one another for the design life of the tank system under conditions likely to be encountered in the UST.

- **Contaminant** - any physical, chemical, biological, or radiological substance in water that renders or is likely to render the water unfit for its intended use or for any feasible use.
- **Continuous Monitoring System** - an automatic, continuous leak detection and alarm system that operates independent of human assistance and meets industry standards such as those of Underwriters Laboratories (UL), and that is approved by the Director.
- **Department or RIDEM or Department of Environmental Management** - the Rhode Island Department of Environmental Management and/or any division thereof.
- **Diesel Oil** - any grade of distillate oil commonly referred to as diesel that may be used as fuel in an internal combustion engine.
- **Director** - the Director of the Rhode Island Department of Environmental Management or his/her designee. Any documents or reports required to be submitted to the Director should be sent to: UST Program, R.I. Department of Environmental Management, 291 Promenade Street, Providence, Rhode Island 02908.
- **Double-Walled Tank** - a container with two complete shells providing both primary and secondary containment. The container has a continuous 360-degree interstitial space between the primary and secondary shell. The interstitial space is designed so that an approved interstitial space monitor is able to continuously monitor this space. All double-walled tanks must be UL-listed.
- **Existing Facility** - a facility that is either in full operation, or where substantial construction has begun, or where construction on any modification was commenced prior to October 1984.
- **Excavation Zone** - the underground area containing the tank system and backfill material, bounded by the ground surface, walls, floor of the pit, and trenches into or from which the UST system is installed or removed.
- **Facility** - any parcel of real estate or contiguous parcels of real estate owned and/or operated by the same person(s) that together with all land, structures, facility components, improvements, fixtures, and other appurtenances located therein form a distinct geographic unit where petroleum products or hazardous materials are or have been stored in USTs.
- **Facility Component** - any underground tanks, associated pipes, pumps, leak monitoring systems, cathodic protection systems, vaults, fixed containers, or appurtenant structures, used or designed to be used for the storage, transmission, or dispensing of petroleum products and hazardous wastes.
- **Flow-Through Process Tank** - any tank that is an integral part of a production process through which there is a steady, variable, recurring, or intermittent flow of materials during the operation of the process. Flow-through process tanks do not include tanks used for the storage of finished products or by-products from a production process.
- **Free Product** - any petroleum product or hazardous material that is present as a nonaqueous phase liquid (e.g., liquid not dissolved in water).
- **Gasoline** - a petroleum distillate, or blends of petroleum distillates, having a Reid vapor pressure of 7 psia (48.3 kPa) or greater and capable of being used as fuel for internal combustion engines.
- **Groundwater** - water found in the saturated zone underground that completely fills the open spaces between particles of sediment and within rock formations.

- **Hazardous Materials** - any material defined as a hazardous substance by section 101(14) of the *Comprehensive Environmental Response, Compensation, and Liability Act* of 1980 (42 USC 9605), as amended. Hazardous materials also includes any material defined as a hazardous waste according to the *Rhode Island Hazardous Waste Management Act* of 1978, as well as acetone, ethanol, ethylene oxide, methanol, methylene chloride, perchloroethylene.
- **Heating Oil** - No. 1, No. 2, No. 4, No. 5, or No. 6 technical grades of fuel oil, other residual fuel oil (including bunker C and or other fuels, except motor fuels or waste oils) when used as substitutes for any of these fuel oils.
- **Hydraulic Conductivity** - a measure of the ability of an aquifer to transmit a fluid.
- **Hydraulic Lift Tanks** - those tanks holding hydraulic fluid for a closed-loop mechanical system using compressed air or hydraulic fluid to operate lifts, elevators, and other similar devices.
- **Leak** - a loss from or gain to a UST system of 0.05 gal/h or more of fluid as determined by a precision test, visual inspection, a continuous monitoring system, inventory control, or other appropriate means.
- **Line Leak Detection System** - a device installed on the discharge side of a pump that is capable of interrupting product flow if there is a leak greater than or equal to 3 gal/h.
- **Local Fire Chief** - the person responsible for the administration and direction of a fire department in a fire district or municipality, including a fire administrator or chief, or that person's designee.
- **Maintenance** - the normal operational upkeep of a UST system necessary to prevent a release of product.
- **Modification** - any addition, replacement, restoration, refurbishment, or renovation to an existing facility that does any of the following:
  1. increases or decreases the facility's storage capacity
  2. alters the facility's physical configuration
  3. alters the design and/or specifications of facility components
  4. impairs or affects the physical integrity of a facility or its monitoring system.
- **Monitoring Well** - a cased well with a screened interval that intercepts the water table and can be used to detect the presence of groundwater contamination.
- **Motor Fuels** - any petroleum or a petroleum-based substance, typically used in the operation of combustion (motor) engines, including but not limited to, gasoline, aviation gasoline, No. 1 or No. 2 diesel fuel, or any grade of gasohol.
- **New Facility** - any facility that was not in operation or where substantial construction had not begun as of May 1985.
- **NFPA 329** - the National Fire Protection Association publication number 329 entitled, *Underground Leakage of Flammable and Combustible Liquids*, or 1987 or current edition.
- **No. 1 Fuel Oil** - a distillate oil, commonly referred to as kerosene, range oil, or jet propulsion fuel (JP-1).
- **No. 1-D Fuel Oil** - a distillate oil, commonly referred to as light diesel oil.



- **No. 2 Fuel Oil** - a distillate oil, commonly referred to as home heating oil.
- **No. 2-D Fuel Oil** - a distillate oil, commonly referred to as medium diesel oil.
- **No. 4 Fuel Oil** - a distillate oil blend of No. 2 and No. 6 fuel oil.
- **No. 5 Fuel Oil** - a distillate oil blend of No. 4 and No. 6 fuel oil.
- **No. 6 Fuel Oil** - a distillate oil, commonly referred to as Bunker-C or residual fuel.
- **Onsite** - located on the same or geographically contiguous property that may be divided by public or private right-of-way, provided the entrance and exit between the properties is at a cross-roads intersection and access is by crossing as opposed to going along the right-of-way. Noncontiguous properties owned by the same person but connected by a right-of-way that the owner controls and to which the public does not have access, is also considered onsite property.
- **Operate a Facility** - to maintain petroleum product(s) or hazardous material(s) in USTs at a facility for purposes of storage, use, or sale.
- **Operator** - any person in control of or having responsibility for the daily operation of a facility.
- **Overfill Protection** - a device that will:
  1. alert the transfer operator when the tank is no more than 90 percent full by restricting the flow into the tank or triggering a high-level alarm
  2. automatically shut off flow into the tank when the tank is no more than 95 percent full, or
  3. an equivalent device preapproved by the Department.
- **Owner** - any person who holds exclusive or joint title to or lawful possession of a facility or part of a facility.
- **Person** - an individual, trust, firm, joint stock company, corporation (including quasi-government corporation), partnership, or other unincorporated association, syndicate, governmental entity, or subdivision thereof.
- **Petroleum Product** - crude oil (or any fractions thereof) that is liquid at standard conditions of temperature (60 °F) and pressure (14.7 psia) and includes substances derived from crude oil including, but not limited to:
  1. gasoline
  2. fuel oils
  3. diesel oils
  4. waste oils
  5. gasohol, lubricants, and solvents.
- **Pollutant** - any material or effluent that may alter the chemical, physical, biological, or radiological characteristics and/or integrity of water, including: dredge spoils, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, cellar dirt, industrial, municipal, agricultural, or other waste, and petroleum or petroleum products (including oil).

- **Precision Test** - a test able to determine whether or not a UST system is leaking as defined by NFPA 329, *Underground Leakage of Flammable and Combustible Liquids*. The test must be capable of accurately detecting a tank or piping leak as small as 0.1 gal/h, adjusted for all variables, with a probability of detection of no less than 95 percent and a probability of false detection of no more than 5 percent. Measurements recorded for each test must be in accordance with manufacturer's protocol. The test method must be approved by the Director prior to use, and must be conducted by persons who have demonstrated the capability to properly conduct the test.
- **Public Water System** - a system for the distribution to the public of piped water for human consumption, provided this system has at least 15 service connections, or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.
- **Release** - any spilling, leaking, pumping, pouring, injecting, emitting, escaping, leaching, or disposing of any material stored in a UST system into groundwater, surface water, or subsurface soils.
- **Remove From Service** - to cease to operate a facility component.
- **Replacement Tank** - a tank installed at an existing facility in place of a tank that has been permanently closed.
- **Saturated Thickness** - the thickness of an aquifer below the water table.
- **Spill** - a loss of petroleum product or hazardous material in a manner other than a leak, occurring on the property where a facility is in operation, and such that the product or material is likely to enter groundwater or surface water, and shall be considered a release from a facility.
- **Spill Containment Basin** - a device installed in fill-pipe manholes that prevents petroleum product or hazardous material spills from leaching into the soil and groundwater.
- **Substantial Construction** - a continuous onsite physical construction program which has progressed to a point where 25 percent or more of the total project is completed, or where 25 percent or more of the total cost of the project has been expended for materials that are at the site.
- **Substantial Modification** - any modification to a facility, facility component, or any new facility plan that is inconsistent with the information provided to the Director in a facility's application for a certificate of registration, or any modification that could be expected to result in reduced performance of a facility component as it relates to leak prevention or detection, including:
  1. the installation of tanks that are not identified on the application for a certificate of registration for the facility
  2. the repair, relining, or replacement of any UST
  3. the replacement or repair of any piping
  4. any changes in type of petroleum product or hazardous material stored
  5. for a new facility, any alterations to the site plan
  6. any changes in the design or specifications of a facility's corrosion protection system
  7. any changes in the design, specifications, or location of a facility's leak detection equipment, including observation wells.
- **Surface Water** - a body of water whose top surface is exposed to the atmosphere and includes all waters of the territorial sea and tidewaters; all inland waters of any river, stream, brook, pond, lake, or wetlands.
- **Tank** - a stationary device designed to contain petroleum products or other regulated substances and that is constructed of nonearthen materials that provide structural support.

- *Transmissivity* - a measure of the ability of an aquifer to transmit a fluid. It is equal to the average hydraulic conductivity multiplied by the saturated thickness.
- *Underground* - 10 percent or more of the volume of the facility components (storage tanks and piping) is buried in the ground.
- *UST or Underground Storage Tank* - any one or more underground tanks and their associated components, including piping, used to contain an accumulation of petroleum product or hazardous material. The system includes piping with a volume of 10 percent or more beneath the surface of the ground.
- *Vault* - a secondary enclosure that houses a UST and is designed to contain any leaks from the tank and provide protection from corrosive soils.
- *Waste Oil* - used or spent oil of any kind, including those oils from automotive, industrial, aviation, and other sources.
- *Wellhead Protection Area* - the three-dimensional zone, surrounding a public well or wellfield through which water will move toward and reach this well or wellfield, as designated by the Director.

**RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE I (RCRA-I)**  
**GUIDANCE FOR RHODE ISLAND CHECKLIST USERS**

<b>Applicability:</b>	<b>Refer to Checklist Items:</b>
UST Exemptions	6-1
UST Registration	6-2 and 6-3
Existing USTs	6-4 through 6-9
New USTs and Replacement Systems	6-10 through 6-17
UST Facility Modification	6-18
UST Recordkeeping	6-19
UST Leak and Spill Response	6-20 and 6-21
UST Closure	6-22 through 6-26
UST Precision Test Licensing Requirements	6-27
Signatories to UST Registration and UST Closure Applications	6-28
Transfer of UST Certificates of Registration or UST Closure	6-29

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**COMPLIANCE CATEGORY:**  
**Resource Conservation and Recovery Act - Subtitle I (RCRA-I)**  
**Rhode Island Supplement**

**REGULATORY  
REQUIREMENTS:**

**REVIEWER CHECKS:**

**UST EXEMPTIONS**

**6-1.** Specific USTs must comply with the requirements of this protocol (RR 5.01 and 5.03).

Determine if the installation operates any USTs that are exempt from regulation:

- hydraulic lift tanks
- storage tanks located entirely within structures, such as a basement or cellar that is not part of a secondary containment structure, provided that the tank is situated on or above the surface of the floor
- septic tanks
- natural gas pipeline facilities
- flow-through process tanks
- USTs storing propane or liquefied natural gas.

Determine if the installation operates any of the following partially exempt USTs:

- onsite USTs less than or equal to 1100 gal in capacity used for storing heating oil and serving a one-, two- or three- family dwelling
- onsite USTs less than or equal to 1100 gal in capacity and storing heating oil for noncommercial purposes.

Verify that partially exempt USTs meet the following standards:

- UST Leak and Spill Response requirements (see numbers 6-20 and 6-21)
- new USTs are not installed in groundwater in a designated well-head protection area (USTs registered prior to 21 July 1992 are permitted to upgrade)
- new and replacement USTs fabricated of bare steel or metal are not installed for the storage of petroleum products or hazardous materials.

**UST REGISTRATION**

**6-2.** USTs must be registered with the Rhode Island Department of Environmental Management (RR 8.02, 8.03(A) and (B), and 8.07(B)).

Verify that all USTs are registered with the Department.

Verify that new and replacement USTs are registered and have a letter of approval from the Director before construction.

<b>COMPLIANCE CATEGORY:</b> Resource Conservation and Recovery Act - Subtitle I (RCRA-I) Rhode Island Supplement	
<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>6-3. Changes in UST registration information must be reported (RR 8.04-8.06, 8.15(B)).</b></p>	<p>Verify that any of the following changes in information for new facilities and proposed replacement tank systems are reported to RIDEM in writing within 10 days of that change:</p> <ul style="list-style-type: none"> <li>- the detailed specifications for the tank system</li> <li>- tank size, construction material, construction type, and material to be stored</li> <li>- all leak monitoring systems</li> <li>- spill/overflow protection methods</li> <li>- corrosion protection methods</li> <li>- operation and maintenance requirements for any of the above</li> <li>- location(s) of all tanks, piping, and dispensing pumps</li> <li>- location(s) of onsite observation wells, where applicable</li> <li>- water table elevation, where available</li> <li>- location of all public water supply wells or reservoirs within 400 ft of the facility site</li> <li>- location of all facilities served by private wells within 200 ft of the facility site</li> <li>- location of all buildings and associated structures</li> <li>- boundaries of the facility site.</li> </ul> <p>Verify that any of the following changes in information contained on the registration form for existing facilities are reported to RIDEM in writing within 10 days of that change:</p> <ul style="list-style-type: none"> <li>- results of any precision or leak detection tests pertaining to all tanks and associated piping</li> <li>- tank size, construction material, construction type, and material stored</li> <li>- all leak monitoring systems</li> <li>- spill/overflow protection methods</li> <li>- corrosion protection methods</li> <li>- operation and maintenance requirements for any of the above</li> <li>- location of all tanks, piping, and dispensing pumps</li> <li>- location of monitoring and observation wells, where applicable</li> <li>- description of water service to the facility and properties within 200 ft of the facility site</li> <li>- locations of buildings and associated structures onsite</li> <li>- boundaries of the facility site</li> <li>- description of all repairs performed on the tank system.</li> </ul> <p>(NOTE: Any tank of unknown size is assumed to be of regulated capacity unless it is determined to the satisfaction of the Director by records or measurements that the tank is not of regulated capacity. Any tank of unknown age is assumed to be greater than 13 yr of age.)</p> <p>Verify that a continuous and accurate record of the name, address, and length of operation is maintained, until the facility is closed by law.</p>

**COMPLIANCE CATEGORY:  
Resource Conservation and Recovery Act - Subtitle I (RCRA-I)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>EXISTING USTs</b></p> <p><b>6-4.</b> Existing USTs must be upgraded by 22 December 1998 (RR 10.03 and 10.04).</p> <p><b>6-5.</b> Existing USTs must be continuously monitored or precision tested to detect leaks (RR 10.05).</p>	<p>(NOTE: Requirements for upgrading, leak detection for piping, tanks, and line leak detection for existing USTs do not apply to tanks storing heating oil of any grade that is consumed onsite. Requirements for spill containment and for continuous monitoring during product transfer do apply.)</p> <p>Verify that all USTs and associated piping are upgraded through interior lining and/or cathodic protection no later than 22 December 1998.</p> <p>Verify that any UST upgrade is performed only once, and in accordance with national codes of practice.</p> <p>Verify that the Director receives a written description of the proposed upgrade method at least 30 days before the upgrade.</p> <p>Verify that the upgrade proposal is approved in writing by the Director.</p> <p>Verify that the tank is precision tested following the tank upgrade, and that no leaks are detected.</p> <p>Verify that existing USTs are either continuously monitored or precision tested to detect leaks.</p> <p>Verify that continuous monitoring for double-walled USTs consists of installing and operating interstitial continuous monitoring consistent with the requirements for New USTs and Replacement Systems.</p> <p>Verify that continuous monitoring for single-walled USTs consists of installing and operating an approved continuous monitoring system compatible with the product and tank material and performing a precision test of the tank at 5-yr intervals following the installation of the monitoring device, until the tank has been installed for 20 yr, when precision tests is conducted once every 2 yr.</p> <p>Verify that for USTs with a known installation date, precision testing is performed:</p> <ul style="list-style-type: none"> <li>- annually for USTs installed prior to 1 January 1965</li> <li>- 5, 8, 11, and 13 yr after installation, and annually thereafter.</li> </ul> <p>Verify that for USTs without a known installation date, precision testing is performed annually.</p> <p>(NOTE: Precision testing, in conjunction with inventory control, is an acceptable leak detection method for 10 yr after a tank has been upgraded. After 10 yr, a leak detection method that provides for continuous monitoring must be installed consistent with the requirements for new facilities and replacement tanks.)</p>



<b>COMPLIANCE CATEGORY:</b> <b>Resource Conservation and Recovery Act - Subtitle I (RCRA-I)</b> <b>Rhode Island Supplement</b>	
<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>6-5. (continued)</b></p> <p><b>6-6. Existing USTs must meet specific standards for piping (RR 10.06 and 10.07).</b></p> <p><b>6-7. Existing USTs leak monitoring equipment must meet specific standards (RR 10.08).</b></p>	<p>Verify that for USTs of any size storing No. 4, No. 5, or No. 6 fuel oils, precision testing is performed according to the following schedule:</p> <ul style="list-style-type: none"> <li>- annually for USTs installed prior to 1 January 1965</li> <li>- 5, 8, 11, and 13 yr after installation for USTs installed on or after 1 January 1965, and annually thereafter.</li> </ul> <p>Verify that for double-walled piping, interstitial or annular space monitoring is performed consistent with the requirements for New Facility and Replacement Tank Systems.</p> <p>Verify that for single walled USTs, the piping meets the following requirements:</p> <ul style="list-style-type: none"> <li>- pressurized piping undergoes a line tightness test upon installation and annually thereafter</li> <li>- suction piping undergoes a line tightness test upon installation, and 5, 8, 11, and 13 yr following installation and annually thereafter</li> <li>- piping pressure tightness tests have a detection limit of 0.1 gal/h at 1.5 times normal operating pressure.</li> </ul> <p>Verify that existing USTs that are equipped with pressurized piping are fitted with a line leak detection system.</p> <p>Verify that leak monitoring devices are installed, calibrated, operated, and maintained in accordance with the manufacturer's instructions, including routine maintenance and service checks for operability or running conditions.</p> <p>Verify that all leak monitoring devices are tested annually to ensure proper operation.</p> <p>Verify that all records pertaining to the equipment manufacturer, warranties, maintenance requirements, repairs, maintenance, and testing is maintained onsite for the life of the system, or at an alternate location approved by the Director in writing.</p> <p>Verify that leak monitoring devices are not shut off or deactivated at any time except for repair.</p> <p>Verify that any malfunction is repaired within 15 working days of its first occurrence.</p> <p>Verify that systems affected by devices that cannot be repaired within 15 days are temporarily closed until satisfactory repairs are made.</p>

COMPLIANCE CATEGORY: Resource Conservation and Recovery Act - Subtitle I (RCRA-I) Rhode Island Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p><b>6-7. (continued)</b></p> <p><b>6-8. Existing USTs must meet operation and maintenance standards (RR 10.02, 10.09 through 10.11).</b></p>	<p>Verify that any deactivation of a monitoring device is immediately reported to the Department by the owner/operator.</p> <p>Verify that leak monitoring devices employ an audible alarm and a visual indicator that are located as to be readily heard and seen by the owner/operator or other personnel during normal working hours.</p> <p>Verify that all monitoring devices are conspicuously marked or labeled as being monitoring devices, and are secured against vandalism, incidental damage, and improper deactivation.</p> <p>Verify that all continuous monitoring systems are tested on a monthly basis to ensure that they are operating effectively.</p> <p>Verify that continuous monitoring systems are designed, constructed, and installed so as to detect a 0.2 gal/h leak rate from any portion of the tank system that routinely contains product.</p> <p>Verify that the probability of detection is no less than 95 percent and the probability of a false alarm is no more than 5 percent.</p> <p>Verify that precision tests are capable of detecting a 0.1 gal/h leak rate from the full tank system, accounting for the effects of thermal expansion or contraction of product, vapor pockets, tank deformation, evaporation, condensation, and the location of the water table.</p> <p>Verify that these precision test results are submitted to the Director within 15 calendar days of the date of test completion.</p> <p>Verify that existing USTs are operated and maintained by trained personnel in compliance with the applicable national codes of practice for the handling and storage of petroleum or hazardous materials.</p> <p>Verify that existing USTs subject to leak detection requirements post or provide written instructions about the operation of leak detection equipment and spill response procedures in a location available to the operators.</p> <p>Verify that existing USTs are fitted with spill containment basins above-ground fill pipes.</p> <p>Verify that existing USTs are retrofitted with overfill protection by 1 January 1996.</p>

<b>COMPLIANCE CATEGORY:</b> <b>Resource Conservation and Recovery Act - Subtitle I (RCRA-I)</b> <b>Rhode Island Supplement</b>	
<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>6-8. (continued)</b></p>	<p>Verify that at a point before any transfer, the tank is gauged to determine that the tank has available capacity sufficient to receive the volume of product to be transferred.</p> <p>Verify that the carrier continuously monitors product transfer.</p> <p>Verify that the fill pipe is permanently labeled so that the product inside the tank is identified.</p> <p>(NOTE: The American Petroleum Institute (API) Publication 1637, <i>Product Identification at Service Stations</i> may be used to satisfy this requirement.)</p>
<p><b>6-9. Existing USTs must meet reporting and recordkeeping requirements (RR 10.12 and 10.13).</b></p>	<p>Verify that facilities maintain records documenting compliance with upgrades, leak detection, and operating requirements.</p> <p>Verify that written verification of compliance with corrosion protection requirements, continuous monitoring or precision testing requirements, line leak detection system requirements, and the spill containment basins is submitted to the Director within 15 calendar days of installation of the required equipment or component.</p>
<p><b>NEW USTs AND REPLACEMENT SYSTEMS</b></p>	
<p><b>6-10. New and replacement USTs must meet specific requirements (RR 11.01 and 11.02).</b></p>	<p>Verify that new USTs are not installed where the groundwater is designated as a wellhead protection area for a community well.</p> <p>Verify that USTs of bare steel or metal for the storage of petroleum products or hazardous materials are not installed.</p>
<p><b>6-11. USTs must meet operation and maintenance requirements (RR 11.03).</b></p>	<p>Verify that all USTs are maintained and operated in compliance with all national codes of practice for handling and storing of petroleum or hazardous materials.</p> <p>Verify that all USTs equipped with cathodic protection are maintained by personnel trained in cathodic protection in accordance with national codes of practice.</p>

**COMPLIANCE CATEGORY:  
Resource Conservation and Recovery Act - Subtitle I (RCRA-I)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>6-12.</b> USTs must meet design and construction requirements (RR 11.04-11.08).</p>	<p>Verify that all new or replacement tanks and/or piping systems are made of or lined with materials that are compatible with the substances stored.</p> <p>Verify that all new USTs have secondary containment for the tank and associated piping.</p> <p>Verify that all new and replacement USTs are of double-walled construction.</p> <p>Verify that all new USTs constructed of fiberglass-reinforced plastic comply with one of the following national codes:</p> <ul style="list-style-type: none"> <li>- Underwriters Laboratories (UL) Standard 1316: <i>Standard for Glass- Fiber-Reinforced Plastic Underground Storage Tanks for Petroleum Products</i></li> <li>- Underwriters Laboratories of Canada CAN 4-5615-M83: <i>Standard for Reinforced-Plastic Underground Tanks for Petroleum Products.</i></li> </ul> <p>Verify that all new USTs constructed of steel are cathodically protected and comply with one of the following national codes:</p> <ul style="list-style-type: none"> <li>- Underwriters Laboratories of Canada CAN 4-56030M85, <i>Standard for Steel Underground Tanks for Flammable and Combustible Liquids</i> and CAN 4-603.1M85, <i>Standard for Galvanic Corrosion Protection Systems for Underground Tanks for Flammable and Combustible Liquids</i> and CAN 4-5631-M84, <i>Isolated Bushings for Steel Underground Tanks Protected with Coatings and Galvanic Systems</i></li> <li>- National Association of Corrosion Engineers Standard RP-02-85, <i>Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems</i>, and UL Standard 58, <i>Standard for Steel Underground Tanks for Flammable and Combustible Liquids.</i></li> </ul> <p>Verify that all new USTs constructed of a steel-fiberglass-reinforced plastic composite comply with the Association of Composite Tanks ACT-100, <i>Specifications for the Fabrication of FRP Clad Underground Storage Tanks.</i></p> <p>Verify that all new UST outer jackets made of steel meet design and construction standards in accordance with the Steel Tank Institute, <i>Standard for Dual-Wall Underground Storage Tanks</i> and provide corrosion protection in accordance with UL Standard 1746, <i>Corrosion Protection Systems for Underground Storage Tanks.</i></p> <p>Verify that all new and replacement USTs have steel wear plates centered under all openings with minimum dimensions of 8 in. by 8 in. in area and at least 1/4 in. thick.</p> <p>Verify that all new and replacement USTs have a submerged fill tube.</p>

**COMPLIANCE CATEGORY:  
Resource Conservation and Recovery Act - Subtitle I (RCRA-I)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>6-12. (continued)</b></p> <p><b>6-13.</b> UST installation must meet specific standards (RR 11.09 and 11.10).</p> <p><b>6-14.</b> UST piping design, construction, and installation must meet specific requirements (RR 11.11).</p> <p><b>6-15.</b> USTs must meet spill and overfill prevention requirements (RR 11.12 and 11.13).</p>	<p>Verify that prior to installation, all new and replacement USTs are factory tested at a minimum of 5 psig and are guaranteed tight by the manufacturer.</p> <p>Verify that all tanks, piping, and other facility components are installed in accordance with a code of practice developed by a nationally recognized association of independent testing laboratory and in accordance with the manufacturer's instructions.</p> <p>Verify that all new and replacement facility components are precision tested upon completion of installation and before commencing regular UST operations.</p> <p>Verify that the results of this initial precision test are submitted to the Director within 15 calendar days of test completion.</p> <p>Verify that all new or replacement underground piping that routinely contains regulated substances, including fittings and connections, are equipped with secondary containment and are designed and constructed as follows:</p> <ul style="list-style-type: none"> <li>- fiberglass-reinforced plastic piping is made of materials listed by UL or UL of Canada, and is of double-walled construction</li> <li>- all steel or metal piping that routinely contains a regulated substance and is in contact with the ground is cathodically protected by coating with suitable dielectric material or impressed current.</li> </ul> <p>Verify that all new and replacement UST systems are provided with equipment and procedures to prevent spilling and overfilling during product transfers to the tank including the following:</p> <ul style="list-style-type: none"> <li>- spill prevention equipment, such as a containment basin, that will prevent a release of regulated substance to the environment in the area of the fill pipe</li> <li>- overfill prevention equipment</li> <li>- shear valves (impact valves) located in the supply line at the inlet for all dispensers of motor fuels under pressure from a remote pumping system.</li> </ul> <p>(NOTE: Alternate containment systems and spill and/or overfill prevention systems may be approved by the Director.)</p>

**COMPLIANCE CATEGORY:  
Resource Conservation and Recovery Act - Subtitle I (RCRA-I)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>6-16.</b> USTs must meet leak detection requirements for tanks and piping (RR 11.15 and 11.16).</p>	<p>Verify that leak monitoring is installed and continuously operated for all new USTs.</p> <p>Verify that the interstitial space in all double-walled USTs is continuously monitored for the presence of both the regulated substance and water.</p> <p>Verify that all leak monitoring devices are able to detect water and the substance stored in the UST and its vapors if the substance is volatile.</p> <p>Verify that all new and replacement pressurized piping systems are equipped with a line leak detection system.</p> <p>Verify that all new and replacement pressurized piping systems employ a UL-approved line leak detector capable of detecting a line leakage rate of at least 3 gal/h at 10 psi.</p> <p>Verify that if a leak is detected, the leak detection system shuts off or restricts the product flow and otherwise notifies the operator of the detection of a leak.</p> <p>Verify that the interstitial space of double-walled piping or the annular space between the primary piping and secondary containment system is continuously monitored to detect the presence of the regulated substance or its vapors.</p> <p>Verify that the piping collection sump and the submersible pump head containment structure employs a leak monitor activated by the regulated substance or its vapors.</p> <p>Verify that all new or replacement suction piping is equipped with a check valve located underneath the dispensing unit.</p>

<b>COMPLIANCE CATEGORY:</b> <b>Resource Conservation and Recovery Act - Subtitle I (RCRA-I)</b> <b>Rhode Island Supplement</b>	
<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>6-17.</b> UST leak monitoring equipment must meet operational requirements (RR 11.17).</p> <p><b>UST FACILITY MODIFICATION</b></p> <p><b>6-18.</b> Substantial modification of a UST facility requires a permit (RR 12.01 - 12.04).</p> <p><b>UST RECORDKEEPING</b></p> <p><b>6-19.</b> Installations must meet recordkeeping requirements for USTs (RR 13.01 - 13.05).</p>	<p>Verify that leak monitoring devices are installed, calibrated, operated, and maintained in accordance with the manufacturer's instructions, including routine maintenance and service checks for operability or running conditions.</p> <p>Verify that all leak monitoring devices are tested annually to ensure proper operation.</p> <p>Verify that all records pertaining to the equipment manufacturer, warranties, maintenance requirements, repairs, maintenance, and testing are maintained onsite for the life of the system, or at an alternate location approved by the Director in writing.</p> <p>Verify that leak monitoring devices are not shut off or deactivated</p> <p>Verify that all substantial modifications of USTs have received the approval of the Director.</p> <p>Verify that the following permanent records of all USTs are maintained:</p> <ul style="list-style-type: none"> <li>- all data used to complete the application for certificate of registration</li> <li>- all repairs, upgrades, or modifications to pipes, fittings, or other components of UST systems</li> <li>- any monitoring, leak detection system, inventory control system, and/or UST testing results</li> <li>- records of closure activities</li> <li>- records of leaks, spills, overfills, site investigations, and remedial response activities taken.</li> </ul> <p>Verify that, for all USTs the following routine records are kept for 3 yr:</p> <ul style="list-style-type: none"> <li>- records of all calibration and standard maintenance performed</li> <li>- readings from strip charts, electronic recall device, and/or manual recordings for any continuous monitoring instrumentation</li> <li>- records of monthly tests of continuous monitoring systems</li> <li>- records pertaining to the operation and maintenance of an approved corrosion protection method</li> </ul>

**COMPLIANCE CATEGORY:**  
**Resource Conservation and Recovery Act - Subtitle I (RCRA-I)**  
**Rhode Island Supplement**

**REGULATORY REQUIREMENTS:**

**REVIEWER CHECKS:**

**6-19. (continued)**

- daily written inventory of the product or material stored, including the following minimum information:
    - record of all inflows and outflows
    - daily reconciliation between inflows, outflows, and volume on hand
    - written daily entries of any unusual occurrences that might affect the inflow, outflow, or volume on hand
    - written entries explaining in detail any adjustments to the records.
- Verify that if inventory recordkeeping indicates a discrepancy of 1 percent or more of the flowthrough plus 130 gal on a monthly basis, this discrepancy is reported as a leak/spill.

**UST LEAK AND SPILL RESPONSE**

**6-20.** All new, existing, and abandoned USTs that store petroleum products and/or hazardous materials must report leaks and spills (RR 14.01 - 14.04).

- (NOTE: Leak and spill response requirements apply to partially exempt USTs.)
- Verify that all facilities with USTs storing petroleum or hazardous materials report, investigate, and clean up any spills, overfills, or releases.
- Verify that all suspected releases are investigated, including instances where unusual operating conditions, release detection signals, or environmental conditions at the site suggest a release may have occurred.
- Verify that all confirmed and suspected releases from USTs are immediately reported to the Department and the appropriate local fire official.
- Verify that persons reporting releases to the Department provide the following information:
- name and phone number of person reporting the release
  - location of the release and name of the facility
  - date and time of the release
  - type, and to the extent known, the amount of material released
  - name and phone number of potentially responsible party, if known.
- (NOTE: During normal working hours reports of releases must be made to the RIDEM UST section at (401) 277-2234; fax (401) 521-4230. At all other times, reports can be made to the RIDEM 24-h Emergency Response Hotline at (401) 277-3070.)



**COMPLIANCE CATEGORY:  
Resource Conservation and Recovery Act - Subtitle I (RCRA-I)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>6-21.</b> All new, existing, and abandoned USTs that store petroleum products and/or hazardous materials must abate spills and leaks (RR 14.05, 14.06, and 14.07).</p>	<p>Verify that unless directed by RIDEM to do otherwise, when a confirmed release occurs, personnel take the following actions:</p> <ul style="list-style-type: none"> <li>- arrange for within 24 h and as soon as practicable, complete removal of the contents of the UST system to prevent further release into the environment</li> <li>- contain all discharged oil, oil-contaminated debris, and hazardous waste</li> <li>- assess fire, health, and safety hazards and take reasonable steps to mitigate any of these hazards including consulting local fire officials as conditions require</li> <li>- inspect any exposed releases and take steps to prevent the migration of any released regulated substance into the environment, including soils, groundwater, or surface waters</li> <li>- investigate for the presence of free product and, if present, initiate free product removal, as follows</li> <li>- carry out other actions as directed by the RIDEM.</li> </ul> <p>Verify that at sites where free product is present, the free product is removed in a manner that minimizes the spread of contamination.</p> <p>Verify that discharges and by-products from free product recovery and disposal operations are treated or disposed of in compliance with all applicable state and Federal statutes, rules, and regulations.</p> <p>Verify that free product removal systems are designed to maximize the removal of free product.</p> <p>Verify that a Release Characterization Report is submitted to the Department.</p> <p>Verify that documentation of all free product removal measures are submitted to RIDEM with the Release Characterization Report and Site Investigation Report, which includes:</p> <ul style="list-style-type: none"> <li>- names of persons implementing the free product removal measures</li> <li>- estimated quantity, type, and thickness of free product observed or measured</li> <li>- type of system used to remove free product</li> <li>- locations of any discharges associated with free product recovery activities</li> <li>- type of treatment applied to any water pumped for the purpose of free product removal</li> <li>- disposition of recovered free product.</li> </ul>

**COMPLIANCE CATEGORY:  
Resource Conservation and Recovery Act - Subtitle I (RCRA-I)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>UST CLOSURE</b></p> <p><b>6-22.</b> The removal or closure of a UST or UST system must meet specific requirements (RR 15.02 through 15.04).</p> <p><b>6-23.</b> Permanent closure of a UST must meet specific requirements (RR 15.05 and 15.06).</p> <p><b>6-24.</b> USTs that are to be permanently closed, except USTs that store fuel oil consumed solely onsite, must meet the requirements for Closure Assessment (RR 15.01, 15.10).</p>	<p>Verify that UST systems are not abandoned.</p> <p>Verify that if any UST is removed from service for more than 90 days but less than 180 days the following requirements are met:</p> <ul style="list-style-type: none"> <li>- all fill lines are capped and secured against tampering</li> <li>- manways, pumps, and other components are secure</li> <li>- suction lines are pumped out</li> <li>- vent lines are open</li> <li>- records are maintained regarding: <ul style="list-style-type: none"> <li>- UST location and size</li> <li>- the date that USTs were taken out of operation</li> <li>- the procedures used to maintain the facility in a safe condition</li> </ul> </li> <li>- personnel continue to comply with all general operating requirements, including release reporting and investigation, leak and spill response, and corrective action requirements</li> <li>- personnel continue to comply with all release detection requirements if regulated substances are stored in the UST or if greater than 1 in. of residue is measured in the tank bottom following evacuation of liquids.</li> </ul> <p>Verify that any personnel who remove a UST from operation for more than 180 days and have not been granted an extension of temporary closure by the Director or who have abandoned any UST, comply with the following procedures for closing USTs and the appropriate national codes of practice.</p> <p>Verify that a certificate of closure is obtained from the Director at least 10 days before the removal of a UST from service.</p> <p>Verify that the Department is notified at least 3 days before the proposed date of excavation or closure of a UST.</p> <p>Verify that the UST to be closed and the excavation zone are made available to be viewed and inspected by RIDEM personnel during the closure process.</p> <p>(NOTE: The time frame requirements above may be waived by the Director in the event of an emergency UST closure.)</p> <p>Verify that Closure Assessments are performed in accordance with RIDEM guidelines and indicate whether contamination was detected at the closure site.</p>

<b>COMPLIANCE CATEGORY:</b> <b>Resource Conservation and Recovery Act - Subtitle I (RCRA-I)</b> <b>Rhode Island Supplement</b>	
<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>6-24. (continued)</b></p>	<p>Verify that Closure Assessments are submitted to the RIDEM in writing and include:</p> <ul style="list-style-type: none"> <li>- physical descriptions of all USTs removed or otherwise closed</li> <li>- an inspection of the condition of the USTs, including identification of any holes</li> <li>- observations of the soil conditions in the excavation zone</li> <li>- observations of any groundwater encountered in the excavation zone or or observed via monitoring wells</li> <li>- descriptions of any analytical methods used to evaluate site conditions and resulting data</li> <li>- the name and qualifications of the person preparing the Closure Assessment.</li> </ul> <p>Verify that the Closure Assessment is submitted to the Department within 30 days after the UST closure.</p> <p>(NOTE: The Director may waive the requirement for a Closure Assessment if there is documentation in writing at the time of the proposed closure stating the facility has complied with all leak detection requirements for the USTs proposed to be closed, the leak detection data indicates the UST system is tight, that groundwater monitoring data is available for the site that is deemed to be representative of the area that is likely to be affected by a release from the USTs, and that these data indicate that a release has not occurred.)</p>
<p><b>6-25. The removal of a UST requires notification and approval (RR 15.11).</b></p>	<p>Verify that notification is made to and approval received from RIDEM before the the permanent closure of a UST by removal of the UST and related facility components.</p> <p>Verify that before removal of a UST:</p> <ul style="list-style-type: none"> <li>- all product is removed from the UST and connecting lines</li> <li>- local fire safety officials have been notified concerning removal activities</li> <li>- the UST is cleaned to remove any remaining product or residual material and this product or residual material is disposed of in accordance with applicable Federal, state, and local statutes, ordinances, rules, and regulations</li> <li>- the gaseous vapors are released at the site in a safe manner consistent with national codes of practice</li> <li>- before final disposal, openings are made in the UST to render it unfit for further use</li> <li>- any excavated contaminated soil or debris is stored, handled, and disposed of in accordance with appropriate state and Federal statutes, rules, or regulations.</li> </ul>

**COMPLIANCE CATEGORY:**  
**Resource Conservation and Recovery Act - Subtitle I (RCRA-I)**  
**Rhode Island Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p><b>6-26.</b> Closing a UST in place must meet specific requirements (RR 15.12).</p> <p><b>UST PRECISION TEST LICENSING REQUIREMENTS</b></p>	<p>Verify that notification is made to and approval received from RIDEM before the permanent closure in place of a UST.</p> <p>Verify that prior to closure in place of a UST:</p> <ul style="list-style-type: none"> <li>- the UST(s) and associated piping are precision tested, the test results reveal no leaks, and all results are furnished to the Director</li> <li>- all product is removed from the UST and from all connecting lines</li> <li>- the UST is cleaned to remove any remaining product or residual material and the product or residual material is disposed of in accordance with applicable Federal, state, and local statutes, ordinances, rules, and regulations</li> <li>- all fill, gauge, pump, and vent lines are disconnected and all inlets and outlets are permanently capped or plugged</li> <li>- all USTs are filled completely with an inert solid material and all remaining underground piping associated with the USTs are permanently capped and secured against tampering.</li> </ul>
<p><b>6-27.</b> Personnel who conduct precision tests must be licensed (RR 16.02, 16.06).</p>	<p>Verify that all personnel who conduct precision tests are licensed.</p> <p>Verify that licensed testers do not allow any other person to conduct precision testing under his/her license, or transfer his/her license to any person.</p> <p>Verify that a licensed tester performs precision tests in accordance with protocols provided by the developer or manufacturer of the testing equipment.</p> <p>Verify that all licensed testers sign and include their license number on all precision test results submitted to the Department or provided to the owner or operator of the UST(s) tested.</p>

<b>COMPLIANCE CATEGORY:</b> <b>Resource Conservation and Recovery Act - Subtitle I (RCRA-I)</b> <b>Rhode Island Supplement</b>	
<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>SIGNATORIES TO UST REGISTRATION AND UST CLOSURE APPLICATIONS</b></p> <p><b>6-28.</b> Registration documents and closure applications must be signed by a responsible officer (RR 17.01(D), 17.02 - 17.04).</p>	<p>Verify that for a military installation, the Installation Commander of a rank of O6 or higher (if the installation employs more than 250 persons and authority to sign permit applications has been assigned or delegated to the Installation Commander in accordance with applicable Department of Defense (DOD) procedures), signs the registration documents and closure applications.</p> <p>(NOTE: If an Installation Commander does not meet these requirements, the permit application must be signed by a superior officer who meets the requirements.)</p> <p>Verify that where a tenant is present on the installation and has authority or responsibility for any aspect of the regulated activity, the Tenant Commander of a rank of O6 or higher must also sign the application. The Tenant Commander must also employ more than 250 persons and have been assigned or delegated the authority to sign permit applications in accordance with applicable DOD procedures.</p> <p>(NOTE: If the Tenant Commander does not meet these requirements, the permit application must be signed by a superior officer who meets the requirements.)</p> <p>Verify that all reports required by these regulations and other information requested by the Director are signed by a person described above, or by a duly authorized representative of that person.</p> <p>Verify that a duly authorized representative is authorized in writing by a person described above.</p> <p>Verify that this authorization specifies either an individual or a position having responsibility for overall operation of the regulated facility or activity such as the plant manager, operator of a well or well field, superintendent, or position of equivalent responsibility.</p> <p>(NOTE: A duly authorized representative may thus be either a named individual or any individual occupying a named position.)</p> <p>Verify that this authorization is submitted to the Director.</p> <p>Verify that if an authorization above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements above is submitted to the Director before or together with any reports, information, or applications to be signed by an authorized representative.</p>

**COMPLIANCE CATEGORY:  
Resource Conservation and Recovery Act - Subtitle I (RCRA-I)  
Rhode Island Supplement**

**REGULATORY  
REQUIREMENTS:**

**REVIEWER CHECKS:**

**6-28. (continued)**

Verify that all documents required above to be signed contain the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

**TRANSFER OF UST  
CERTIFICATES OF  
REGISTRATION OR  
UST CLOSURE**

**6-29.** Transfer of a Certificate of Registration or Closure to a new owner or operator requires notification (RR 18.02, 18.03).

Verify that the Director is notified by certified mail at least 30 days before the proposed transfer date of any transfer of Certificate of Registration or Closure, which includes:

- name, registration number, and address of the facility
- name and address(es) of the current owner(s) and operator(s)
- names and address(es) of the proposed owner(s) and operator(s)
- names and addresses of the persons upon whom legal process can be served for both the present and proposed owner(s) and operator(s)
- a notarized statement, signed by a duly authorized officer or agent of the new owner/operator stating that he/she has:
  - read the original application for a Certificate of Registration or Closure, and
  - believes, to the best of his or her knowledge, that there has been no substantial modification in the operations of the facility since the Certificate was issued
  - included a description of all the changes that have occurred since the Certificate was issued
- a proposed transfer date when the new owner will assume the Certificate and all accompanying responsibility.

Verify that the current owner pays any due or past due registration fees pertaining to the facility.

**COMPLIANCE CATEGORY:  
Resource Conservation and Recovery Act - Subtitle I (RCRA-I)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>6-29. (continued)</b></p>	<p>Verify that no transfer of Closure Certificates occurs without prior notification to the Director, in writing, at least 30 days before the proposed transfer date, including:</p> <ul style="list-style-type: none"> <li>- the name and address of the current owner</li> <li>- the address of the facility, and facility registration number</li> <li>- the name and address of the new owner(s) and operator(s)</li> <li>- the name and address of all persons upon whom legal process can be served for both the present and proposed owner(s) and operator(s)</li> <li>- a notarized statement signed by the new owner/operator stating that he or she agrees to abide by the conditions of the Closure Certificate issued for the facility site.</li> </ul> <p>Verify that the existing Certificate holder delivers to the new owner or operator all documents and information related to the UST, facility, or system, including:</p> <ul style="list-style-type: none"> <li>- the inventory reconciliations for the previous 3 yr</li> <li>- the installation of any and all UST-related equipment</li> <li>- release detection</li> <li>- closures</li> <li>- monitoring</li> <li>- sampling and analysis</li> <li>- site assessment</li> <li>- equipment maintenance</li> <li>- repairs</li> <li>- all other records required to be maintained above in the UST Recordkeeping section.</li> </ul>

<b>INSTALLATION:</b>	<b>COMPLIANCE CATEGORY:</b> Resource Conservation and Recovery Act Subtitle I (RCRA-I) Rhode Island Supplement	<b>DATE:</b>	<b>REVIEWER(S):</b>
<b>STATUS</b> NA C RMA	<b>REVIEWER COMMENTS:</b>		



**SECTION 7**

**COMPREHENSIVE ENVIRONMENTAL RESPONSE,  
COMPENSATION, AND LIABILITY ACT/  
SUPERFUND AMENDMENT AND REAUTHORIZATION ACT (CERCLA/SARA)  
AND RCRA CORRECTIVE ACTIONS  
Rhode Island Supplement**

**SECTION 7**  
**COMPREHENSIVE ENVIRONMENTAL RESPONSE**  
**COMPENSATION AND LIABILITY ACT/SUPERFUND**  
**AMENDMENT AND REAUTHORIZATION ACT (CERCLA/SARA)**  
**AND RCRA CORRECTIVE ACTIONS**  
**Rhode Island Supplement**

Regulations promulgated under the authority of CERCLA/SARA are applicable to installations in Rhode Island. Rhode Island regulations cited under several protocols require release reporting. Refer to Protocol 7 in the U.S. ECAS Manual for Federal, Army, and Department of Defense (DOD) requirements.



<b>INSTALLATION:</b>	<b>COMPLIANCE CATEGORY:</b> Comprehensive Environmental Response and Liability Act / Superfund Amendment and Reauthorization Act (CERCLA/SARA) and RCRA Corrective Actions Rhode Island Supplement	<b>DATE:</b>	<b>REVIEWER(S):</b>
<b>STATUS</b> NA C RMA	<b>REVIEWER COMMENTS:</b>		

**SECTION 8**

**TOXIC SUBSTANCES CONTROL ACT (TSCA)**

**Rhode Island Supplement**

**SECTION 8**  
**TOXIC SUBSTANCES CONTROL ACT (TSCA)**  
**Rhode Island Supplement**

Rhode Island regulates polychlorinated biphenyls (PCBs) under hazardous waste. See the Hazardous Materials Management Protocol for the definition of PCB release. See the U.S. ECAS Manual for Department of Defense (DOD), Army, and Federal requirements.



<b>INSTALLATION:</b>	<b>COMPLIANCE CATEGORY:</b> <b>TOXIC SUBSTANCES CONTROL ACT (TSCA)</b> <b>Rhode Island Supplement</b>	<b>DATE:</b>	<b>REVIEWER(S):</b>
<b>STATUS</b> NA C RMA	<b>REVIEWER COMMENTS:</b>		



**SECTION 9**

**FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT (FIFRA)**

**Rhode Island Supplement**

**SECTION 9**  
**FEDERAL INSECTICIDE, FUNGICIDE, AND**  
**RODENTICIDE ACT (FIFRA)**  
**Rhode Island Supplement**

**Definitions**

The following definitions are from the *Rhode Island Pesticide Control Act*, Title 23, Chapter 25 of the General Laws of Rhode Island (GLRI), and the Rules and Regulations Relating to Pesticides (Rhode Island Pesticide Rule (RIPR)):

- *Agricultural Commodity* - any plant, or part thereof, or animal, or animal product, produced by a person (including farmers, ranchers, vintagers, plant propagators, Christmas tree growers, aquaculturists, floriculturists, orchardists, foresters, or other comparable persons) primarily for sale, consumption, propagation, or other use by man or animals.
- *Animal* - all vertebrate and invertebrate species, including man and other mammals, birds, fish, and shellfish.
- *Applicator* - the individual or company providing lawn care services.
- *Beneficial Insects* - those insects that, during their life cycle, are effective pollinators of plants, are parasites or predators of pests, or are otherwise beneficial.
- *Certified Commercial Applicator* - any commercial applicator who is certified as authorized to purchase, acquire, apply, or supervise the application of a pesticide classified for restricted use by the U.S. Environmental Protection Agency (USEPA) or limited use by the Director.
- *Commercial Applicator* - any person, including employees of Federal agencies, who apply or supervise the application of any pesticide for any purpose or on any property other than for the purpose of producing any agricultural commodity on land owned or rented by him or his employer.
- *Defoliant* - any substance or mixture of substances intended to cause the leaves or foliage to drop from a plant, with or without causing abscission.
- *Desiccant* - any substance or mixture of substances intended for artificially accelerating the drying of plant tissue.
- *Device* - any instrument or contrivance (other than a firearm) that is intended for trapping, destroying, repelling, or mitigating any pest or any other form of plant or animal life (other than man, bacteria, virus, or other micro-organism on or in living man or other living animals); but not including equipment used for the application of pesticides when sold separately therefrom.
- *Director* - the Rhode Island Director of Environmental Management.
- *End Use Product* - the pesticide(s) as applied, does not mean the concentrate.
- *Environment* - includes water, air, land, all plants, man, and other living animals therein, and the interrelationships that exist among these.

- **FIFRA** - the *Federal Insecticide, Fungicide, and Rodenticide Act*.
- **Fungi** - all nonchlorophyll-bearing thallophytes (that is, all nonchlorophyll-bearing plants of a lower order than mosses and liverworts) as, for example, rusts, smuts, mildews, molds, yeasts, and bacteria, except those in or on living man or other animals, and except those in or on processed food, beverages, or pharmaceuticals.
- **Homeowner** - the owner or occupant of a private single family residence or the manager of a multi-unit dwelling.
- **Immediate Service Call** - includes customer complaints and lawn-threatening pests but excludes regularly scheduled treatments.
- **Insect** - any of the numerous small invertebrate animals generally having the body more or less obviously segmented; for the most part belonging to the class insecta; comprising six-legged, usually winged forms, as for example, moths, beetles, bugs, bees, flies and their immature stages; and to other allied classes of arthropods whose members are wingless and usually have more than six legs, as for example, spiders, mites, ticks, centipedes, and wood lice.
- **Label** - the written, printed, or graphic matter on or attached to the pesticide or device or any of its containers or wrappers.
- **Labeling** - the label and all other written, printed or graphic matter accompanying the pesticide or device at any time, and to which reference is made on the label or in literature accompanying the pesticide or device, except to current official publications of the USEPA, the U.S. Departments of Agriculture, Interior, and the Department of Health and Human Services; state experiment stations; state agricultural colleges; and other Federal or state institutions or agencies authorized by law to conduct research in the field of pesticides.
- **Land** - all land and water areas, including airspace, all plants, animals, structures, buildings, contrivances, and machinery appurtenant thereto or situated thereon; fixed or mobile; including any used for transportation.
- **Permit** - a written certificate issued by the director authorizing the purchase, possession, and/or use of certain pesticides, or pesticide uses defined as restricted-use pesticides, and state limited-use pesticides.
- **Person** - any individual, partnership, association, fiduciary, corporation, governmental entity, or any organized group of persons whether incorporated or not.
- **Pest** - any insect, rodent, nematode, fungus or weed, and any other form of terrestrial or aquatic plant or animal life or virus, bacteria, or other micro-organism (except viruses, bacteria, or other micro-organisms on or in living man or other living animals) that the Director declares to be a pest.
- **Pesticide** - any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest, and any substance or mixture of substances intended for use as a plant regulator, defoliant, or desiccant.
- **Public Recreation Facilities** - includes golf courses, playgrounds, athletic facilities, school grounds, and parks.

- *Restricted-Use Pesticides* - any pesticide that is classified for restricted use by USEPA, as published in the Federal Register (FR), is a restricted-use pesticide under the *Rhode Island Pesticide Control Act*.
- *State Limited-Use Pesticide* - any pesticide or pesticide use that, when used as directed or in accordance with a widespread and commonly recognized practice, the Director may determine additional restrictions to prevent unreasonable adverse effects on the environment including man, land, beneficial insects, animals, crops and wildlife, other than pests, including products containing Alar or chlordane.
- *Under the Direct Supervision* - onsite supervision of any pesticide application by an appropriately certified applicator who is responsible for pesticide application and is capable of dealing with any emergency situations that might occur.
- *Unreasonable Adverse Effects on the Environment* - any unreasonable risk to man or the environment, taking into account the economic, social, and environmental costs and benefits of the use of any pesticide.
- *Use of a Pesticide* - any act of handling or release of a pesticide, or the exposure of man or the environment to a pesticide, but excluding normal handling associated with pesticide distribution, through acts including:
  1. application of a pesticide including mixing or loading of equipment and any required supervisory action in or near the area of application
  2. storage actions for pesticides and pesticide containers
  3. disposal actions for pesticides and pesticide containers.
- *Weed* - any plant that grows where not wanted.
- *Wildlife* - all living things that are neither human nor (as defined herein) pests, including mammals, birds, and aquatic life.



**FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT  
(FIFRA)**

**GUIDANCE FOR RHODE ISLAND CHECKLIST USERS**

<b>Applicability:</b>	<b>Refer to Checklist Items:</b>
Certification	9-1
Supervision of Noncertified Applicators	9-2
Application Records	9-3
Pesticide Management	9-4 through 9-7
Lawn and Turf Applications	9-8
Chlordane	9-9

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**COMPLIANCE CATEGORY:  
FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT (FIFRA)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>CERTIFICATION</b></p> <p><b>9-1.</b> Installation personnel who apply USEPA restricted-use pesticides or state limited-use pesticides must be certified (GLRI 23-25-11, 23-25-12, 23-25-18(a)(9),(10), 23-24-23(c),(d); RIPR C.1, D.1, D.7.a, K.1.c-d).</p>	<p>Verify that all personnel who use a restricted-use or state limited-use pesticide (see Definitions) in any category are certified commercial applicators for that category or are under the direct supervision of an commercial applicator certified in that category.</p> <p>(NOTE: Category 8 and 9 include Federal, state, and other governmental personnel who use or supervise the use of restricted-use or state limited-use pesticides.)</p> <p>Verify that all personnel who supervise the use of a restricted-use or state limited-use pesticide are certified commercial applicators for that category.</p> <p>Verify that the full-size certification document is retained at the applicator's place of business.</p> <p>Verify that the wallet-size certification document is retained on the applicator's person at all times that he is using a restricted-use or state limited-use pesticide.</p>
<p><b>SUPERVISION OF NONCERTIFIED APPLICATORS</b></p> <p><b>9-2.</b> Supervision of non-certified applicators by certified commercial applicators must meet specific standards (RIPR S).</p>	<p>Verify that certified applicators whose activities indicate a supervisory role demonstrate a practical knowledge of Federal and state supervisory requirements, including labeling, regarding the application of restricted-use pesticides by noncertified applicators.</p> <p>Verify that in situations where the certified applicator is not required to be physically present, direct supervision includes verifiable instructions to the competent person, including:</p> <ul style="list-style-type: none"> <li>- detailed guidance for applying the pesticide properly, and</li> <li>- how to contact the certified applicator in the event he or she is needed.</li> </ul> <p>Verify that in situations where labeling requires, a certified applicator must be physically present when application is made by a noncertified applicator.</p> <p>Verify that in situations where sub-surface application of the following classes of termiticides are made, the actual physical presence of an applicator certified for termite and structural pest control is required when application is made by any applicator not certified for termite and structural pest control:</p> <ul style="list-style-type: none"> <li>- cyclodienes, including chlordane, aldrin, dieldrin, and heptachlor</li> <li>- organo phosphates, including chlorpyrifos.</li> </ul>



**COMPLIANCE CATEGORY:  
FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT (FIFRA)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>APPLICATION RECORDS</b></p> <p><b>9-3.</b> Commercial applicators must keep pesticide application records (GLRI 23-25-18(a)(8); RIPR B.2).</p> <p><b>PESTICIDE MANAGEMENT</b></p> <p><b>9-4.</b> Pesticides must be stored, transported, and disposed of safely (GLRI 23-25-13(c)(4),(5), 23-25-19; RIPR O.11).</p> <p><b>9-5.</b> Pesticide application must meet site restrictions (RIPR O.5-O.7).</p>	<p>Verify that all commercial applicators keep accurate records for 2 yr containing the following information on their application of pesticides:</p> <ul style="list-style-type: none"><li>- the brand names or registered names of the pesticides</li><li>- the formulation used and the quantity of that formulation used per day by each applicator when less than 1 gal of use dilution spray or 1 lb of dusts, powders, or prepared rodenticide baits are used at any one location</li><li>- when more than these amounts are used at one location, complete records for that location must be kept</li><li>- the purposes for which the pesticides were applied</li><li>- the dates of application</li><li>- the places of application.</li></ul> <p>Verify that personnel do not:</p> <ul style="list-style-type: none"><li>- handle, transport, or store pesticides in a way that endangers man and the environment, food, feed, or any other products that may be transported or stored with those pesticides</li><li>- dispose of, discard, or store any pesticide or pesticide containers in a way that causes injury to humans, vegetation, crops, livestock, wildlife, beneficial insects, or pollutes any water supply, waterway, or water body.</li></ul> <p>Verify that pesticide containers are not used for any purpose, other than the storage of pesticides, unless that purpose has been approved by the Director and the containers have been properly cleaned.</p> <p>Verify that no restricted-use or state limited-use pesticide (see Definitions) is applied to woodland areas exceeding 25 acres without the prior approval of the Director.</p> <p>Verify that pesticide applications made to areas adjacent to crops or pasturage do not contaminate crops or pasturage.</p> <p>Verify that pesticide application for agricultural purposes does not contaminate adjacent land.</p>

**COMPLIANCE CATEGORY:  
FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT (FIFRA)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>9-6.</b> Pesticide application must not contaminate waters of the state (RIPR O.1-O.4, O.8).</p> <p><b>9-7.</b> Application of pesticides by powered devices is restricted (RIPR O.9, O.10).</p> <p><b>LAWN AND TURF APPLICATIONS</b></p> <p><b>9-8.</b> Lawn and turf applications of pesticides are specially restricted (RIPR T).</p>	<p>Verify that all pest control equipment using pesticides and drawing water from the surface waters of the state has an effective antisiphon device approved by the Director to prevent back flow.</p> <p>Verify that pesticide applications to lands near or adjacent to public water supplies do not allow pesticides to drift or flow into the water.</p> <p>Verify that no pesticide applications are made within 400 ft of gravel-packed wells used for public water supply or within 250 ft of other wells so used unless materials and methods to be employed have been approved by the Director.</p> <p>Verify that pesticide applications are not made on the watershed of a public water supply unless the applications have been approved by the Director.</p> <p>Verify that pesticide applications to any surface waters of the state for the control of aquatic nuisances or for any other reason have been approved by the Director.</p> <p>Verify that application of pesticides by mechanically powered equipment is not made when the wind velocity causes a hazardous chemical to drift beyond the target area.</p> <p>Verify that application of pesticides by aircraft has been approved by the Director.</p> <p>Verify that after entering into or renewing an agreement to apply pesticides to control lawn or turf pests, and before the initial application of pesticides, the applicator must provide the homeowner with a list of those pesticides that may be used.</p> <p>Verify that this list includes common and most likely trade names of each pesticide and any post-application safety, environment, or health instructions specified on the label for the end-use product.</p> <p>Verify that the applicator informs the homeowner, in writing, that they may request a copy of the label, and/or the material data sheet, and/or the USEPA Fact Sheet, if available, on any pesticide that may be used.</p> <p>Verify that personnel notify neighbors that are contiguous to a property that they are treating and that request to be notified.</p> <p>Verify that notification takes place at least 48 h in advance of the application of lawn or turf pesticides.</p>

**COMPLIANCE CATEGORY:  
FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT (FIFRA)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>9-8. (continued)</b></p>	<p>Verify that if notice by telephone, mail, or in person cannot be given 48 h before the application of pesticides, the applicator must leave written notice at that house following the application.</p> <p>(NOTE: Advance notice is not required for immediate service calls, which includes customer complaints and lawn-threatening pests but does not include regularly scheduled treatments. In these cases, written notification shall be left at the requesting neighbor's house following the application.)</p> <p>Verify that at the completion of each application, the applicator leaves written notice at the property treated, containing the following information:</p> <ul style="list-style-type: none"> <li>- the common name of the pesticide(s) that were applied to the property</li> <li>- a telephone number of the applicator</li> <li>- the telephone number of the RIDEM.</li> </ul> <p>Verify that at the time of each application, the applicator posts signs in conspicuous points of access to the property and instructs the customer when to remove the signs.</p> <p>(NOTE: Conspicuous points of access include unobstructed abutting yard, walkways, paths, etc.)</p> <p>Verify that prior to commencing each application of a pesticide, the manager of a public recreation facility posts a notice in the place most likely to inform those who make use of the facility.</p> <p>Verify that this notice remains in place for 72 h after completion of the application.</p> <p>Verify that signs are at least 20 in.<sup>2</sup> (4 in. by 5 in.) and are printed with the following information on waterproof stock in dark letters on a white field:</p> <ul style="list-style-type: none"> <li>- lawn chemicals applied (in letters at least 1/2 in. high)</li> <li>- applicator name</li> <li>- phone number of applicator</li> <li>- keep posted for 72 h (no smaller than 1/4 in. letters).</li> </ul> <p>Verify that each applicator makes any written material required above readily available to the Department upon request.</p>

**COMPLIANCE CATEGORY:  
FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT (FIFRA)  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>CHLORDANE</b></p> <p><b>9-9.</b> Pesticide products containing chlordane are specially restricted (RIPR A.2.a.3,4).</p>	<p>Verify that products containing Alar and chlordane are used by certified personnel or personnel under the direct supervision of a certified applicator.</p> <p>Verify that certified commercial applicators maintain records of applications of Chlordane for the control of termites for a period of 5 yr.</p> <p>Verify that these records include:</p> <ul style="list-style-type: none"><li>- date of application</li><li>- municipality in which application was made</li><li>- address of application.</li></ul>



<b>INSTALLATION:</b>	<b>COMPLIANCE CATEGORY:</b> <b>FEDERAL INSECTICIDE, FUNGICIDE,</b> <b>AND RODENTICIDE ACT (FIFRA)</b> <b>Rhode Island Supplement</b>	<b>DATE:</b>	<b>REVIEWER(S):</b>
<b>STATUS</b> <b>NA C RMA</b>	<b>REVIEWER COMMENTS:</b>		

**SECTION 10**

**NATIONAL HISTORIC PRESERVATION ACT (NHPA)  
AND CULTURAL RESOURCES**

**Rhode Island Supplement**

**SECTION 10**  
**NATIONAL HISTORIC PRESERVATION ACT (NHPA)**  
**AND CULTURAL RESOURCES**  
**Rhode Island Supplement**

**Definitions**

These definitions were obtained from the Rhode Island Historical Preservation Commission's Procedures for Registration and Protection of Historic Properties and the General Laws of Rhode Island (GLRI) 23-18-1.

- *Commission* - the Rhode Island Historical Preservation Commission.
- *Executive Director* - the executive Director of the Commission.
- *Historic Cemetery* - any tract of land that has been for more than 100 yr used as a burial place, whether or not marked with an historic marker, including but not limited to, ancient burial places known or suspected to contain the remains of one or more American Indians.
- *Historic Property* - one of the following:
  1. any district, site, building, structure, or object listed in the State Register. Properties may be listed in the State Register through concurrent listing in the National Register of Historic Places or alternatively, for the purposes of these regulations, the Commission may determine that properties meet the criteria for registration
  2. any building, site, object, or artifact of historical, architectural, or archaeological interest listed in the catalog of state-owned historic properties
  3. any archaeological resource, including specimens, sites, and underwater resources subject to Commission permits or advisories.
- *State Register Criteria* - the criteria established by the Commission for use in evaluating the eligibility of properties for the State Register.





**NATIONAL HISTORIC PRESERVATION ACT (NHPA)  
AND CULTURAL RESOURCES  
GUIDANCE FOR RHODE ISLAND CHECKLIST USERS**

<b>Applicability:</b>	<b>Refer to Checklist Items:</b>
Historic Property	10-1
Archaeological Investigations	10-2
Historic Cemeteries	10-3

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**COMPLIANCE CATEGORY:  
NATIONAL HISTORIC PRESERVATION ACT (NHPA)  
AND CULTURAL RESOURCES  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>HISTORIC PROPERTY</b></p> <p><b>10-1.</b> Installations with property listed or meeting the criteria for listing in the Rhode Island State Register of Historic Places must meet specific requirements (RI: Procedures for Registration and Protection of Historic Properties I.a.1. and IV.b.).</p> <p><b>ARCHAEOLOGICAL INVESTIGATIONS</b></p> <p><b>10-2.</b> Installations must meet certain requirements for archaeological investigations (RI: Procedures for Registration and Protection of Historic Properties XIV).</p> <p><b>HISTORIC CEMETERIES</b></p> <p><b>10-3.</b> Installations with historic cemeteries must meet specific requirements (RIGL 23-18-11).</p>	<p>Verify that installations obtain the approval of the Commission before conducting any activity that will encroach upon, damage, or destroy property eligible for or listed in the State Register.</p> <p>Verify that installations with property that may be eligible for the State Register consult with the Executive Director to determine whether the property should be listed.</p> <p>Verify that installations conducting investigations on state-owned lands or bottoms of navigable waters obtain a permit from the Commission.</p> <p>Verify that installations do not alter or remove historic cemeteries without a permit from local authorities.</p> <p>Verify that the local authorities are immediately notified if any of the following are identified during construction or excavation activities:</p> <ul style="list-style-type: none"> <li>- human skeletal remains</li> <li>- unmarked cemeteries.</li> </ul>



<b>INSTALLATION:</b>	<b>COMPLIANCE CATEGORY: NATIONAL HISTORIC PRESERVATION ACT (NHPA) AND CULTURAL RESOURCES Rhode Island Supplement</b>	<b>DATE:</b>	<b>REVIEWER(S):</b>
<b>STATUS NA C RMA</b>	<b>REVIEWER COMMENTS:</b>		

**SECTION 11**

**NATURAL RESOURCES MANAGEMENT**

**Rhode Island Supplement**

**SECTION 11**  
**NATURAL RESOURCES MANAGEMENT**  
**Rhode Island Supplement**

**Definitions**

These definitions were obtained from the State of Rhode Island Coastal Resources Management Program.

- *Council* - the Coastal Resources Management Council of Rhode Island.





**NATURAL RESOURCES MANAGEMENT**  
**GUIDANCE FOR RHODE ISLAND CHECKLIST USERS**

<b>Applicability:</b>	<b>Refer to Checklist Items:</b>
Endangered and Threatened Species	11-1
Coastal Resources	11-2

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**COMPLIANCE CATEGORY:  
NATURAL RESOURCES MANAGEMENT  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>ENDANGERED AND THREATENED SPECIES</b></p> <p><b>11-1.</b> Installations must meet specific requirements for buying, possessing, trafficking, or otherwise disturbing endangered or threatened plant and animal species (Rhode Island General Laws (RIGL) 20-37-3 and Endangered Species in Rhode Island list).</p> <p><b>COASTAL RESOURCES</b></p> <p><b>11-2.</b> Installations must meet specific requirements for coastal development (State of Rhode Island Coastal Resources Management Program).</p>	<p>Verify that installation personnel do not disturb any plant species listed in Appendix 11-1.</p> <p>Verify that installation personnel do not take, transport, process, or sell any fish or wildlife listed in Appendix 11-2.</p> <p>(NOTE: Special permits may be issued by the Director for the collection of endangered species for scientific or educational purposes.)</p> <p>Verify that installations obtain assent from the Council before conducting activities affecting:</p> <ul style="list-style-type: none"> <li>- tidal waters within the territorial see (including coastal ponds, some of which are not tidal but which are coastal waters associated with a barrier beach system)</li> <li>- shoreline features</li> <li>- areas contiguous to shoreline features (including all lands and waters directly adjoining shoreline features that extend inland 200 ft from the inland border of that shoreline feature).</li> </ul>



## Appendix 11 - 1

### ENDANGERED PLANT SPECIES

Scientific Name	Common Name
<i>Lycopodium alopecuroides</i>	Foxtail clubmoss
<i>Lycopodium Annotinum</i>	Stiff clubmoss
<i>Asplenium montanum</i>	Mountain spleenwort
<i>Asplenium rhizophyllum</i>	Walking fern
<i>Pellaea atropurpurea</i>	Purple cliff-brake
<i>Scheuchzeria palustris</i> ssp. <i>americana</i>	Pod-grass
<i>Sagittaria teres</i>	Slender arrowhead
<i>Carex collinsii</i>	Collins' sedge
<i>Carex walteriana</i> var. <i>brevis</i>	Walter's sedge
<i>Carex polymorpha</i>	Variable sedge
<i>Eleocharis melanocarpa</i>	Black-fruited spike-rush
<i>Eleocharis tricostata</i>	Three-angled spike-rush
<i>Fuirena pumila</i>	Umbrella grass
<i>Psilocarya scirpoides</i>	Long-beaked bald rush
<i>Scirpus etuberculatus</i>	Untubercled bulrush
<i>Scirpus longii</i>	Long's bulrush
<i>Rynchospora inundata</i>	Inundated horned rush
<i>Rynchospora torreyana</i>	Torrey's beaked rush
<i>Scleria triglomerata</i>	Tall nut-rush
<i>Scleria pauciflora</i>	Few-flowered nut-rush
<i>Orontium aquaticum</i>	Golden club
<i>Galearis spectabilis</i>	Showy orchis
<i>Malaxis unifolia</i>	Green adder's mouth
<i>Platanthera flava</i> var. <i>herbiola</i>	Pale green orchis
<i>Platanthera ciliaris</i>	Yellow fringed orchid
<i>Platanthera hookeri</i>	Hooker's orchid
<i>Spiranthes tuberosa</i>	Little ladies'-tresses
<i>Saururus cernuus</i>	Lizard's-tail
<i>Arceuthobium pusillum</i>	Dwarf mistletoe
<i>Minuartia stricta</i>	Rock sandwort
<i>Minuartia glabra</i>	Smooth sandwort
<i>Clematis occidentalis</i>	Purple clematis
<i>Caulophyllum thalictroides</i>	Blue cohosh
<i>Adlumia fungosa</i>	Climbing fumitory
<i>Drosera filiformis</i>	Thread-leaved sundew
<i>Cardamine longii</i>	Long's bitter cress
<i>Dalibarda repens</i>	Dewdrop
<i>Sanguisorba canadensis</i>	Canadian burnet
<i>Desmodium seddillifolium</i>	Sessile-leaved tick-trefoil
<i>Linum intercursum</i>	Sandplain flax
<i>Linum sulcatum</i>	Grooved flax

APPENDIX 11 - 1 (continued)

*Helianthemum dumosum*  
*Rotala ramosior*  
*Ludwigia sphaerocarpa*  
*Aralia racemosa*  
*Hydrocotyle verticillata*  
*Andromeda polifolia*  
*Sabatia kennedyana*  
*Stachys hyssopifolia*  
*Houstonia longifolia*  
*Eupatorium leucolepis* var.  
    *novae-angliae*  
*Liatris borealis*  
*Sclerolepis uniflora*

Bushy rockrose  
Toothcup  
Round-fruited false loosestrife  
Spikenard  
Saltpond pennywort  
Bog rosemary  
Plymouth gentian  
Hyssop-leaved hedge nettle  
Long-leaved bluets  
New England boneset  
  
Northern blazing star  
Sclerolepis

Appendix 11 - 2

ENDANGERED ANIMAL SPECIES

Common Name	Scientific Name
Barrens bluet damselfly	<i>Enallagma recurvatum</i>
Banded bog skimmer dragonfly	<i>Williamsonia lintneri</i>
Regal fritillary butterfly	<i>Speyeria idalia</i>
American bittern	<i>Botaurus lentiginosus</i>
Northern harrier	<i>Circus cyaneus</i>
Yellow-breasted chat	<i>Icteria virens</i>
Vesper sparrow	<i>Poocetes gramineus</i>





<b>INSTALLATION:</b>	<b>COMPLIANCE CATEGORY:</b> <b>NATURAL RESOURCES MANAGEMENT</b> Rhode Island Supplement	<b>DATE:</b>	<b>REVIEWER(S):</b>
<b>STATUS</b> NA C RMA	<b>REVIEWER COMMENTS:</b>		

**SECTION 12**

**NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)**

**Rhode Island Supplement**

**SECTION 12**  
**NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)**  
**Rhode Island Supplement**

Regulations promulgated under the authority of NEPA are applicable to installations in Rhode Island. Refer to Protocol Section 12 in the U.S. ECAS Manual for Federal, Army, and Department of Defense (DOD) requirements.



<b>INSTALLATION:</b>	<b>COMPLIANCE CATEGORY:</b> <b>NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)</b> <b>Rhode Island Supplement</b>	<b>DATE:</b>	<b>REVIEWER(S):</b>
<b>STATUS</b> NA C RMA	<b>REVIEWER COMMENTS:</b>		

**SECTION 13**

**ASBESTOS MANAGEMENT PROGRAM**

**Rhode Island Supplement**

**SECTION 13**  
**ASBESTOS MANAGEMENT PROGRAM**  
**Rhode Island Supplement**

**Definitions**

These definitions were taken from the Rules and Regulations for Asbestos Control issued by the Rhode Island Department of Health, Division of Occupational and Radiological Health.

- *Asbestos* - the unique group of naturally occurring minerals that separate into fibers of high tensile strength; resistant to heat, wear and chemicals; described as the following types: chrysotile, amosite, crococolite, tremolite, anthophyllite, and actinolite; and every product containing any of these materials that have been chemically treated and/or altered which, after manufacture, are used for such products and end uses as insulation, textiles, paper, cement sheets, floor tile, wall coverings, decorations, coating, sealants, cement pipe, reinforced plastics, and other compounds.
- *Asbestos Abatement* - any activity involving the removal, encapsulation, enclosure, renovation, repair, demolition, or other disturbance of friable asbestos-containing materials.
- *Asbestos Abatement Site Supervisor* - any asbestos abatement worker of a licensed asbestos contractor who has been specifically licensed as a supervisor by the Rhode Island Department of Health and is named on the asbestos contractor's license.
- *Asbestos Abatement Project* - any asbestos abatement project which involves greater than 10 linear ft of pipe covered or coated with asbestos-containing material (ACM), or 25 ft<sup>2</sup> of ACM used to cover or coat any surface other than pipe.
- *Asbestos-Containing Material* - any material or product which contains more than 1 percent asbestos, as determined during the method as specified in Appendix A, 40 CFR 763, Section 1, Polarized Light Microscopy (PLM). If the asbestos content of friable material is less than 10 percent as determined by a method other than point counting by PLM, the asbestos content must be verified by point counting using PLM.





**ASBESTOS MANAGEMENT PROGRAM**  
**GUIDANCE FOR RHODE ISLAND CHECKLIST USERS**

**Applicability: Refer to**  
**Checklist Items:**

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**Abatement 13-1 and 13-2**

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**COMPLIANCE CATEGORY:  
ASBESTOS MANAGEMENT PROGRAM  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>ABATEMENT</b></p> <p><b>13-1.</b> Any asbestos abatement projects and personnel must meet specific notification and licensing requirements (Rules and Regulations for Asbestos Control, Section A, B.1, and B.3).</p> <p><b>13-2.</b> Any asbestos abatement project involving more than 10 linear ft of pipe or 25 ft<sup>2</sup> of asbestos-containing material must meet specific standards (Rules and Regulations for Asbestos Control, Section B.8.2).</p>	<p>Verify that the installation has an asbestos abatement plan approved by the Department of Health before asbestos abatement.</p> <p>Verify that the installation contacts the Department of Health before starting an emergency asbestos abatement project.</p> <p>Verify that asbestos contractors, site supervisors, and workers are licensed by the Department of Health.</p> <p>Verify that asbestos-contaminated areas are sealed off from uncontaminated areas.</p> <p>Verify that warning signs are posted to advise of the location within the facility where asbestos abatement activity is in progress.</p> <p>Verify that all asbestos-containing waste materials are adequately wetted before placement into impermeable containers for disposal and labeled according to United States Department of Transportation (DOT) and Occupational Safety and Health Administration (OSHA) requirements.</p> <p>Verify that metal or fiber drums with locking-ring tops are used when asbestos waste has sharp-edged components.</p> <p>Verify that double polyethylene bags of at least 6-mil thickness that can be securely sealed are used for asbestos waste.</p> <p>Verify that large components or structural members removed intact are contained in leak-tight wrapping equivalent to at least double layers of 6-mil polyethylene sheeting, and are secured with tape.</p>



<b>INSTALLATION:</b>	<b>COMPLIANCE CATEGORY:</b> <b>ASBESTOS MANAGEMENT PROGRAM</b> Rhode Island Supplement	<b>DATE:</b>	<b>REVIEWER(S):</b>
<b>STATUS</b> NA C RMA	<b>REVIEWER COMMENTS:</b>		

**SECTION 14**

**NOISE ABATEMENT**

**Rhode Island Supplement**

**SECTION 14**  
**NOISE ABATEMENT**  
**Rhode Island Supplement**

According to the Rhode Island Department of Transportation (RIDOT) there are no state-wide regulations concerning airport and airplane noise control. Refer to the U.S. Environmental Compliance Assessment System (ECAS) manual.





**NOISE ABATEMENT**  
**GUIDANCE FOR RHODE ISLAND CHECKLIST USERS**

**Applicability:**

**Refer to  
Checklist Items:**

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Motor Vehicle Noise Control    14-1

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**COMPLIANCE CATEGORY:  
NOISE ABATEMENT  
Rhode Island Supplement**

**REGULATORY  
REQUIREMENTS:**

**REVIEWER CHECKS:**

**MOTOR VEHICLE  
NOISE CONTROL**

**14-1.** Motor vehicles must meet specific noise control requirements (General Laws, Title 31, Chapter 45, Sections 1, 2.)

Verify that personnel do not operate a motor vehicle so that it exceeds the following noise limits based on a distance of 50 ft from the center lane of travel within the speed limit:

- in speed zones of 35 mph or less, not more than 86 dbA
- in speed zones of more than 35 mph, not more than 90 dbA.

Verify that personnel do not use a muffler cutout, bypass, or similar device on a motor vehicle on a highway.

Verify that all mufflers or tail pipes extend to the outside edge of the passenger compartment, or as originally equipped.

(NOTE: Commercial and other vehicle types may have abbreviated exhaust systems, providing the ends of the systems extend beyond any passenger compartment of the vehicle.)

Verify that the installation does not use any exhaust system if any modifications, alterations, or deletions have been made that cause any exhaust system to generate a higher or louder sound level than would be generated by the exhaust system customarily installed by the manufacturer as original equipment.



<b>INSTALLATION:</b>	<b>COMPLIANCE CATEGORY:</b> NOISE ABATEMENT Rhode Island Supplement	<b>DATE:</b>	<b>REVIEWER(S):</b>
<b>STATUS</b> NA C RMA	<b>REVIEWER COMMENTS:</b>		

**SECTION 15**

**RADON PROGRAM**

**Rhode Island Supplement**

**SECTION 15**  
**RADON PROGRAM**  
**Rhode Island Supplement**

Rhode Island has no requirements concerning the monitoring of radon in indoor facilities. See the U.S. ECAS Manual for Army requirements.





<b>INSTALLATION:</b>	<b>COMPLIANCE CATEGORY:</b> <b>RADON PROGRAM</b> Rhode Island Supplement	<b>DATE:</b>	<b>REVIEWER(S):</b>
<b>STATUS</b> NA C RMA	<b>REVIEWER COMMENTS:</b>		

**SECTION 16**

**ENVIRONMENTAL PROGRAM MANAGEMENT (EPM)**

**Rhode Island Supplement**

**SECTION 16**  
**ENVIRONMENTAL PROGRAM MANAGEMENT**  
**Rhode Island Supplement**

This protocol has no specific, applicable state regulations. Refer to the U.S. ECAS Manual for Army requirements.



<b>INSTALLATION:</b>	<b>COMPLIANCE CATEGORY:</b> <b>ENVIRONMENTAL PROGRAM MANAGEMENT (EPM)</b> <b>Rhode Island Supplement</b>	<b>DATE:</b>	<b>REVIEWER(S):</b>
<b>STATUS</b> NA C RMA	<b>REVIEWER COMMENTS:</b>		

**SECTION 17**

**HAZARDOUS MATERIALS MANAGEMENT**

**Rhode Island Supplement**

# SECTION 17

## HAZARDOUS MATERIALS MANAGEMENT

### Rhode Island Supplement

Rhode Island has adopted 49 Code of Federal Regulations (CFR) 172 and 173 concerning the transportation of hazardous materials.

#### Definitions

The following definitions are taken from the Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases, DEM-DSR-01-93:

- *Department* - the Rhode Island Department of Environmental Management.
- *Emergency Response Action* - any activities undertaken immediately following the discovery of a release of hazardous material in order to completely or partially contain, clean up, or treat the released material and remove an imminent hazard.
- *Hazardous Material* - any material or combination or mixture of materials containing any Hazardous Substance in an amount and concentration such that when released into the environment, that material can be shown to present a significant potential to cause an acute or chronic adverse effect on human health or the environment. Hazardous Material also includes any material that meets the definition of Hazardous Waste. Hazardous Material does not include petroleum for the purpose of this regulation.
- *Hazardous Substance* - any substance designated as such pursuant to 40 CFR 300.5. It does not include asbestos or radioactive materials for the purpose of this regulation.
- *Hazardous Waste* - any material defined as such waste pursuant to Rule 3.25 of the *Rhode Island Rules and Regulations for Hazardous Waste Management*.
- *Imminent Hazard* - a release of hazardous material meeting any of the following criteria:
  1. the release poses an immediate and substantial threat or risk of acute or chronic adverse effect on human health
  2. the release poses a threat or risk of harm which could cause immediate destruction or significant adverse impact on an environmentally sensitive area or the contamination of a wellhead protection area or other drinking water source
  3. the release poses an immediate threat of fire or explosion considering the following factors in evaluating the release:
    - a. the ignitability of the hazardous material, the mixture resulting from the release of the hazardous material
    - b. the potential incompatibility of the hazardous material, and the mixture resulting from the release of the hazardous material, with other materials which can reasonably be expected to be stored or handled in the area of the release
    - c. the potential impacts of a fire and/or explosion
  4. the release may be influenced by site-specific factors which have the potential to lead to an imminent threat to human health and the environment.



- **Person** - an individual, trust, firm, joint stock company, corporation (including a government corporation), partnership, association, the Federal Government or a agency or subdivision thereof, a state, municipality, commission, political subdivision of a state, or any interstate body.
- **Petroleum** - any virgin petroleum product including the following products: unused distillate and residual oil including, but not limited to, gasoline, aviation fuels, kerosene, diesel, and heating oils; and unused crankcase oil, lubricants, hydraulic oils, penetrant oils, tramp oils, quench oils, and other industrial oils.
- **Release** - as defined by 40 CFR 300.5 for the purposes of these regulations, but also excludes any release from a process, activity, or source area allowed under a permit, license, or approval by any regulatory process or legal authority; any release of hazardous materials solely derived from common household materials and occurring at the household; or any release that is completely contained within an area or structure designed and engineered to contain such materials. For the purposes of these regulations, release also includes an actual or potential threat of release.
- **Responsible Party** - any of the following persons:
  1. the owner or operator of a vessel, transport vehicle, or a site where there is a known or suspected release
  2. any person who, at the time of storage or disposal of any hazardous material, owned or operated a site where there is a known or suspected release
  3. any person who, by contract, agreement, or otherwise, directly or indirectly, arranged for the disposal of hazardous material at a site where there is a known or suspected release
  4. any person who, directly or indirectly, transported any hazardous material to a storage, disposal or treatment facility, vessel, transport vehicle, or site at which there is known or suspected release
  5. any person who otherwise caused or is legally responsible for a release of hazardous material from a vessel, transport vehicle, or operation at a site
  6. the person or legal entity controlling a site, transport vehicle, vessel, or activity that led to a known or suspected release
  7. any and all combinations of the abovementioned.
- **Remedial Action or Remedy** - those actions taken to rectify the effects of a release of hazardous material, so that it does not cause a significant risk to present or future public health or welfare, or the environment.
- **Site** - the aerial extent of contamination and all suitable areas in very close proximity to the contamination where it will be necessary to implement or conduct any required investigation or remedial action.

**HAZARDOUS MATERIALS MANAGEMENT  
GUIDANCE FOR RHODE ISLAND CHECKLIST USERS**

**Applicability:**

**Refer to  
Checklist Items:**

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Flammable and Combustible Liquids 17-1 through 17-4

Hazardous Material Releases 17-5 through 17-8

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**COMPLIANCE CATEGORY:  
HAZARDOUS MATERIALS MANAGEMENT  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>FLAMMABLE AND COMBUSTIBLE LIQUIDS</b></p> <p><b>17-1.</b> Service stations, bulk plants, and their aboveground and underground storage tanks and piping must comply with certain requirements (Rhode Island Rules and Regulations of the State Fire Marshal (RRSFM) 23-28.22-1, 23-28.22-3, and 23-28.22-4).</p> <p><b>17-2.</b> Construction and use of facilities must meet certain requirements (RRSFM 23-28.22-5, 6).</p> <p><b>17-3.</b> Attendants at self-service stations must perform certain duties (RRSFM 23-28.22-7,8).</p>	<p>(NOTE: These requirements do not apply to existing buildings, plants, structures or equipment now used for flammable liquids unless the enforcing officer determines the conditions constitute a distinct hazard. The enforcing officer is the fire chief of any city, town, or fire district.)</p> <p>Verify that three complete sets of plans and specifications, certified by an engineer, are submitted to the fire chief for any proposed facility or addition to a present facility for aboveground storage.</p> <p>Verify that when the installation or addition is completed, the applicant notifies the fire chief.</p> <p>Verify that underground tanks are not covered at the site until the tank and the underground appurtenances have been inspected and approved by the fire chief.</p> <p>Verify that the construction, installation, use, and maintenance of facilities storing, using and dispensing flammable and combustible liquids is in accordance with National Fire Protection Association (NFPA) Standard 30, 19873 edition, except for self-service dispensing stations, which are subject to the additional requirements below.</p> <p>Verify that remote-controlled dispensing devices (self-service dispensers) are approved by the authority having jurisdiction.</p> <p>(NOTE: Coin and/or card operated type dispensers are not acceptable.)</p> <p>Verify that all self-service stations have at least one qualified attendant on duty while the station is open to the public.</p> <p>Verify that during all times that Class 1 liquids are actually being dispensed, the attendant:</p> <ul style="list-style-type: none"> <li>- supervises, observes, and controls the dispensing of Class 1 liquids</li> <li>- controls sources of ignition</li> <li>- immediately handles accidental spills and uses fire extinguishers, if needed.</li> </ul> <p>Verify that the attendant prevents the dispensing of Class 1 liquids into portable containers unless the container:</p> <ul style="list-style-type: none"> <li>- is constructed of metal, approved plastic, or is approved by the authority having jurisdiction,</li> <li>- has a tight closure with screwed or spring cover and is fitted with a spout or so designed that the contents can be poured without spilling.</li> </ul>

**COMPLIANCE CATEGORY:  
HAZARDOUS MATERIALS MANAGEMENT  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>17-3. (continued)</b></p> <p><b>17-4. Self-service stations must meet specific safety standards (RRSFM 23-28.22.9-18).</b></p>	<p>Verify that the attendant or supervisor on duty is capable of performing the functions and assuming the responsibilities above.</p> <p>Verify that at self-service stations, the attendant remains within the control console area at all times while Class 1 liquids are being dispensed.</p> <p>Verify that a main power shut-off switch or switches are installed in the remote-control location and are not more than 75 ft from the dispensers.</p> <p>Verify that a fixed-fire extinguisher system suitable for the extinguishment of Class B (flammable liquid) fires, acceptable to the authority with jurisdiction, and covering the entire gasoline dispensing area is installed at each self-service station.</p> <p>Verify that the fixed-fire extinguisher system is capable of being activated, either manually or automatically.</p> <p>Verify that if the fixed-fire extinguisher is activated manually, the triggering device is in the remote control location not more than 75 ft from the dispensers.</p> <p>Verify that activation of the extinguishing system automatically cuts off power to pump dispensing device.</p> <p>(NOTE: The entire gasoline dispensing area means the area encompassing the self-service island.)</p> <p>Verify that the above extinguishing systems have a device showing the condition of the system at all times.</p> <p>Verify that instructions for the operation of the dispensers is conspicuously posted on either the dispenser or the dispenser island.</p> <p>Verify that a list of emergency procedures and instructions is conspicuously posted in the immediate vicinity of the attendant's remote control location.</p> <p>Verify that the attendant does not allow any obstacle to come between the dispensing operation and the attendant so as to obstruct the attendant's view.</p> <p>Verify that hose nozzle valves at self-service islands are approved automatic closing type valves without a latch-open device.</p> <p>Verify that a voice communication system, such as an intercom system, allowing direct voice communication at all times between the person dispensing the fuel and the attendant, is operating.</p>

**COMPLIANCE CATEGORY:  
HAZARDOUS MATERIALS MANAGEMENT  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>17-4. (continued)</b></p>	<p>Verify that on each and every dispenser island is conspicuously posted the following words of warning:</p> <ul style="list-style-type: none"> <li>- WARNING . . . It is unlawful to dispense gasoline into any portable container unless the container is constructed of metal or is approved by the authority having jurisdiction.</li> <li>- NO SMOKING.</li> <li>- SHUT OFF MOTOR WHILE MOTOR FUEL IS BEING DISPENSED.</li> </ul> <p>Verify that at least two suitable fire control devices, such as portable extinguishers, are available within 75 ft of every dispenser are in good operating condition, and are accessible.</p> <p>Verify that the attendant prevents a container that is inside a passenger-carrying vehicle from being filled with flammable liquid.</p> <p>Verify that the attendant prevents all persons under age 16 from operating a gasoline dispensing device at a self-service station.</p>
<p><b>HAZARDOUS MATERIAL RELEASES</b></p> <p><b>17-5.</b> Installations and any responsible party who discovers or is notified of any unpermitted disposal or release of hazardous materials from its operation or property must immediately investigate and initiate required actions (Rules and Regulations for the Investigation and Remediation of Hazardous Materials Releases (Remediation Regulations), DEM-DSR-01-03, Section 4.00, 5.01, and 5.02).</p>	<p>Determine if the installation has knowledge of any unpermitted disposal or release of hazardous materials.</p> <p>(NOTE: Concentrations of PCB greater than 10 ppm in any environmental media and/or greater than 2 <math>\mu</math>/100 cm<sup>2</sup>, as measured by a standard wipe test, on any surface, constitutes a release. The Division of Site Remediation may determine that an area with lower concentrations requires investigation and/or remediation.)</p> <p>Verify that the Department is notified in writing no later than 15 days after the discovery of any release of hazardous materials.</p> <p>Verify that the Department is notified in writing of any release from an existing source area discovered before 20 April 1993 and not previously reported.</p> <p>(NOTE: Releases reported to RIDEM Division of Air and Hazardous Materials, Division of Site Remediation or the Groundwater Section of the Division of Groundwater and ISDS do not have to be reported again. All other release, both before and after 20 April 1993, must be reported.)</p>

**COMPLIANCE CATEGORY:  
HAZARDOUS MATERIALS MANAGEMENT  
Rhode Island Supplement**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b>
<p><b>17-6.</b> All releases must be evaluated to determine if they pose an imminent hazard (Remediation Regulations, Section 5.03 through 5.05).</p>	<p>Verify that upon discovery or identification of a release of hazardous material on the site or directly resulting from activities at the site, the release is evaluated to determine if it is an imminent hazard (see Definitions).</p> <p>Verify that the Department is notified by telephone with written notification following no later than 48 h after the time of discovery of a release determined to be an imminent hazard.</p>
<p><b>17-7.</b> Installations and any responsible party must take immediate, appropriate action to stop or minimize a release posing an imminent hazard and/or any on-going spill (Remediation Regulations, Section 6.00).</p>	<p>Verify that immediate and appropriate action is taken to protect human health and the environment.</p> <p>Verify that no emergency response action is taken that increases the potential for harm, either short-term or long-term, to human health or the environment.</p> <p>Verify that all emergency response actions are approved by the Director before initiation.</p> <p>Verify that the duration of any portion of an approved emergency response action involving hazardous waste treatment is limited to less than 24 h from the time of discovery of the release.</p> <p>Verify that a Department-approved public notice is published in a local newspaper with the largest regional circulation when an emergency permit is issued.</p> <p>Verify that when an emergency response action is initiated, the action is monitored and evaluated.</p> <p>Verify that the emergency response report is submitted to the Department within 30 days of completion of the emergency response action.</p>
<p><b>17-8.</b> Installations and any responsible party may be required to conduct additional investigation and remedial action (Remediation Regulations, Section 7.00 through 11.00).</p>	<p>Verify that the installation conducts any required site investigation, remedial investigations, remedial action work plans, and remedial actions.</p> <p>Verify that an operating log is maintained and is readily available at the site during operating of any remedial action.</p>

<b>INSTALLATION:</b>	<b>COMPLIANCE CATEGORY:</b> <b>HAZARDOUS MATERIALS MANAGEMENT</b> Rhode Island Supplement	<b>DATE:</b>	<b>REVIEWER(S):</b>
<b>STATUS</b> NA C RMA	<b>REVIEWER COMMENTS:</b>		