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13. ABSTRACT (Maximum 200 words)

The number of environmental laws and regulations has continued to grow in the United States and worldwide, making compliance with these regulations increasingly difficult. Environmental assessments became a way to determine compliance with current environmental regulations. The U.S. Air Force 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 1984, the U.S. Army Construction Engineering Research Laboratories (USACERL), in cooperation with the Air Force Engineering and Services Center, began research on the U.S. Environmental Complaince Assessment and Management Program (ECAMP). The concept was to combine Federal, Department of Defense (DOD), and Air Force environmental regulations, along with existing checklists from the USEPA and private industry, and documentation of good management practices and risk-management issues, into a series of checklists that list legal requirements and specify items or operations to review. Each assessment protocol lists a point of contact to help assessors review the checklists as effectively as possible.

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

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Environmental Law - Hawaii
Environmental Compliance Checklists

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FOREWORD

This work was performed for the United States Air Force (USAF), Director of Engineering and Services, Environmental Division, under military interdepartmental purchase Request (MIPR) number FQMSR 19300018, Environmental Compliance Assessment and Management Program (ECAMP), dated 23 March 1993. The technical monitor was Suzy Shulman, AFCEE-ESP.

The research was performed by the Environmental Compliance Modeling and Systems Division (EC) of the Environmental Sustainment Laboratory (EL), U.S. Army Construction Engineering Research Laboratories (USACERL). The Principal Investigator was Carolyn O'Rourke, CECER-ECP. Lisa A. Gifford, CECER-ECP, was Associate Investigator. Dr. Diane K. Mann, CECER-ECP, is Acting Team Leader. Dr. John T. Bandy is Chief, CECER-EC, and William D. Goran is Chief, CECER-EL.

LTC David J. Rehbein is Commander, USACERL, and Dr. L.R. Shaffer is Director.

NOTICE

This manual is intended as general guidance for personnel at certain U.S. Air Force installations. It is not, nor is it intended to be, a complete treatise on environmental laws and regulations. Neither the U.S. Government nor any agency thereof, nor any of their employees, makes any warranty, expressed or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information contained herein. For any specific questions about, or interpretations of, the legal references herein, consult appropriate legal counsel.

SECTION 1

HAWAII SUPPLEMENT

SECTION 1

HAWAII SUPPLEMENT

This Hawaii ECAMP manual contains the protocols necessary for determining compliance with Hawaii environmental rules and regulations. This manual is a supplement to the U.S. ECAMP manual; it does not replace it.

The following departments issue regulations in the identified areas:

- *Department of Agriculture* - regulates pesticides and their application.
- *Department of Health* - regulates and monitors: air quality; wastewater, water discharges, and drinking water; the disposal of solid waste; the registration of underground storage tanks (UST); and vehicle and environmental noise.
- *Department of Land and Natural Resources* - regulates land management, including development in shoreline areas, and protects endangered and threatened species.

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^2
1 lb	=	0.453 kg
1 lb/h	=	0.126 g/s
1 cu ft	=	0.028 m^3
1 mi	=	1.61 km
1 sq ft	=	0.093 m^2
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

Acronym List

Acronym	Definition
ANOVA	Analysis of Variance
BACT	Best Available Control Technology
BAT	Best Available Technology
BMP	Best Management Practice
Btu	British Thermal Unit
CAS	Chemical Abstract Service
CFC	Chlorofluorocarbon
CFR	Code of Federal Regulations
CWA	Clean Water Act
DOD	Department of Defense
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
GAC	Granular Activated Carbon
GMP	Good Management Practice
GWI	Groundwater Under the Direct Influence of Surface Water
HAR	Hawaii Administrative Rules
HCRR	Hawaii Code of Rules and Regulations
HRS	Hawaii Revised Statutes
IRIS	Integrated Risk Information System
LC	Lethal Concentration
MACT	Maximum Achievable Control Technology
MBtu	Million British Thermal Units
MCL	Minimum Contaminant Level
MCLG	Minimum Contaminant Level Goal
MMWR	Morbidity and Mortality Weekly Report
MSWLF	Municipal Solid Waste Landfill
MTTHMP	Maximum Total Trihalomethane Potential
NESHAPs	National Emission Standard for Hazardous Air Pollutants
NGPC	Notice of General Permit Coverage
NTNCWS	Nontransient Noncommunity Water System
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
PCB	Polychlorinated Biphenyl
POL	Petroleum, Oils, and Liquids
POTW	Publicly Owned Treatment Works
PSD	Prevention of Significant Deterioration
RCRA	Resource Conservation and Recovery Act
SARA	Superfund Amendments and Reauthorization Act
SICC	Standard Industry Classification Code
SIP	State Implementation Plan
SLH	Session Laws of Hawaii
SMCL	Secondary Maximum Contaminant Level
SSI	Statistically Significant Increase
THM	Trihalomethane
TTHM	Total Trihalomethane
TOC	Total Organic Carbon
TPH	Total Petroleum Hydrocarbon
TSCA	Toxic Substance Control Act
USEPA	U.S. Environmental Protection Agency

USC	U.S. Code
UST	underground storage tank
VOC	Volatile Organic Compound

Abbreviations

Abbreviation	Definition
C	Celsius
cm	centimeter
F	Fahrenheit
ft	feet
g	gram
gal	gallon
gpd	gallons per day
h	hour
in.	inch
kg	kilogram
L	liter
lb	pound
m	meter
m^2	square meter
m^3	cubic meter
µg	microgram
µm	micrometer
mg	milligrams
Mg	megagrams
mi	mile
min	minute
mL	milliliter
mm	millimeter
mo	month
mph	miles per hour
mrem	millirem
mV	millivolt
NTU	Nephelometric Turbidity Units
pCi	picoCurie
ppb	parts per billion
ppm	parts per million
psi	pounds per square inch
psia	pounds per square inch absolute
psig	pounds per square inch gauge
ppt	parts per thousand
s	second
yr	year

SECTION 2

AIR EMISSIONS MANAGEMENT

Hawaii Supplement

SECTION 2

AIR EMISSIONS MANAGEMENT

Hawaii Supplement

Definitions

The following definitions were taken from Hawaii Administrative Rules (HAR) 11-59-2, HAR 11-60.1-1, HAR 11-60.1-51, HAR 11-60.1-61, HAR 11-60.1-81, and HAR 11-60.1-171.

2.1. Accidental Release - an unanticipated emission of a regulated substance or other extremely hazardous substance into the ambient air from a stationary source.

2.2. Act - the *Clean Air Act*, as amended, 42 U.S. Code (USC) Section 7401, et seq.

2.3. Agricultural Burning - open outdoor fires used in agricultural operations, growing of crops, raising of fowls or animals, forest management, or range improvements.

2.4. Agricultural Burning Permit - written authorization from the Director to engage in agricultural burning.

2.5. Air Pollution - the presence in the outdoor air of substances in quantities and for durations which may endanger human health or welfare, plant or animal life, or property or which may unreasonably interfere with the comfortable enjoyment of life and property throughout the state and in such areas of the state as are affected thereby, but excludes all aspects of employer-employee relationships as to health and safety hazards.

2.6. Air Pollution Control Equipment - equipment or a facility of a type intended to eliminate, prevent, reduce, or control the emissions of any regulated or hazardous air pollutant to the atmosphere.

2.7. Allowable Emissions - the emissions rate of a stationary source calculated using the maximum rated capacity of the source (unless the source is subject to Federally enforceable limits which restrict the operating rate or hours of operation, or both) and the most stringent applicable air regulation.

2.8. Ambient Air - the general outdoor atmosphere to which the public has access.

2.9. Area Source - any stationary source of hazardous air pollutants that is not a major source but shall not include motor vehicles or nonroad vehicles subject to regulation approved pursuant to Title II of the Act.

2.10. Best Available Control Technology (BACT) - an emissions limitation including a visible emission standard based on the maximum degree of reduction for each pollutant subject to regulation approved pursuant to the Act which would be emitted from any proposed stationary source or modification which the Director, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such pollutant.

2.11. Biomass Fuel Burning Boilers - fuel burning equipment with an annual capacity factor greater than 50 percent for biomass fuel.

2.12. Carcinogenic Hazardous Air Pollutant - any hazardous air pollutant recognized as known, probable, or potential human carcinogen by the U.S. Environmental Protection Agency's (USEPA) Integrated Risk Information System (IRIS), or other documented studies or information by recognized authorities and approved by the Director.

2.13. Category - any category of major sources and area sources of hazardous air pollutants listed pursuant to Section 112(c) of the Act.

2.14. Commenced - as applied to construction of or modification to a stationary source, the owner or operator has all necessary preconstruction approvals or permits and either has:

1. begun a continuous program of actual operation or onsite construction of the source
2. entered into binding agreements or contractual obligations, which cannot be canceled or modified without substantial loss to the owner or operator, to undertake a program of actual operation or construction of the source.

2.15. Compliance Plan - a plan which includes a description of how a source will comply with all applicable requirements, and includes a schedule of compliance under which the owner or operator will submit progress reports to the Director no less frequently than every [illegible].

2.16. Construction - any physical change or change in the method of operation (including fabrication, erection, installation, demolition, or modification of an emissions unit) which would result in a change in actual emissions.

2.17. Covered Source -

1. any major source
2. any source subject to standards of performance for stationary sources
3. any source subject to an emissions standard or other requirement for hazardous air pollutants pursuant to Section of 112 of the Act, with the exception of those sources solely subject to regulations or requirements pursuant to Section 112(r) of the Act
4. any source subject to the rules for prevention of significant deterioration of air quality.

2.18. Covered Source Permit - a permit or group of permits covering a covered source.

2.19. Department - the Department of Health.

2.20. Director - the Director of Health or a duly authorized agent, officer, or inspector.

2.21. Emergency - any situation arising from sudden and reasonably unforeseeable event beyond the control of the owner or operator of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the emergency. An emergency does not include noncompliance to the extent caused by improperly designed equipment, lack of preventive maintenance, careless or improper operation, or operator error, and does not include an exceedance of a health-based emission limitation.

2.22. Emission - the act of releasing or discharging air pollutants into the ambient air from any source or an air pollutant which is released or discharged into the ambient air from any source.

2.23. Emissions Unit - any part or activity of a stationary source that emits or has the potential to emit any regulated or hazardous air pollutant.

2.24. Existing Covered Source - a stationary covered source that has received an authority to construct permit, commenced construction or modification, or was in operation prior to 26 November 1993.

2.25. Existing Noncovered Source - a stationary noncovered source that has received an authority to construct permit, commenced construction or modification, or was in operation prior to 26 November 1993.

2.26. Existing Source - concerning hazardous air pollutant sources, any stationary source, the construction or reconstruction of which commenced prior to proposal of an applicable standard.

2.27. Fuel-Burning Equipment - any furnace, boiler, apparatus, stack, and all appurtenances thereto, used in the process of burning fuel for the primary purpose of producing heat or power by heat transfer.

2.28. Fugitive Dust - emission of solid, airborne, particulate matter from any source other than combustion.

2.29. Fugitive Emissions - those emissions that could not reasonably pass through a stack, chimney, vent, or other functionally equivalent opening.

2.30. HAR 11-59 - Hawaii Administrative Rules, Title 11, Chapter 59, *Ambient Air Quality Standards.*

2.31. HAR 11-60.1 - Hawaii Administrative Rules, Title 11, Chapter 60.1, *Air Pollution Control.*

2.32. Hazardous Air Pollutants - those hazardous air pollutants listed in Section 112(b) of the Act and any other hazardous air pollutants listed in Table 2-1.

2.33. Major Source - a source or a group of stationary sources that are located on one or more contiguous properties or adjacent properties, and are under common control of the same person or persons under common control, belonging to a single major industrial grouping (i.e., all have the same two-digit Standard Industrial Classification Code (SICC)) and that emits or has the potential to emit, considering controls, any hazardous air pollutant, except radionuclides, in the aggregate of 10 tons/yr or more including fugitive emissions, or 25 tons/yr or more of any combination including fugitive emissions.

2.34. Maximum Achievable Control Technology (MACT) - the maximum degree of reduction in emissions of the hazardous air pollutants, on a case-by-case basis, taking into consideration the cost of achieving such emission reduction and any nonair quality health and environmental impacts and energy requirements, that is deemed achievable.

2.35. Minor Modification - a modification which:

1. does not increase the emissions of any air pollutant above the permitted emission limits
2. does not result in the emission of any air pollutant not previously emitted
3. does not increase the emissions of any air pollutant identified in the application and not limited by the permit

4. does not violate any applicable agreement
5. does not involve significant changes to existing monitoring requirements or any relaxation or significant change to existing reporting or recordkeeping requirements in the permit. Any change to the existing monitoring, reporting, or recordkeeping requirements that reduces the enforceability of the permit is considered a significant change
6. does not require or change a case-by-case determination of an emission limitation of other standard, a source-specific determination for temporary sources of ambient impacts, or a visibility or increment analysis
7. does not seek to establish or change a permit term or condition for which there is no corresponding underlying applicable requirement, and that the source has assumed to avoid an applicable requirement to which the source would otherwise be subject
8. is not a modification pursuant to any provision of Title I of the Act.

2.36. Modification -

1. A physical change in or a change in the method of operation of a stationary source which increases the amount of any air pollutant emitted by such source or which results in the emission of any air pollutant not previously emitted or every significant change in existing monitoring requirements, and every relaxation of, or significant change in reporting or recordkeeping requirements. Routine maintenance, repair, and replacement are not considered a modification.
2. A physical change in or a change in the method of operation of a stationary source which requires a change to a permit. Modification includes minor and significant modifications. Routine maintenance, repair, and replacement are not considered a modification.

2.37. New Covered Source - a covered source that commenced construction on or after 26 November 1993.

2.38. New Noncovered Source - a noncovered source that commenced construction or modification on or after 26 November 1993.

2.39. New Source - any stationary source the construction of which is commenced after the Section 112(e) promulgation deadline, or after proposal of a relevant emission standard pursuant to Section 112(r)(3), whichever comes first.

2.40. Noncovered Source - a stationary source constructed, modified, or relocated after 20 March 1972, that is not a covered source.

2.41. Nonmajor Covered Source - any covered source that is not a major covered source.

2.42. PM_{10} - particulate matter with an aerodynamic diameter less than or equal to a nominal 10 μm.

2.43. Opacity - a state which renders material partially or wholly impervious to rays of light and causes obstruction of an observer's view.

2.44. Open Burning - the burning of any matter in such a manner that the products of combustion resulting from the burning are emitted directly into the ambient air without passing through an adequate stack or flare.

2.45. Potential to Emit - the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, is treated as part of its design if the limitation or the effect it would have on emissions is Federally

enforceable. Secondary emissions do not count in determining the potential to emit a stationary source.

2.46. PSD - prevention of significant deterioration.

2.47. Regulated Air Pollutant -

1. nitrogen oxides or any volatile organic compound (VOC)
2. any air pollutant for which a national or state ambient air quality standard has been promulgated
3. any air pollutant that is subject to any standard adopted pursuant to Chapter 342b, Hawaii Revised Statutes (HRS), or promulgated pursuant to Section 111 of the Act
4. any class I or II substance subject to a standard promulgated pursuant to or established by Title VI of the Act
5. any air pollutant subject to a standard promulgated pursuant to Section 112 or other requirements established pursuant to Section 112 of the Act, including 112(g), (j), and (r) of the Act.

2.48. Significant - in reference to a net emissions increase or the potential of a source to emit:

1. a rate of emissions that would equal or exceed any of the following pollutant and emission rates:
   a. carbon monoxide - 100 tons/yr
   b. nitrogen oxides - 40 tons/yr
   c. sulfur dioxide - 40 tons/yr
   d. particulate matter - a total of 25 tons/yr or particulate mater of all sizes or 15 tons/yr of PM_{10}
   e. ozone - 40 tons/yr of VOC
   f. lead - 0.6 tons/yr
   g. asbestos - 0.007 tons/yr
   h. beryllium - 0.0004 tons/yr
   i. mercury - 0.1 tons/yr
   j. vinyl chloride - 1 ton/yr
   k. fluorides - 3 tons/yr
   l. sulfuric acid mist - 7 tons/yr
   m. hydrogen sulfide - 10 tons/yr
   n. total reduced sulfur (hydrogen sulfide, methyl mercaptan, dimethyl sulfide, and dimethyl disulfide) - 10 tons/yr
   o. reduced sulfur compounds (hydrogen sulfide, carbon disulfide, and carbonyl sulfide) - 10 tons/yr
   p. municipal waste combustor organics - 3.2 by 10^6 Mg/yr (3.5 by 10^6 tons/yr) measured as total tetra- through octa-chlorinated dibenzo-p-dioxins and dibenzofurans
   q. municipal waste combustor metals - 14 Mg/yr (15 tons/yr) measured as particulate matter
   r. municipal waste combustor acid gases - 36 Mg/yr (40 tons/yr) measured as sulfur dioxide and hydrogen chloride
2. any net emissions increase of a pollutant or the potential of a source to emit a pollutant subject to regulation pursuant to the Act not listed in part 1 of this definition
3. notwithstanding part 1 of this definition, any emissions rate or any net emissions increase associated with a major stationary source or major modification, which would be constructed within 10 km of a Class I area, and have an impact on such area equal to or greater than 1 $\mu g/m^3$ (24-h average).

2.49. Significant Modification - a modification which does not qualify as a minor modification of administrative amendment. A significant modification includes every significant change in existing monitoring requirements, and every relaxation of, or significant change to the existing reporting or recordkeeping requirements.

2.50. Smoke - the gaseous products of burning carbonaceous materials made visible by the presence of small particles of carbon.

2.51. Source - any property, real or personal, which emits or may emit any air pollutant.

2.52. Stack - any point in a source designed to emit solids, liquids, or gases into the air, including a pipe or duct but not including flares.

2.53. Stationary Source - any piece of equipment or any activity at a building , structure, facility, or installation that emits or may emit any air pollutant.

2.54. Submerged Fill Pipe - a fill pipe the discharged opening of which is entirely submerged when the liquid level is 6 in. above the bottom of the tank; or when applied to a tank which is loaded from the side, a fill pipe the discharge opening of which is 18 in. above the bottom of the tank.

2.55. Temporary Covered Source - a nonmajor covered source that is intended to be operated at multiple locations for a designated period of time at each location. The operation of the source is temporary and involve at least one change of location during the term of a covered source permit.

2.56. Temporary Noncovered Source - a noncovered source that is intended to be operated at multiple locations for a designated period of time at each location. the operation of the source is temporary and involves at least one change change of location during the term of a noncovered source permit.

2.57. Volatile Organic Compounds (VOCs) - a compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions. This includes any such organic compound other than methane; ethane; methylene chloride (dichloromethane); 1,1,1 trichloroethane (methyl chloroform); 1,1,1 trichloro-2,2,2-trifluoroethane (CFC-113); trichlorofluoromethane (CFC-11); dichlorodifluoromethane (CFC-12); chlorodifluoromethane (CFC-22); trifluoromethane (FC-23); 1,2-dichloro-1,1,2,2-tetrafluoroethane (CFC-114); chloropentafluoroethane (CFC-115); 1,1,1-trifluoro-2,2-dichloroethane (HCFC-123); 1,1,1,2-tetrafluoroethane (HFC-134a); 1,1-dichloro-1-fluoroethane (HCFC-141b); 1-chloro 1,1-difluoroethane (HCFC-142B); 2-chloro-1,1,1,2-tetrafluoroethane (HCFC-124); pentafluoroethane (HFC-125); 1,1,2,2-tetrafluoroethane (HFC-134); 1,1,1-trifluoroethane (HFC-143a); 1,1-difluoroethane (HFC-152a); and perfluorocarbon compounds which fall into the following classes:

1. cyclic, branched, or linear, completely fluorinated alkanes
2. cyclic, branched, or linear, completely fluorinated ethers with no unsaturations
3. cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations
4. sulfur containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine.

2.58. VOC Water Separator - a tank, box, or other container which is primarily designed to separate and recover VOCs from water. Petroleum storage tanks from which water incidental to the process is periodically removed are not considered VOC water separators.

AIR EMISSIONS MANAGEMENT

GUIDANCE FOR HAWAII CHECKLIST USERS

Applicability	Refer to Checklist Items:
All Installations	HI.A.1 through HI.A.7
Vehicles	HI.A.8 and HI.A.9
Particulate Matter	HI.A.10 through HI.A.13
Sulfur	HI.A.14
Volatile Organic Compounds (VOCs)	HI.A.15 through HI.A.19
Open Burning	HI.A.20 through HI.A.22
Noncovered and Covered Sources	HI.A.23 through HI.A.25
Hazardous Air Pollutants	HI.A.26

AIR EMISSIONS MANAGEMENT

ALL INSTALLATIONS

HI.A.1. Copies of applicable state and local regulations should be maintained at the installation (GMP).

HI.A.1.1. Verify that copies of the following regulations are maintained and kept current at the installation:

- HAR 11-59, *Ambient Air Quality Standards*
- HAR 11-60, *Air Pollution Control*
- applicable county and local regulations.

HI.A.2. Installations must meet ambient air quality standards (HAR 11-59-4 and 11-59-5).

HI.A.2.1. Verify that limiting concentrations for a 12 mo period or a calendar quarter are not exceeded and that limiting concentrations specified for 1-, 3-, 8-, and 24-h periods are not exceeded more than once in any 12-mo period.

HI.A.2.2. Verify that the concentration of carbon monoxide per cubic meter of air does not exceed an average value of 10 mg during any 1-h period or an average value of 5 mg during any 8-h period.

HI.A.2.3. Verify that the average concentration of nitrogen dioxide per cubic meter of air does not exceed 70 µg during any 12-mo period.

HI.A.2.4. Verify that the concentration of particulate matter as particles with an aerodynamic diameter less than or equal to a nominal 10 µm does not exceed an arithmetic mean of 50 $\mu g/m^3$ of air during any 12-mo period and an average value of 150 $\mu g/m^3$ of air during any 24-h period.

HI.A.2.5. Verify that the average concentration of ozone per cubic meter of air does not exceed 100 µg during any 1-h period.

HI.A.2.6. Verify that the average concentration of sulfur dioxide per cubic meter of air does not exceed 80 µg during any 12-mo period, 365 µg during any 24-h period, and 1300 µg during any 3-h period.

HI.A.2.7. Verify that the average concentration of lead per cubic meter of air does not exceed 1.5 µg during any calendar quarter.

HI.A.2.8. Verify that the average concentration of hydrogen sulfide per cubic meter of air does not exceed 35 µg (25 ppb) during any 1-h period.

HI.A.3. Installations must not engage in, cause, allow, or maintain any activity which causes air pollution without approval from the Director (HAR 11-60.1-2).

HI.A.3.1. Verify that the installation receives approval from the Director before causing, allowing, engaging in, or maintaining any activity which causes air pollution.

HI.A.4. Installations with stationary sources that commenced construction or were operational before 21 March 1972 are subject to visible emission standards (HAR 11-60.1-32a).

HI.A.4.1. Verify that the emission opacity is less than 40 percent during normal operation.

(NOTE: During startup, shutdown, or breakdown of equipment, air pollutants of an opacity of 40 to 60 percent, inclusively, may be discharged into the atmosphere from a single source for a period aggregating not more than 6 min in any 60-min period.)

HI.A.4.2. Verify that emission opacity is never greater than 60 percent.

HI.A.5. Installations with stationary sources that commenced construction after 20 March 1972 are subject to visible emission standards (HAR 11-60.1-32b).

HI.A.5.1. Verify that the emission opacity is less than 20 percent during normal operation.

(NOTE: During startup, shutdown, or breakdown of equipment, air pollutants of an opacity of 20 to 60 percent, inclusively, may be discharged into the atmosphere from a single source for a period aggregating not more than 6 min in any 60-min period.)

HI.A.5.2. Verify that the emission opacity is never greater than 60 percent.

HI.A.6. Installations must meet directives for air pollution alert, warning, or emergency episodes (HAR 11-60.1-17).

HI.A.6.1. Verify that the installation meets directives for air pollution alert, warning, or emergency episodes.

AIR EMISSIONS MANAGEMENT

(NOTE: Conditions justifying the proclamation of an air pollution alert, warning, or emergency exist whenever the Director determines that the accumulation of air contaminants in any place is attaining or has attained levels which could, if such levels are sustained or exceeded, lead to a threat to the health of the public.)

HI.A.7. Installations must notify the Director of Health of malfunctions and planned shutdowns of air pollution control equipment (HAR 11-60.1-15 and 11-60.1-16).

HI.A.7.1. Verify that the Department of Health is notified:

- at least 24 h prior to all planned shutdowns of air pollution control equipment for scheduled maintenance
- immediately of all startups, shutdowns, failures, or breakdowns of air pollution control equipment which caused the emission of air pollutants in violation of applicable rules
- with a followup written report, within 5 days of the notification, for each violation.

VEHICLES

HI.A.8. Installation vehicles that are operated on streets, roads, and highways must meet visible smoke emission standards (HAR 11-60-34a, b, and d).

HI.A.8.1. Verify that the installation's gasoline-powered vehicles do not emit visible smoke.

HI.A.8.1. Verify that the installation's diesel-powered vehicles do not emit visible smoke for a period of more than five consecutive seconds.

HI.A.8.2. Verify that vehicles have operational air pollution control systems.

HI.A.9. Motor vehicle engines must not be operated while the vehicle is stationary at off-street areas (HAR 11-60-34c).

HI.A.9.1. Verify that stationary vehicle engines do not idle at the following locations:

- loading zones
- parking or servicing areas

- route terminals
- other off-street areas.

(NOTE: Exemptions include adjustment or repair; auxiliary equipment use; loading or unloading of passengers, not to exceed 3 min; and startup or cool down, not to exceed 3 min.)

PARTICULATE MATTER

HI.A.10. Installations must take reasonable precautions to prevent particulate matter from becoming airborne (HAR 11-60.1-33).

(NOTE: Examples of reasonable precautions are as follows:
- use of water or suitable chemicals for control of fugitive dust in the demolition of existing buildings or structures, construction operations, the grading of roads, or the clearing of land
- application of asphalt, water, or suitable chemicals on roads, material stockpiles, and other surfaces which may result in fugitive dust
- use of hoods, fans, and fabric filters to enclose and vent the handling of dusty materials
- use of containments during sandblasting and similar operations
- covering all moving, open-bodied trucks transporting materials which may result in fugitive dust
- maintenance of roadways in a clean manner
- prompt removal of earth or other materials from paved streets which have been transported there by trucking, earth-moving equipment, erosion, or other means.)

HI.A.10.1. Verify that precautions for fugitive dust are incorporated into procedures for handling, transporting, and storing materials.

HI.A.10.2. Verify that precautions for fugitive dust are incorporated into procedures for constructing, altering, repairing, or demolishing buildings and roads.

HI.A.10.3. Verify that particulate matter is not allowed to exit the installation.

HI.A.11. Installations with incinerators are required to limit particulate emissions (HAR 11-60.1-35).

HI.A.11.1. Verify that particulate matter emissions do not exceed 0.20 lb/100 lb (2 g/kg) of refuse charged.

AIR EMISSIONS MANAGEMENT

HI.A.12. Installations with biomass fuel burning boilers are required to limit particulate emissions (HAR 11-60.1-36).

HI.A.12.1. Verify that particulate emissions do not exceed 0.40 lb/100 lb of biomass as burned.

HI.A.13. Emission of particulate matter from stacks must be limited (HAR 11-60.1-37).

HI.A.13.1. Verify that, except for incinerators and biomass fuel burning boilers, particulate matter emissions from stacks do not exceed the amount determined by the following equation: $E = 4.10\ p^{0.67}$, where E equals the rate of emission in pounds per hour and p equals the process weight in tons per hour.

HI.A.13.2. Verify that no rate of emissions exceeds 40 lb/h, regardless of the process.

SULFUR

HI.A.14. Installations must meet sulfur requirements (HAR 11-60.1-38).

HI.A.14.1. Verify that the installation does not burn, sell, or make available for burning, any fuel containing in excess of 2 percent sulfur, by weight, except in ocean-going vessels.

HI.A.14.2. Verify that installations with a fossil-fuel fired power and steam generating facility with an output in excess of 25 MW or a heat input greater than 250 MBtu/h do not burn fuel containing in excess of 0.50 percent sulfur by weight.

(NOTE: The Director of Health may permit the use of fuels containing sulfur in excess of 2 percent.)

AIR EMISSIONS MANAGEMENT

VOLATILE ORGANIC COMPOUNDS (VOCs)

HI.A.15. Installations with stationary storage vessels for VOCs with a storage capacity greater than 40,000 gal must meet specific requirements (HAR 11-60.1-39a and 39c).

HI.A.15.1. Verify that storage vessels with a true vapor pressure greater than or equal to 1.5 psia are pressure tanks capable of maintaining working pressures sufficient to prevent vapor or gas loss to the atmosphere or are equipped with one of the following:

- floating roof (not allowed for vapor pressures greater than or equal to 11 psia)
- vapor recovery system
- an equivalent approved system.

(NOTE: Underground tanks are exempted from this requirement if the total volume of VOCs added to and taken from a tank annually does not exceed twice the volume of the tank.)

HI.A.16. Installations with new stationary storage vessels for VOCs with a storage capacity greater than 250 gal must meet specific requirements (HAR 11-60.1-39b).

HI.A.16.1. Verify that new storage vessels are pressure tanks capable of maintaining working pressures sufficient to prevent vapor or gas loss to the atmosphere or are equipped with one of the following:

- a permanent submerged fill pipe
- a vapor recovery system.

HI.A.17. Installations with VOC/water separators must meet specific requirements (HAR 11-60.1-40).

HI.A.17.1. Verify that VOC/water separators receiving effluent containing greater than or equal to 200 gpd of VOCs having a Reid vapor pressure of greater than or equal to 0.5 psi use one of the following vapor loss control devices, properly installed, and in good working condition:

- sealed, enclosed container
- floating roof
- vapor recovery system
- an equivalent approved system.

AIR EMISSIONS MANAGEMENT

HI.A.18. Installations with pumps and compressors that handle VOCs having a Reid vapor pressure of greater than or equal to 1.5 psi must meet specific requirements (HAR 11-60.1-41).

HI.A.18.1. Verify that one of the following vapor loss control devices has been installed and is in good working condition:

- mechanical seals
- other approved air pollution control equipment.

HI.A.19. Installations with emissions of gas streams containing VOCs from a vapor blowdown system or emergency relief must meet specific requirements (HAR 11-60.1-42).

HI.A.19.1. Verify that gases are burned by smokeless flares or an equivalent approved control device.

OPEN BURNING

HI.A.20. Installations must not allow open burning (HAR 11-60.1-52).

HI.A.20.1. Verify that the installation does not allow open burning.

HI.A.20.2. Determine if the installation conducts open burning that is one of the following exceptions to the open burning prohibition:

- open fires for the cooking of food
- fires for other special purposes, as approved by the Director of Health
- fires to prevent or control a fire hazard
- fires for training personnel in fire-fighting methods
- fires for residential bathing purposes
- fires for the burning of leaves, grass, weeds, wood, paper, and similar materials on one's premises.

(NOTE: These exceptions do not apply to any county with a population greater than 500,000 persons.)

AIR EMISSIONS MANAGEMENT

HI.A.21. A state permit is required for agricultural burning (HAR 11-60.1-53 and 11-60.1-56).

HI.A.21.1. Determine if the installation does any agricultural burning.

HI.A.21.2. Verify that the installation has a permit for agricultural burning.

HI.A.21.3. Verify that the installation maintains a record of conditions existing at the time of each burn including: the location and identification of the burn area; size of the area; date and time of day; prevailing wind direction and speed; rainfall in preceding 24 h; type of material burned; and any other pertinent data as required by the Director of Health.

HI.A.22. Installations must not allow agricultural burning on *no-burn* days (HAR 11-60.1-55).

HI.A.22.1. Verify that state-permitted agricultural burning is stopped on *no-burn* days.

NONCOVERED AND COVERED SOURCES

HI.A.23. Installations must meet permit requirements for covered sources (HAR 11-60.1-62 and 11-60.1-82).

HI.A.23.1. Determine if the installation operates any of the following, which are exempt from the permit requirements for noncovered and covered sources:

- sources with potential emissions of less than 1.0 ton/yr for each air pollutant and less than 0.1 ton/yr for each hazardous air pollutant
- any storage tank, reservoir, or other container of capacity equal to or less than 40,000 gal storing VOCs, not including those storage tanks subject to other regulations
- gasoline service stations
- other than smoke house generators, fuel burning equipment with a heat input capacity less than 1 MBtu/h, except where the total heat input capacity of all individually exempted equipment exceeds 5 MBtu/h when operated within the facility
- steam generators, steam superheaters, water boilers, or water heaters, all of which have a heat capacity of less than 5 MBtu/h are are fired exclusively with either natural or synthetic gas, liquefied petroleum gas, or a combination of natural, synthetic, or liquefied gas

- standby generators used exclusively to provide electricity, standby sewage pump drives, and other emergency equipment which are used only during power outages, emergency equipment maintenance and testing, and are fired exclusively by natural or synthetic gas, liquefied petroleum gas, fuel oil No. 1 or 2, or diesel fuel oil No. 1D or 2D, which do not trigger a PSD or covered source review, based on their potential to emit regulated or hazardous air pollutants
- paint spray booths, except for paint spray booths subject to any other requirement
- welding booths
- portable diesel or gasoline fired industrial equipment less than 200 horsepower in size which are used during power outages or intermittently for maintenance and repair purposes
- hand-held equipment used for buffing polishing, carving, cutting, drilling, machining, routing, sanding, sawing, surfaces grinding, or turning of ceramic art work, precision parts, leather, metals, plastics, fiver board, masonry, carbon, glass, or wood, provided reasonable precautions are taken to prevent particulate matter from becoming airborne
- laboratory equipment used exclusively for chemical and physical analyses
- containers, reservoirs, or tanks used exclusively for dipping operations for coating objects with oils, waxes, or greases where no organic solvents, diluents, or thinners are used; or for dipping operations for applying coatings of natural or synthetic resins which contain no organic solvents
- ocean-going vessels, except for those subject to other requirements
- fire water system pumps dedicated for fighting fires and maintaining fire water system pressure, and fired exclusively by natural or synthetic gas, fuel oil No. 1 and 2, or diesel fuel No. 1D or 2D
- smoke generating systems used exclusively for training in government or certified fire fighting training facilities
- mobile internal combustion engines
- diesel fired portable ground support equipment used exclusively to start aircraft or provide temporary power to aircraft prior to startup
- fuel burning equipment which is used in a private dwelling or for space heating, other than boilers or hot furnaces
- stacks or vents to prevent escape of sewer gases through plumbing traps
- air conditioning or ventilation systems not designed to remove air pollutants generated or released from equipment, and that do not involve the open release of venting of CFCs into the atmosphere
- woodworking shops with a sawdust collection system
- other sources exempted by the Director.

(NOTE: Reasonable precautions include the use of dust collection systems.)

HI.A.23.2. Verify that the installation obtains a noncovered or covered source permit from the Director before burning used or waste oil.

HI.A.23.3. Verify that the installation obtains a noncovered source permit from the Director before beginning construction, reconstruction, modification, relocation, or operation of an emission unit or air pollution control equipment of any noncovered source.

HI.A.23.4. Verify that the installation obtains a covered source permit from the Director before beginning construction, reconstruction, modification, relocation, or operation of an emission unit or air pollution control equipment of any noncovered source.

HI.A.23.5. Verify that the installation meets the requirements of any noncovered or covered source permit issued by the Director.

HI.A.24. Installations must meet holding requirements for noncovered and covered source permits (HAR 11-60.1-6).

HI.A.24.1. Verify that the installation maintains a copy of each noncovered or covered permit at or near the stationary source for which the permit is issued.

(NOTE: The term *near* is not defined in the Hawaii regulations.)

HI.A.24.2. Verify that each noncovered or covered permit is neither willfully defaced, altered, forged, counterfeited, nor falsified.

HI.A.25. Installations must meet discontinuance reporting requirements (HAR 11-60.1-8).

HI.A.25.1. Verify that, within 30 days of permanent discontinuance of the construction, modification, relocation, or operation of any covered source, the discontinuance is reported in writing to the Director.

AIR EMISSIONS MANAGEMENT

HAZARDOUS AIR POLLUTANTS

HI.A.26. Installations must meet specific requirements for hazardous air pollutants (HAR 11-60.1-173 and 11-60.1-174).

HI.A.26.1. Determine if the installation operates any stationary source which emits or has the potential to emit any hazardous air pollutants (see Table 2-1).

(NOTE: The modification, construction, or reconstruction of any electric utility steam generating units is exempt from the requirements for hazardous air pollutants.)

HI.A.26.2. Verify that the installation has obtained a permit from the Director before beginning construction, reconstruction, or modification of any major source of hazardous air pollutants.

HI.A.26.3. Verify that the installation meets the requirements of any hazardous air pollutants permit.

HI.A.26.4. Verify that the installation does not exceed the MACT emission limitation specified by the Director.

HI.A.26.5. Verify that the installation does not emit from any stationary source any hazardous air pollutants in quantities that result in or contribute to an ambient air concentration which endangers human life.

Table 2 - 1

Hazardous Air Pollutants

(Source: HAR 11-60.1-172)

Chemical Name	CAS Number
Acetaldehyde	75070
Acetamide	60355
Acetonitrile	75058
Acetophenone	98862
2-Acetylaminofluorene	53963
Acrolein	107028
Acrylamide	79061
Acrylic acid	79107
Acrylonitrile	107131
Allyl chloride	107051
4-Aminobiphenyl	92671
Aniline	62533
o-Anisidine	90040
Asbestos	1332214
Benzene (including benzene from gasoline)	71432
Benzidine	92875
Benzotrichloride	98077
Benzyl chloride	100447
Biphenyl	92524
Bis(2-ethylhexyl) phthalate (DEHP)	117817

(continued)

Table 2-1 (continued)

Chemical Name	CAS Number
Bis(chloromethyl) ether	542881
Bromoform	75252
1,3-Butadiene	106990
Calcium cyanamide	156627
Caprolactam	105602
Captan	133062
Carbaryl	63252
Carbon disulfide	75150
Carbon tetrachloride	56235
Carbonyl sulfide	463581
Catechol	120809
Chloramben	133904
Chlordane	57749
Chlorine	7782505
Chloroacetic acid	79118
2-Chloroacetophenone	532274
Chlorobenzene	108907
Chlorobenzilate	510156
Chloroform	67633
Chloromethyl methyl ether	107302
Chloroprene	126998
Cresols/Cresylic acid (isomers and mixture)	1319773
o-Cresol	95487
m-Cresol	108394
p-Cresol	106445

(continued)

Table 2-1 (continued)

Chemical Name	CAS Number
Cumene	98828
2,4-D, salts and esters	94757
DDE	3547044
Diazomethane	334883
Dibenzofurans	132649
1,2-Dibromo-3-chloropropane	96128
Dibutylphthalate	84742
1,4-Dichlorobenzene (p)	106467
3,3-Dichlorobenzidene	91941
Dichloroethyl ether (Bis(2-chloroethyl)-ether)	111444
1,3-Dichloropropene	542756
Dichlorvos	62737
Diethanolamine	111422
N,N-Diethyl aniline (N,N-Dimethylaniline)	121697
Diethyl sulfate	64675
3,3-Dimethoxybenzidine	119904
Dimethyl aminoazobenzene	60117
3,3-Dimethyl benzidine	119937
Dimethyl carbamoyl chloride	79447
Dimethyl formamide	68122
1,1-Dimethyl hydrazine	57147
Dimethyl phthalate	131113
Dimethyl sulfate	77781
4,6-Dinitro-o-cresol, and salts	534521
2,4-Dinitrophenol	51285

(continued)

Table 2-1 (continued)

Chemical Name	CAS Number
2,4-Dinitrotoluene	121142
1,4-Dioxane (1,4-Diethyleneoxide)	123911
1,2-Diphenylhydrazine	122667
Epichlorohydrin (l-Chloro-2,3-epoxypropane)	106898
1,2-Epoxybutane	106887
Ethyl acrylate	140885
Ethyl benzene	100414
Ethyl carbamate (Urethane)	51796
Ethyl chloride (Chloroethane)	75003
Ethylene dibromide (Dibromoethane)	106934
Ethylene dichloride (1,2-Dichloroethane)	75343
Ethylene glycol	107211
Ethylene imine (Aziridine)	151564
Ethylene oxide	75218
Ethylene thiourea	96457
Ethylidene dichloride (1,l-Dichloroethane)	107062
Formaldehyde	50000
Heptachlor	76448
Hexachlorobenzene	11874
Hexachlorobutadiene	87683
Hexachlorocyclopentadiene	77474
Hexachloroethane	67721
Hexamethylene-1,6-diiso cyanate	82206
Hexamethylphosphoramide	680319
Hexane	110543

(continued)

Table 2-1 (continued)

Chemical Name	CAS Number
Hydrazine	302012
Hydrochloric acid	7647010
Hydrogen fluoride (Hydrofluoric acid)	7664393
Hydroquinone	123319
Isophorone	78591
Lindane (all isomers)	58899
Maleic anhydride	108316
Methanol	67561
Methoxychlor	72435
Methyl bromide (Bromomethane)	74839
Methyl chloride (Chloromethane)	74873
Methyl chloroform (1,1,1-Trichloroethane)	71556
Methyl ethyl ketone (2-Butanone)	78933
Methyl hydrazine	60344
Methyl iodide (Iodomethane)	74884
Methyl isobutyl ketone (Hexone)	108101
Methyl isocyanate	624839
Methyl methacrylate	80626
Methyl tert butyl ether	1634044
4,4-Methylene bis(2-chloroaniline)	101144
Methylene chloride (Dichloromethane)	75092
Methylene diphenyl diisocyanate (MDI)	101688
4,4-Methylenedianiline	101779
Naphthalene	91203
Nitrobenzene	98953

(continued)

Table 2-1 (continued)

Chemical Name	CAS Number
4-Nitrobiphenyl	92933
4-Nitrophenol	100027
2-Nitropropane	79469
N-Nitroso-N-methylurea	684935
N-Nitrosodimethylamine	62759
N-Nitrosomorpholine	59892
Parathion	56382
Pentachloronitrobenzene (Quintobenzene)	82688
Pentachlorophenol	87865
Phenol	108952
p-Phenylenediamine	106503
Phosgene	75445
Phosphine	7803512
Phosphorus	7723140
Phthalic anhydride	85449
Polychlorinated biphenyls (Aroclors)	1336363
1,3-Propane sultone	1120714
beta-Propiolactone	57578
Propionaldehyde	123386
Propoxur (Baygon)	114261
Propylene dichloride (1,2-Dichloropropane)	78875
Propylene oxide	75569
1,2-Propylenimine (2-Methyl aziridine)	75558
Quinoline	91225
Quinone	106514

(continued)

Table 2-1 (continued)

Chemical Name	CAS Number
Styrene	100425
Styrene oxide	96093
2,3,7,8-Tetrachlorodibe nzo-p-dioxin	1746016
1,1,2,2-Tetrachloroethane	79345
Tetracchloroethylene (Perchloroethylene)	127184
Titanium tetrachloride	7550450
Toluene	108883
2,4-Toluene diamine	95807
2,4-Toluene diisocyanate	584849
o-Toluidine	95534
Toxaphene (chlorinated camphene)	8001352
1,2,4-Trichlorobenzene	120821
1,1,2-Trichloroethane	79005
Trichloroethylene	79016
2,4,5-Trichlorophenol	95954
2,4,6-Trichlorophenol	88062
Triethylamine	121448
Trifluralin	1582098
2,2,4-Trimethylpentane	540841
Vinyl acetate	108054
Vinyl bromide	593602
Vinyl	75014
Vinylidene chloride (1,1-Dichloroethylene)	75354
Xylenes (isomers and mixture)	13[illegible]07
o-Xylenes	95476

(continued)

Table 2-1 (continued)

Chemical Name	CAS Number
m-Xylenes	108383
p-Xylenes	106423
Antimony Compounds	0
Arsenic Compounds (inorganic including arsine)	0
Beryllium Compounds	0
Cadmium Compounds	0
Chromium Compounds	0
Cobalt Compounds	0
Coke Oven Emissions	0
Cyanide Compounds[1]	0
Glycol ethers[2]	0
Lead Compounds	0
Manganese Compounds	0
Mercury Compounds	0
Fine mineral fibers[3]	0
Nickel Compounds	0
Polycylic Organic Matter[4]	0
Radionuclides (including radon)[5]	0
Selenium Compounds	0

(NOTE: For all listings above which contain the word *compounds* and for glycol ethers, the following applies: Unless otherwise specified, these listings are defined as including any unique chemical substance that contains the named chemical (i.e., antimony, arsenic, etc.) as part of that chemical's infrastructure.)

[1] X'CN where X = H' or any other group where a formal dissociation may occur. For example, KCN or Ca(CN)2.

(continued)

Table 2-1 (continued)

[2] Includes mono- and di- ethers of ethylene glycol, diethylene glycol, and triethylene glycol R-(OCH2CH2) n-OR' where:

n = 1, 2, or 3

R = alkyl or aryl groups

R' = R, H, or groups which, when removed, yield glycol ethers with the structure: R-(OCH2CH)n-OH. Polymers are excluded from the glycol category.

[3] Includes mineral fiber emissions from facilities manufacturing or processing glass, rock, or slag fibers (or other mineral derived fibers) of average diameter one micrometer or less.

[4] Includes organic compounds with more than one benzene ring, and which have a boiling point greater than or equal to 100 °C.

[5] A type of atom which spontaneously undergoes radioactive decay.

CAS Number - Chemical Abstract Service number.

SECTION 3

HAZARDOUS MATERIALS MANAGEMENT

Hawaii Supplement

SECTION 3

HAZARDOUS MATERIALS MANAGEMENT

Hawaii Supplement

Refer to Protocol Section 3 in the U.S. ECAMP manual for Federal, Air Force, and DOD requirements. State facilities are also required to comply with the Hawaii Occupational Safety and Health Standards, Hawaii Administrative Rules Title 12, Subtitle 8. Refer to the Occupational Safety and Health Standards for state operated military facilities, such as the National Guard. The Occupational Safety and Health Standards are not included in this protocol.

Definitions

The following definitions were taken from the Hawaii Revised Statutes (HRS), Chapter 286.

3.1. Etiologic Agent - a viable microorganism, or its toxin, which causes or may cause human disease.

3.2. Extremely Hazardous Substance - for transportation purposes, chemicals transported in commerce that could cause serious health effects following short-term exposure from accidental releases and which are listed in Part 355 of 40 Code of Federal Regulations (CFR).

3.3. Hazardous Material - a substance or material, including a hazardous substance, which has been determined by the United States Secretary of Transportation to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce and has been so designated.

3.4. Hazardous Substance - for transportation purposes, shipments of particular quantities of hazardous substances which are significant enough to be a substantial threat to public health and the environment and which are listed in 49 CFR 172.

3.5. Hazardous Waste - any material designated in 40 CFR 261 and subject to the hazardous waste manifest requirements of 40 CFR 262.

3.6. Transportation-Related Release - a release of hazardous material, hazardous substance, extremely hazardous substance, hazardous waste, or etiologic agent that occurs during the course of transportation in commerce, including storage incidental to transportation while under active shipping papers or manifests and which has not reached the ultimate consignee.

HAZARDOUS MATERIALS MANAGEMENT

GUIDANCE FOR HAWAII CHECKLIST USERS

Applicability	Refer to Checklist Items:
All Installations	HI.HM.1
Transportation of Explosives	HI.HM.2
Transportation of Hazardous Materials	HI.HM.3 through HI.HM.5

HAZARDOUS MATERIAL MANAGEMENT

ALL INSTALLATIONS

HI.HM.1. Copies of applicable state and local regulations should be maintained at the installation (GMP).

HI.HM.1.1. Verify that copies of the following regulations are maintained and kept current at the installation:

- *Rules and Regulations to be Observed by Motor Carriers*, Sections 397.01-397.19
- HRS 286, *Transportation of Hazardous Materials, Hazardous Waste, and Etiologic Agents*
- applicable county and local regulations.

TRANSPORTATION OF EXPLOSIVES

HI.HM.2. Specific rules apply to motor carriers transporting explosives (*Rules and Regulations to be Observed by Motor Carriers*, Sections 397.01-397.19).

HI.HM.2.1. Verify that vehicles transporting explosives meet the following requirements:

- the vehicle is attended at all times by a qualified representative of the carrier, unless all of the following conditions are met:
  - the vehicle is on the property of the motor carrier, shipper, or consignee in a safe place, or the vehicle contains 50 lb or less of explosives and is on a construction site
  - the receiver of the explosives has been instructed in emergency procedures
  - the vehicle is within the receiver's field of view
- the vehicle is not parked:
  - within 5 ft of the traveled portion of a street or highway
  - on private property without the consent of the person in charge of the property
  - within 300 ft of a bridge, tunnel, building, or place where people congregate.

HI.HM.2.2. Verify that the driver carries the following documents:

- a copy of a written plan of the route in compliance with route requirements
- a copy of the *Rules and Regulations to be Observed by Motor Carriers*, Sections 397.01-397.19

- a document of procedures to be followed in case of accident or delay which includes:
  - names and telephone numbers of persons to be contacted
  - the nature of the explosives
  - precautions to be taken in case of fire, accidents, or leakages.

HI.HM.2.3. Verify that tires are examined and repaired, if necessary, every 2 h or 100 mi, at the beginning of the trip, and each time the vehicle is parked.

TRANSPORTATION OF HAZARDOUS MATERIALS

HI.HM.3. Specific regulations apply to vehicles transporting hazardous materials (*Rules and Regulations to be Observed by Motor Carriers*, Sections 397.01-397.19).

HI.HM.3.1. Verify that vehicles containing hazardous materials are:

- attended by its driver when on public streets or highways
- not parked within 5 ft of the traveled portion of a public street (except for brief periods when it is necessary to park the vehicle and it is impractical to park in any other place)
- not operated near an open fire or parked within 300 ft of an open fire
- attended when being fueled.

HI.HM.3.2. Verify that smoking is not permitted within 25 ft of a vehicle containing explosives, oxidizing or flammable materials, or empty tank vehicles used to transport flammable liquids or gases.

HI.HM.3.3. Verify that tires are examined and repaired, if necessary, every 2 h or 100 mi, at the beginning of the trip, and each time the vehicle is parked.

HAZARDOUS MATERIAL MANAGEMENT

HI.HM.4. Hazardous materials transported in the course of commerce must meet specific requirements regarding releases and spills of hazardous materials and substances (HRS 286-223).

HI.HM.4.1. Verify that no person in the course of transportation in commerce spills, dumps, deposits, or causes the release of a hazardous material or hazardous substance upon a public highway, street, or the surrounding or connecting property including, but not limited to, storm drains, gutters, waterways, canals, lakes, and ocean shorelines, without immediately taking action to stop the spread of the material or remove the same or cause the same to be removed.

HI.HM.5. Transportation-related incidents involving hazardous materials, hazardous wastes, and etiologic agents must be reported (HRS 286-225).

(NOTE: This requirement applies to employees of the motor carrier, drivers, handlers, loaders, and any employee of the state and county government.)

HI.HM.5.1. Verify that any driver, handler, loader, and any other motor carrier employee, upon becoming aware of or observing a potential or actual spill, leakage, or loss of control of a hazardous material or substance, notifies the nearest police or fire department and makes a report of the situation.

HI.HM.5.2. Verify that the incident report includes the following information:

- name and telephone number of the person calling in the report
- type of vehicle involved
- any injuries or fatalities connected with the incident
- location and time of the incident
- duration of a chemical release into the environment, if known
- description of hazards involved including, the chemical name or identity of any substance released, hazardous materials classification, markings, and information on labels and placards affixed on packages, containers, or vehicles
- emergency actions taken, including evacuation, to minimize hazardous effects to public health, safety, and property.

HI.HM.5.3. Verify that a written report is submitted to the Director of Transportation within 15 days of the reported incident.

HI.HM.5.4. Verify that whenever an etiologic agent shipment is lost, stolen, or suspected or known to be leaking from its containment packaging, the state department of health and the Centers for Disease Control and Prevention (CDC) in Atlanta, Georgia are notified and a report of the situation is made.

SECTION 4

HAZARDOUS WASTE MANAGEMENT

Hawaii Supplement

SECTION 4

HAZARDOUS WASTE MANAGEMENT

Hawaii Supplement

Regulations promulgated under the authority of the *Resource Conservation and Recovery Act*, Subtitle C (*RCRA-C*) are applicable to installations in Hawaii. Refer to Protocol Section 4 in the U.S. ECAMP Manual for Federal, Air Force, and DOD requirements.

SECTION 5

NATURAL AND CULTURAL RESOURCES MANAGEMENT

Hawaii Supplement

SECTION 5

NATURAL AND CULTURAL RESOURCES MANAGEMENT

Hawaii Supplement

This protocol covers regulations concerning endangered species and natural and cultural resources and is intended to supplement the Federal regulations. When state regulations do not specifically address Federal requirements, installations must comply with Federal regulations. Refer to Protocol Section 5 in the U.S. ECAMP manual for Federal requirements.

Definitions

These definitions were taken from Hawaii Administrative Rules (HAR) 1-2, HAR 13-124, and Hawaii Revised Statutes (HRS) 6E.

5.1. Agency - any agency, board, commission, department, or officer of a county government or the state government.

5.2. Aquaculture - the farming or ranching of aquatic life in a controlled salt, brackish, or fresh water environment, provided that the farm or ranch is on or directly adjacent to land.

5.3. Conservation District - those lands within the various counties of the state bounded by the conservation district line as established under the provisions of Act 187, Session Laws of Hawaii (SLH) 1961 and Act 205, SLH 1963 or future amendments thereto.

5.4. Coastal Zone Management Area - the waters from the shoreline to the seaward limit of the state's jurisdiction and all land areas, excluding those lands designated as state forest reserves.

5.5. Coastal Zone Management Program - the comprehensive statement in words, maps, or other permanent media of communication, prepared, approved for submission, amended by the state and approved by the United States government.

5.6. County - the County of Hawaii, the City and County of Honolulu, the County of Kauai, or the County of Maui.

5.7. Department - the Department of Land and Natural Resources.

5.8. Development - any of the uses, activities, or operations on land or in or under the water within the special management area that are included in the following list:

1. the placement or erection of any solid material or any gaseous, liquid, solid, or thermal waste
2. grading, removing, dredging, mining, or extracting of any materials
3. change in the density or intensity of use of water, ecology related thereto, or of access thereto
4. change in the density or intensity of use of land including, but not limited to, the division or subdivision of land
5. construction, reconstruction, demolition, or alteration of the size of any structure.

5.9. Director - the Director of the Office of State Planning, or authorized subordinate or designee.

5.10. Endangered Species - all species, subspecies, or subpopulations of wildlife or plants that have been officially listed by the Federal government as endangered, and any species, subspecies, or subpopulation of indigenous wildlife or plants listed in the exhibit entitled Chapter 13-124, Exhibit 2, 6 June 1986.

5.11. Feral - having escaped or been released from domestication and reverted to a wild state over several generations.

5.12. HAR 1-2 - Hawaii Administrative Rules, Title 1, Chapter 2, *Rules Governing Special Management Areas and Shoreline Areas Within Community Development Districts and Practice and Procedures Before the Office of State Planning.*

5.13. HAR 13-124 - Hawaii Administrative Rules, Title 13, Subtitle 5, Forestry and Wildlife, Part 2, Wildlife, Chapter 124, *Indigenous Wildlife, Endangered and Threatened Wildlife and Plants, and Introduced Wild Birds.*

5.14. HRS 6E - Hawaii Revised Statutes Chapter 6E, *Historic Preservation.*

5.15. Hawaii Register of Historic Places or Hawaii Register - the Hawaii Register of districts, sites, buildings, structures, and objects significant in Hawaiian history, architecture, engineering, and culture.

5.16. Historic Preservation - the research, protection, restoration, rehabilitation, and interpretation of buildings, structures, objects, districts, areas, and sites, including underwater sites, significant to the history, architecture, archaeology, or culture of the state, its communities, or the nation.

5.17. Historic Property - any buildings, structures, objects, districts, areas, and sites, including underwater sites, significant to the history, architecture, archaeology, or culture of the state, its communities, or the nation.

5.18. Indigenous Wildlife - any species or subspecies of animal, including migratory forms, occurring or living naturally in Hawaii without having been brought to Hawaii by man and listed in the exhibit entitled Chapter 13-124, Exhibit 1, 6 June 1986. In addition to the species and subspecies listed in the exhibit entitled Chapter 13-124, Exhibit 1, 6 June 1986, indigenous wildlife includes any other migratory birds and mammals which arrive in Hawaii unaided by humans.

5.19. Land - the earth, water, and air above, below, or on the surface.

5.20. Lead Agency - the Office of State Planning.

5.21. National Register of Historic Places - the national list of districts, sites, buildings, structures, and objects significant in American history, architecture, archaeology, engineering, and culture, maintained by the Secretary of the Interior under the authority of the *National Historic Preservation Act.*

5.22. Shoreline Area - all of the land between the shoreline setback line (40 ft inland from the certified shoreline) and mean sea level.

5.23. Special Management Area - the land extending inland from the shoreline as delineated on maps filed with the county.

5.24. Structure - includes, but is not limited to, any portion of any building, pavement, road, pipe, flume, utility line, fence, groin, wall, or revetment.

5.25. **Threatened Species** - all species, subspecies, or subpopulations of wildlife or plants that have been officially listed by the Federal government as threatened, and any species, subspecies, or subpopulation of indigenous wildlife or plants listed in the exhibit entitled Chapter 13-124, Exhibit 3, 6 June 1986.

5.26. **Wildlife** - any member of any nondomesticated species of the animal kingdom, whether reared in captivity or not, including any mammal, fish, bird, amphibian, reptile, mollusk, crustacean, arthropod, or other invertebrate and includes any part, product, egg, or offspring thereof, or the dead body or parts thereof.

NATURAL AND CULTURAL RESOURCES MANAGEMENT

GUIDANCE FOR HAWAII CHECKLIST USERS

Applicability	Refer to Checklist Items:
All Installations	HI.NCR.1
Protected Species	HI.NCR.2
Special Management Areas	HI.NCR.3
Shoreline Areas	HI.NCR.4 and HI.NCR.5
Conservation Districts	HI.NCR.6
Stream Channel Alteration	HI.NCR.7
Historic Preservation	HI.NCR.8 and HI.NCR.9

NATURAL AND CULTURAL RESOURCE MANAGEMENT

ALL INSTALLATIONS

HI.NCR.1. Copies of all relevant state regulations should be maintained at the installation (GMP).

HI.NCR.1.1. Verify that copies of the following regulations are maintained and kept current at the installation:

- HAR Title 1, Chapter 2, *Rules Governing Special Management Areas and Shoreline Areas Within Community Development Districts and Practice and Procedures Before the Office of State Planning*
- HAR Title 13, Chapter 124, *Indigenous Wildlife, Endangered and Threatened Wildlife and Plants, and Introduced Wild Birds*
- HAR Title 13, Chapter 2, *Conservation Districts*
- HRS, Chapter 6E, *Historic Preservation*
- applicable county and local regulations.

PROTECTED SPECIES

HI.NCR.2. Endangered and threatened plant and animal species must be protected (HAR 13-124).

HI.NCR.2.1. Verify that no one on the installation attempts to catch, possess, injure, kill, destroy, sell or offer for sale, transport, or export any indigenous wildlife or introduced wild bird; the young or eggs of wildlife or wild birds; or any endangered or threatened species of wildlife or plants, the dead body or parts, offspring, or eggs, without authorization from the Department.

HI.NCR.2.2. Verify that no one on the installation removes, damages, or destroys the nests of any indigenous, endangered, or threatened species, except as authorized by the Department.

(NOTE: Permits may be issued by the Department for collecting, possessing, killing, or transporting such species for scientific, propagative, or educational purposes.)

(NOTE: See Tables 5-1, 5-2, and 5-3 for a list of protected indigenous wildlife.)

NATURAL AND CULTURAL RESOURCE MANAGEMENT

SPECIAL MANAGEMENT AREAS

HI.NCR.3. Development activities within special management areas are restricted (HAR 1-2-8).

HI.NCR.3.1. Determine if any part of the installation is located in a special management area or operates within a special management area.

HI.NCR.3.2. Verify that the installation contacts the office of state planning before beginning any development activities within a special management area and abides by agency procedures and guidelines.

SHORELINE AREAS

HI.NCR.4. The mining or taking of sand, dead coral or coral rubble, rocks, soil, or other beach or marine deposits from the shoreline area is prohibited (HAR 1-2-23).

HI.NCR.4.1. Verify that the installation is not engaged in any of the following activities in the shoreline area (see definitions), except for:

- taking materials, up to 1 gal/person/day, from a public beach for personal, non-commercial use
- clearing of sand from existing drainage pipes and canals and from the mouths of streams (provided that the sand is placed on adjacent beaches, unless such placement would result in excess turbidity).

HI.NCR.5. No structure or part of a structure is permitted within the shoreline area (HAR 1-2-24 through 1-2-26).

HI.NCR.5.1. Determine if the installation has any of the following structures or activities that are allowed within the shoreline area without a variance:

- structures completed prior to 22 June 1970
- structures that were outside the shoreline area when they received a building permit
- structures that received a permit or variance prior to 16 June 1989
- structures necessary for or ancillary to continuation of existing agriculture or aquaculture in the shoreline area on 16 June 1989

- work that consists of maintenance, repair, reconstruction, and minor additions or alterations
- work that consists of repair of permitted structures.

HI.NCR.5.2. Determine if the installation has plans to modify or build any structures within the shoreline area.

HI.NCR.5.3. Verify that the installation has a variance for any structure or structure-related work in the shoreline area.

HI.NCR.5.4. Verify that the installation has a variance for any of the following:
- aquaculture
- landscaping, provided that the Lead Agency finds that the proposed structure or activity will not adversely affect beach processes and will not artificially fix the shoreline
- drainage
- boating, maritime, or water sports recreational facilities
- facilities or structural improvements.

CONSERVATION DISTRICTS

HI.NCR.6. Installations must not conduct specific activities within conservation districts without a permit (HAR 13-2-19).

HI.NCR.6.1. Determine if the installation conducts any activities within a designated conservation district.

(NOTE: Conservation districts may vary in different counties of the state. Specific subzones of conservation districts may have additional restrictions on certain activities. Conservation districts and specific subzones are delineated on maps on file with the Department.)

HI.NCR.6.2. Verify that no other use, including a nonconforming use, is made of any building, structure, premises, or land within a conservation district without a permit issued by the Department.

STREAM CHANNEL ALTERATION

HI.NCR.7. Installations must not alter stream channels without a permit (HAR 13-169-50).

HI.NCR.7.1. Verify that stream channels that are on installation grounds or are affected by installation operations are protected from alteration whenever practicable to provide for fishery, wildlife, recreational, aesthetic, scenic, and other beneficial uses.

HI.NCR.7.2. Verify that no stream channel is altered without a permit issued by the Department.

(NOTE: When emergency channel alteration is necessary to prevent or minimize loss of life or damage to property, the channel alteration may proceed without a permit.)

HISTORIC PRESERVATION

HI.NCR.8. Installations must meet specific requirements for historic preservation (HRS, Sections 6E-8 and 6E-10a).

HI.NCR.8.1. Determine if the installation intends to construct, alter, dispose, or improve any land in a way that may affect historic property on the Hawaii Register of Historic Places.

HI.NCR.8.2. Verify that the installation notifies the Department of such intent.

HI.NCR.8.3. Verify that the Department has been given approval to proceed with intended activities.

HI.NCR.9. Installations must protect historic properties on state or private land (HRS, Section 6E-11).

HI.NCR.9.1. Verify that no person takes, appropriates, excavates, injures, destroys, or alters any historic property located upon private lands without written permission from the landowner.

HI.NCR.9.2. Verify that no person takes, appropriates, excavates, injures, destroys, or alters any historic property located upon lands owned or controlled by the state, except as permitted by the Department of Land and Natural Resources.

Table 5 - 1

Protected Indigenous Wildlife

(Source: HAR 13-124)

Common name	Scientific name
REPTILES	
Yellow-bellied Sea Snake	*Pelamis platurus*
Pacific Green Sea Turtle	*Chelonia mydas agassizi*
Pacific Hawksbill Turtle	*Eretmochelys imbricata bissa*
Pacific Leatherback Sea Turtle	*Dermochelys coriacea schlegelii*
Olive Ridley Sea Turtle	*Lepidochelys olivacea*
MOLLUSK	
Oahu Tree Snails	*Achatinella* spp.
BIRDS	
Black-footed Albatross	*Diomedea nigripes*
Laysan Albatross	*Diomedea immutabilis*
Wedge-tailed Shearwater	*Puffinus pacificus chlororhynchus*
Christmas Shearwater	*Puffinus nativitatis*
Townsend's Shearwater	*Puffinus auricularis newelli*
Dark-rumped Petrel	*Pterodroma phaeopygia sandwichensis*
Bonin Petrel	*Pterodroma hypoleuca hypoleuca*
Bulwar Petrel	*Bulweria bulwerii*
Sooty Storm-Petrel	*Oceanodroma tristrami*
Band-Rumped Storm-Petrel	*Oceanodroma castro cryptoleucura*
White-tailed Tropicbird	*Phaethon lepturus dorotheae*
Red-tailed Tropicbird	*Phaethon rubricauda rothschildi*
Masked Booby	*Sula dactylatra personata*
Brown Booby	*Sula leucogaster plotus*
Red-footed Booby	*Sula sula rubripes*
Great Frigatebird	*Fregata minor palmerstoni*
Black-crowned Night Heron	*Nycticorax nycticorax hoactli*
Hawaiian Goose	*Nesochen sandvicensis*
Laysan Duck	*Anas laysanensis*
Hawaiian Duck	*Anas wyvilliana*
Northern Pintail	*Anas acuta*
American Wigeon	*Anas americana*
Northern Shoveler	*Anas clypeata*
Lesser Scaup	*Aythya affinis*
Hawaiian Hawk	*Buteo solitarius*
Laysan Rail	*Porzana palmeri*
Hawaiian Rail	*Porzana sandwichensis*

(continued)

Table 5 - 1 (continued)

Common name	Scientific name
BIRDS (continued)	
Common Moorhen	*Gallimula chloropus sandvicensis*
American Coot	*Fulica americana alai*
Lesser Golden Plover	*Pluvialis dominica*
Black-bellied Plover	*Pluvialis squatarola*
Bristle-thighed Curlew	*Numenius thitiensis*
Wandering Tattler	*Heteroscelus incanus*
Ruddy Turnstone	*Arenaria interpres*
Sanderling	*Calidris alba*
Black-necked Stilt	*Himantopus mexicanus knudseni*
Sooty Tern	*Sterna fuscata oahuensis*
Gray-backed Tern	*Sterna lunata*
Blue-gray Noddy	*Procelsterna cerulea saxatilis*
Brown Noddy	*Anous stolidus pileatus*
Black Noddy	*Anous minutus melanogenys*
White Tern	*Gygis alba rothschildi*
Short-eared Owl	*Asio flammeus sandwichensis*
Hawaiian Crow	*Corvus hawaiiensis*
Hawaii Thrush	*Myadestes obscurus*
Lanai Thrush	*Myadestes lanaiensis lanaiensis*
Molokai Thrush	*Myadestes lanaiensis rutha*
Oahu Thrush	*Myadestes oahuensis*
Kauai Thrush	*Myadestes myadestinus*
Small Kauai Thrush	*Myadestes palmeri*
Laysan Millerbird	*Acrocephalus familiaris familiaris*
Nihoa Millerbird	*Acrocephalus familiaris kingi*
Hawaii 'Elepaio	*Chasiempis sandwichensis sandwichensis*
Oahu 'Elepaio	*Chasiempis sandwichensis gayi*
Kauai 'Elepaio	*Chasiempis sandwichensis sclateri*
Hawaii 'O'o	*Moho nobilis*
Molokai 'O'o	*Moho bishopi*
Oahu 'O'o	*Moho apicalis*
Kauai 'O'o	*Moho braccatus*
Kioea	*Chaitoptila angustipluma*
Hawaii 'Amakihi	*Hemignathus virens virens*
Maui 'Amakihi	*Hemignathus virens wilsoni*
Oahu 'Amakihi	*Hemignathus virens chloris*
Kauai 'Amakihi	*Hemignathus virnes stejnegeri*
Anianiau	*Hemignathus parvus*
Greater 'Amakihi	*Hemignathus sagittirostris*
Hawaii Creeper	*Oreomystis mana*

(continued)

Table 5 - 1 (continued)

Common name	Scientific name
BIRDS (continued)	
Kauai Creeper	*Oreomystis bairdi*
Maui Creeper	*Paroreomyza montana newtoni*
Lanai Creeper	*Paroreomyza montana montana*
Molokai Creeper	*Paroreomyza flammea*
Oahu Creeper	*Paroreomyza maculata*
Hawaii 'Akepa	*Loxops coccineus coccineus*
Maui 'Akepa	*Loxops coccineus ochraceus*
Oahu 'Akepa	*Loxops coccineus rufus*
Kauai 'Akepa	*Loxops coccineus caeruleirostris*
Po'ouli	*Melamprosops phaeosoma*
Hawaii 'Akialoa	*Hemignathus obscurus obscurus*
Lanai 'Akialoa	*Hemignathus obscurus lanaiensis*
Oahu 'Akialoa	*Hemignathus obscurus ellisianus*
Kauai 'Akialoa	*Hemignathus procerus*
Maui Nuku-pu'u	*Hemignathus lucidus affinus*
Oahu Nuku-pu'u	*Hemignathus lucidus lucidus*
Kauai Nuku-pu'u	*Hemignathus lucidus hanapepe*
'Akiapola'au	*Hemignathus munroi*
Maui Parrotbill	*Pseudonestor xanthophrys*
'O'u	*Psittirostra psittacea*
Nihoa Finch	*Telespyza ultima*
Laysan Finch	*Telespyza cantans*
Palila	*Loxioides bailleui*
Greater Koa Finch	*Rhodacanthis palmeri*
Lesser Koa Finch	*Rhodacanthis flaviceps*
Kona Finch	*Chloridops*
'Apapane	*Himatione sanguinea sanguinea*
Laysan Honeycreeper	*Himatione sanguinea freethii*
Crested Honeycreeper	*Palmeria dolei*
'Ula-'ai-hawane	*Ciridops anna*
I'iwi	*Vestiaria coccinea*
Black Mamo	*Drepanis funerea*
Hawaii Mamo	*Drepanis pacifica*

(continued)

Table 5 - 1 (continued)

Common name	Scientific name
MAMMALS	
Hawaiian Bat	*Lasiurus cinereus semotus*
Hawaiian Seal	*Monachus schauinslandi*
Fin Whale	*Balaenoptera physalus*
Minke Whale	*Balaenoptera acutorostrata*
Humpback Whale	*Megaptera novaengliae*
Sperm Whale	*Physeter catodon*
Densebeaked Whale	*Mesoplodon densirostris*
Killer Whale	*Orcinus orca*
False Killer Whale	*Pseudorca crassidens*
Pygmy Killer Whale	*Feresa attenuata*
Melon-headed Whale	*Peponocephala electra*
Pilot Whale	*Globicephala macrorhynchus*
Pygmy Sperm Whale	*Kogia breviceps*
Pacific Bottlenose Dolphin	*Tursiops gilli*
Rough-toothed Dolphin	*Steno bredanensis*
Spotted Dolphin	*Stenella attenuata*
Spinner Dolphin	*Stenella longirostris*
Striped Dolphin	*Stenella coeruleoalba*

Table 5 - 2

Endangered Wildlife and Plants

(Source: HAR 13-124)

Common name	Scientific name
BIRDS	
Dark-rumped Petrel	*Pterodroma phaeopygia sandwichensis*
Band-rumped Storm-Petrel	*Oceanodroma castro cryptoleucura*
Hawaiian Goose	*Nesochen sandvicensis*
Laysan Duck	*Anas laysanensis*
Hawaiian Duck	*Anas wyvilliana*
Hawaiian Hawk	*Buteo solitarius*
Common Moorhen	*Gallinula chloropus*
American Coot	*Fulica americana alai*
Black-necked Stilt	*Himantopus mexicanus knudseni*
Short-eared Owl	*Asio flammeus sandwichensis*
Hawaiian Crow	*Corvus hawaiiensis*
Molokai Thrush	*Myadestes lanaiensis rutha*
Kauai Thrush	*Myadestes myadestinus*
Small Kauai Thrush	*Myadestes palmeri*
Nihoa Millerbird	*Acrocephalus familiaris kingi*
Kauai 'O'o	*Moho braccatus*
Maui 'Amakihi	*Hemignathus virens wilsoni*
Hawaii Creeper	*Oreaomystis mana*
Molokai Creeper	*Paroreomyza flamma*
Oahu Creeper	*Paroreomyza maculata*
Hawaii 'Akepa	*Loxops coccineus coccineus*
Maui 'Akepa	*Loxops coccineus ochraceus*
Po'ouli	*Melamprosops phaeosoma*
Kauai 'Akialoa	*Hemignathus procerus*
Maui Nuku-pu'u	*Hemignathus lucidus affinis*
Kauai Nuku-pu'u	*Hemignathus lucidus hanapepe*
'Akiapola'au	*Hemignathus munroi*
Maui parrotbill	*Pseudonestor xanthophrys*
'O'u	*Psittirostra psittacea*
Laysan Finch	*Telespyza cantans*
Nihoa Finch	*Telespyza ultima*
Palila	*Loxioides bailleui*
Crested Honeycreeper	*Palmeria dolei*
'I'iwi	*Vestiaria coccinea*

(continued)

Table 5 - 2 (continued)

Common name	Scientific name
MAMMALS	
Hawaiian Bat	*Lasiurus cinereus semotus*
Hawaiian Seal	*Monachus schauinslandi*
Humpback Whale	*Megaptera novaengliae*
Fin Whale	*Balaenoptera physalus*
Sperm Whale	*Physeter catodon*
REPTILES	
Pacific Hawksbill Sea Turtle	*Eretmochelys imbricata bissa*
Pacific Leatherback Sea Turtle	*Dermochelys coriacea schlegelii*
MOLLUSKS	
Oahu Tree Snails	*Achatinella* spp.
PLANTS	
----------	*Abutilon eremitopetalum*
Ko'oloa'ula	*Abutilon menziesii*
----------	*Abutilon sandwicense*
Liliwai	*Acaena exigua*
----------	*Achyranthes rotundata*
Mahoe	*Alectryon macrococcus*
----------	*Alsinidendron obovatum*
----------	*Alsinidendron trinerve*
Ka'u Silversword	*Argyroxiphium kauense*
Mauna Kea Silversword	*Argyroxiphium sandwicense*
Cuneate Bidens	*Bidens Cuneata*
Ko'oko'olau	*Bidens micrantha*
Ko'oko'olau	*Bidens wiebkei*
Pua 'ala	*Brighamia rockii*
Uhiuhi, Kea, Kalamona	*Caesalpinia kavaiensis*
'Awikiwiki	*Canavalia molokaiensis*
'Awiwi	*Centaurium sebaeoides*
'Akoko	*Chamaesyce celastroides*
----------	*Chamaesyce halemanui*
----------	*Cyanea undulata*
Ha'iwale	*Cyrtandra munroi*
----------	*Diellia falcata*
Na'ena'e	*Dubautia herbstobatae*
----------	*Dubautia latifolia*
----------	*Dubautia pauciflorula*
'Ewa Plains 'akoko	*Euphorbia skottsbergii*
----------	*Gahnia lanaiensis*
Nanu, Nau	*Gardenia brighamii*
Hawaiian Red-flowered Geranium	*Geranium arboreum*

(continued)

Table 5 - 2 (continued)

Common name	Scientific name
PLANTS (continued)	
----------	*Hesperomannia arbuscula*
----------	*Hesperomannia lydgatei*
Kauai Hau Kuahiwi	*Hibiscadelphus distans*
Koki'o ke'oke'o	*Hibiscus arnottianus*
Wawae'iole	*Huperzia mannii*
Aupaka	*Isodendrion hosaikae*
Cooke's Kokio	*Kokia cookei*
Hawaiian Tree Cotton	*Kokia drynarioides*
Kamakahala	*Labordia lydgatei*
Nehe	*Lipochaeta kamolensis*
Nehe	*Lipochaeta lobata*
Ulihi	*Phyllostegia glabra*
----------	*Phyllostegia mannii*
----------	*Phyllostegia mollis*
Hawaiian Bluegrass	*Poa sandvicensis*
----------	*Poa siphonoglossa*
Loulu	*Pritchardia munroi*
----------	*Remya kauaiensis*
Maui Remya	*Remya mauiensis*
----------	*Remya montagomeryi*
----------	*Sanicula mariversa*
Lanai Sandalwood, 'iliahi	*Santalum freycinetianum*
----------	*Silene perlmanii*
----------	*Stenogyne angustifolia*
----------	*Stenogyne bifida*
----------	*Stenogyne campanulata*
----------	*Stenogyne kanehoana*
----------	*Tetramolopium filiforme*
----------	*Tetramolopium lepidotum*
----------	*Tetramolopium remyi*
Opuhe	*Urera kaalae*
----------	*Vicia menziesii*
Pamakani	*Viola chamissoniana*

Table 5 - 3

Threatened Wildlife and Plants

(Source: HAR 13-124)

Common name	Scientific name
BIRDS	
Townsend's Shearwater	*Puffinus auricularis newelli*
White Tern	*Gygis alba rothschildi*
REPTILES	
Pacific Green Sea Turtle	*Chelonia mydas agassizi*
Olive (Pacific) Ridley Sea Turtle	*Lepidochelys olivacea*
PLANTS	
Haleakala Silversword	*Argyroxiphium sandwicense*
----------	*Tetramolopium rockii*

SECTION 6

ENVIRONMENTAL NOISE MANAGEMENT

Hawaii Supplement

SECTION 6

ENVIRONMENTAL NOISE MANAGEMENT

Hawaii Supplement

The Hawaii Department of Health regulates vehicle and environmental noise. The Department has issued regulations pertaining to noise for the Island of Oahu.

Definitions

The following definitions were taken from Hawaii Administrative Rules (HAR) 11-42 and HAR 11-43.

6.1. Decibel - one-tenth of a bel. A unit of sound level.
   1. dB is an abbreviation for decibels
   2. dBA is an abbreviation for A-weighted sound level expressed in decibels.

6.2. Department - the Department of Health.

6.3. HAR 11-42 - Hawaii Administrative Rules, Title 11, Chapter 42, *Vehicular Noise Control for Oahu.*

6.4. HAR 11-43 - Hawaii Administrative Rules, Title 11, Chapter 43, *Community Noise Control for Oahu.*

6.5. Heavy Vehicle - a vehicle which has a manufacturer's gross vehicular weight rating of 10,000 lb or greater.

6.6. Level - the total sound level of all noises as measured with a sound level meter using the "A" weighting network. The unit of measurement is the dBA.

6.7. Light Vehicle - a vehicle not specifically identified as a heavy vehicle.

6.8. Muffler - a mechanical apparatus designed to allow the flow of gas and steam and to reduce the noise created by intake from or exhaust to the atmosphere by such flow. Spark arrestors do not qualify as mufflers.

6.9. Onsite Vehicles - fuel, electric, and air powered vehicles, stationary and mobile, which are operated within the boundaries of a construction site, agricultural land, or a premises.

6.10. Trafficway - the entire area within the property lines of every way or place, including parking areas, publicly or privately owned or maintained, that are open to the use of the public for purposes of automotive traffic.

6.11. Truck Route - a sequence of trafficways identified by the Director of the Department of Health for the regular and repeated daily use of trucks.

6.12. Vehicle - any device, or combination of devices, used for or capable of being used for transporting persons or property.

ENVIRONMENTAL NOISE MANAGEMENT

GUIDANCE FOR HAWAII CHECKLIST USERS

Applicability	Refer to Checklist Items:
All Installations	HI.N.1
Installations on Oahu	HI.N.2 and HI.N.3

ENVIRONMENTAL NOISE MANAGEMENT

ALL INSTALLATIONS

HI.N.1. Copies of all relevant state and local regulations should be maintained at the installation (GMP).

HI.N.1.1. Verify that copies of the following regulations are maintained and kept current at the installation:

- applicable county and local regulations.

HI.N.1.2. Verify that installations located on the Island of Oahu maintain the following regulations:

- HAR 11-42, *Vehicular Noise Control for Oahu*
- HAR 11-43, *Community Noise Control for Oahu*
- other applicable county and local regulations.

INSTALLATIONS ON OAHU

HI.N.2. Vehicles operated on trafficways on the Island of Oahu must meet certain standards (HAR 11-42-3, 11-42-4, and 11-42-9).

HI.N.2.1. Verify that installation vehicles meet the noise standards listed in Tables 6-1 and 6-2, except the following exempted vehicles:

- aircraft
- boats
- police and fire vehicles
- ambulances
- properly installed truck back-up alarms.

HI.N.2.2. Verify that the installation does not operate any vehicles having altered motors or exhaust systems that emit more noise than the original system.

HI.N.3. Excessive noise without a permit is prohibited on the Island of Oahu (HAR 11-43-5).

HI.N.3.1. Verify that the installation does not produce noise which exceeds the limits listed in Table 6-3.

HI.N.3.2. Verify that no onsite vehicles, construction equipment, or other devices requiring a muffler are operated on the installation without a muffler.

HI.N.3.3. Verify that no minibikes, go-carts, motorcycles, etc., are operated on the installation without mufflers.

Table 6 - 1

Noise Level Limits for Light Vehicles

(Source: HAR 11-42-7)

Posted Speed Limit (in mph)	Measurement Distance for Noise Level Limits (in dBA)		
	20 ft	25 ft	50 ft
25 or less	77	75	69
30	79	77	71
35	81	79	73
40	83	81	75
45	85	83	77
50	87	85	79
55	89	87	81
60 or more	91	89	83

Table 6 - 2

Noise Level Limits for Heavy Vehicles

(Source: HAR 11-42-8)

Posted Speed Limit (in mph)	Time Periods When Applicable	Measurement Distances for Noise Level Limits (in dBA)		
		20 ft	25 ft	50 ft
35 or less	Daytime	92	90	84
	Evening	92	90	84
	Night	81	79	73
	Holiday			
	Sunday			
More than 35	All	92	90	84
Truck routes	All	96	94	88

Table 6 - 3

Allowable Noise Levels

(Source: HAR 11-43-3)

Zoning Districts	Allowable Noise Levels in dBA Daytime 7 a.m. - 10 p.m.	 Night 10 p.m. - 7 a.m.
Residential (R-1 through current R-70)	55	45
Preservation (P-1)	55	45
Apartment (A-1 through current A-5)	60	50
Hotel (H-1 and H-2)	60	50
Business (B-1 through current B-5)	60	50
Agricultural (AG-1 and AG-2)	70	70
Industrial (I-1 through current I-3)	70	70

SECTION 7

PESTICIDE MANAGEMENT

Hawaii Supplement

SECTION 7

PESTICIDE MANAGEMENT

Hawaii Supplement

Definitions

The following definitions were obtained from the Hawaii Code of Rules and Regulations (HCRR) 11-58, Hawaii Administrative Rules (HAR) 4-66, and Hawaii Revised Statutes (HRS), Chapter 149A.

7.1. Active Ingredient -

1. in the case of a pesticide other than a plant regulator, defoliant, or desiccant, an ingredient which will prevent, destroy, repel, or mitigate any pest
2. in the case of a plant regulator, an ingredient which, through physiological action, will accelerate or retard the rate of growth or maturation or otherwise alter the behavior of ornamental or crop plants or the produce thereof
3. in the case of a defoliant, an ingredient which will cause the leaves or foliage to drop from a plant
4. in the case of a desiccant, an ingredient which will artificially accelerate the drying of plant tissues.

7.2. Adulterated - any pesticide if its strength or purity falls below the professed standard of quality as expressed on the labeling under which it is sold, or if any substance has been substituted wholly or in part for the pesticide, or if any valuable constituent of the pesticide has been wholly or in part abstracted.

7.3. Animal - all vertebrate and invertebrate species including, but not limited to, man and other mammals, birds, fish, and shellfish.

7.4. Board - the Board of Agriculture.

7.5. Certified Pesticide Applicator - any individual who is certified as authorized to use or supervise the use of any pesticide which is classified for restricted use.

7.6. Certification - the authorization granted by the state or Federal government to a person to use, handle, or supervise the use of restricted use pesticides.

7.7. Commercial Pesticide Applicator - any certified pesticide applicator, whether or not the applicator is a private pesticide applicator, with respect to some uses, who uses or supervises the use of any pesticide which is classified for restricted use for any purpose or on any property.

7.8. Defoliant - any substance or mixture of substances intended for causing the leaves or foliage to drop from a plant, with or without causing abscission.

7.9. Department - the Department of Agriculture.

7.10. Desiccant - any substance or mixture of substances intended for artificially accelerating the drying of plant tissues.

7.11. Device - any instrument or contrivance, other than a firearm, which is intended for trapping, destroying, repelling, or mitigating any pest or any form of plant or animal life (other than man and other than bacteria, viruses, or other microorganisms on or living in man or other animals), but not including equipment used for application of pesticides when sold separately therefrom.

7.12. Environment - water, air, land, all plants, man, and other animals living therein and the interrelationships which exist among these.

7.13. Front Panel - that portion of the label of a pesticide product that is ordinarily visible to the purchaser under the usual conditions of display for sale.

7.14. Fungi - all nonchlorophyll-bearing thallophytes including rusts, smuts, mildews, molds, yeasts, and bacteria, except those on or living in man or other animals and those on or in processed foods, beverages, or pharmaceuticals.

7.15. HAR 4-66 - Hawaii Administrative Rules, Title 4, Department of Agriculture, Subtitle 6, Chapter 66, *Pesticides*.

7.16. Hazard - a situation where there exists a probability that a given pesticide will cause injury or have an adverse effect on the environment.

7.17. HCRR 11-58 - Hawaii Code of Rules and Regulations, Title 11, Chapter 58, *Solid Waste Management Control.*

7.18. Head - the head of the Division of Plant Industry, Hawaii Department of Agriculture, or any officer or employee to whom authority has been duly delegated.

7.19. HRS 149A - Hawaii Revised Statutes, Chapter 149A, *Hawaii Pesticides Law.*

7.20. Ingredient Statement -

1. a statement of the name and percentage of each active ingredient, together with the total percentage of the inert ingredients in the pesticide
2. if the pesticide contains arsenic in any form, a statement of the percentages of total and water soluble arsenic, each calculated as elemental arsenic.

7.21. Insect - invertebrate animals belonging to the class insecta including beetles, bugs, bees, flies, and other allied classes of arthropods, which includes spiders, mites, ticks, centipedes, and wood lice.

7.22. Label - the written, printed, or graphic matter on or attached to the pesticide or device or any of its containers or wrappers.

7.23. Labeling - all labels and other written, printed, or graphic matter accompanying the pesticide or device at any time or to which reference is made on the label or in literature accompanying the pesticide or device, except to current official publications of the U.S. Environmental Protection Agency (USEPA), the U.S. Departments of Agriculture and the Interior, the U.S. Department of Health and Human Services, state experiment stations, state agriculture colleges, or other similar Federal or state institutions or agencies authorized by law to conduct research in the field of pesticides.

7.24. LC_{50} - a concentration of substance, expressed as parts per million parts of medium, that is lethal to 50 percent of the test population of animals under test conditions acceptable for registration under the *Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA).*

7.25. LD_{50} - a single dermal or oral dose of a substance, expressed as milligrams per kilogram of body weight, that is lethal to 50 percent of the test population of animals under test conditions acceptable for registration under *FIFRA*.

7.26. License - the process of being allowed to register a pesticide product pursuant to provisions of these regulations.

7.27. Nematode - invertebrate animals of the phylum nemathelminthes and the class nematoda, including unsegmented roundworms with elongated fusiform or sac-like bodies covered with cuticle, and inhabiting soil, water, plants, or plant parts.

7.28. Nontarget Organisms - those flora and fauna (including man) that are not intended to be controlled, injured, killed, or detrimentally affected in any way by a pesticide.

7.29. Pest - any insect, rodent, nematode, fungus, weed, or any other form of terrestrial or aquatic plant or animal life or virus, bacterium, or any other microorganism, except viruses, bacteria, or other microorganisms on or in living man or other living animals, which the Board declares to be a pest.

7.30. Pesticide - any substance or mixture of substances intended for preventing, destroying, repelling, attracting, or mitigating any pest, and any substance or mixture of substances intended for use as a plant regulator, defoliant, or desiccant. A product shall be deemed to be a pesticide regardless of whether it is intended for use as packaged or as a dilution or mixture with substances such as carriers or baits. Products not considered pesticides include:

1. deodorants, bleaching agents, and cleaning agents for which no pesticidal claims are made or implied
2. embalming fluids
3. building materials which have been treated to protect the material itself against any pest and bear no claims for protection of other surfaces or objects
4. fabrics which have been treated to protect the fabric itself from insects, fungi, or any other pests
5. fertilizer and other plant nutrients
6. products intended only for use after further processing or manufacturing such as grinding to dust or other operations.

7.31. Plant Regulator - any substance or mixture of substances intended, through physiological action, for accelerating or retarding the rate of growth or maturation or for otherwise altering the behavior of plants or the produce thereof, but does not include substances to the extent that they are intended as plant nutrients, trace elements, nutritional chemicals, plant inoculants, and soil amendments.

7.32. Private Pesticide Applicator - a certified pesticide applicator who uses or supervises the use of any pesticide which is classified for restricted use for purposes of producing any agricultural commodity on property owned or rented by the applicator or the applicator's employer if applied without compensation other than trading of personal services between producers of agricultural commodities on the property of another person.

7.33. Protect Health and the Environment or Protection of Health and the Environment - protection against unreasonable adverse effects on the environment.

7.34. Restricted-Use Pesticide - a pesticide or pesticide use classified by the Administrator, USEPA, for use by certified applicators or competent persons under their direct supervision and so designated on its label; or a pesticide or pesticide use classified by the Board for use by certified applicators or competent persons under their direct supervision.

7.35. Under the Direct Supervision of a Certified Applicator - unless otherwise prescribed by its labeling, a pesticide is considered to be applied under the direct supervision of a certified applicator if it is applied by a competent person acting under the instructions and control of a certified applicator who is available if and when needed, even though the certified applicator is not physically present at the time and place the pesticide is applied.

7.36. Unreasonable Adverse Effect 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 the pesticide.

7.37. Use - any act of handling or release of a pesticide, or exposure of man or the environment to a pesticide through acts including, but not limited to the following:

1. application of a pesticide including mixing and loading 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.

7.38. Weed - any plant which grows where not wanted.

PESTICIDE MANAGEMENT

GUIDANCE FOR HAWAII CHECKLIST USERS

Applicability	Refer to Checklist Items:
All Installations	HI.P.1
Certification Requirements	HI.P.2
Pesticide Disposal	HI.P.3 through HI.P.5
Labeling Requirements	HI.P.6 and HI.P.7
Pesticide Use	HI.P.8
Recordkeeping	HI.P.9

PESTICIDE MANAGEMENT

ALL INSTALLATIONS

HI.P.1. Copies of all relevant state regulations should be maintained at the installation (GMP).

HI.P.1.1. Verify that copies of the following regulations are maintained and kept current at the installation:

- HAR 4-66, *Pesticides*
- HCRR 11-58, *Solid Waste Management Control*
- HRS 149A, *Hawaii Pesticides Law*
- applicable county and local regulations.

CERTIFICATION REQUIREMENTS

HI.P.2. Restricted-use pesticide applicators must be certified (HAR 4-66-56, 4-66-56(b)(9), 4-66-63, and 4-66-61).

HI.P.2.1. Verify that installation personnel and commercial applicators who use or apply restricted-use pesticides (see Table 7-1) hold a valid certificate issued by the Hawaii Department of Agriculture, the Federal government, or do so under the direct supervision of a certified applicator.

(NOTE: Certification requirements include Federal, state, or other governmental employees using or supervising the use of restricted-use pesticides in public health programs and in the control of regulated pesticides.)

PESTICIDE DISPOSAL

HI.P.3. Disposal of pesticide containers that formerly contained organic or metallo-organic pesticides (except organic mercury, lead, cadmium, or arsenic compounds) must meet specific requirements (HCRR 11-58-5(e)(1)(A)).

HI.P.3.1. Verify that combustible containers are disposed of in the following manner (in rank order of preferred disposal method):

- disposed of in a pesticide incinerator
- buried in a specifically designated landfill

- emptied, triple rinsed, punctured, crushed, and buried under at least 1 ft of compacted soil away from any water system.

HI.P.3.2. Verify that unusable, noncombustible containers are disposed of in the following manner (in rank order of preferred disposal method):

- emptied, triple rinsed, punctured, crushed, and buried under at least 1 ft of compacted soil away from any water system
- triple rinsed and punctured prior to transport to a solid waste disposal facility.

(NOTE: Triple rinsed containers may be incorporated with other solid wastes in a landfill.)

HI.P.3.3. Verify that empty reusable, noncombustible containers are not used for purposes other than for reuse with the same pesticide.

HI.P.4. Disposal of pesticide containers that formerly contained organic mercury, lead, cadmium, or arsenic compounds must meet specific requirements (HCRR 11-58-5(e)(1)(C)).

HI.P.4.1. Verify that containers are disposed of in the following manner (in rank order of preferred disposal method):

- triple rinsed and punctured prior to being incorporated with the other solid wastes in a landfill
- left unrinsed, encapsulated, and buried in a specifically designated landfill.

HI.P.5. Specific requirements apply to the disposal of experimental use and restricted-use pesticides (HCRR 11-58-5(e)).

HI.P.5.1. Verify that organic pesticides (except organic mercury, lead, cadmium, and arsenic compounds) are disposed of in the following manner (in rank order of preferred disposal method):

- incinerated in a pesticide incinerator until completely destroyed
- buried in a specially designated landfill burial trench or pit
- temporarily stored with proper inspection pending final detoxification and disposal.

HI.P.5.2. Verify that metallo-organic pesticides (except organic mercury, lead, cadmium, and arsenic compounds) are disposed of in the following manner (in rank order of preferred disposal method):

- incinerated in a pesticide incinerator after recovering the heavy metals through chemical or physical treatment
- buried in a specifically designated landfill
- temporarily stored with proper inspection pending final detoxification and disposal.

HI.P.5.3. Verify that organic mercury, lead, cadmium, arsenic, and all inorganic pesticides are disposed of in the following manner (in rank order of procedure):

- deactivated chemically and the heavy metal resources recovered
- encapsulated and buried in a specially designated landfill
- temporarily stored with proper inspection, pending final detoxification and disposal.

LABELING REQUIREMENTS

HI.P.6. Pesticide containers are required to bear a label containing specific information (HRS 149A-15).

HI.P.6.1. Verify that each pesticide container bears or has attached in a conspicuous place a plainly written or printed label in the English language that provides the following information:

- name, brand, or trade mark under which the pesticide is sold or distributed
- ingredient statement
- direction for use which, if complied with, will adequately protect health and the environment
- warning or caution statement
- name and address of the manufacturer, registrant, or person for whom manufactured
- weight or measure of content
- USEPA registration and establishment numbers
- any other labeling requirement as prescribed under *FIFRA*.

HI.P.6.2. Verify that pesticides classified for general use are labeled with the exact words "general classification" immediately below the heading "directions for use."

HI.P.6.3. Verify that pesticides classified for restricted use are labeled with the following:

- the exact words "restricted-use pesticide" at the top of the front panel of the label in letters large enough so that they are not easily overlooked
- directly below this statement on the front panel, a summary statement of the terms of restriction imposed as a precondition of registration
- if use is restricted to certified applicators, the following statement is required: "For retail sale to and use only by certified applicators or persons under their direct supervision and only for those uses covered by the certified applicator's certification."

(NOTE: Restricted-use pesticides are listed in Table 7-1.)

HI.P.6.4. Verify that a pesticide whose chemical composition changes significantly bears a label that contains the following statement in a prominent position: "Not for sale or use after (date)."

HI.P.7. Labels on pesticide containers are required to warn the public about toxicological hazards (HAR 4-66-17, 4-66-18(a) through (d)(1), and 4-66-19(a) and (d)).

HI.P.7.1. Verify that the front panel of the label on a pesticide container contains a warning based on the highest hazard shown by the toxicity categories outlined in Table 7-2.

HI.P.7.2. Verify that the following human hazard signal words for the respective toxicity categories are prominently placed on the front panel of labels affixed to pesticide containers:

- DANGER for toxicity category I; in addition, if the product was assigned to toxicity category I on the basis of its oral, inhalation, or dermal toxicity (as distinct from skin and eye local effects), the word POISON is to appear in red on a background of distinctly contrasting color and the skull and crossbones is to appear in immediate proximity to the word POISON
- WARNING for toxicity category II
- CAUTION for toxicity categories III and IV.

HI.P.7.3. Verify that every pesticide product label bears on the front panel the statement: "Keep out of reach of children."

HI.P.7.4. Verify that a statement of practical treatment (first aid or other) appears on the front panel of the label of all pesticides falling into toxicity category I on the basis of oral, inhalation, or dermal toxicity.

HI.P.7.5. Verify that warnings and precautionary statements appear together on the label under the general heading, precautionary statements, and under the appropriate subheadings, hazard to humans and domestic animals, environmental hazard, and physical or chemical hazard.

HI.P.7.6. Verify that warning statements on the flammability or explosive characteristics of the pesticide are included on the label.

PESTICIDE USE

HI.P.8. Installations are prohibited from using pesticides in specific manners (HRS 149A-31).

HI.P.8.1. Verify that the installation does not use any pesticide in a manner inconsistent with its label.

HI.P.8.2. Verify that the installation does not use, store, transport, or discard any pesticide or pesticides in any manner which could have unreasonable adverse effects on the environment.

HI.P.8.3. Verify that the installation does not use or apply restricted-use pesticides, unless the pesticide is applied by a certified pesticide applicator or under the direct supervision of a certified pesticide applicator with a valid certificate.

HI.P.8.4. Verify that the installation does not use or apply pesticides in any manner that has been suspended, canceled, or restricted.

HI.P.8.5. Verify that the installation does not falsify any record or report required to be made or maintained.

HI.P.8.6. Verify that any tank, implement, apparatus, or equipment used to disperse pesticides is not filled with water, unless it is equiped with an air gap or a reduced-pressure principle backflow device.

PESTICIDE MANAGEMENT

RECORDKEEPING

HI.P.9. Certified applicators are required to keep records of restricted-use pesticides applied on every job site of their operations (HAR 4-66-62).

HI.P.9.1. Verify that the certified applicator maintains records of the application of restricted-use pesticides for a period of 2 yr.

HI.P.9.2. Verify that the records of restricted-use pesticide applications contain the following information:

- brand or common name of pesticide product applied
- USEPA registration number
- type of formulation
- percent active ingredient
- scientific or common name of target pest
- dilution rate
- total amount of pesticide used
- total area covered
- date of application
- address or location of treated site
- name of certified applicator and certification number
- any other information that the Head deems to be necessary.

Table 7 - 1

Restricted-Use Pesticides

(Source: HAR 4-66-32)

Restricted Use Pesticides	Restricted Concentration
Acrolein (Aqualin, Acrylaldehyde)	all
Aldicarb (Temik)	all
Aldrin	all
Aluminum phosphide (Phostoxin)	all
Arsenic compounds, inorganic	all except finished baits
Avitrol (4-aminopyridine)	all
Azinphos ethyl (ethyl Guthion)	all
Azinphos methyl (Guthion)	all
BHC (Benzene Hexachloride)	all
Bomyl (dimethyl 3-hydroxyglutaconate dimethyl phosphate)	all
Cadmium compounds	all
Carbofuran (Furdan)	all
Carbophenothion (Trithion)	all
Chlordane	all
Chloropicrin	all
Copper acetoarsenite (Paris Green)	all
Cyanides (Calcium, sodium, liquid hydrogen)	all
Cycloheximide (Actidione)	all
DBCP (1,2-dibromo-3-chloropropane)	all
DDD (TDE)	all
DDT	all
Demeton (Systox)	all
2,4-Dichlorophenoxyacetic acid and its esters and salts*	all
2(2,4-Dichlorophenoxy) proprionic acid and its esters and salts*	all
1,2-dichloropropane, 1,3-dichloro-propane and related C3 compounds (Telone, DD mixture, Vidden D)	all
Dicrotophos (Bidrin)	all
Dieldrin	all
Dinoseb (DNSP)	all
Dioxathion (Delnav)	all
Diphacinone (Diphacin)	all except finished baits

(continued)

Table 7 - 1 (continued)

Restricted Use Pesticides	Restricted Concentration
Diguat	all
Disulfoton (Di-syston)	all
DNOC (4,6-dinitro-o-cresol and salts)	all
Endosulfan (Thiodan)	all
Endoth all and salts	all
Endrin	all
EPN (O-ethyl O-p-nitrophenyl phenylphosphonothioate)	all
Ethion	all
Ethoptop (Mocap)	all
Ethylene dibromide (EDB)	all
Ethylene dichloride	all
Famphur	all
Fenamiphos (Nemacur)	all
Fensulfothion (Dasanit)	all
Fenthion (Baytex)	all
Fonophos (Dyfonate)	all
Fumarin (3-alpha-acetonylfurfuryl-4-hydroxycoumarin)	all except finished baits
Heptachlor	all
Lead arsenate	all
Lindane	all above 1%
Magnesium phosphide	all
Mercury compounds	all
Methsmidophos (Monitor)	all
Methomyl (Lannate)	all
Methyl bromide	all
Mevinphos (Phosdrin)	all
Mexacarbate (Zectran)	all
Mirex	all
Monocrotophos (Azodrin)	all
Nicotine	all
Nicotine salts	all above 40%
Oxamyl (Vydate)	all
Paraquat	all above 0.2% cation
Parathion	all
Phorate (Thimet)	all
Pentachlorophenol and salts	all above 5%

(continued)

Table 7 - 1 (continued)

Restricted Use Pesticides	Restricted Concentration
Phosphamidon (Dimecron)	all
Phosphorous (white or yellow)	all
Picloram (Tordon)	all
Pival (2-pivalyl-1,3-indandione and salts)	all except finished baits
PMP (Valone)	all
Schradan (OMPA)	all
Selenium compounds	all
Silvex	all
Sodium arsenite	all
Sodium chlorate	all without fire retardant
Sodium fluoroacetate (1080)	all
Strychnine and its salts	all
Sulfotepp (0,0,0,0-tetraethyl dithiopyrophosphate)	all
Sulfuryl fluoride (Vikane)	all
TEPP (Tetraethyl pyrophosphate)	all
Terbufos (Counter)	all
Temephos (Abate)	all aquatic uses
Thallium compounds	all
Toxaphene	all
Tricalcium arsenate	all
2,4,5-Trichlorophenoxyacetic acid and its esters and salts	all
Warfarin and salts	all except finished baits
Zinc phosphide	all except finished baits for domestic use containing 2% or less
Zinophos (0,0-diethyl 0-2-pyrazinyl phosphorothioate)	all

* Pesticides marketed in quantities of 1 quart or less or containing 2 percent or less active ingredient in combination with fertilizers may be sold for general use.

Table 7 - 2

Toxicity Categories for Pesticides

(Source: HAR 4-66-18(a))

Toxicity category I	
Oral LD_{50}	Up to and including 50 mg/kg
Inhalation LC_{50}	Up to and including 0.2 mg/L
Dermal LD_{50}	Up to and including 200 mg/kg
Eye effects	Corrosive corneal opacity not reversible within 7 days
Skin effects	Corrosive
Toxicity category II	
Oral LD_{50}	From 50 through 500 mg/kg
Inhalation LC_{50}	From 0.2 through 2 mg/L
Dermal LD_{50}	From 200 through 2000 mg/kg
Eye effects	Corneal opacity reversible within 7 days
Skin effects	Severe irritation at 72 h
Toxicity category III	
Oral LD_{50}	From 500 through 5000 mg/kg
Inhalation LC_{50}	From 2 through 20 mg/L
Dermal LD_{50}	From 2000 through 20,000 mg/kg
Eye effects	No corneal opacity; irritation reversible in 7 days
Skin effects	Moderate irritation at 72 h
Toxicity category IV	
Oral LD_{50}	Greater than 5000 mg/kg
Inhalation LC_{50}	Greater than 20 mg/L
Dermal LD_{50}	Greater than 20,000 mg/kg
Eye Effects	No irritation
Skin effects	Mild or slight irritation at 72 h

SECTION 8

PETROLEUM, OIL, AND LUBRICANT (POL) MANAGEMENT

Hawaii Supplement

SECTION 8

PETROLEUM, OIL, AND LUBRICANT (POL) MANAGEMENT

Hawaii Supplement

The State of Hawaii does not have its own underground storage tank (UST) program, but administers the U.S. Environmental Protection Agency (USEPA) program. The Department of Health is the state agency designated by the USEPA to collect notification forms from owners of USTs. Refer to Protocol Section 8 in the U.S. ECAMP Manual for Federal, Air Force, and DOD requirements.

Definitions

The following definitions were taken from Hawaii Revised Statutes (HRS) 19-342N.

8.1. Department - the Department of Health.

8.2. Director - the Director of the Department of Health.

8.3. Permit - written authorization from the Director to discharge waste or to construct, modify, or operate any used oil management system. A permit authorizes the grantee to do any act not forbidden, but requiring review by the Department.

8.4. Person - any individual, partnership, firm, association, public or private corporation, Federal agency, the state or any of its political subdivisions, trust, estate, or any other legal entity.

8.5. Recycled Oil - used oil that is reused or prepared for reuse as a petroleum product.

8.6. Specification Fuel - recycled oil which meets specific standards that are set by the Director. These standards, at a minimum, shall comply with those set by the USEPA for specification fuel.

8.7. Used Oil - a petroleum-based oil which through use, storage, or handling has become unsuitable for its original purpose due to the presence of impurities or loss of original properties.

8.8. Used Oil Transporter - any person who transports more than 500 gal of used oil annually.

PETROLEUM, OIL, AND LUBRICANT (POL) MANAGEMENT

GUIDANCE FOR HAWAII CHECKLIST USERS

Applicability	Refer to Checklist Items:
All Installations	HI.POL.1 and HI.POL.2
Oil Discharges	HI.POL.3
Used Oil	HI.POL.4 through HI.POL.8

PETROLEUM, OIL, AND LUBRICANTS MANAGEMENT

ALL INSTALLATIONS

HI.POL.1. Copies of all relevant state and local regulations should be maintained at the installation (GMP).

HI.POL.1.1. Verify that copies of the following regulations are maintained and kept current at the installation:

- Hawaii Revised Statutes 19-342N, *Used Oil Transportation, Recycling, and Disposal*
- applicable county and local regulations.

HI.POL.2. All USTs must be registered with the state (HRS 19-342N-30).

HI.POL.2.1. Determine if the installation has any USTs.

HI.POL.2.2. Verify that the installation has sent USEPA notification forms to the Hawaii Department of Health for all USTs.

OIL DISCHARGES

HI.POL.3. Installations must not discharge new, used, or recycled oil into the environment or drainage systems (Hawaii Used Oil Recycling Act (HRS 19-342N-30(a) and (c1)).

HI.POL.3.1 Verify that new, used, or recycled oil is not discharged or allowed to enter the sewers, drainage systems, surface or groundwaters, watercourses, marine waters, or onto the ground with the exception of inadvertent, normal discharges from vehicles, and equipment, or maintenance and repair activities associated with the vehicles, provided that appropriate measures are taken to minimize releases.

(NOTE: Appropriate measures include the use of drip pans, catchment systems, the use of absorbent materials, or other similar measures.)

HI.POL.3.2. Verify that no new oil, used oil, or recycled oil is discharged onto the ground without prior written approval from the Department.

PETROLEUM, OIL, AND LUBRICANTS MANAGEMENT

USED OIL

HI.POL.4. Installations that transport, market, or recycle used oil must have a valid permit (HRS 19-342N-31 and 19-342N-32).

HI.POL.4.1. Verify that installations that transport, market, or recycle used oil have a valid permit from the Department.

HI.POL.4.2. Verify that the terms and conditions of the permit are met.

HI.POL.4.3. Verify that the Department is notified of the vehicles used to transport used oil.

(NOTE: The Director may require installations that generate and burn their own used oil as specification fuel to notify the Department.)

HI.POL.5. Installations that transport used oil must meet specific recordkeeping requirements (HRS 19-342N-30(b), 19-342N-33(a) and (f)).

HI.POL.5.1. Verify that installations that transport used oil do not deliver used oil to any person with the knowledge that the oil will be improperly disposed.

HI.POL.5.2. Verify that installations that transport used oil maintain a record of the signed vouchers received for each delivery of used oil.

HI.POL.5.3. Verify that used oil transporters keep a record of each transaction and a copy of each invoice for 3 yr.

HI.POL.6. Installations that transport used oil must analyze the oil for halogen content (HRS 19-342N-30(c2)).

HI.POL.6.1. Verify that a field screening test is performed for total halogen concentrations prior to accepting used oil for transportation.

HI.POL.6.2. Verify that used oil that has a halogen concentration greater than 1000 ppm is treated and disposed of as hazardous waste and the following information is submitted to the Department of Health within 10 days:

- the name and address of the generator of the used oil

- the halogen concentration of the used oil
- the estimated quantity of the used oil
- the date of the field screening test.

HI.POL.7. Installations that burn used oil as specification fuel must meet recordkeeping standards (HRS 19-342N-30(d), 19-342N-33(b) through (d)).

HI.POL.7.1. Determine if the installation burns used oil as specification fuel.

HI.POL.7.2. Verify that installations that burn used oil or recycled oil analyze or have written documentation that the oil meets the standards for specification fuel.

HI.POL.7.3. Verify that the installation maintains a copy of each analysis performed or other written information documenting that the used oil meets the standards for specification fuel.

HI.POL.7.4. Verify that installations that accept used oil as specification fuel from a used oil transporter maintain the records of the field screening tests for 3 yr.

(NOTE: Installations that generate and burn their own used oil as specification fuel may be required by the Director to keep a copy of each analysis performed or other written information documenting that the oil meets the standards of specification fuel.)

HI.POL.8. Installations that transport, market, recycle, or burn used oil must meet recordkeeping standards (HRS 19-342N-33(a)).

HI.POL.8.1. Verify that installations that transport, market, recycle, or burn used oil keep the records of all used oil transactions and a copy of each invoice for 3 yr.

SECTION 9

SOLID WASTE MANAGEMENT

Hawaii Supplement

SECTION 9

SOLID WASTE MANAGEMENT

Hawaii Supplement

Definitions

The following definitions were obtained from Hawaii Administrative Rules (HAR) Title 11, Chapter 58.1 and Title 19, Chapter 42. The infectious waste definitions were obtained from HAR Title 11, Chapter 104. The used oil definitions were obtained from Hawaii Revised Statutes Annotated (HRS) Title 19, Chapter 342N.

9.1. Active Life - the period of operation beginning with the initial receipt of solid waste and ending at completion of closure activities.

9.2. Active Portion - that part of the facility or unit that has received or is receiving wastes and that has not been closed.

9.3. Aerated Static Pile Composting Method - a method of reducing pathogens in which the compost pile must be insulated and a temperature of not less than 55 °C or greater must be maintained throughout the compost pile for at least three consecutive days.

9.4. Agricultural Waste - wastes resulting from the production of agricultural products, including but not limited to, manures and carcasses of dead animals.

9.5. Aquifer - a geological formation, group of formations, or part of a formation capable of yielding a significant quantity of groundwater to wells or springs.

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

9.7. Autoclaving - rendering sterile by exposing to steam or appropriate temperature under given pressures for appropriate time periods using *Bacillus* spp. spore fill time as a guide in accordance with the National Committee for Clinical Laboratory Standards: *Clinical Laboratory Hazardous Waste*, 1986.

9.8. Best Practicable Technology - current state of the art methods and/or procedures which consider the economic capabilities of the owner and/or operator.

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

9.10. Blood, Blood Products, and Other Body Fluids - all waste blood and blood products such as serum, plasma, and other blood components, and all body fluids. It includes items saturated or dripping with blood or with body fluids and those caked with dried blood or with dried body fluids.

9.11. Body Fluids - semen, vaginal secretions, cerebrospinal, synovial, pleural, peritoneal, and amniotic fluids. It does not mean nasal secretions, sputum, tears, urine, and vomitus unless they contain visible blood.

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

9.13. Clean Air Act - the Federal *Clean Air Act (CAA)*, 42 U.S. Code (USC) Sections 7401 to 7671q.

9.14. Clean Water Act - the Federal *Clean Water Act (CWA)*, 33 USC Sections 1251 to 1387.

9.15. Clear and Grub Material - material consisting of any rock, coral, sand, gravel, and soil in conjunction with a maximum of 20 percent vegetation which includes trees, timber shrubbery, and plants dislodged or uprooted from the ground.

9.16. Closure - those actions taken by the solid waste site or facility to cease disposal operations and to ensure that all such facilities are closed in conformance with applicable rules at the time of such closures and to prepare the site for the postclosure care period.

9.17. CFR - Code of Federal Regulations.

9.18. Compliance Schedule - a written schedule of required measures in a permit including an enforceable sequence leading to the compliance with these rules.

9.19. Composting - a process in which organic solid wastes, such a biosolids (sewage sludge), green or yard waste materials, manures, and nontreated wood ships and shavings, are biologically decomposed and stabilized under controlled conditions to produce a stable humus-like mulch or soil amendment. This term includes the processing of organic and nontreated wood waste materials for the generation of wood chips or other materials that can be used as soil amendment, planting mixes, mulches or horticultural and agricultural applications, landfill cover, and land reclamation. This process of composting under methods approved by the Department is a recycling activity. Land application of uncomposted organic solid waste shall not be considered an approved solid waste management activity.

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

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

9.22. Contaminate - to allow to discharge a substance into groundwater that would cause the concentration of that substance in the groundwater to exceed the maximum contaminant level (MCL).

9.23. Contaminated Animal Carcasses, Body Parts, and Bedding - carcasses, body parts, tissues, and bedding of animals that have been, or are believed to have been intentionally exposed to pathogens that are infectious to humans.

9.24. Contaminated Sharps - all discarded sharp items including, but not limited to, hypodermic needles, syringes, Pasteur pipettes, scalpel blades, lancets, capillary tubes, slides, and broken glass that have been used in the diagnosis, treatment, or immunization of human beings or animals, in research pertaining to the diagnosis, treatment, or immunization of human beings or animals, or in the production, use, or testing of biologicals.

9.25. Convenience Center - waste handling facilities performing limited transfer station operation located at convenient areas receiving less than 40 tons/day of only household or residential solid waste.

9.26. Cover Material - soil or other suitable materials that has been approved by the Department as cover for wastes.

9.27. Cultures and Stocks of Infectious Agents - cultures and stocks of infectious agents from medical, clinical, and pathological laboratories; cultures and stocks of infectious agents from research and industrial laboratories; wastes from the production of biologicals; discarded liver and attenuated vaccines; culture dishes and devices used to transfer, inoculate, or mix cultures and glassware that have contained infectious agents.

9.28. Department - the Department of Health, State of Hawaii.

9.29. Director - the Director of the Department of Health or his duly authorized agent, officer, or inspector.

9.30. Disease Vectors - any rodent, flies, mosquitoes, or other animals, including insects, capable of transmitting disease to humans.

9.31. Disinfect - to inactivate virtually all recognizable pathogenic microorganisms, but not necessarily all microbial forms (e.g., bacterial endospores).

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

9.33. Disposal Site - the location where any final treatment, utilization, processing, or deposition of solid waste occurs.

9.34. Enclosed Vessel Composting Method - a method of reducing pathogens in which the mixture is maintained at a temperature of not less than 55 °C or greater throughout the mixture for at least three consecutive days.

9.35. Energy Recovery - the recovery of energy in a usable form from mass burning or refuse derived fuel incineration, pyrolysis, or any other means of using the heat of combustion or solid waste that involves high temperature (over 1200 °F) processing.

9.36. Existing Facility - a facility which is owned or leased, and in operation, on or before 15 December 1993 and the owner or operator has obtained permits or approvals necessary under Federal, state, and local statutes, regulations, rules, and ordinances, except for existing Municipal Solid Waste Facility (MSWLF) units.

9.37. Existing Municipal Solid Waste Facility (MSWLF) Unit - any MSWLF unit that is receiving solid waste as of 9 October 1993. Waste placement in existing units must be consistent with past operating practices or modified practices to ensure good management.

9.38. Facility - a building within which infectious waste is generated or all contiguous land including buffer zones and structures, other appurtenances, and improvements on the land used for handling of solid waste.

9.39. Facility Structures - includes, but is not limited to, buildings, sheds, utility lines, and drainage pipes on the facility.

9.40. Farm - any plot of land used for the production of crops, livestock, or horticultural products.

9.41. Farm Products Processing Facility - a facility which receives and processes farm products, excluding livestock and dairy products.

9.42. Foreign Waste - garbage generated by carriers which left foreign ports and their first port of entry to the United States is Hawaii.

9.43. Free Liquids - liquids from any solid waste which produces measurable liquids as defined by the Paint Filter Liquids Test, Method 9095 of U.S. Environmental Protection Agency (USEPA) Publication Number SW-846.

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

9.45. Gas Condensate - the liquid generated as a result of gas recovery processes at the MSWLF unit.

9.46. Generator - any person, corporation, or agency that produces, or causes to be produced, infectious waste including, but not limited to, hospitals; clinics; laboratories; health care facilities, agencies and providers; physicians; dentists; veterinarians; and podiatrists.

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

9.48. Groundwater - water below the land surface in a zone of saturation.

9.49. HAR 11-58.1 - Hawaii Administrative Rules, Title 11, Chapter 58.1, *Solid Waste Management Control.*

9.50. HAR 11-104 - Hawaii Administrative Rules, Title 11, Chapter 104, *Management and Disposal of Infectious Waste.*

9.51. HAR 19-42 - Hawaii Administrative Rules, Title 19, Chapter 42, *Commercial Harbors and Tariff.*

9.52. Household Waste - any solid waste, including garbage and trash, derived from households, including single and multiple residences, hotels and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use recreation areas.

9.53. HRS 19-342H - Hawaii Revised Statutes, Title 19, Chapter 342H - *Solid Waste Pollution.*

9.54. HRS 19-342I - Hawaii Revised Statutes, Title 19, Chapter 342I - *Lead Acid Battery Recycling.*

9.55. Incineration - a controlled process under permit pursuant to HAR, Chapters 11-60 and 11-58.1 by which waste undergoes complete combustion and becomes carbonized or mineralized sterile ash.

9.56. Incinerator - an engineered combustion device specifically designed for volume reduction of combustible solid waste by controlled burning.

9.57. Industrial Solid Waste - solid waste generated by manufacturing or industrial processes that is not a hazardous waste regulated under Subtitle C of the *Resource Conservation and Recovery Act (RCRA)*. The waste may include, but is not limited to, waste resulting from the following manufacturing processes: electric power generation; fertilizer or agricultural chemicals; food and related products or byproducts; inorganic chemicals; iron and steel manufacturing; leather and leather products; nonferrous metals manufacturing or foundries; organic chemicals; plastics and resins manufacturing; pulp and paper industry; rubber and miscellaneous plastic products; stone, clay, and concrete products; textile manufacturing; transportation equipment; and water treatment. This term does not include mining waste or oil and gas waste.

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

9.59. Infectious Isolation Waste - biological waste and discarded material contaminated with blood, body fluids, excretions, exudates, or secretions from patients with diseases considered communicable and requiring isolation as defined by the Centers for Disease Control's *Guidelines for Isolation Precautions in Hospitals*, 1983.

9.60. Infectious Waste - any waste that may contain pathogens capable of causing an infectious disease including, but not limited to, the following categories: infectious isolation waste; cultures and stocks of infectious agents; blood, blood products and body fluids; pathological waste; contaminated sharps; and contaminated animal carcasses, body parts, and bedding.

9.61. Landfill - a land area used for the disposal of solid waste which is not a landspreading facility.

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

9.63. Lateral Expansion - a horizontal expansion of the waste boundaries of an existing MSWLF unit.

9.64. Leachate - water or other liquid that has percolated through solid waste and contains dissolved or suspended portions from the solid waste.

9.65. Lift - a compacted layer of solid waste and its overlying earth cover in a landfill.

9.66. Limited Purpose Landfill - a landfill that receives solid waste of limited types, known and consistent composition, other than woodwastes, garbage, inert wastes, and demolition waste.

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

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

9.69. Lower Explosive Limit - the lowest percent by volume of a mixture of explosive gases in air that will propagate a flame at 25 °C and atmospheric pressure.

9.70. Medical Waste - all the infectious and injurious waste originating from a medical, veterinary, or intermediate care facility.

9.71. Monofill - a landfill which accepts only one type of solid waste.

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

9.73. New MSWLF Unit - any municipal solid waste landfill unit that has not received waste before 9 October 1993.

9.74. Nuisance - consists of an act or an omission of an act which annoys, injures, or endangers the comfort, health, or safety of others, offends decency, or unlawfully interferes with, obstructs or tends to obstruct, any public park, square, street, or highway; or in any way renders other persons insecure in life, or in use of property.

9.75. Opening Burning - the combustion of solid waste without:

1. control of combustion air to maintain adequate temperature for efficient combustion
2. containment of the combustion reaction in an enclosed device to provide sufficient residence time and mixing for complete combustion
3. control of the emission of the combustion products.

9.76. Pathological Waste - all human tissues, organs, and body parts that are removed during surgery, autopsy, obstetrical, and other medical or diagnostic procedures. All pathological wastes are considered infectious waste and are subject to HAR, Chapter 11-104.

9.77. Permit - a written authorization issued by the Department, bearing the signature of the Director or his authorized representative, which, by its conditions, may authorize the permittee to construct, install, modify, or operate specified solid waste disposal facilities, conduct specified solid waste disposal activities or engage in the management of solid waste in accordance with specified limitations.

9.78. Permit by Rule - an abbreviated procedure by which *limited impact* solid waste facilities may begin operations in accordance with the permit by rule requirements for solid waste facilities.

9.79. Person - an individual, firm, association, copartnership, political subdivision, government agency, municipality, industry, public or private corporation, or any other entity whatsoever.

9.80. Petroleum - a regulated substance which includes crude oil or any fraction thereof which is liquid at standard temperatures and pressure (60 °F and 14.7 psia).

9.81. Pile - any noncontainerized accumulation of solid waste that is used for treatment or storage.

9.82. Plan of Operation - the written plan developed by an owner or operator of a facility detailing how a facility is to be operated during its active life and during closure and postclosure.

9.83. Point of Generation - the location at which a material is discarded and becomes a waste.

9.84. Post-Closure - the requirements placed upon landfill disposal sites after closure to ensure their environmental safety for a 30-yr period or until the site becomes stabilized (i.e., little or no settlement, gas production, or leachate generation).

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

9.86. Putrescible Waste - solid waste which contains material capable of being decomposed by microorganisms.

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

9.88. Qualified Groundwater Scientist - a scientist or engineer who has received a baccalaureate or postgraduate degree in the natural sciences or engineering and who has sufficient training and experience in groundwater hydrology and related fields as may be demonstrated by state registration, professional certifications, or completion of accredited university programs that enable that individual to make sound professional judgements regarding groundwater monitoring. contaminant fate and transport, and corrective action.

9.89. Reclamation Facility - a facility in which solid waste is stored, dismantled, or reprocessed into new products in such a manner that the original products lose their identity.

9.90. RCRA - the Federal *Resource Conservation and Recovery Act*, 42 USC Section 6901 to 6992k.

9.91. Recoverable Material - material that can be diverted from disposal for recycling or bioconversion. This term does not include those materials that are generated and normally used onsite for manufacturing processes.

9.92. Recycled Oil - used oil that is reused or prepared for reuse as a petroleum product.

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

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

9.95. Recycling Processing or Materials Recovery Facility - a facility which collects and bales, shreds, crushes, melts, sorts, or otherwise treats, temporarily stores, and brokers, or transports recyclable materials for reuse or re-manufacture.

9.96. Refuse - anything putrescible or nonputrescible that is discarded or rejected.

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

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

9.99. Runoff - any rainwater, leachate, or other liquid that drains over land from any part of a facility.

9.100. Run-on - any rainwater, leachate, or other liquid that drains over land onto any part of the facility.

9.101. Salvaging - the authorized removal of material from a solid waste disposal facility.

9.102. Saturated Zone - that part of the earth's crust in which all voids are filled with water.

9.103. Scavenging - the unauthorized removal of material from a solid waste disposal facility.

9.104. Secondary Resources - postconsumer material collected and processed for feedstock in a manufacturing process.

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

9.106. Solid Waste or Waste - garbage, refuse, and other discarded materials, including solid, liquid, semisolid, or contained gaseous materials resulting from industrial, commercial, mining, and agricultural operations, sludge from waste treatment plants and water supply treatment plants, and residues from air pollution control facilities and community activities, but does not include solid or dissolved materials in domestic sewage or other substances in water sources such as silt, dissolved or suspended solid in industrial wastewater effluents, dissolved materials in irrigation return flows, or other common water pollutants, or other source, special nuclear, or byproduct material as defined by the Federal *Atomic Energy Act* of 1954, as amended.

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

9.108. Solid Waste Disposal System - the entire process or part thereof of the storage, collection, transportation, processing, and disposal of solid waste by any person engaging in such a process as a business or by any municipality, authority, county, or any combination thereof.

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

9.110. Solid Waste Management - the systematic administration of activities which provide for the collection, source separation, storage, transportation, transfer, processing, treatment, and disposal of solid waste.

9.111. Source Separation - dividing solid waste into some or all of its component parts at the point of generation.

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

9.113. Specification Fuel - recycled oil which meets specific standards that are set by the director. These standards, at a minimum, comply with those set by the USEPA for specification fuel.

9.114. Sterilization - the use of physical or chemical procedures to destroy all microbial life, including highly resistant bacterial endospores.

9.115. Storage - the holding of infectious or treated infectious waste that is awaiting treatment or transport in such a manner as not to constitute disposal or the holding of solid waste materials for a temporary period.

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

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

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

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

9.120. Transport - the movement of infectious waste and treated infectious waste from point of generation to any intermediate point inside or outside the facility and finally to the point of disposal.

9.121. Transporter - any person, corporation, or agency who transports infectious waste or treated infectious waste.

9.122. Treated - exposed to any method or process that changes the character of the infectious waste so as to render the waste noninfectious.

9.123. Treated Infectious Waste - infectious waste that has been incinerated, sterilized, or chemically disinfected by the methods in HAR, Chapter 11-104.

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

9.125. 25-yr Storm - a storm of a particular duration and of such intensity that is has a 4 percent probability of being equaled or exceeded in any year.

9.126. 24-h, 25-yr Storm - a 25-yr storm of 24-h duration.

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

9.128. Used Oil - a petroleum-based oil which through use, storage, or handling has become unsuitable for its original purpose due to the presence of impurities or loss of original properties.

9.129. Used Oil Transporter - any person who transports more than 500 gal of used oil annually, except a person who transports used oil obtained solely from sources owned and operated by the person to a storage facility owned and operated by the same person.

9.130. Waste Management Unit Boundary - a vertical surface located at the hydraulically downgradient limit of the unit. This vertical surface extends down into the uppermost aquifer.

9.131. Waste Recycling - reusing waste materials and extracting materials from a waste stream.

9.132. Waste Reduction - reducing the amount or type of waste generated.

9.133. Wetlands - those areas that are defined in 40 CFR 232.2(r). It includes those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support a prevalence of vegetative or aquatic life that requires saturated or seasonably saturated soil conditions for growth and reproduction. Wetlands generally include swamps, marches, bogs, estuaries, and similar areas.

9.134. White Goods - electrical and mechanical appliances made primarily of metal parts such as refrigerators, clothes washers, and dryers. Appliances of less then 3 ft^3 in volume before crushing shall not be included in this definition.

9.135. Windrow Composting Method - a method of reducing pathogens in which the solid waste is maintained under aerobic conditions during the composting process. A minimum of five turnings are required during a period of 15 consecutive days with the temperature of the mixture being 55 ° C or greater within 6 to 8 in. below the surface of the pile.

SOLID WASTE MANAGEMENT

GUIDANCE FOR HAWAII CHECKLIST USERS

Applicability	Refer to Checklist Items:
All Installations	HI.SW.1 through HI.SW.7
Permit Requirements	HI.SW.8 through HI.SW.13
Solid Waste Disposal Facilities	HI.SW.14 through HI.SW.16
Municipal Solid Waste Landfill (MSWLF) Units	
Operation and Management Requirements	HI.SW.17 through HI.SW.26
Groundwater Protection and Monitoring Requirements	HI.SW.27
Closure and Postclosure Requirements	HI.SW.28 and HI.SW.29
Construction and Demolition Solid Waste Landfills	HI.SW.30 through HI.SW.32
Solid Waste Incinerators and Refuse-Derived Fuel Processing Facilities	HI.SW.33 through HI.SW.36
Solid Waste Storage, Handling, and Processing Facilities	HI.SW.37 through HI.SW.42
Solid Waste Reclamation Facilities	HI.SW.43 through HI.SW.47
Infectious Waste	HI.SW.48 through HI.SW.54
Special Waste Management	HI.SW.55 and HI.SW.56
Used Oil	HI.SW.57 through HI.SW.64

SOLID WASTE MANAGEMENT

ALL INSTALLATIONS

HI.SW.1. Copies of all relevant state and local regulations should be maintained at the installation (GMP).

HI.SW.1.1. Verify that copies of the following regulations are maintained and kept current at the installation:

- HCRR 11-58.1, *Solid Waste Management Control*
- HAR 11-104, *Management and Disposal of Infectious Waste*
- HAR 19-42, *Commercial Harbors and Tariff*
- HRS 19-342H, *Solid Waste Pollution*
- HRS 19-342I, *Lead Acid Battery Recycling*
- applicable county and local regulations.

HI.SW.2. All plastic bottles and rigid plastic containers manufactured, distributed, and sold in the state must have a label indicating the plastic resin used to produce it (HRS 19-342H-42).

HI.SW.2.1. Verify that plastic containers purchased by the installation have a label consisting of a number placed within a triangle of arrows and letters placed beneath the triangle detailing the type of resin.

HI.SW.3. The disposal of lead acid batteries is restricted (HRS 19-342I-1 and 19-342I-2).

HI.SW.3.1. Verify that the installation disposes of used lead acid batteries at one of the following:

- a lead acid battery retailer or wholesaler
- an authorized collection or recycling facility
- a secondary lead smelter permitted by the USEPA.

HI.SW.3.2. Verify that no one at the installation disposes of electrolyte from any used lead acid battery onto the ground or into sewers, drainage systems, surface or groundwaters, or ocean waters.

SOLID WASTE MANAGEMENT

HI.SW.4. Animal carcasses must be disposed according to specific requirements (HAR 11-58.1-61(c)).

HI.SW.4.1. Verify that animal carcasses are disposed by one of the following methods:

- immediate burial with at least 2 ft of compacted earth cover
- incineration
- other method approved by the Director.

HI.SW.5. Depositing litter in state harbors is prohibited (HAR 19-42-126(a)).

HI.SW.5.1. Verify that the installation does not throw, place, leave, deposit, or abandon, or cause or permit any litter to be thrown, placed, left, deposited or abandoned within a state harbor, except in receptacles designated by the Department for the disposal of such materials.

(NOTE: *Litter* includes any and all types of debris and substances including, but not limited to, the following:

- liquids, solids, and gases
- garbage, refuse, glass, paper, cans, bottles
- machinery or parts
- fish or animal carcasses
- any other substances which render harbor lands or facilities unsightly, noxious, or otherwise unwholesome to the detriment of the public health and welfare and effective and safe operation of the harbor.)

HI.SW.6. Polluting of state harbors is prohibited (HAR 19-42-126(b)).

HI.SW.6.1. Verify that the installation does not deposit oil, oily refuse, sludge, chemicals, or other hydrocarbons on state property except in specifically designated collection points.

HI.SW.6.2. Verify that oil, oily refuse, sludge, chemicals, or other hydrocarbons are not left in or near standard refuse containers or anywhere else on harbor property.

SOLID WASTE MANAGEMENT

HI.SW.7. Littering and polluting of state waters is strictly prohibited (HAR 19-42-127).

HI.SW.7.1. Verify that the installation does not place, throw, deposit, or discharge, or cause any litter or gaseous, liquid, or solid materials to be placed, thrown, deposited, or discharged into the waters of any harbor, river, or shore waters of the state.

HI.SW.7.2. Verify that the installation does not discharge, either directly or indirectly, oil sludge, oil refuse, fuel oil, or molasses or pump bilges or ballast tanks containing other than clean water into the waters of any harbor, river, or any shore waters of the state.

PERMIT REQUIREMENTS

HI.SW.8. Installations must not operate a solid waste management system without a permit (HAR 11-58.1-04(a), (b), and (f)).

HI.SW.8.1. Determine if the installation operates a solid waste management system.

HI.SW.8.2. Verify that the installation has a permit for all nonexempt solid waste management facilities.

(NOTE: The following solid waste activities are exempt from permit requirements:
- a single family or duplex residential property disposing or reusing by composting only green or vegetative solid wastes generated on its premises
- a solid waste disposal facility on which the agricultural solid waste from the operation or from its products processing facility is disposed. This exemption does not include equipment and materials such as pesticides and fertilizers used in the operation of the farm. It also excludes land not used for agricultural purposes
- a landfill site which is used only by the installation or person in control of the premises to landfill less than 150 tons/yr of soil, rock, concrete, or other nondecomposable and/or uncontaminated inert materials generated on the site
- incinerator facilities having a total rated capacity of less than 1 ton/h
- minor sources as determined by the Director.)

HI.SW.8.3. Verify that the permit is posted in a conspicuous place at or near the solid waste disposal facility.

HI.SW.8.4. Verify that all permits are current.

HI.SW.8.5. Verify that disposal operations are conducted in compliance with the requirements specified in the permit.

HI.SW.9. Permits-by-rule are issued to specific limited impact solid waste handling and disposal facilities (HAR 11-58.01-04(i)(1)(A) and (i)(1)(B)).

HI.SW.9.1. Determine if the installation operates one of the following types of facilities which are eligible for permit-by-rule status:

- convenience centers
- composting facilities handling not more than 3000 tons/yr of green wastes
- clearing and grubbing landfills
- certain agricultural landfills
- recycling drop-off facilities.

HI.SW.9.2. Verify that eligible facilities meet the following requirements to retain permit-by-rule status:

- notify the Director in writing of the solid waste handling activities which are covered under permit-by-rule at least 30 days before commencing the activities
- do not collect, transport, or dispose of regulated hazardous waste
- employ suitable means to prevent solid wastes from scattering
- control litter, odors, and vectors such as rodents and insects
- provide means to prevent and control fires, including an emergency response plan when appropriate
- meet all local rules, regulations, and ordinances
- supervise and secure the facility
- display a permanent sign identifying the facility, hours and days of operation, materials accepted or not accepted, the owner and/or operator, a person to contact, and other pertinent information
- prepare and submit an annual report to the Director.

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HI.SW.10. Convenience centers must meet specific requirements to achieve permit- by-rule status (HAR 11-58.1-04(i)(1)(C)).

(NOTE: This requirement is in addition to the requirements for all permit-by-rule facilities.)

HI.SW.10.1. Verify that convenience centers meet the following requirements to meet permit-by-rule standards:

- accept only household and/or residential solid waste
- car batteries and waste oil collected at the center are stored in a safe and orderly manner.

HI.SW.11. Green waste composting facilities must meet specific requirements to achieve permit-by-rule status (HAR 11-58.1-04(i)(1)(D)).

(NOTE: This requirement is in addition to the requirements for all permit-by-rule facilities.)

HI.SW.11.1. Verify that green waste (landscape waste) composting facilities meet the following requirements to maintain permit-by-rule status:

- accept less than 3000 tons/yr of green waste unless exempted
- produce sufficiently stable finished compost that can be stored or applied on land without producing a nuisance
- prepare and submit an annual report to the Department reporting the tonnage of green waste accepted, compost produced, and residual disposed
- meet any additional requirements added by the Department.

HI.SW.12. Land clearing, grubbing, and inert waste landfills must meet specific requirements to achieve permit-by-rule status (HAR 11-58.1-04(i)(1)(E)).

(NOTE: This requirement is in addition to the requirements for all permit-by-rule facilities.)

HI.SW.12.1. Verify that land clearing, grubbing, and inert waste landfills meet the following requirements to achieve permit-by-rule status:

- only dispose of waste in the landfill that will not or is not likely to produce leachate of environmental concern
- materials placed in the landfill must have been generated onsite

- spread landfill material in layers and compact it to the smallest practicable volume
- limit public access to the landfills to authorized entrances which are closed when the site is not in operation
- create a final cover that consists of 18 in. of earthen material to minimize infiltration and 6 in. of earthen material to minimize erosion
- place a vegetative cover over the final lift, not later than 1 mo following final placement of waste within that lift, and maintain the vegetative cover a minimum of 1 yr after the closure of the landfill
- provide a written notice of final closure to the Director within 180 days of receiving the final load of material
- add a permanent notation of the landfill location at the bureau of conveyances to the facility property and on any other instrument that would normally be examined during the title search and note any land use restrictions from the closure plans
- meet all other applicable Federal, state, and local laws, rules and ordinances, including erosion and sediment control, and any applicable Federal wetlands permits, before commencing landfilling operations.

(NOTE: A landfill unit which is used only by the installation to landfill 150 tons/yr or more of soil, rock, concrete, or other nondecomposable and/or uncontaminated inert materials generated on site is permitted-by-rule.)

(NOTE: Acceptable materials for disposal in land clearing and grubbing landfills are earth and earth-like products, and land clearing debris such as stumps, limbs, and leaves. Acceptable materials for disposal in inert waste landfills are earth and earth-like products, concrete, cured asphalt, rocks, and bricks.)

(NOTE: Any site not receiving waste for more than 180 days is deemed abandoned and in violation of these rules unless properly closed.)

HI.SW.13. Recycling drop-off and processing facilities must meet specific requirements to achieve permit-by-rule status (HAR 11-58.1-04(i)(1)(F)).

(NOTE: This requirement is in addition to the requirements for all permit-by-rule facilities.)

HI.SW.13.1. Verify that an annual report is prepared and submitted to the Department reporting the amounts and types of recyclable materials or scrap metals received and distributed by weight.

HI.SW.13.2. Verify that the annual report is submitted by 31 July each year and includes information for the preceding fiscal year.

HI.SW.13.3. Verify that scavenging at the facility by the general public is prohibited.

HI.SW.13.4. Verify that the recycling processing facility utilizes single source separated material for reuse.

(NOTE: Single source separated items include, but are not limited to:
- cardboard
- newspaper print
- office paper
- glass
- aluminum containers
- plastics
- tires
- nonferrous scrap metals.)

SOLID WASTE DISPOSAL FACILITIES

HI.SW.14. Solid waste disposal facilities must implement a program at the facility for detecting and preventing the disposal of regulated hazardous waste (HAR 11-58.1-62).

HI.SW.14.1. Verify that the installation implements a program at the solid waste disposal facility to detect and prevent the disposal of regulated hazardous waste (as defined in 40 CFR 261 or the State of Hawaii's rules and regulations, whichever is more stringent) and PCB wastes (as defined in 40 CFR 761).

HI.SW.14.2. Verify that soils determined to be hazardous are treated and disposed as hazardous waste.

HI.SW.15. Solid waste disposal facilities must meet specific requirements for the control of green wastes (HAR 11-58.1-65(b)).

HI.SW.15.1. Verify that the installation has a plan to ban green waste from the facility or require source separation by 31 December 1994.

HI.SW.15.2. Verify that the plan details requirements for diversion of 75 percent of all commercially generated green waste by 31 December 1995 and 50 percent of all residential green waste by 31 December 1996.

(NOTE: Based on data submitted by the operator as part of the annual report, if these diversion rates are not achieved, all commercial green waste must be banned from the facility by 31 December 1995, and residential green waste must be by 31 December 1996.)

HI.SW.16. Solid waste disposal facilities must meet specific requirements to control scrap automobiles, white goods, and tires at the facility (HAR 11-58.1-65(c)).

HI.SW.16.1. Verify that the installation does not accept scrap automobiles at the disposal facility.

HI.SW.16.2. Verify that white goods and motor vehicle tires are not accepted at the disposal facility after 30 June 1994.

HI.SW.16.3. Verify that a plan is developed by the solid waste disposal facility and included in the facility operation plan to implement these bans.

MUNICIPAL SOLID WASTE LANDFILL (MSWLF) UNITS

Operation and Management Requirements

(NOTE: These requirements do not apply to MSWLF units which did not receive waste on or after 9 October 1991. Installations operating nonexempt new MSWLF units, existing MSWLF units, and lateral expansions that received waste on or after 9 October 1993 must meet the MSWLF unit requirements. MSWLF units failing to meet the MSWLF unit requirements are considered to be an open dump and are in violation of the *Resource Conservation and Recovery Act.*)

(NOTE: The following units are exempt from the MSWLF unit requirements:
- MSWLF unit that did not receive waste after 9 October 1991
- MSWLF unit that received waste after 9 October 1991 but stopped receiving waste before 9 October 1993 (but must still meet the final cover requirements to install the final cover within 6 mo of the last receipt of wastes).)

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HI.SW.17. MSWLF units must meet specific design criteria (HAR 11-58.1-14(a)).

(NOTE: Installations with new MSWLF units, existing MSWLF units, and lateral expansions that dispose of less than 20 tons of municipal solid waste daily (based on an annual average) are exempt from the design requirements if they meet the following:

- there is no evidence of existing groundwater contamination from the MSWLF unit
- the MSWLF unit serves either:
  - a community that experiences an annual interruption for at least three consecutive months of surface transportation that prevents access to a regional waste management facility
  - a community that has no practicable waste management alternative and is located in an area that annually receives less than or equal to 25 in. of precipitation
- the installation places information in the operating record demonstrating that the requirements of this section are met.)

HI.SW.17.1. Verify that the design of a new MSWLF unit and any lateral expansions of a unit are approved by the Director before commencement of construction.

HI.SW.18. MSWLF units must develop specific procedures for excluding hazardous waste from the site (HAR 11-58.1-15(a)).

HI.SW.18.1. Verify that the installation develops a specific program for detecting and preventing the disposal of regulated hazardous waste (as defined in 40 CFR 261) and polychlorinated biphenyl (PCB) wastes (as defined in 40 CFR 761).

HI.SW.18.2. Verify that the detection and prevention program includes the following, at a minimum:

- random inspections of incoming loads, unless steps are taken to ensure that the incoming loads do not contain regulated hazardous wastes or PCB wastes
- records of inspections
- training of facility personnel to recognize regulated hazardous waste and PCB waste
- notification to the Director if a regulated hazardous waste or PCB waste is discovered at the facility.

SOLID WASTE MANAGEMENT

HI.SW.19. MSWLF units must meet specific cover material requirement (HAR 11-58.1-15(b)).

HI.SW.19.1. Verify that the installation covers disposed solid waste with 6 in. of earthen material at the end of each operating day or at more frequent intervals, if necessary, to control disease vectors, fires, odors, blowing litter, and scavenging.

(NOTE: Alternative materials or thicknesses may be approved by the Director.)

HI.SW.20. MSWLF units must meet disease vector control requirements (HAR 11-58.1-15(c)).

HI.SW.20.1. Verify that the installation prevents or controls onsite populations of disease vectors using techniques appropriate for the protection of human health and the environment.

HI.SW.21. MSWLF units must meet control requirements for explosive gases (HAR 11-58.1-15(d)).

HI.SW.21.1. Verify that the installation ensures the following:

- 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)
- the concentration of methane gas does not exceed the lower explosive limit for methane at the facility property boundary.

HI.SW.21.2. Verify that the installation implements a routine methane monitoring program to ensure that the methane gas levels are not exceeded.

(NOTE: The minimum frequency of monitoring must be quarterly.)

HI.SW.21.3. Verify that the installation takes the following actions if methane gas levels exceeding the specified limits are detected:

- immediately take all necessary steps to ensure protection of human health and notify the Director
- within 7 days of detection, place in the operating record the methane gas levels detected and a description of the steps taken to protect human health

- within 60 days of detection, implement a remediation plan for methane gas releases, place a copy of the plan in the operating record detailing the nature and extent of the problem and the proposed remedy, and notify the Director that the plan has been implemented.

HI.SW.22. MSWLF units must meet specific air criteria requirements (HAR 11-58.1-15(e)).

HI.SW.22.1. Verify that the installation does not violate any applicable requirements developed under the Hawaii State Implementation Plan (SIP).

HI.SW.22.2. Verify that open burning of solid waste, except for debris from emergency cleanup operations, does not occur.

HI.SW.23. MSWLF units must meet specific requirements to control unauthorized access (HAR 11-58.1-15(f)).

HI.SW.23.1. Verify that the installation controls public access and prevents unauthorized vehicular traffic and illegal dumping of wastes by using artificial barriers, natural barriers, or both, as appropriate to protect human health and the environment.

HI.SW.24. MSWLF units must meet specific requirements for run-on or runoff control systems and surface water quality (HAR 11-58.1-15(g) and (h)).

HI.SW.24.1. Verify that the installation designs, constructs, and maintains the following:

- a run-on control system to prevent flow onto the active portion of the landfill during the peak discharge from a 25-yr storm
- a runoff control system from the active portion of the landfill to collect and control at least the water volume resulting from a 24-h, 25-yr storm.

HI.SW.24.2. Verify that the MSWLF unit does not cause the discharge of a nonpoint source pollutant into the waters of the United States, including wetlands.

HI.SW.25. MSWLF units must meet restrictions for liquid waste (HAR 11-58.1-15(i)).

HI.SW.25.1. Verify that bulk or noncontainerized liquid waste is not placed in the MSWLF unit, unless:

- the waste is household waste other than septic waste
- the waste is leachate or gas condensate derived from the MSWLF unit and the MSWLF unit, whether it is a new or existing MSWLF or a lateral expansion, is designed with a composite liner and leachate collection system.

(NOTE: The installation must place the demonstration of compliance for leachate or gas condensate in the operating record and notify the Director that it has been placed in the operating record.)

HI.SW.25.2. Verify that containers holding liquid waste are not placed in a MSWLF, unless the following requirements are met:

- the container is a small container similar in size to that normally found in household waste
- the container is designed to hold liquids for use other than storage
- the waste is household waste
- the liquid waste is an oil filter which has been drained for at least 24 h or crushed and is not a regulated hazardous waste.

HI.SW.26. MSWLF units must meet specific recordkeeping requirements (HAR 11-58.1-15(j)).

HI.SW.26.1. Verify that the installation records and retains the following information near the facility in an operating record or an alternative location approved by the Director:

- any required location restriction demonstration
- required inspection records, training procedures, and notification procedures
- required gas monitoring results and any remediation plans
- required design documentation for placement of leachate or gas condensate
- any required demonstration, certification, finding, monitoring, testing, or analytical data
- closure and postclosure care plans
- any cost estimates and financial assurance documentation
- any information demonstrating compliance with the small community exemption from MSWLF requirements.

HI.SW.26.2. Verify that the installation notifies the Director when all information has been placed or added to the operating record.

Groundwater Protection and Monitoring Requirements

(NOTE: The Hawaii groundwater protection and monitoring requirements for MSWLFs duplicate the Federal groundwater protection and monitoring requirements.)

(NOTE: Installations with new MSWLF units, existing MSWLF units, and lateral expansions that dispose of less than 20 tons of municipal solid waste daily (based on an annual average) are exempt from the groundwater protection requirements if they meet the following:

- there is no evidence of existing groundwater contamination from the MSWLF unit
- the MSWLF unit serves either:
  - a community that experiences an annual interruption for at least three consecutive months of surface transportation that prevents access to a regional waste management facility, or
  - a community that has no practicable waste management alternative and is located in an area that annually receives less than or equal to 25 in. of precipitation
- the installation places information in the operating record demonstrating that the requirements of this section are met.)

HI.SW.27. MSWLF units must meet specific requirements for the protection and monitoring of groundwater (HAR 11-58.1-16).

HI.SW.27.1. Verify that the installation complies with the Federal groundwater protection and monitoring requirements and any additional requirements specified in the facility permit or by the Director.

(NOTE: Existing MSWLF units and lateral expansions less than 1 mi and those between 1 mi and 2 mi from a drinking water intake (surface or subsurface) must meet the groundwater monitoring requirements by 9 October 1995. Existing MSWLF units and lateral expansions which are greater than 2 mi from a drinking water intake (surface or subsurface) must meet the groundwater monitoring requirements by 9 October 1996.)

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Closure and Postclosure Requirements

HI.SW.28. MSWLF units must meet specific closure requirements (HAR 11-58.1-17(a)).

HI.SW.28.1. Verify that the installation installs a final cover system for the MSWLF unit that is designed to minimize infiltration and erosion.

HI.SW.28.2. Verify that the final cover system is comprised of an erosion layer underlain by an infiltration layer that:

- has a permeability less then or equal to the permeability of any bottom liner system or natural subsoils present, or a permeability no greater than 1×10^{-5} cm/s, whichever is less
- minimizes infiltration through the closed MSWLF by the use of an infiltration layer that contains a minimum 18 in. of earthen material
- minimizes erosion of the final cover by the use of an erosion layer that contains a minimum 6 in. of earthen material that is capable of sustaining native plant growth.

(NOTE: The Director may approve an alternative final cover design.)

HI.SW.28.3. Verify that the installation prepares a written closure plan describing the steps necessary to close all MSWLF units at any point during its active life and notifies the Director that the closure plan has been placed in the operating record by 9 October 1993, or by the initial receipt of waste, whichever is later.

HI.SW.28.4. Verify that the closure plan includes the following information, at a minimum:

- a description of the final cover and the methods and procedures used to install the cover
- an estimate of the largest area of the MSWLF unit ever requiring a final cover at any time during the active life
- an estimate of the maximum inventory of wastes ever onsite over the active life of the landfill facility
- a schedule for completing all activities necessary to satisfy the closure criteria.

HI.SW.28.5. Verify that the installation notifies the Director that a notice of intent to close the unit has been placed in the operating record before beginning the closure of each MSWLF unit.

HI.SW.28.6. Verify that the installation begins closure activities within 30 days of the date on which the unit received the known final wastes, or if the MSWLF unit has remaining capacity and there is a reasonable likelihood that the MSWLF unit will receive additional wastes, within 1 yr after the most recent receipt of wastes.

HI.SW.28.7. Verify that the installation completes closure activities of each MSWLF unit within 180 days following the beginning of closure.

HI.SW.28.8. Verify that the installation notifies the Director following the closure of each MSWLF unit that a certification by an independent registered professional engineer verifying that closure has been completed has been placed in the operating record.

HI.SW.28.9. Verify that the installation, following the closure of all MSWLF units, records a notation on the deed to the landfill facility property, or some other instrument that is normally examined during title searches, and notifies the Director that the notation has been recorded and a copy has been placed in the operating record.

(NOTE: The notation on the deed must in perpetuity notify any potential purchaser of the property that the land has been used as a landfill facility and that its use it restricted. The installation may request permission from the Director to remove the notation from the deed if all wastes are removed from the facility.)

HI.SW.29. MSWLF units must meet postclosure care requirements (HAR 11-58.1-17(b)).

HI.SW.29.1. Verify that postclosure care is conducted for 30 yr after the closure of each MSWLF unit and consists of at least the following:

- maintaining the integrity and effectiveness of any final cover, including making repairs to the cover as necessary to correct the effects of settlement, subsidence, erosion, or other events, and preventing run-on and runoff from eroding or otherwise damaging the final cover
- maintaining and operating the leachate collection system, if applicable
- monitoring the groundwater and maintaining the groundwater monitoring system, if applicable
- maintaining and operating the gas monitoring system.

HI.SW.29.2. Verify that the installation prepares a postclosure plan that includes the following, at a minimum:

- a description of the monitoring and maintenance activities required for each MSWLF unit and the frequency at which these activities will be performed
- name, address, and telephone number of the person or office to contact about the facility during the postclosure period
- a description of the planned uses of the property during the postclosure care period.

(NOTE: Postclosure use of the property must not disturb the integrity of the final cover, liner(s), or any other components of the containment system, or the function of the monitoring system unless necessary.)

HI.SW.29.3. Verify that the installation notifies the Director that a postclosure plan has been placed in the operating record no later than 9 October 1993, or by the initial receipt of waste, whichever is later.

HI.SW.29.4. Verify that, following completion of the postclosure care period, the installation notifies the Director that a certification, signed by an independent registered professional engineer verifying that postclosure care has been completed in accordance with the postclosure plan, has been placed in the operating record.

CONSTRUCTION AND DEMOLITION SOLID WASTE LANDFILLS

HI.SW.30. Construction and demolition solid waste landfills must meet specific design requirements (HAR 11-58.1-19(c)).

HI.SW.30.1. Verify that, when required, groundwater monitoring systems include a minimum of three monitoring wells, located to provide adequate data of groundwater movement and quality.

(NOTE: Additional wells may be required by the Director.)

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HI.SW.31. Construction and demolition solid waste landfills must meet specific operating requirements (HAR 11-58.1-19(d)).

HI.SW.31.1. Verify that the installation is operated according to the procedures in the operation plan.

HI.SW.31.2. Verify that the landfill does not accept the following:

- hazardous waste
- electrical transformers with oil or PCB or those generated from other than demolition projects
- pesticide containers, unless they meet the requirements of 40 CFR 261.7 and 261.4(b) for household waste
- liquids.

HI.SW.31.3. Verify that the installation records the landfill location on the property deed at the bureau of conveyances and on any other instrument that would normally be examined during the title search and notes any land use restrictions.

HI.SW.31.4. Verify that the application of interim cover of earthen material is on a case by case basis and is a minimum of 6 in.

HI.SW.31.5. Verify that final cover is 2 ft of earthen material or as approved in the closure plan.

HI.SW.31.6. Verify that the facility maintains daily operating records including:

- weights (or volumes)
- number of vehicles entering
- source and type of solid waste being disposed
- major deviations from the operating plan (such as fires and explosions).

(NOTE: Landfills may accept friable asbestos containing material complying to the latest 40 CFR 61, National Emission Standards for Hazardous Air Pollutants (NESHAP) Regulations.)

(NOTE: Petroleum contaminated soils may be accepted at the landfill if the contaminated soil meets the landfill's special permit conditions.)

SOLID WASTE MANAGEMENT

HI.SW.32. Construction and demolition solid waste landfills must meet groundwater protection requirements (HAR 11-58.1-19(e)).

HI.SW.32.1. Verify that the installation prepares and submits groundwater protection and monitoring plans, unless they can justify their omission.

HI.SW.32.2. Verify that the monitoring plan includes the following:

- location of the monitoring wells
- detailed description of the monitoring well construction
- a monitoring well head protection or security plan
- boring log of each monitoring well.

HI.SW.32.3. Verify that the installation samples and tests the groundwater monitoring wells to establish baseline data before starting operation including, but not limited to, the following chemicals:

- heavy metals:
  - arsenic
  - barium
  - cadmium
  - chromium
  - lead
  - mercury
  - selenium
  - silver
- volatile organic compounds (VOCs):
  - chemical oxygen demand (COD)
  - total organic carbon (TOC)
  - total petroleum hydrocarbon (TPH) for diesel, oil, and grease
- others:
  - cyanide.

HI.SW.32.4. Verify that a sampling plan, including tests to be performed, methods to be used, and frequency of sampling, is submitted for approval.

(NOTE: The method used for testing should be equivalent to EPA-SW-846, *Test Methods for Evaluating Solid Waste*, Third Edition.)

HI.SW.32.5. Verify that the results of testing are submitted to the Director for evaluation, and corrective actions are submitted if the results of testing are deficient.

HI.SW.32.6. Verify that the installation develops a closure plan according to the requirements previously stated for MSWLF units.

HI.SW.32.7. Verify that the installation submits an annual report no later than 30 days after 30 June of each year detailing the volume or weight of solid waste received at the facility, the origin, and transporter of the solid waste.

SOLID WASTE INCINERATORS AND REFUSE-DERIVED FUEL PROCESSING FACILITIES

HI.SW.33. Solid waste used for incineration must not include materials contaminated with hazardous waste (HAR 11-58.1-20(a)).

HI.SW.33.1. Verify that the solid waste used for incineration does not include materials contaminated with hazardous waste.

HI.SW.34. Solid waste incinerators and refuse-derived fuel processing facilities must meet specific design requirements (HAR 11-58.1-20(d)).

HI.SW.34.1. Verify that the installation provides adequate drainage to prevent standing water and to control run-on and runoff of rainwater.

HI.SW.34.2. Verify that the installation designs methods to control litter, insects, odors, and vectors.

HI.SW.34.3. Verify that the installation develops a fire plan to prevent and minimize fire hazards.

HI.SW.34.4. Verify that the facility is maintained with a neat and orderly appearance and is screened and buffered to minimize nuisances to neighboring properties.

HI.SW.34.5. Verify that the installation designs the energy recovery facility and solid waste incinerators in compliance with state air pollution control authority emission and operating requirements.

HI.SW.34.6. Verify that the installation provides equipment and space for the storage and charge areas and elsewhere to allow periodic cleaning and temporary upsets as may be required in order to maintain the plant in a vector free, sanitary, and clean condition.

HI.SW.35. Solid waste incinerators and refuse-derived fuel processing facilities must meet specific operating requirements (HAR 11-58.1-20(e)).

HI.SW.35.1. Verify that the installation operates the facility in accordance with the submitted and approved operation plan.

HI.SW.35.2. Verify that all solid waste received at the facility and ash residues are weighed, recorded, and the results incorporated in the annual report.

HI.SW.35.3. Verify that ash residue generated by energy recovery facilities or solid waste incinerators is handled as special waste unless determined to be otherwise and is disposed in an ash monofill, or as determined by the Director.

HI.SW.35.4. Verify that the installation submits an annual report to the Director by the end of July for the previous fiscal year.

HI.SW.35.5. Verify that the installation maintains daily operating records that include the following information, at a minimum:

- weights (or volume)
- number of vehicles entering
- source and type of solid waste being disposed
- major deviations from the operations plan (fires and explosions).

HI.SW.35.6. Verify that incinerators do not accept the following items:

- hazardous waste
- electrical transformers with oil or PCB or those generated from other than demolition projects
- pesticide containers, unless they meet the requirements of 40 CFR 261.7 and 261.4(b) household waste
- liquids.

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HI.SW.36. Solid waste incinerators and refuse-derived fuel processing facilities must meet specific sampling and analysis requirements 11-58.1-20(f)).

HI.SW.36.1. Verify that the installation tests the ash residue within 1 mo following the date in which the solid waste incinerator began operation and tests semiannually thereafter, or as determined by the Director.

HI.SW.36.2. Verify that the ash residue contains less than 10 percent organic matter by weight.

(NOTE: The frequency of testing for organic matter will be determined by the Director.)

HI.SW.36.3. Verify that a representative sample of solid waste and ash residue is tested for the following:

- arsenic
- barium
- cadmium
- chromium (total and hexavalent)
- lead
- mercury
- selenium
- silver.

HI.SW.36.4. Verify that the test methods used are USEPA documented (SW-846, *Test Methods for Evaluating Solid Waste*, Third Edition) or the equivalent.

SOLID WASTE STORAGE, HANDLING, AND PROCESSING FACILITIES

(NOTE: Solid waste storage, handling, and processing facilities, for the purpose of this section, include transfer stations, recycling and materials recovery facilities, and solid waste salvaging facilities.)

HI.SW.37. Specific recyclables handling and recovery facilities must meet solid waste storage, handling, and processing facility requirements (HAR 11-58.1-32(a)).

HI.SW.37.1. Determine if the installation operates one of the following types of facilities that must meet the solid waste storage, handling, and processing facility requirements:

- recycling centers which process only source separated materials such as batteries, motor oil, and metal sludges
- recycling facilities which separate recyclables from nonrecyclables onsite
- recycling facilities which only collect, buy, broker, bale, compact, or shred recyclable materials.

HI.SW.37.2. Determine if the installation operates one of the following types of facilities that are exempt from the solid waste storage, handling, and processing facility requirements:

- composting operations which separate or treat green waste, sludge, or ash
- facilities which process hazardous or other regulated wastes as determined by 40 CFR 261 and the *CAA* and do not produce a recycled material or solid waste requiring disposal
- buy back and refillable container centers
- manufacturers that use clean, source separated paper products, glass, and plastic as feedstock for their manufacturing process, and which as a result of this process, produce an end-product for resale
- repair and resale of clean source separated clothing, and residential and commercial furniture.

(NOTE: Recycling drop-off centers are permitted-by-rule and are not subject to this subchapter.)

(NOTE: Recycling facilities which were in operation on or by 13 January 1994 must complete the requirements for a permit by 13 January 1995.)

HI.SW.38. Specific materials recovery facilities must meet the requirements of solid waste storage, handling, and processing facilities (HAR 11-58.1-33(a)).

HI.SW.38.1. Determine if the installation operates one of the following types of facilities that must meet the solid waste storage, handling, and processing facility requirements:

- automobile dismantlers
- scrap metal processors
- white goods processors
- junkyards.

HI.SW.38.2. Determine if the installation operates one of the following facilities which are exempt from the solid waste storage, handling, and processing facilities requirements:

- facilities which store 25 cars or less at any one time
- facilities which store 25 units of white goods or less at any one time.

HI.SW.39. Solid waste storage, handling, and processing facilities must meet specific design requirements (HAR 11-58.1-31(b)(2), 11-58.1-32(b)(2), and 11-58.1-33(b)(2)).

HI.SW.39.1. Verify that the installation provides adequate drainage to prevent standing water and to control run-on and runoff of rainwater.

HI.SW.39.2. Verify that the installation designs methods to control litter, insects, odors, and vectors.

HI.SW.39.3. Verify that the installation develops a fire plan to prevent and minimize fire hazards.

HI.SW.39.4. Verify that the installation maintains the facility in a neat and orderly manner and that it is screened and buffered to minimize nuisances to neighboring properties.

HI.SW.40. Solid waste storage, handling, and processing facilities must submit and follow an operation plan (HAR 11-58.1-31(b)(3), 11-58.1-32(b)(3), and 11-58.1-33(b)(3)).

HI.SW.40.1. Verify that the installation follows an approved operation plan.

HI.SW.41. Solid waste storage, handling, and processing facilities must meet specific reporting requirements (HAR 11-58.1-31(c), 11-58.1-32(c), and 11-58.1-33(c)).

HI.SW.41.1. Verify that transfer stations maintain operational records which include a daily log of the volume of solid waste received, transported, and the disposal site of the solid waste.

HI.SW.41.2. Verify that the installation submits an annual report to the Director no later than 30 days after 30 June of each year.

HI.SW.41.3. Verify that the annual report contains the following information where applicable:

- for transfer stations:
  - the volume or weight of solid waste received at the facility
  - the origin and transporter of the solid waste
  - the ultimate disposal site
- for recycling and material recovery facilities, the volume (in tons) of each recoverable material collected, processed, shipped, and disposed
- for solid waste salvaging facilities, the volume or weight (in tons) of the incoming material, the salvageable material recovered, and method of disposal.

(NOTE: One combined report may be submitted for owners with more than one transfer station.)

HI.SW.42. Transfer stations must meet specific additional requirements (HAR 11-58.1-31(b)(3)).

HI.SW.42.1. Verify that the transfer station accepts only household and commercial waste.

HI.SW.42.2. Verify that no industrial waste, infectious waste, construction and demolition waste, or regulated hazardous waste is accepted unless specifically approved by the Director.

HI.SW.42.3. Verify that all solid waste passing through the facility is collected, treated, recycled, or disposed at a solid waste disposal facility authorized by the Department.

SOLID WASTE RECLAMATION FACILITIES

HI.SW.43. Installations composting sewage sludge, green waste (yard waste), and other solid wastes and offsite remedial facilities, unless exempt, must obtain permits for construction and operation of the facility (HAR 11-58.1-41(a) and (b), and 11-58.1-42(a) and (b)).

HI.SW.43.1. Determine if the installation operates one of the following exempted facilities:

- composting facilities processing less than 3000 tons of green waste per year which are permitted-by-rule
- remediation facilities developed for a one-time operation.

(NOTE: Remediation facilities include, but are not limited to, facilities utilizing the physical, chemical, and biological conversion processes in the recovery of waste materials using the best practicable technology and in the best interest of the public.)

HI.SW.43.2. Verify that the installation obtains a permit to construct and operate a composting or remediation facility.

HI.SW.44. Installations operating solid waste reclamation facilities must meet specific design requirements (HAR 11-58.1-41(b)(2) and 11-58.1-42(b)(2)).

HI.SW.44.1. Verify that the installation provides adequate drainage to prevent standing water and to control run-on and runoff of rainwater.

HI.SW.44.2. Verify that the installation designs methods to control litter, insects, odors, and vectors.

HI.SW.44.3. Verify that the installation develops a fire plan to prevent and minimize fire hazards.

HI.SW.44.4. Verify that the installation maintains the facility in a neat and orderly manner and screens and buffers the area to minimize nuisances to neighboring properties.

HI.SW.45. Installations operating remediation facilities must prepare and submit an operations plan (HAR 11-58.1-42(b)(3)).

HI.SW.45.1. Verify that the installation prepares and submits an operations plan to the Department that includes a description of the process and the equipment necessary, byproducts produced, and the means for their disposal.

HI.SW.46. Installations operating composting facilities must meet specific additional operating requirements (HAR 11-58.1-41(b)(2) and (3)).

HI.SW.46.1. Verify that the composting facility has sufficient temperature monitoring to ensure that the pathogen reduction criteria are met.

HI.SW.46.2. Verify that the waste storage area and the active composting, curing, and compost storage areas are located on surfaces capable of minimizing leachate release into the groundwater under the site and the surrounding land surface.

HI.SW.46.3. Verify that all leachate is collected and treated by a method approved by the Department.

HI.SW.46.5. Verify that the compost from composting operations is nonpathogenic, free of offensive odors, biologically and chemically stable, free of injurious components or particles, and able to sustain plant growth.

HI.SW.46.6. Verify that rejects generated by the composting process are appropriately disposed.

HI.SW.46.7. Verify that solid waste which possess a pathogen concern is composted and meets the criteria for reducing pathogens.

HI.SW.46.8. Verify that the composting facility uses one of the following methods for reducing pathogens:

- windrow composting method
- aerated static pile
- enclosed vessel
- other methods as approved by the Director.

HI.SW.47. Installations operating composting and remediation facilities must meet specific reporting requirements (HAR 11-58.1-41(c) and 11-58.1-42(c)).

HI.SW.47.1. Verify that the installation prepares and submits an annual report to the Department no later than 30 days after 30 June of each year.

HI.SW.47.2. Verify that the annual report includes the following information:

- for composting facilities:
  - the type and quantity, after primary processing, of solid waste received by the facility
  - the quantity of compost produced and removed from the facility
  - a summary of monitoring done during the operation

- for remediation facilities:
  - the volume or weight in tons of the incoming material
  - the material recovered from the process.

INFECTIOUS WASTE

HI.SW.48. Generators of infectious waste and transporters of untreated infectious waste must have an infectious waste management plan (HAR 11-104-10).

HI.SW.48.1. Verify that generators and transporters have written management plans that contain policies and detailed procedures for compliance with all infectious waste management requirements.

HI.SW.48.2. Verify that generators and transporters keep a copy of the management plan in their respective administrative offices.

HI.SW.48.3. Verify that the plan includes, at a minimum, the following procedures for emergency situations:

- containment, protection of personnel, cleanup procedures, disinfection, and disposal of spill residue
- containment, protection of personnel, cleanup procedures, disinfection, and repackaging of waste when plastic bags rupture or other loss of containment occurs
- alternative arrangements for waste storage, transportation, and treatment when equipment failures occur.

HI.SW.49. Infectious waste must meet segregation and incineration, sterilization, and disinfection requirements (HAR 11-104-5(a) and (b)).

HI.SW.49.1. Verify that infectious wastes are incinerated, sterilized, or chemically disinfected by the following methods:

- the Centers for Disease Control's (CDC) *Recommendations for Prevention of HIV Transmission in Health-Care Settings*, MMWR 1987 or the *Update: Universal Precautions for Prevention of Transmission of HIV Immunodeficiency Virus, Hepatitis B Virus and Other Blood Borne Pathogens in Health Care Settings*, MMWR June 1988

- USEPA's *Guide for Infectious Waste Management* (May 1986)
- 29 CFR 1910, Subpart Z
- other methods approved by these agencies or the Department.

HI.SW.49.2. Verify that infectious waste is segregated from all other waste at the point of generation.

HI.SW.50. Infectious waste management and treatment must meet specific requirements (HAR 11-104-5(c)).

(NOTE: The categories of infectious waste discussed in these management and treatment requirements are defined individually in the definition section.)

HI.SW.50.1. Verify that infectious isolation waste management meets the following requirements:

- deposited at the point of generation into containers that are lined with non-soluble plastic bags that are red or clearly marked with the Universal Biological Hazard Symbol
- bags used for autoclaving are marked with the Universal Biological Hazard Symbol
- the number and thickness of bags is sufficient to contain the waste from generation through treatment and storage
- bags are tightly closed before transportation so that the waste is completely contained
- sterilization is by autoclaving or incineration.

HI.SW.50.2. Verify that cultures and stocks of infectious agents are sterilized or incinerated.

HI.SW.50.3. Verify that all blood, blood products, and body fluids considered infectious are incinerated, sterilized, disinfected, or disposed of via a wastewater disposal system approved by the Department.

HI.SW.50.4. Verify that pathological waste is incinerated, sterilized, or disinfected.

(NOTE: Sterilized or disinfected material may be finely ground and flushed into a drain leading to a wastewater disposal system approved by the Department.)

HI.SW.50.5. Verify that contaminated sharps management meets the following requirements:

- deposited at the point of generation into rigid puncture resistant and leak-proof containers that are red in color or clearly marked with the Universal Biological Hazard Symbol
- containers are located in the immediate area where sharps are used and are not allowed to be overfilled
- needles are not recapped, purposely bent, broken, or otherwise manipulated
- prior to transport, containers are closed securely to contain the sharps completely and are kept closed throughout transport, storage, and disposal
- sharps undergo sterilization, incineration, or chemical disinfection prior to disposal.

HI.SW.50.6. Verify that contaminated animal carcasses, body parts, and bedding are sterilized, incinerated, or chemically disinfected.

HI.SW.51. Management and transportation of infectious waste within a facility must meet specific standards (HAR 11-104-6).

HI.SW.51.1. Verify that untreated infectious waste is placed in containers sufficient to completely contain the waste.

(NOTE: Containers sufficient to completely contain untreated infectious waste are as follows:
- nonsoluble plastic bags either red in color or clearly labeled with the Universal Biological Hazard Symbol
- sharps containers are rigid, puncture resistant, leak-proof, and are either red in color or clearly labeled with the Universal Biological Hazard Symbol
- sturdy, leak-proof, and clearly marked with the Universal Biological Hazard Symbol.)

HI.SW.51.2. Verify that the number and the thickness of bags is sufficient to contain the waste completely from generation through treatment and storage.

HI.SW.51.3. Verify that bags and other containers of untreated infectious waste are tightly closed before transport.

HI.SW.51.4. Verify that bags and containers of waste are transported in leak-proof rigid or semi-rigid portable containment systems or carts, clearly marked with the Universal Biological Hazard Symbol.

HI.SW.51.5. Verify that untreated infectious waste is transported manually to minimize rupturing and insemination or aerosolization.

HI.SW.51.6. Verify that reusable carts, bins, and other containment systems used to transport waste are cleaned after each use and disinfected daily when in use.

HI.SW.52. Management and transportation of infectious waste for treatment away from the generating facility must meet specific standards (HAR 11-104-7).

HI.SW.52.1. Verify that untreated infectious waste is placed in containers sufficient to completely contain the waste.

HI.SW.52.2. Verify that containers and bags meet the following criteria:

- bags are made of nonsoluble plastic and are either red in color or clearly labeled with the Universal Biological Hazard Symbol
- sharps containers are rigid, puncture resistant, leak-proof, and are either red in color or clearly labeled with the Universal Biological Hazard Symbol
- containers are sturdy, leak-proof, and clearly marked with the Universal Biological Hazard Symbol.

HI.SW.52.3. Verify that the number and the thickness of bags is sufficient to contain the waste completely from generation through treatment.

HI.SW.52.4. Verify that bags and other containers of untreated infectious waste are tightly closed before transport.

HI.SW.52.5. Verify that bags and containers of waste are transported from the facility in leak-proof rigid or semi-rigid portable containment systems or carts, clearly marked with the Universal Biological Hazard Symbol.

HI.SW.52.6. Verify that infectious waste in containment systems are transported away from the facility in fully enclosed, rigid, leak-proof containers or vehicle compartments that will prevent scattering, spillage, and leakage of the waste during transport.

HI.SW.52.7. Verify that untreated waste is not compacted.

HI.SW.52.8. Verify the transport vehicles are labeled with a clearly visible Universal Biological Hazard Symbol.

HI.SW.52.9. Verify that disposable containers that have been in contact with infectious waste are sterilized prior to disposal or incineration.

HI.SW.52.10. Verify that reusable containers are cleaned after each use and disinfected daily when in use.

HI.SW.52.11. Verify that untreated infectious waste is not transported with noninfectious waste, unless all waste in the load is managed as infectious waste.

HI.SW.53. Storage of infectious waste and treated infectious waste must meet specific standards (HAR 11-104-8).

HI.SW.53.1. Verify that infectious waste stored while awaiting treatment is stored in disposable or reusable, sturdy, leak-proof containers that have tight-fitting lids or stored in a leak-proof fully enclosed room.

HI.SW.53.2. Verify that containers are clearly labeled with the Universal Biological Hazard Symbol.

HI.SW.53.3. Verify that containers are kept in fully enclosed and secured locations that are inaccessible to animals and to persons not authorized to treat, transfer, or dispose of such wastes.

HI.SW.53.4. Verify that infectious waste that has been treated and is awaiting transport for disposal is stored in fully enclosed and secured areas or containment systems that are accessible only to persons authorized to handle its disposal.

SOLID WASTE MANAGEMENT

HI.SW.54. Disposal of infectious waste and treated infectious waste must meet specific criteria (HAR 11-104-9).

HI.SW.54.1. Verify that infectious waste that is not disposed of via an approved wastewater disposal system is treated and disposed of only in state permitted landfills or authorized disposal site.

HI.SW.54.2. Verify that containers holding treated infectious waste that has not been incinerated are clearly marked as treated waste that has been rendered noninfectious.

HI.SW.54.3. Verify that recognizable human body parts are incinerated or disposed of in accordance with other applicable state laws governing the disposal of human remains.

HI.SW.54.4. Verify that incinerator ash from the treatment of infectious waste is disposed of only in state permitted landfills or authorized disposal sites.

SPECIAL WASTE MANAGEMENT

(NOTE: Special wastes are solid wastes which do not fall under the categories for wastes which may be treated at transfer stations, recycling and materials recovery facilities, solid waste salvage facilities, composting facilities, and remediation facilities.)

HI.SW.55. Installations managing special waste must meet specific design and operating requirements (HAR 11-58.1-51).

HI.SW.55.1. Verify that the installation has obtained a permit to operate a special waste landfill.

HI.SW.55.2. Verify that the installation provides the landfill with adequate drainage to prevent standing water and to control run-on and runoff of rainwater.

HI.SW.55.3. Verify that the installation designs the landfill to include methods to control litter, insects, odors, and vectors or any other possibilities of nuisance and to protect health and safety.

HI.SW.55.4. Verify that the installation submits an annual report to the Director no later than 30 days after 30 June each year detailing the volume or weight in tons of the incoming material and any monitoring data required by the permit.

HI.SW.56. Medical waste treatment and disposal facilities must meet special waste management permit requirements (HAR 11-58.1-52).

(NOTE: All facilities involved with the storage, transfer, treatment, and disposal of infectious waste are subject to the requirements for special waste management.)

(NOTE: Health care facilities with treatment and disposal units located onsite which treat and dispose of only infectious waste generated onsite are exempt from the special waste management requirements.)

HI.SW.56.1. Verify that the installation has a permit to store, transfer, treat, and dispose of infectious waste.

HI.SW.56.2. Verify that the installation does not accept low level radioactive waste, solid waste, or treated and destroyed medical waste, unless authorized in writing by the Director.

HI.SW.56.3. Verify that the installation submits to the Director an annual report within 30 days of 30 June each year detailing the volume or weight of incoming material.

USED OIL

(NOTE: This section applies to used oil defined as petroleum-based oil which through use, storage, or handling has become unsuitable for its original purpose due to the presence of impurities or loss of original properties.)

HI.SW.57. Installations that transport, recycle, or market used oil must obtain a permit from the Department (HAR 11-58.1-54(b) and HRS 19-342N-30(e)).

HI.SW.57.1. Determine if the installation is a transporter, recycler, or marketer of used oil.

HI.SW.57.2. Verify that the installation has obtained a permit from the Department to manage the used oil.

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

HI.SW.58. Used oil transporters must meet specific operating requirements (HAR 11-58.1-54(b)(6)).

HI.SW.58.1. Verify that the used oil transporter provides a signed voucher to each person surrendering or accepting the used oil.

HI.SW.58.2. Verify that all vehicles used in the actual transporting of used oil are identified with the firm's name and the permit number.

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

HI.SW.59. New, used, or recycled oil must not be discharged into sewers, drainage systems, surface or groundwaters, watercourses, marine water, or onto the ground (HRS 19-342N-30(a)).

HI.SW.59.1. Verify that no new, used, or recycled oil is discharged into or caused or allowed to enter into sewers, drainage systems, surface or groundwaters, watercourses, marine waters, or onto the ground.

(NOTE: The discharge prohibition does not apply to inadvertent, normal discharges from vehicles, provided that appropriate measures are taken to minimize releases. Appropriate measures may include, but are not limited to, use of drip pans, institution of structural catchment systems, use of absorbent materials, and other similar measures.)

HI.SW.60. Used oil transporters must not knowingly deliver used oil to any persons who will dispose of the oil illegally or improperly (HRS 19-342N-30(b)).

HI.SW.60.1. Verify that used oil transporters do not knowingly deliver used oil to any person who will dispose of the oil illegally or improperly.

SOLID WASTE MANAGEMENT

HI.SW.61. New, used, or recycled oil must not be discharged into the ground without prior written approval from the Department and the landowner (HRS 19-342N-30(c)).

HI.SW.61.1. Verify that no new, used, or recycled oil is discharged into the ground without prior written approval from the Department and the landowner.

HI.SW.62. Used oil or recycled oil must not be marketed or burned as specification fuel without information documenting that the oil meets the standards for specification fuel (HRS 19-342N-30(d)).

HI.SW.62.1. Verify that the installation does not market or burn used or recycled oil as specification fuel without an analysis or other written information documenting that the oil meets the standards for specification fuel as set forth by the Director.

HI.SW.63. Installations must employ permitted oil transporters to remove used oil from the premises (HRS 19-342N-30(e)).

HI.SW.63.1. Verify that the installation employs or contracts only permitted oil transporters to remove used oil from the installation premises.

HI.SW.64. Transporters, marketers, recyclers, and burners of used oil must meet recordkeeping, sampling, and testing requirements (HAR 11-58.1-54(c) and HRS 19-342N-33).

HI.SW.64.1. Verify that transporters, marketers, recyclers, and burners of used oil keep a record of each transaction and a copy of each invoice for 3 yr.

HI.SW.64.2. Verify that each installation that markets or burns used oil as specification fuel keeps a copy of each analysis performed or other written information documenting that the used oil meets the standards for specification fuel as set forth by the Director.

HI.SW.64.3. Verify that each person accepting used oil from a used oil transporter maintains records of the field screening test for 3 yr.

HI.SW.64.4. Verify that each used oil transporter provides a signed voucher to each installation surrendering or accepting the used oil when used oil is picked up or delivered and keeps a record of each voucher.

HI.SW.64.5. Verify that each voucher contains, at a minimum, the following information:

- name and address of the parties
- the quantity and type of used oil
- whether an analysis has been performed
- date of transaction
- signature.

HI.SW.64.6. Verify that, at a minimum, the installation submits an annual report to the Director no later than 30 days after 30 June of each year detailing the volume or weight of the incoming material and the salvageable material recovered and the method of disposal.

(NOTE: The Department may require installations that generate, transport, market, recycle, burn used oil or specification fuel, or accept oil for final disposal to conduct sampling and testing and to keep and submit records.)

SECTION 10

SPECIAL PROGRAMS MANAGEMENT

Hawaii Supplement

SECTION 10

SPECIAL PROGRAMS MANAGEMENT

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• TOXIC SUBSTANCES CONTROL ACT (TSCA)

Regulations promulgated under the authority of *TSCA* are applicable to installations in Hawaii. Refer to Protocol Section 10 in the U.S. ECAMP Manual for Federal, Air Force, and DOD requirements.

• RADON PROGRAM

Hawaii has no specific requirements concerning Radon. Refer to Protocol Section 10 in the U.S. ECAMP Manual for Federal, Air Force, and DOD requirements.

• ASBESTOS MANAGEMENT PROGRAM

Federal regulations concerning asbestos are applicable to installations in Hawaii. In addition, Hawaii regulates asbestos abatement, renovation, and demolition activities. Refer to this Protocol and to Protocol Section 10 in the U.S. ECAMP Manual for Federal, Air Force, and DOD requirements.

Definitions

The following definitions were taken from Hawaii Administrative Rules (HAR), Title 16, Chapter 77, Subchapter 19, Section 16-77-111:

10.1. Asbestos Containing Material - any material that contains more than 1 percent asbestos.

10.2. Asbestos Project - any activity involving the demolition, renovation, or encapsulation of friable asbestos materials.

10.3. Demolition - the wrecking or taking of any load supporting structure member and any related removing or stripping of friable asbestos materials.

10.4. Encapsulation - to coat, bind, or resurface walls, ceilings, pipes, or other structures to prevent friable asbestos from becoming airborne.

10.5. Friable Asbestos - any asbestos containing material that can be crumbled, pulverized, or reduced to powder when dry, by hand pressure and included previously nonfriable material after such perviously nonfriable material becomes damaged to the extent that when dry it may be crumbled, pulverized, or reduced to powder by hand pressure.

10.6. Renovation - the removal or stripping of friable asbestos materials used on any pipe, duct, boiler, tank, reactor, turbine, furnace, or structural member.

SPECIAL PROGRAMS MANAGEMENT

Licensed Contractors

HI.SP.1. Any person or contracting entity who engages in activities involving friable asbestos or friable asbestos containing material must be licensed (HAR, Title 16, Chapter 77, Subchapter 19, Section 16-77-112).

HI.SP.1.1. Verify that any person or contracting entity engaged in any activity involving the application, enclosure, removal, encapsulation, renovation, repair, demolition, or other disturbance of friable asbestos or asbestos containing material that may become friable during the activity is licensed by the State Contractor License Board.

Asbestos Abatement

HI.SP.2. Asbestos abatement projects must meet specific management standards (Hawaii Revised Statues, Title 19, Chapter 342P).

HI.SP.2.1. Determine if asbestos abatement activities are required to have a permit from the Department of Health.

HI.SP.2.2. Verify that all permit conditions and recordkeeping and monitoring requirements are met.

HI.SP.2.3. Verify that no activity causes a release or discharge of asbestos into the ambient air from any source.

(NOTE: This prohibition on emissions specifically includes any public body. Public body is not defined in the statute. Person is defined as any individual, partnership, firm, association, public or private corporation, Federal agency, the state or any of its political subdivisions, trust, estate, or any other legal entity)

SECTION 11

WATER QUALITY MANAGEMENT

Hawaii Supplement

SECTION 11

WATER QUALITY MANAGEMENT

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Definitions

The following definitions were obtained from Hawaii Administrative Rules (HAR) 11-54, 11-55, and 11-20.

11.1. Acute Violation - a violation of the Maximum Contaminant Levels (MCLs) of contaminants that may pose an acute risk to human health. The following violations are acute violations:

1. violations determined by the Director as posing an acute risk to human health
2. violation of the MCL for nitrate or nitrite
3. violation of the MCL for total coliforms.

11.2. Act - the *Clean Water Act (CWA)* as of 12 May 1992.

11.3. Administrator - the administrator of the U.S. Environmental Protection Agency (USEPA).

11.4. Ambient Conditions - the water quality conditions that would occur in the receiving waters if these waters were not influenced by the proposed new human activity.

11.5. Anchialine Pools - coastal bodies of waters that have no surface connections to the ocean but display both tidal fluctuations and salinity ranges characteristic of fresh and brackish waters, indicating the presence of subsurface connections to the water table and ocean. They are located in porous substrata (recent lava or limestone) and often contain a distinctive native biota. Deeper anchialine pools may display salinity stratification, and some shallow pools may contain standing water only on the highest tides.

11.6. Artificial Basins - dredged or ed channels or harbors and harbor-associated submerged structures.

11.7. Average - unless otherwise indicated, the arithmetic mean of values taken at the frequency required for each parameter over the specified period. For fecal coliform, the average is the geometric mean. For total coliform, the average is the median.

11.8. Backflow - the flow of water or other liquids, mixtures, or substances in the distributing pipes of a potable supply of water from any source or sources other than its intended source. Backsiphonage is one type of backflow.

11.9. Backflow Preventor - a device or means to prevent backflow into the potable water system.

11.10. Back Pressure - backflow caused by a pump, elevated tank, boiler, or other means that could create pressure within the system greater than the supply pressure.

11.11. Backsiphonage - the flow of water or other liquids, mixtures, or substances into the distribution pipes of a potable water supply system from any source other than its intended source caused by the sudden reduction of pressure in the potable water supply system.

11.12. Best Available Technology (BAT) - the best technology, treatment techniques, or other means which the Director finds, after examination for efficacy under field conditions and not solely under laboratory conditions, are available (taking cost into consideration). For the purposes of setting MCLs for synthetic organic chemicals, any BAT shall be at least as effective as granular activated carbon.

11.13. Best Management Practice (BMP) - schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of state waters. Also includes treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

11.14. Brackish Waters - waters with dissolved inorganic ion concentrations (salinity) greater than 0.5 ppt, but less than 30 ppt.

11.15. Bypass - the intentional diversion of any waste stream from any portion of a treatment facility.

11.16. Category of Sources - means either storm water point sources or a group of point sources other than storm water point sources if all sources in the group involve the same or substantially similar types of operations, discharge wastes, sludge use or disposal practices, effluent limitations, operating conditions, standards, monitoring, or determined by the Director to be more appropriately controlled under a general permit rather than an individual permit.

11.17. Check Valve - a self-closing device which is designed to permit the flow of fluids in one direction and to close if there is a reversal of flow.

11.18. Coagulation - a process using coagulant chemicals and mixing by which colloidal and suspended materials are destabilized and agglomerated into flocs.

11.19. Coastal Waters - all waters surrounding the islands of the state from the coast of any island to a point 3 mi seaward from the coast, and, in the case of streams, rivers, and drainage ditches, to a point 3 mi seaward from their point of discharge into the sea and includes those brackish waters, fresh waters, and salt waters that are subject to the ebb and flow of the tide.

11.20. Coastal Wetlands - natural or manmade ponds and marshes having variable salinity, basin limits, and permanence. These wetlands usually adjoin the coastline but are not surface-connected to the ocean except in rare circumstances. They are usually without tidal fluctuations. Most are characterized by introduced biota, especially fishes.

11.21. Community Water System - a public water system which serves at least 15 service connections used by year-round residents or regularly serves at least 25 yr-round residents.

11.22. Compliance Cycle - means the 9-yr calendar year cycle during which public water systems must monitor. Each compliance cycle consists of three 3-yr compliance periods. The first calendar year cycle begins 1 January 1993 and ends 31 December 2001; the second begins 1 January 2002 and ends 31 December 2010; the third begins 1 January 2011 and ends 31 December 2019.

11.23. Compliance Period - a 3-yr calendar year period within a compliance cycle. Each compliance cycle has three 3-yr compliance periods. Within the first compliance cycle, the first compliance period runs from 1 January 1993 to 31 December 1995; the second from 1 January 1996 to 31 December 1998; the third from 1 January 1999 to 31 December 2001.

11.24. Composite Sample - a combination of at least three sample aliquotes, collected at periodic intervals during the first hour of a storm event discharge. The composite must be flow proportional; either the time interval between each aliquot or the volume of each aliquot must be proportional to either the stream flow at the time of sampling or total stream flow since the collection of the previous aliquot. Aliquotes may be collected manually or automatically.

11.25. Confluent Growth - a continuous bacterial growth covering the entire filtration area of a membrane filter, or a portion thereof, in which bacterial colonies are not discrete.

11.26. Contamination - an impairment of the quality of the potable water by sewage, industrial fluids or waste liquids, compounds or other materials to a degree which creates an actual hazard to the public health through poisoning or through the spread of disease.

11.27. Contaminant - any physical, chemical, biological, or radiological substance or matter in water.

11.28. Conventional Filtration Treatment - a series of processes including coagulation, flocculation, sedimentation, and filtration resulting in substantial particulate removal.

11.29. Critical Level - the critical level C-L or C/L marking on a backflow prevention device or vacuum breaker which is a point conforming to approved standards and established by the testing laboratory (usually stamped on the device by the manufacturer), which determines the minimum elevation above the flood-level rim of the fixture or receptacle served at which the device may be installed. When a backflow prevention device does not bear a critical level marking, the bottom of the vacuum breaker, combination valve, or the bottom of any such approved device shall constitute the critical level.

11.30. Cross-Connection - any physical arrangement whereby a public water supply is connected, directly or indirectly, with any other water supply system, sewer, drain, conduit, pool, storage reservoir, plumbing fixture, or other device with contains, or may contain, contaminated water, sewage, or other waste or liquid of unknown or unsafe quality which may be capable of imparting contamination to the public water supply as a result of backflow. Bypass arrangements, jumper connections, removable sections, swivel or changeover devices, and other temporary or permanent devices through which, or because of which, backflow could occur are considered to be cross-connections.

11.31. CT or CT_{calc} - the product of residual disinfectant concentration (C) in milligrams per liter determined before or at the first customer, and the corresponding disinfectant contact time (T) in minutes, i.e., "C" x "T." If a public water system applies disinfectants at more than one point prior to the first customer, it shall determine the CT of each disinfectant sequence before or at the first customer to determine the total percent inactivation or total inactivation ratio. In determining the total inactivation ratio, the supplier shall determine the residual disinfectant concentration of each disinfectant sequence and corresponding contact time before any subsequent disinfection application point(s).

11.32. $CT_{99.9}$ - the CT value required for 99.9 percent (3-log) inactivation of *Giardia lamblia* cysts.

11.33. CT Inactivation Ratio - $(CT_{calc})/(CT_{99.9})$ the sum of the inactivation ratios, or total inactivation ratio shown as $(CT_{calc})/(CT_{99.9})$ is calculated by adding together the inactivation ratio for each disinfection sequence. A total inactivation ratio equal to or greater than 1.0 is assumed to provide a 3-log inactivation of *Giardia lamblia* cysts.

11.34. Department - the Hawaii Department of Health.

11.35. Diatomaceous Earth Filtration - a process resulting in substantial particulate removal in which (1) a precoat cake of diatomaceous earth filter media is deposited on a support membrane (septum), and (2) while the water is filtered by 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.

11.36. Direct Additives - contaminants added to water in the protection of drinking water.

11.37. Direct Filtration - a series of processes including coagulation, flocculation, and filtration but excluding sedimentation resulting in substantial particulate removal.

11.38. Director - the Director of the Department of Health, his duly authorized representative, or a duly authorized agent.

11.39. Disinfection - any oxidant, including chlorine, chlorine dioxide, chloramines, and ozone added to water in any part of the treatment or distribution process that is intended to kill or inactivate pathogenic microorganisms.

11.40. Domestic or Other Nondistribution 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.

11.41. Effluent - any substance discharged into state waters or publicly owned treatment works or sewerage systems, including but not limited to, sewage, waste, garbage, feculent matter, offal, filth, refuse, any animal, mineral, or vegetable matter or substance, and any liquid, gaseous, or solid substances.

11.42. Elevated Wetlands - standing water that is always fresh, in more or less indistinct basins such as natural bogs, ponds, and marshes. These wetlands are found in undisturbed areas, mainly remote uplands and forest reserves.

11.43. Embayments - land-confined and physically protected marine waters with restricted openings to open coastal waters defined by the ratio of total bay volume to the cross-sectional entrance area of 700 to 1 or greater.

11.44. Estuaries - characteristically brackish coastal waters in well-defined basins with a continuous or seasonal surface connection to the ocean that allows entry of marine fauna. Estuaries may be either natural, occurring mainly at streams or river mouths, or developed, artificially or strongly modified from the natural state.

11.45. Excursion - an unintentional and temporary incident in which the pH value of discharge wastewater exceeds the range set forth in the general permit. The number of individual excursions exceeding 60 min and the total accumulated excursion time in minutes occurring in any calendar month shall be reported in accordance with the general permit.

11.46. Facility or Activity - any National Pollutant Discharge Elimination System (NPDES) point source or any facility or activity (including land or appurtenances thereto) that is subject to regulation under the NPDES program.

11.47. Fecal Coliform - part of the total coliform group that is gram negative, nonspore forming rods that ferment lactose in 24 ± 2 h at 44.5 ± 0.2 °C with the production of gas.

11.48. Filtration - a process for removing particulate matter from water by passage through porous media.

11.49. Flocculation - a process to enhance agglomeration or collection of smaller floc particles into larger, more easily settlable particles through gentle stirring by hydraulic or mechanical means.

11.50. 40 CFR - the Code of Federal Regulations, Title 40, Protection of Environment, revised as of 1 July 1991, unless otherwise specified.

11.51. Fresh Waters - all waters with dissolved inorganic ion concentrations of less than 0.5 ppt.

11.52. General Permit - a rule or document that authorizes a category of discharges into state waters from a category of sources within a geographical area.

11.53. Geographical Area - existing geographical or political boundaries.

11.54. Grab Sample - an individual sample is collected at a randomly selected time over a period not exceeding 15 min.

11.55. Granular Activated Carbon (GAC) - consists of fine carbon particles placed in pressure filters to absorb the organics in the water.

11.56. Groundwater Under the Direct Influence of Surface Water (GWI) - any water beneath the surface of the ground with one of the following:

1. significant occurrence of 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 correlate to climatological or surface water conditions.

11.57. Halogen - one of the chemical elements chlorine, bromine, or iodine.

11.58. HAR 11-20 - Hawaii Administrative Rules, Title 11, Chapter 20, *Potable Water Systems*.

11.59. HAR 11-21 - Hawaii Administrative Rules, Title 11, Chapter 21, *Cross-Connection and Backflow Control.*

11.60. Hazard, Health - any condition, device, or practice in the water supply system and its operation which create, or in the judgment of the Direct may create, a danger to the health and well-being of the water consumer. An example of a health hazard is a structural defect in the water supply system, whether of location, design, or construction, that regularly or occasionally may prevent satisfactory purification of the water supply or cause it to be polluted from extraneous sources.

11.61. Heterotrophic Bacteria - a broad class of aerobic and facultative anaerobic organisms which use organic nutrients for growth. The group includes many innocuous bacteria as well as virtually all of the bacteria pathogens and those bacteria that infect when the host defenses are weakened.

11.62. Hydrotesting Waters - water used to test the integrity of a tank or pipeline.

11.63. Indirect Additives - contaminants that are introduced into drinking water through contact with surfaces of material or products used for its treatment, storage, transmission, or distribution.

11.64. Indirect Discharge - the introduction of pollutants into a publicly owned treatment works (POTW) from any nondomestic source regulated under 307(b), (c) or (d) of the *CWA*.

11.65. Individual Permit - an NPDES permit, other than a general permit issued for a discharge at a specific location.

11.66. Industrial User - a source of indirect discharge.

11.67. Initial Compliance Period - the first full 3-yr compliance period which begins at least 18 mo after promulgation.

11.68. Lava Rock Shorelines - sea cliffs and other vertical rock faces, horizontal basalts, volcanic tuff beaches, and boulder beaches formed by rocks falling from above or deposited by storm waves.

11.69. Legionella - a genus of bacteria, some species of which have caused a type of pneumonia called Legionnaires Disease.

11.70. Low Wetlands - standing water that is always fresh, ponds, or marshes. These wetlands are found in lowland areas near coasts or in valley termini modified by man. They may be natural or manmade.

11.71. Major Facility - any NPDES facility or activity classified as such by the regional administrator in conjunction with the Director.

11.72. Marine Pools - waters which collect in depressions on sea level lava rock outcrops and solution benches and also behind large boulders fronting the sea.

11.73. Maximum Contaminant Level or MCL - the maximum permissible level of a contaminant in water which is delivered to the free flowing outlet of the ultimate user of a public water system, except in the case of turbidity where the maximum permissible level is measured at the point of entry to the distribution system. Contaminants added to the water under circumstances controlled by the user, except those resulting from corrosion of piping and plumbing caused by water quality, are excluded from this definition.

11.74. Maximum Contaminant Level Goal or MCLG - the maximum level of a contaminant in drinking water at which no known or anticipated adverse effect on the health or persons would occur, and which allows an adequate margin of safety. MCLGs are nonenforceable health goals.

11.75. Maximum Total Trihalomethane Potential or MTTHMP - the maximum concentration of total trihalomethanes produced in a given water containing a disinfectant residual after 7 days at a temperature of 25 °C or above.

11.76. Natural Lakes - standing water that is always fresh, in well-defined natural basins.

11.77. Near the First Service Connection - at one of the 20 percent of all service connections in the entire system that are nearest the water supply treatment facility, as measured by water transport time within the distribution system.

11.78. Nearshore Reef Flats - shallow platforms of reef rock, rubble, and sand extending from the shoreline.

11.79. National Pollutant Discharge Elimination System (NPDES) - the national system for the issuance of permits and includes any state or interstate program that has been approved by the administrator in whole, or in part pursuant to 402 of the *CWA*.

11.80. New Discharger - any building, structure, facility, or installation:

1. from which there is or may be a discharge of pollutants
2. that did not commence the discharge of pollutants at a particular site before 13 August 1979
3. that is not a new source
4. that has never received a finally effective NPDES permit for discharges at the site.

11.81. New Source - any source for which the construction started:

1. after the adoption, by the Director, of rules prescribing a standard of performance that will be applicable to the source
2. after the publication by the administrator of regulations prescribing a standard of performance that is applicable to the source, if such standard is thereafter promulgated by the administrator, whichever occurs first.

11.82. Noncommunity Water System - a public water system that is not a community water system.

11.83. Nonpotable Water - water that is not safe for human consumption or that is of questionable potability.

11.84. Nontransient Noncommunity Water System or NTNCWS - a public water system that is not a community water system and that regularly serves at least 25 of the same persons over 6 mo per year.

11.85. Notice of Intent (NOI) - a form used to notify the Director within a specified time, to seek coverage under a general permit.

11.86. NPDES Permit - an authorization, license, or equivalent control document issued by USEPA or an approved state to implement the requirements of 40 CFR Parts 122, 123, and 124. NPDES permit includes an NPDES general permit per 40 CFR 122.28.

11.87. Oceanic Waters - all other marine waters outside of the 183 m or 600 ft (100 fathom) depth contour.

11.88. Offshore Reef Flats - shallow, submerged platforms of reef rock and sand between depths of zero to 3 m (0 to 10 ft) which are separated from the shoreline of high volcanic islands by lagoons or ocean expanses.

11.89. Once-Through Cooling Waters - water passed through the main cooling condensers in one or two passes for the purpose of removing waste heat.

11.90. Open Coastal Waters - marine waters bounded by the 183 m or 600 ft (100 fathom) depth contour and the shoreline, excluding the bays listed as embayments.

11.91. Pollution - the presence of any foreign substance (organic, inorganic, radiological, or biological) in water that may degrade the water quality so as to constitute a hazard or impair its usefulness.

11.92. Person - an individual, corporation, company, association, partnership, county, municipality, or state, Federal, or tribal agency.

11.93. Picocurie or pCi - that quantity of radioactive material producing 2.22 nuclear transformations per minute. A symbol for picocurie per liter is pCi/L.

11.94. Point of Disinfectant Application - the point where the disinfectant is applied and water downstream of that point is not subject to recontamination by surface water runoff.

11.95. Point of Entry Treatment Device - a 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.

11.96. Point of Use Treatment Device - a treatment device applied to a single tap used for the purpose of reducing contaminants in drinking water at that one tap.

11.97. Potable Water - water free from impurities in amounts sufficient to cause disease or harmful physiological effects. The bacteriological, chemical, and radiological quality must conform with HAR 11-20, *Potable Water Systems*.

11.98. Privately ed Treatment Works - any device or system which is used to treat wastes from a facility se operator is not the operator of the treatment works and not a POTW.

11.99. Protected Coves - small inlets which are removed from heavy wave action or surge.

11.100. Protected Reef Communities - hard bottom aggregations, including scattered sand channels and patches, dominated by living coral thickets, mounds, or platforms.

11.101. Public Water System - a system for the provision to the public of piped water for human consumption, if such 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. Such term includes (1) any collection, treatment, storage, and distribution facilities under control of the operator of such system and used primarily in connection with such system, and (2) any collection or pretreatment storage facilities not under such control which are used primarily in connection with such system. A public water system may be privately or publicly owned or operated. A public water system is either a community water system, a noncommunity water system, or a nontransient noncommunity water system.

11.102. Publicly Owned Treatment Works (POTW) - any device or system used in the treatment (including recycling and reclamation) of municipal sewage or industrial wastes of a liquid nature which is owned by a state or municipality. This definition includes sewers, wastewater, pipes, or other conveyances only if they convey to a POTW providing treatment.

11.103. Regional Administrator - the USEPA regional administrator of Region 9.

11.104. Rem - the unit of dose equivalent from ionizing radiation to the total body or any internal organ or organ system. A millirem or mrem is 1/1000 of a rem.

11.105. Repeat Compliance Period - any subsequent compliance period after the initial compliance period.

11.106. Representative Sample - a sample whose content is (1) identical to the content of the substance sampled at the time of the sampling; (2) accurately represent the monitored item; and (3) accurately represent the monitored item for the monitored time period. Representative sampling may mean including weekends and storms and may mean taking more samples than the minimum number specified elsewhere in the permit.

11.107. Representative Storm - the storm event that is greater than 0.1 in. in magnitude and at least 72 h from the previous measurable (greater than 0.1 in. rainfall) storm event as defined in 40 CFR 122.21(g)(7).

11.108. Residual Disinfectant Concentration (C in CT calculations) - the concentration of disinfectant measured in mg/L in a representative sample of water.

11.109. Saline (or Salt) Waters - waters with dissolved inorganic ion concentrations greater than 30 ppt.

11.110. Sand Beaches - shoreline composed of the weathered calcareous remains of marine algae and animals (white sand), the weathered remains of volcanic tuff (olivine), or the weathered remains of lava (black sand).

11.111. Sanitary Survey - an onsite review of the water source, facilities, equipment, operation, and maintenance of a public water system for the purpose of evaluating the adequacy of such source, facilities, equipment, operation, and maintenance for producing and distributing safe drinking water.

11.112. Secondary Maximum Contaminant Levels or SMCLs - the maximum permissible level of contaminant in water which is delivered to the free flowing outlet of the ultimate user of the public water system.

11.113. Secondary Water System - any water supply in a building or premise maintained in addition to a public water system. Such secondary water system includes any system, other than the public water supply, supplying surface water from streams, rivers, lakes, ponds, lagoons, reservoirs and cisterns, and groundwater from both deep and shallow sources; also, any supply of public water system which has been stored, held, reserved, treated, and processed in a manner which may detract from the potability of the water by either bacterial, chemical, or radiological nature.

11.114. Sedimentation - a process for removal of solids before filtration by gravity or separation.

11.115. Severe Property Damage - substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

11.116. Site - the land or water area where any facility or activity is physically located or conducted, including adjacent land used in connection with the facility or activity.

11.117. Slow Sand Filtration - a process involving passage of raw water through a bed of sand at low velocity (generally less than 0.4 m/h or 1.2 ft/h) resulting in substantial particulate removal by physical and biological mechanisms.

11.118. Soft Bottom Communities - poorly described and "patchy" communities, mostly of burrowing organisms, living in deposits at depths of 2 to 40 m (approximately 6 to 130 ft). The particle size of sediment, depth below sea level, and degree of water movement and associated sediment turnover dictate the composition of animals which rework the bottom with burrows, trails, tracks, ripples, hummocks, and depressions.

11.119. Solution Benches - sea level platforms developed on upraised reef or solidified beach rock by the erosive action of waves and rains.

11.120. Standard of Performance - a standard for the control of the discharge of pollutants that reflects the greatest degree of effluent reduction which the Director determines to be achievable through application of the best available demonstrated control technology, processes, operating methods, or other alternatives, including, where practicable, a standard permitting no discharge of pollutants; provided that such standard shall not be less stringent that required under 306 of the *CWA*.

11.121. Standard Sample - the aliquot of finished drinking water that is examined for the presence of coliform bacteria.

11.122. State Waters - all waters, fresh, brackish, or salt around and within the state including, but not limited to, coastal waters, streams, rivers, drainage ditches, ponds, reservoirs, canals, groundwaters, and lakes; provided that drainage ditches, ponds, and reservoirs required as part of a water pollution control system are excluded. This does not apply to groundwater or ditches, flumes, ponds, and reservoirs required for water pollution control or used solely for irrigation, so long as they do not discharge into any other state waters. State waters are classified by use. See Table 11-1 for these classifications.

11.123. Streams - seasonal or continuous water flowing in all or part of natural channels as a result of either surface water runoff or groundwater influx, or both.

11.124. Substantial Modification - includes the following:

1. any physical modification to the source, storage, collection, treatment, or distribution facilities of the system that is determined by the Department to have an actual or potentially significant impact on the quality of water delivered to users of the system
2. any modification that will cause an existing system, that is not a public water system before such modification, to become a public water system.

11.125. Supplier of Water - any person who owns or operates a public water system.

11.126. Surface Water - all water which is open to the atmosphere and subject to surface runoff.

11.127. System with a Single Service Connection - a system which supplies drinking water to consumers via a single service line.

11.128. Too Numerous to Count - that the total number of bacterial colonies exceeds 200 on a 47 mm diameter membrane filter used for coliform detection.

11.129. Total Coliform - all aerobic and facultative anaerobic gram-negative, nonspore-forming, rod-shaped bacteria that ferment lactose with gas and acid formation within 48 h at 35 °C.

11.130. Total Trihalomethanes or TTHM - the sum of the concentration in milligrams per liter of the trihalomethane compounds (trichloromethane (chloroform), dibromochloromethane, bromodichloromethane, and tribromomethane (bromoform)), rounded to two significant figures.

11.131. Transient Noncommunity Water System - a noncommunity water system that does not meet the definition of a nontransient noncommunity water system (e.g., highway rest stops, restaurants, motels, golf courses, parks).

11.132. Treatment Technique Requirement - a requirement of the state primary drinking water rules which specifies for a contaminant a specific treatment technique(s) known to the Director which leads to a reduction in the level of such contaminant sufficient to comply with the requirements of HAR 11-20.

11.133. Treatment Works - the plant or other facility and the various devices used in the treatment of wastes including the necessary intercepting sewers, outfall sewers or outlets, pumping, power, and other equipment.

11.134. Trihalomethane or THM - one of the family of organic compounds, names as derivatives of methane, wherein three of the four hydrogen atoms in methane are each substituted by a halogen atom in the molecular structure.

11.135. Turbidity - suspended material such as clay, silt, finely divided organic material or other inorganic materials in water. Turbidity is measured in nephelometric turbidity units (NTU).

11.136. 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 permittee. 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.

11.137. Vacuum - any pressure less than that exerted by the atmosphere.

11.138. Vacuum Breaker, Atmospheric Nonpressure Type - a vacuum breaker designed so as not to be subjected to static line pressure or installed where it would be under pressure for not more than 12 h in any 24-h period.

11.139. Vacuum Breaker, Pressure Type - a vacuum breaker designed to operate under conditions of static line pressure.

11.140. Wastes - material of any kind, whether treated or not, whether animal, mineral, or vegetable, and whether liquid, gaseous, radioactive, or solid, including sewage, agricultural, industrial, and thermal wastes that may pollute or tend to pollute the waters of the state.

11.141. Water Priority Chemicals - the following chemicals or chemical categories:

1. listed in 40 CFR 372.65 pursuant to Section 313 of the Title III of the *Superfund Amendments and Reauthorization Act (SARA)* of 1986
2. present at or above threshold levels at a facility subject to SARA Title III, Section 313 reporting requirements
3. that meet at least one of the following criteria:
   a. listed in Appendix D of 40 CFR 122 on either Table II (organic priority pollutants); Table III (certain metals, cyanide, and phenols); or Table V (certain toxic pollutants and hazardous substances)
   b. listed as a hazardous substance pursuant to Section 311(b)(2) of the *CWA* in 40 CFR 116.4
   c. are pollutants for which USEPA has published acute or chronic toxicity criteria.

11.142. Water Quality Certification - a statement that asserts that a proposed discharge activity will not violate applicable water quality standards.

11.143. Waterborne Disease Outbreak - the significant occurrence of acute infectious illness, epidemiologically associated with the ingestion of water from a public water system which is deficient in treatment, as determined by the director.

11.144. Wave-Exposed Reef Communities - aggregations, including scattered sand channels and patches, dominated by corals.

11.145. Zones of Mixing - limited areas around outfalls and other facilities to allow for the initial dilution of waste discharges.

WATER QUALITY MANAGEMENT

GUIDANCE FOR HAWAII CHECKLIST USERS

Applicability	Refer to Checklist Items:
ALL INSTALLATIONS	HI.W.1
WASTEWATER:	
NPDES Permits	HI.W.2 through HI.W.9
General Permits	HI.W.10 through HI.W.21
Stormwater	HI.W.22 through HI.W.29
Stormwater Discharges and Construction	HI.W.30 through HI.W.36
UST Remedial Activities	HI.W.37 through HI.W.43
Once-Through Cooling Water	HI.W.44 through HI.W.46
Hydrotesting	HI.W.47
Construction Activity Dewatering	HI.W.48 through HI.W.51
Water Priority Chemical Facilities	HI.W.52 through HI.W.62
Water and Shoreline Quality	HI.W.63 through HI.W.81
DRINKING WATER:	
All Installations	HI.W.82 and HI.W.83
PUBLIC WATER SYSTEMS	
New Sources of Raw Water	HI.W.84
New or Modified Public Water Systems	HI.W.85
Inorganic Chemical Monitoring	HI.W.86 through HI.W.91
Organic Chemical Monitoring	HI.W.92 through HI.W.95
Special Monitoring For Inorganic and Organic Chemicals	HI.W.96
Monitoring For Sodium	HI.W.97
Turbidity Monitoring	HI.W.98
Microbiological Monitoring	HI.W.99 through HI.W.105
Radionuclide Monitoring	HI.W.106
Additives	HI.W.107
Recordkeeping	HI.W.108
Reporting Requirements	HI.W.109
Public Notification	HI.W.110

WATER QUALITY MANAGEMENT

ALL INSTALLATIONS

HI.W.1. Copies of all relevant state and local regulations should be maintained at the installation (GMP).

HI.W.1.1. Verify that current copies of the following regulations are maintained at the installation:

- Wastewater:
  - HAR 11-54, *Water Quality Standards*
  - HAR 11-55, *Water Pollution Control*
  - applicable county and local regulations
- Drinking water:
  - HAR 11-20, *Potable Water Systems*
  - HAR 11-21, *Cross-Connection and Backflow Control*
  - applicable county and local regulations.

WASTEWATER

NPDES PERMITS

HI.W.2. Installations that discharge any pollutant or substantially alter the quality or increase the quantity of any discharges must apply for an NPDES permit or file a notice of intent (NOI) (HAR 11-55-04(a) and 11-55-27(a)).

HI.W.2.1. Verify that installations apply for an NPDES permit or submit a NOI prior to discharging any pollutant or altering the quality or increasing the quantity of a discharge.

HI.W.2.2. Verify that installations apply for a NPDES permit 180 days before discharging pollutants or in sufficient time to insure compliance with all applicable regulations.

HI.W.2.3. Verify that installations file for renewal of a NPDES permit at least 180 days prior to its expiration.

HI.W.3. Installations must meet the terms and conditions of the NPDES permit (HAR 11-55-21, 11-55-22(a), 11-55-23(4), 11-55-23(6), and 11-55-23(9)).

HI.W.3.1. Verify that the installation meets the permit conditions, effluent limitations, schedules of compliance, and applicable water quality standards.

HI.W.3.2. Verify that installations with a compliance schedule notify the Director of compliance or noncompliance within 14 days of each interim compliance schedule date and the final date of compliance.

HI.W.3.3. Verify that the installation's frequency and level of discharge is within the limits of the NPDES permit.

HI.W.3.4. Verify that the installation at all times maintains in good working order and operates as efficiently as possible any facilities or control systems installed to achieve compliance with the terms and conditions of the permit.

(NOTE: The Director may require an installation to develop a pretreatment program in accordance with 40 CFR 403.)

HI.W.4. Installations with a NPDES permit must meet specific reporting standards (HAR 11-55-18, 11-55-23(3), and 11-55-23(7)).

HI.W.4.1. Verify that installations with a NPDES permit report within 30 days the permanent discontinuance or dismantlement of any treatment works or waste outlet and surrender the permit within 30 days of issuing the report.

HI.W.4.2. Verify that installations that expand permitted facilities, increase production, or process modifications that result in new or increased discharges of pollutants meet one of the following reporting standards:

- submit a new NPDES application
- if the discharge does not violate permitted effluent limitations, the Director is notified of new or increased discharges of pollutants.

HI.W.4.3. Verify that publicly or privately owned treatment works notify the Director in writing of the following:

- any new introduction of pollutants from an indirect discharger subject to Sections 301 and 306 of the *Clean Water Act*, if the indirect discharger directly discharges those pollutants
- any substantial change in volume or character of pollutants being introduced into a treatment works by a source introducing pollutants into the works at the time the permit is issued

- the quality and quantity of effluent to be introduced into a treatment works
- any anticipated impact of a change in quality or quantity of effluent to be discharged from a POTW.

HI.W.5. NPDES permitted installations with a municipal separate storm sewer system must meet specific reporting standards (HAR 11-55-23(2)).

HI.W.5.1. Determine if the installation has a municipal separate storm sewer system.

HI.W.5.2. Verify that the installation submits an annual report that includes the following:

- the stormwater management program status
- any proposed changes to the stormwater management program
- a summary of data, including monitoring data, accumulated throughout the reporting year
- a summary of the enforcement actions, inspections, and public education programs
- identification of water quality improvements or degradation.

HI.W.6. NPDES permitted installations must meet the monitoring standards required by the permit (HAR 11-55-28(d)).

HI.W.6.1. Verify that installations monitor each effluent flow or monitor-required pollutant at a frequency sufficient to yield data that reasonably characterize the nature of the discharge.

HI.W.7. NPDES permitted installations must meet the recordkeeping and reporting standards required by the permit (HAR 11-55-29 and 11-55-30).

HI.W.7.1. Verify that the installation maintains records of all information resulting from monitoring activities required by the permit.

HI.W.7.2. Verify that monitoring records include the following information for all samples:

- the date, exact place, and time of sampling
- the dates on which analyses were performed
- the name of the person or laboratory that performed the analyses
- the analytical techniques/methods used
- the results of the analyses.

HI.W.7.3. Verify that any records of monitoring activities and results are maintained for at least 3 yr including the following:

- all original strip chart recordings for continuous monitoring instrumentation and calibration
- maintenance records.

HI.W.7.4. Verify that the installation reports the results of the monitoring at least once a year or as required by the Director.

(NOTE: Records may be required to be maintained for more than 3 yr.)

HI.W.8. NPDES permitted installations must meet sampling and testing standards (HAR 11-55-31(a)).

HI.W.8.1. Verify that all sampling and testing is done in accordance with Director-approved test procedures and applicable guidelines.

HI.W.8.2. Verify that all tests are made under the direction of persons knowledgeable in the field of water pollution control.

HI.W.9. NPDES permitted installations must meet malfunction, maintenance, and equipment repair standards (HAR 11-55-32).

HI.W.9.1. Verify that water pollution treatment facilities are not shut down for purposes of maintenance unless a schedule or plan is approved by the Director prior to the shutdown.

HI.W.9.2. Verify that installations that shut down water pollution control equipment for necessary maintenance, report and receive approval from the Director at least 24 h prior to the planned shutdown.

HI.W.9.3. Verify that the shutdown notice includes the following:

- specific facility identification, location, and NPDES permit number
- expected length of time that water pollution control equipment will be out of service
- the nature and quantity of discharge of water pollutants likely to be emitted during the shutdown period

- measures taken to minimize the length of the shutdown period and the effects of the bypassed wastes
- reasons for the operation shut down outside of the maintenance period.

HI.W.9.4. Verify that the installation immediately notifies the Director of a failure or breakdown in any water pollution control equipment or related facility that causes the discharge of water pollutants in violation of applicable rules.

HI.W.9.5. Verify that the Director is notified when the failure or breakdown has been corrected and the equipment is again in operation.

GENERAL PERMITS

HI.W.10. Installations with a discharge not authorized by an individual permit must apply for coverage under a general permit (HAR 11-55-34.08(j)).

(NOTE: The Director may require any discharger authorized by a general permit to apply for and obtain an individual permit.)

HI.W.10.1. Determine if the installation has any discharges authorized by a general permit.

HI.W.10.2. Verify that installations applying for coverage under a general permit submit a NOI no later than 90 days before the start of activities or discharges.

HI.W.11. Installations with discharges authorized by a general permit must meet general permit standards (HAR 11-55-34.01, 11-55-34.04, and 11-55-34.07).

HI.W.11.1. Verify that installations covered by a general permit meet at a minimum all applicable Federal general permit requirements.

HI.W.11.2. Verify that installations covered by a general permit meet the following state NPDES permit conditions:

- reporting of discontinuance or dismantlement
- effluent limitations and water quality standards
- compliance schedule reporting
- reporting of changes that violate permit terms and conditions

- monitoring
- recordkeeping and reporting
- sampling and testing methods
- malfunction, maintenance, and equipment repair.

HI.W.11.3. Verify that installations with discharges covered by a general permit receive the treatment or corrective action to insure compliance with the terms and conditions of the permit and the following, when applicable:

- Federal effluent limitations
- criteria and standards for best management practices
- any more stringent effluent limitations required by the Director.

HI.W.12. Installations covered by a general permit must meet basic water quality standards (HAR 11-54-04(a) and Appendix A, 1).

HI.W.12.1. Verify that installations covered by a general permit meet the basic water quality standards in Table 11-1.

HI.W.13. Installations covered by a general permit must not undertake any construction in any waters of the state (HAR 11-55, Appendix A, 2).

HI.W.13.1. Verify that the installation does not construct any onshore or offshore physical facility structures or undertake any work in any state waters.

HI.W.14. Installations covered by a general permit must meet sampling point standards (HAR 11-55, Appendix A, 3(a)).

HI.W.14.1. Verify that all samples are taken before the effluent joins or is diluted by any other waste stream, body of water, or substance, unless otherwise specified.

HI.W.14.2. Verify that monitoring points are not changed without approval of the Director of Health.

HI.W.14.3. Verify that discharges totally pass through the final monitoring point.

HI.W.15. Installations covered by a general permit must meet flow measurement and calibration standards (HAR 11-55, Appendix A, 3(b) and (c)).

(NOTE: Flow measurement standards do not apply to once-through condenser cooling water flow monitored by pump logs or pump hour meters.)

HI.W.15.1. Verify that flow measurement devices and methods are consistent with accepted scientific practices.

HI.W.15.2. Verify that the devices are installed, calibrated, and maintained to insure the accuracy of the measurements.

HI.W.15.3. Verify that the devices used are capable of measuring flows with a maximum deviation of less than plus or minus 10 percent from the true discharge rates through the range of expected discharge volumes.

HI.W.15.4. Verify that periodically all monitoring and analytical equipment used to monitor the discharged pollutants are calibrated and maintained at intervals that meet the manufacturer's recommendations or every 6 mo, whichever comes first.

HI.W.16. Installations covered by a general permit must meet pH effluent limitations under continuous monitoring standards (HAR 11-55, Appendix A, 3(d)).

HI.W.16.1. Verify that installations that continuously measure the pH of the wastewater and have excursions from the permitted pH range meet the following additional standards:

- the pH limitation in the general permit is based upon a Federal effluent standard
- pH values are outside the required range for a total time that does not exceed 446 min in any calendar month
- no individual excursion from the accepted range exceeds 60 min
- the number of individual excursions exceeding 60 min and the total accumulated excursion time occurring in any calendar month is reported.

HI.W.17. Installations covered by a general permit must meet sampling and monitoring standards (HAR 11-55, Appendix A, 14).

HI.W.17.1. Verify that monitoring samples and measurements are representative of the monitored activity.

HI.W.17.2. Verify that records of monitoring information required by the permit relating to sewage sludge use and disposal activities are retained for at least 5 yr.

HI.W.17.3. Verify that records of the following monitoring information are retained for a period of at least 3 yr from the date of the sample, measurement, report, or application:

- all calibration and maintenance records
- all original strip chart recordings for continuous monitoring instrumentation
- copies of all required reports
- records of all data used to complete the permit application.

HI.W.17.4. Verify that monitoring records include the following information for all samples:

- the date, exact place and time of sampling
- the dates analyses were performed
- who performed the analyses
- the analytical techniques and methods used
- the results of the analyses.

HI.W.18. Installations covered by a general permit must meet bypass approval and notification standards (HAR 11-55, Appendix A, 17(b) and (d)).

HI.W.18.1. Verify that the treatment facility does not allow a bypass except for bypasses that do not cause effluent limitations to be exceeded and that are necessary for essential maintenance.

HI.W.18.2. Verify that installations notify the Director, if possible, 10 days before the date of an anticipated bypass.

HI.W.18.3. Verify that unanticipated bypasses are reported as required by the permit and all other bypasses are reported orally within 24 h.

HI.W.19. Installations covered by a general permit must meet upset response standards (HAR 11-55, Appendix A, 18(c)).

HI.W.19.1. Verify that installations notify the Director within 24 h of any upset that exceeded any effluent limitations specified in the permit.

WATER QUALITY MANAGEMENT

HI.W.20. Installations with discharges covered by a general permit must meet solids, sludges, filter backwash, or other pollutant disposal standards (HAR 11-55, Appendix A, 27).

HI.W.20.1. Verify that solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters are disposed of in a manner that prevents any pollutant from the materials from entering navigable waters.

HI.W.21. Installations with a privately owned treatment works covered by a general permit must meet specific standards (HAR Appendix A, 22).

HI.W.21.1. Determine if the installation has a privately owned treatment works covered by a general permit.

HI.W.21.2. Verify that the following unauthorized materials are not disposed of into the privately owned treatment works unless authorized by the permit:

- hazardous waste
- motor oil
- gasoline
- paints
- varnishes
- solvents
- pesticides
- fertilizers
- industrial wastes
- other materials not generally associated with toilet flushing or personal hygiene, laundry, or food preparation.

HI.W.21.3. Verify that the installation informs users of the privately owned treatment works and collection system of the prohibition against unauthorized materials.

HI.W.21.4. Verify that the installation is capable of sampling all discharges to the collection system, including any from septic haulers or other unsewered discharger in order to analyze for conventional toxic or hazardous pollutants when instructed to do so.

HI.W.21.5. Verify that the installation provides adequate security to prevent unauthorized discharges to the collection system.

WATER QUALITY MANAGEMENT

Stormwater

HI.W.22. Installations authorized by a general permit for stormwater runoff associated with industrial activity must meet permit conditions (HAR 11-55, Appendix B, 1).

HI.W.22.1. Determine if the installation has a general permit covering discharges to the waters of the state composed entirely of stormwater runoff associated with industrial activities.

HI.W.22.2. Verify that installations with an existing facility or activity with stormwater discharges associated with industrial activity submit a complete NOI.

HI.W.22.3. Verify that installations with a proposed facility or activity with stormwater discharges associated with industrial activity submit a NOI no less than 90 days before the starting date of discharges.

HI.W.22.4. Verify that the terms and conditions of the permit are met.

(NOTE: The following discharges are not covered by this general permit:
- stormwater discharges regulated by existing individual NPDES permits
- stormwater discharges in categories for which stormwater effluent guidelines have been promulgated by USEPA
- stormwater discharges determined by the Director
- stormwater discharges associated with construction activity
- stormwater discharges from industrial facilities to a municipal separate stormwater drainage system, except if a permit, license, or written approval is granted
- stormwater discharges for which the Director has issued another general permit specific to that type of industrial activity
- stormwater discharges from a municipal separate stormwater drainage system.)

HI.W.23. Installations with generally permitted stormwater discharges associated with industrial activity must develop and implement a stormwater pollution control plan (HAR 11-55, Appendix B, 5(a) and (b)).

HI.W.23.1. Verify that the installation has developed and implemented a stormwater pollution control plan to minimize the discharge of pollutants in stormwater runoff and maintain compliance with the general permit.

HI.W.23.2. Verify that the stormwater pollution control plan identifies the following:

- pollutants presently in stormwater
- pollutant sources
- stormwater outfalls and monitoring points
- monitoring procedures
- pollutant control procedures
- spill prevention and response procedures.

HI.W.23.3. Verify that a copy of the plan was submitted to the Director within 120 days of obtaining coverage under the general permit.

HI.W.23.4. Verify that the plan was implemented within 180 days after being submitted to the Director.

HI.W.23.5. Verify that the stormwater pollution control plan is maintained onsite or at a nearby office.

HI.W.24. Installations must maintain and update their stormwater pollution control plan (HAR 11-55, Appendix B, 5(c), (d), and (e)(5)).

HI.W.24.1. Verify that the facility or activity is inspected at least semi-annually to ensure that the stormwater pollution control plan remains effective.

HI.W.24.2. Verify that records of inspections, findings, and any corrective action taken are maintained.

HI.W.24.3. Verify that the installation conducts employee education or training programs that ensure that the stormwater pollution control plan is efficiently implemented.

HI.W.24.4. Verify that the stormwater pollution control plan is reviewed and updated as necessary.

HI.W.24.5. Verify that the installation reports any changes in the plan to the Director within 30 days of the change.

HI.W.24.6. Verify that documentation of all changes to the plan are maintained.

HI.W.24.7. Verify that the stormwater pollution control plan and all accompanying records, reports, and changes are retained for at least 3 yr after the expiration of the permit.

WATER QUALITY MANAGEMENT

HI.W.25. The installation's stormwater pollution control plan must include specific information concerning potential pollution sources and spill prevention and responses (HAR 11-55 Appendix B 5(e)(1) through (3)).

HI.W.25.1. Verify that the stormwater pollution control plan has a site map that includes the following:

- drainage and discharge structures
- each stormwater outfall's drainage area
- paved areas, buildings, and other ground cover within those drainage areas
- past and present areas for outdoor storage or disposal of significant materials
- structural measures for the control of stormwater
- material loading and access areas
- where pesticides, herbicides, soil conditioners, and fertilizers are applied
- hazardous waste storage or disposal areas
- underground injection wells
- other surface water bodies.

HI.W.25.2. Verify that the stormwater pollution control plan identifies potential pollution sources and control strategies to minimize the discharge of pollutants.

HI.W.25.3. Verify that the stormwater pollution control plan includes a spill prevention and response plan that identifies facility personnel responsible for its implementation.

HI.W.25.4. Verify that personnel responsible for implementation of a spill prevention and response plan are available at all times when the facility is in operation.

HI.W.26. Installations with stormwater discharges associated with industrial activities must meet specific stormwater monitoring standards (HAR 11-55 Appendix B 5(e)(4) and 7(a)).

HI.W.26.1. Verify that the installation monitors the stormwater outfalls prior to mixing with receiving water or entering municipal separate stormwater drainage systems identified in the stormwater pollution control plan.

HI.W.26.2. Verify that monitoring is conducted at least annually for the effluent parameters listed in Table 11-2.

HI.W.26.3. Verify that the following pollutants are monitored, if applicable:

- pollutants limited under an individual NPDES permit issued to the facility for process water
- pollutants limited in an effluent guideline to which the industry is subject
- pollutants identified in the stormwater pollution control prevention plan.

HI.W.27. Installations that monitor stormwater associated with industrial activities must meet specific procedure standards (HAR 11-55 Appendix B 7(b)(1) and (2)).

HI.W.27.1. Verify that samples are collected from discharges resulting from a storm event that is greater than 0.1 in. in magnitude and occurs at least 72 h after any previous storm event of 0.1 in. or greater.

HI.W.27.2. Verify that runoff events resulting from snow or ice melt are not used to meet the minimum annual monitoring requirement.

HI.W.27.3. Verify that specific sampling techniques are used to monitor the following parameters:

- grab samples:
  - pH
  - temperature
  - cyanide
  - total phenols
  - residual chlorine
  - total recoverable petroleum hydrocarbons
  - oil and grease
  - bacterial counts
  - zylene and compounds in the volatile fraction of the total toxic organic parameter
- composite samples:
  - all other parameters, unless specified otherwise by the Division.

HI.W.27.4. Verify that grab samples are collected in the first 30 min of a storm event discharge.

HI.W.27.5. Verify that composite samples consist of at least three aliquotes taken during the first hour of a storm event discharge and are composited by time or flow-proportioned composite samples.

HI.W.27.6. Verify that the following information is collected for monitored storm events:

- date, duration, starting and ending times, and magnitude in inches
- total volume of stormwater discharged
- duration between storm events sampled
- the end of the previous measurable storm event.

HI.W.28. Installations that monitor stormwater associated with industrial activities must meet specific record-keeping standards (HAR 11-55, Appendix B, 7(b)(3)(C) and (b)(5)).

HI.W.28.1. Verify that the following information is recorded for each measurement or sample:

- the place, date, and time of sampling
- the person collecting the sample
- the date the analyses were performed
- the person(s) or laboratory who performed the analyses
- the analytical techniques or methods used
- the results of all required analyses.

HI.W.28.2. Verify that all records and information resulting from monitoring activities, the analyses performed, and the calibration and maintenance of instrumentation are retained for 3 yr.

(NOTE: The Department may require that records be retained longer than 3 yr.)

HI.W.29. Installations that monitor stormwater discharges associated with stormwater activities must meet specific reporting standards (HAR 11-55, Appendix B, 7(c)).

HI.W.29.1. Verify that all stormwater monitoring results are submitted annually and not later than 60 days after the end of each monitoring year.

HI.W.29.2. Verify that pollutant levels exceeding discharge limitations in Table 11-2 are reported to the Director within 30 days of becoming aware of the results, with an explanation of the pollutant's origin.

HI.W.29.3. Verify that monitoring years start on 15 October 1992 or as specified by the Division in writing.

(NOTE: If the discharger monitors any pollutant more frequently than required using approved analytical methods, the monitoring results must be included in the calculation and stormwater reporting.)

Stormwater Discharges and Construction

HI.W.30. Installations authorized by a general permit for stormwater discharges associated with construction activities must meet permit conditions (HAR 11-55, Appendix C, 1).

HI.W.30.1. Determine if the installation has been issued a general permit for discharges composed entirely of stormwater runoff associated with construction activity.

(NOTE: Permits are not required for areas of less than 5 acres that are not part of a larger common plan of development or sale.)

HI.W.30.2. Verify that an NOI was submitted by 1 October 1992 for existing sites with stormwater discharges associated with construction activity.

HI.W.30.3. Verify that the NOI is submitted no less than 90 days prior to proposed construction.

HI.W.30.4. Verify that permit terms and conditions are met.

(NOTE: The general permit does not apply to the following:
- stormwater discharges regulated by existing individual NPDES permits
- stormwater discharges in categories for which stormwater effluent limitation guidelines have been promulgated by USEPA
- stormwater discharges that the Director determines violates a water quality standard
- stormwater discharges from a construction activity to a municipal separate stormwater drainage system, except if a permit, license, or approval has been granted
- stormwater discharges that have been issued a general permit specific to that type of industrial activity
- stormwater discharges determined by the Director to be more appropriately regulated by an individual permit.)

WATER QUALITY MANAGEMENT

HI.W.31. Installations with construction sites covered by a general permit for stormwater runoff must have a site-specific best management plan to avoid violation of state water quality standards (HAR 11-55, Appendix C, 5(b)).

HI.W.31.1. Verify that a written site-specific plan is developed that details methods to minimize erosion of soil and the discharge of other pollutants into the waters of the state.

HI.W.31.2. Verify that the plan is maintained onsite and a copy is submitted to the Director.

HI.W.32. Installations that conduct land disturbance work that is authorized by a general permit for stormwater discharges associated with the construction activity must meet specific construction management standards (HAR 11-55, Appendix C, 6).

HI.W.32.1. Verify that the following construction management techniques are met for all permitted land disturbance work:

- clearing and grubbing are held to a minimum necessary for grading and equipment operation
- construction is sequenced to minimize the exposure time of the cleared surface area
- construction is staged or phased for large projects
- areas of one phase are stabilized before another phase is initiated
- stabilization is accomplished by temporarily or permanently protecting the disturbed soil surface from rainfall impacts and runoff
- erosion and sediment control measures are in place and functional before earth moving operations begin
- erosion and sediment control measures are constructed and maintained throughout the construction period
- if temporary erosion and sediment control measures are removed at the beginning of the work day, they are replaced afterwards
- all control measures are checked and repaired, as necessary, and at least weekly in dry periods and within 24 h after any rainfall of 0.5 in. within a 24-h period
- control measures are checked daily during prolonged rainfall
- records of all checks and repairs are maintained
- an individual is designated to be responsible for erosion and sediment controls on each project site.

WATER QUALITY MANAGEMENT

HI.W.33. Installations that conduct land disturbance work that is authorized by a general permit for stormwater discharges associated with the construction activity must meet specific vegetative and structural control standards (HAR 11-55, Appendix C, 6(b) and (c)).

HI.W.33.1. Verify that the following vegetative controls are met:

- preconstruction vegetative ground cover is not destroyed or removed or disturbed for more than 20 calendar days prior to grading or earth moving
- temporary soil stabilization with appropriate vegetation is applied on areas that will remain unfinished for more than 30 calendar days
- permanent soil stabilization with perennial vegetation is applied as soon as practical after final grading.

HI.W.33.2. Verify that the following structural controls are met:

- surface water flowing toward the construction area is diverted by using berms, channels, or sediment traps as necessary
- erosion and sediment control measures are designed according to the size and slope of disturbed or drainage areas to detain runoff and trap sediment
- water is discharged through a pipe or lined channel so that the discharge does not cause erosion
- muddy water pumped from excavation and work areas is held in settling basins or treated by filtration prior to its discharge into surface waters through a pipe or lined channel.

HI.W.34. Installations that conduct land disturbance work that is authorized by a general permit for stormwater discharges associated with the construction activity must meet monitoring standards of storm events (HAR 11-55, Appendix C, 7(a)).

HI.W.34.1. Verify that the following information is collected for monitored storm events:

- date, duration, starting and ending times, and magnitude in inches
- total volume of stormwater discharged
- duration between storm events sampled
- the end of the previous measurable storm event.

HI.W.35. Installations authorized by a general permit for stormwater discharges associated with construction activity must meet recordkeeping standards (HAR 11-55, Appendix C, 7(b)).

HI.W.35.1. Verify that records of monitoring, inspections, repair activities, and results, including all original strip chart recording for continuous monitoring instrumentation and calibration and maintenance records, are maintained for a minimum of 3 yr.

HI.W.36. Installations authorized by a general permit for stormwater discharges associated with construction activity must meet reporting standards (HAR 11-55, Appendix C, 7(c)).

HI.W.36.1. Verify that all stormwater monitoring results are submitted at least monthly and not later than the 28th day after the end of each monitoring month.

HI.W.36.2. Verify that monitoring results that exceed the effluent limitation are reported to the Director with an explanation of the pollutants' origin as soon as the results become available but in no case later than 30 days after the samples were taken.

HI.W.36.3. Verify that monitoring years start on 15 October 1992 or as specified by the Division in writing.

(NOTE: If the discharger monitors any pollutant more frequently than required using approved analytical methods, the monitoring results must be included in the calculation and stormwater reporting.)

UST Remedial Activities

HI.W.37. Installations authorized by a general permit for discharges of treated effluent from leaking underground storage tank (UST) remedial activities must meet specific permit standards (HAR 11-55, Appendix D, 1).

HI.W.37.1. Determine if the installation has a general permit issued to cover a facility where petroleum hydrocarbons have been released from USTs and the cleanup or remedial action involves a release or discharge of treated groundwater to surface waters.

HI.W.37.2. Verify that a NOI was submitted at least 90 days prior to the initiation of the discharge, and that the installation has a valid Notice of General Permit Coverage (NGPC).

(NOTE: This permit does not cover the discharges that enter a separate stormwater drainage system, unless a permit, license, or approval has been granted.)

HI.W.38. Installations issued a general permit for remedial action involving a UST must meet specific effluent monitoring standards (HAR 11-55, Appendix D, 4).

HI.W.38.1. Verify that the discharges are monitored and do not exceed the limitations specified in Table 11-3.

HI.W.38.2. Verify that no oil sheen is visible in the effluent.

HI.W.38.3. Verify that effluent samples are taken at the nearest accessible point after final treatment but prior to actual discharge or mixing with receiving waters.

HI.W.38.4. Verify that records of monitoring information include the following:

- the date, place, and time of sampling or measurements
- the individual who performed the sampling or measurement
- the date analyses were performed
- the individual responsible for performing the analyses
- the analytical technique or method used
- the results of the analyses.

(NOTE: If no discharge occurs during the previous monitoring period, a report to that effect must be submitted in lieu of a monitoring report.)

HI.W.38.5. Verify that violations of effluent daily maximum discharge limitations are reported.

HI.W.38.6. Verify that all reasonable steps are taken to minimize or prevent any discharge, use, or disposal of sludge or sediments in violation of the permit.

HI.W.38.7. Verify that sludge, sediments, or any other material generated by any treatment process is disposed of in a compliant manner that prevents its entrance into or pollution of any surface or subsurface waters.

HI.W.39. Installations issued a general permit for remedial action involving a UST must meet specific whole effluent toxicity monitoring standards (HAR 11-55, Appendix D, 5(a)).

HI.W.39.1. Verify that static or flow-through acute bioassays on composite effluent samples are conducted.

HI.W.39.2. Verify that the tests are conducted in 100 percent effluent for a period of 96 h unless the methods specify a shorter period.

HI.W.39.3. Verify that if static tests are used, the daily renewal solutions are fresh 24-h composite samples, unless the samples are shipped off-island to a contract laboratory, in which case one 24-h composite sample may be used for all renewals.

HI.W.39.4. Verify that the test results for each species used in effluent toxicity to freshwater and marine organisms test is reported in the monthly discharge monitoring reports.

(NOTE: Tests using locally available species may be conducted at ambient temperature.)

HI.W.40. Installations issued a general permit for remedial action involving a UST must meet species selection and whole effluent toxicity limitation standards (HAR 11-55, Appendix D, 5(b)).

HI.W.40.1. Verify that a list of three species selected for monitoring has been submitted to the Director and approved within 30 days after the initial commencement of the discharge.

HI.W.40.2. Verify that installations have obtained approval from the Director prior to changing the three species after the initial notification.

HI.W.40.3. Verify that monitoring is conducted, at a minimum, on one of the three selected species each month.

HI.W.40.4. Verify that the three selected species are rotated on a monthly basis.

HI.W.41. Installations that violate the entire effluent toxicity limitation must meet increased monitoring standards (HAR 11-55, Appendix D, 5(c)(1)).

HI.W.41.1. Verify that installations that violate the whole effluent toxicity limitation increase monitoring frequency and reporting to once per week.

HI.W.41.2. Verify that monitoring and reporting remain at once per week until the whole effluent toxicity limitation is met six consecutive times.

HI.W.42. Installations that violate the entire effluent toxicity limitation or are requested by the Director must submit a toxicity reduction evaluation plan (HAR 11-55, Appendix D, 5(c)(2)).

HI.W.42.1. Verify that installations that have failed to meet the whole effluent toxicity limitation two consecutive times during the weekly sampling or are requested by the Director have submitted a toxicity reduction evaluation plan.

HI.W.42.2. Verify that the toxicity reduction evaluation plan is submitted within 45 days of the second failure.

HI.W.42.3. Verify that the toxicity reduction evaluation plan includes a determination of the source of toxicity and an implementation schedule to meet the whole effluent toxicity limitation.

HI.W.42.4. Verify that the time frames of the approved plan are met.

(NOTE: The Director may require the installation to obtain an individual permit in order to incorporate the appropriate permit conditions and compliance schedules.)

HI.W.43. Installations issued a general permit for remedial action involving a UST must meet specific reporting standards (HAR 11-55 Appendix D, 6).

HI.W.43.1. Verify that any planned physical alterations or additions to the facility that do not meet the following criteria are reported to the Director on a quarterly basis:

- alterations or additions to the facility that meet the criteria for a facility that is a new source
- alterations or additions that significantly change the nature or increase the quantity of pollutants discharged
- alterations or additions that significantly change the sludge use or disposal practices and result in permit conditions that are different or absent from the existing permit.

HI.W.43.2. Verify that an annual summary of the quantities of all chemicals (including Material Safety Data Sheets) that are used for groundwater treatment and discharged are submitted to the Director by 28 January of each year.

HI.W.43.3. Verify that a schedule is submitted to the Director for approval at least 14 days prior to any maintenance of facilities that might result in exceedance of effluent limitations that includes the following:

- a description of the maintenance and purpose
- the period of maintenance
- steps taken or planned to reduce, eliminate, and prevent occurrence of noncompliance.

(NOTE: If the discharger monitors any pollutant more frequently than required using approved analytical methods, the monitoring results must be included in the calculation and stormwater reporting.)

Once-Through Cooling Water

HI.W.44. Installations authorized by a general permit for discharges of once-through cooling water with a total flow of less than 1 million gpd to surface waters must meet permit conditions (HAR 11-55, Appendix E, 1).

HI.W.44.1. Determine if the installation is authorized by a general permit for discharges of once-through cooling water with a total flow of less than 1 million gpd to surface waters.

HI.W.44.2. Verify that a NOI has been submitted at least 90 days prior to the date on which discharge was to begin, and that the installation received an NGPC.

HI.W.44.3. Verify that terms and conditions of the permit are met.

(NOTE: This general permit does not cover discharges from facilities that enter separate stormwater drainage systems, except when a permit, license, or written approval is granted from the owner of the system).

HI.W.45. Installations covered by a general permit must meet specific water monitoring standards (HAR 11-55, Appendix E, 5)

HI.W.45.1. Verify that the discharges are monitored and do not exceed the limitations specified in Table 11-4.

HI.W.45.2. Verify that records of monitoring information are maintained and include the date, time, duration, and volume of each discharge.

HI.W.45.3. Verify that for total suspended solids, both the influent and effluent are monitored concurrently.

HI.W.45.4. Verify that no oil sheen is visible in the effluent.

HI.W.45.5. Verify that there is no discharge of waste from the physical cleaning of the cooling system.

HI.W.45.6. Verify that there is no discharge of compounds used in closed-loop systems.

HI.W.45.7. Verify that influent samples are taken downstream from any additions to the source water and prior to the cooling system.

HI.W.45.8. Verify that effluent samples are taken downstream from the cooling system and prior to mixing with the receiving waters.

HI.W.46. Monitoring results must be reported to the Director of Health (HAR 11-55, Appendix E, 6).

HI.W.46.1. Verify that the monitoring results of the previous calendar month have been summarized and reported to the Director not later than the 28th day after the end of each monitoring month.

HI.W.46.2. Verify that each year the installation submits to the Director an annual summary of the quantities of all chemicals that are used in once-through cooling water treatment and that are discharged.

HI.W.46.3. Verify that the installation submits a schedule for approval by the Director at least 14 days prior to any maintenance of facilities which might result in exceedance of effluent limitations.

HI.W.46.4. Verify that the schedule has the following information:

- a description of the maintenance and its purpose
- the period of maintenance, including exact dates and times
- steps taken or planned to reduce, eliminate, and prevent occurrence of noncompliance.

(NOTE: If the discharger monitors any pollutant more frequently than required using approved analytical methods, the monitoring results must be included in the calculation and stormwater reporting.)

Hydrotesting

HI.W.47. Installations authorized by a general permit to discharge hydrotesting waters to surface waters must meet the permit conditions (HAR 11-55, Appendix F, 1).

HI.W.47.1. Determine if the installation has a general permit to discharge hydrotesting waters to surface waters, including water used to test the integrity of a tank or pipeline.

HI.W.47.2. Verify that installations applying for coverage under a general permit submit a complete NOI no later than 90 days before the start of activities or discharges.

HI.W.47.3. Verify that the terms and conditions of the permit are met.

Construction Activity Dewatering

HI.W.48. Installations authorized by a general permit for discharges from dewatering process construction activity must meet permit conditions (HAR 11-55, Appendix G, 1).

HI.W.48.1. Determine if the installation is authorized by a general permit for discharges from dewatering process construction activity of any size.

HI.W.48.2. Verify that installations applying for coverage under a general permit submit a complete NOI no later than 90 days before the start of activities or discharges.

HI.W.48.3. Verify that the terms and conditions of the permit are met.

HI.W.49. Installations authorized by a general permit for discharges from dewatering process construction activity must meet effluent monitoring standards (HAR 11-55, Appendix G, 5(a) through (c)).

HI.W.49.1. Verify that representative samples are collected at the end of effluent discharge points prior to entering the receiving water or municipal separate stormwater drainage systems.

HI.W.49.2. Verify that grab samples are used to monitor the following:

- pH
- temperature
- cyanide
- total phenols
- residual chlorine
- total recoverable petroleum hydrocarbons
- oil and grease
- bacterial counts
- zylene and compounds in the volatile fraction of the total toxic organic parameter.

HI.W.49.3. Verify that composite samples are used to monitor all other compounds, unless specified otherwise by the Director.

HI.W.49.4. Verify that the installation monitors the parameters and meets the discharge limitations, minimum monitoring frequency, and sampling type conditions listed in Table 11-5.

HI.W.49.5. Verify that visual inspections are made while the effluent discharge is in process to ensure there are no physical changes in effluent quality.

HI.W.49.6. Verify that the discharges are stopped if physical changes in effluent quality are observed and the Director is notified of the pollutant source(s) and proposed control and/or mitigative measures.

HI.W.50. Installations authorized by a general permit for discharges from dewatering process construction activity must meet recordkeeping standards (HAR 11-55, Appendix G, 5(d)(3) and 5(e)).

HI.W.50.1. Verify that the following information is recorded for each measurement or sample:

- the place, date, and time of sampling
- the person collecting the sample
- the date and time the analyses were performed
- the person(s) or laboratory who performed the analyses
- the analytical techniques or methods used
- the results of all required analyses.

HI.W.50.2. Verify that all records and information resulting from the monitoring activities required by the permit, including all records of analyses performed and calibration and maintenance of instrumentation is retained for a minimum of 3 yr or longer, if requested by the Director.

HI.W.51. Installations authorized by a general permit for discharges from dewatering process construction activities must meet reporting standards (HAR 11-55, Appendix G, 5(f)(1) and (2)).

HI.W.51.1. Verify that all monitoring results are submitted at least monthly and not later than the 28th day after the end of each monitoring month.

HI.W.51.2. Verify that monitoring results exceeding the discharge limitations and an explanation of the origins of these pollutants are reported to the Director within 24 h as the results become available.

(NOTE: If the discharger monitors any pollutant more frequently than required using approved analytical methods, the monitoring results must be included in the calculations and reporting.)

WATER PRIORITY CHEMICAL FACILITIES

(NOTE: Installations with specific facilities subject to Federal reporting requirements of *SARA*, Title III, Section 313 for chemicals classified as water priority chemicals must comply with the following requirements.)

HI.W.52. Installations that store or handle water priority chemicals must meet containment and drainage control standards (HAR 11-55, Appendix B, 6(a)).

HI.W.52.1. Determine if the installation has a facility that stores or handles water priority chemicals in reportable quantities.

(NOTE: The threshold amounts for reporting toxic chemicals under *SARA*, Title III, Section 313, Threshold for Reporting, are 10,000 lb of toxic chemicals per year used at a facility and 25,000 lb of toxic chemicals manufactured or processed at a facility.)

HI.W.52.2. Verify that one of the following preventive systems or its equivalent are used in water priority chemical storage, processing, or handling areas:

- curbing, culverting, gutters, sewers, or other forms of drainage control that prevents or minimizes the potential for stormwater run-on to contact significant sources of pollutants
- roofs, covers, or other forms of protection that prevent storage piles from exposure to stormwater and wind.

HI.W.52.3. Verify that the facility's stormwater prevention plan includes a complete discussion of applicable measures for water priority chemical storage and discharge minimization.

HI.W.53. Installations must meet tank or container standards for liquid storage areas where stormwater comes into contact with any equipment, tank container, or other vessel used for water priority chemicals (HAR 11-55, Appendix B, 6(c)(1)(A)).

HI.W.53.1. Verify that tanks or containers that store water priority chemicals are constructed of materials compatible with the material stored and the conditions of storage.

HI.W.54. Installations must meet secondary containment standards for liquid storage areas where stormwater comes into contact with any equipment, tank container, or other vessel used for water priority chemicals (HAR 11-55, Appendix B, 6(c)(1)(B)).

HI.W.54.1. Verify that secondary containment is provided sufficient to contain the capacity of the largest single container or tank in a drainage system where water priority chemicals are stored.

HI.W.54.2. Verify that if the secondary containment area and its upstream drainage system are subject to precipitation, an allowance for drainage from a 25-yr, 24-h precipitation event is provided over and above the volume necessary to contain the largest single tank or container.

HI.W.54.3. Verify that secondary containment is sufficiently impervious to contain spilled water priority chemicals until they can be removed and treated.

HI.W.54.4. Verify that if the plant treatment system is used to provide secondary containment, it is sufficient to provide an excess holding capacity to always hold the contents of the largest container in the drainage area plus the drainage from a 25-yr, 24-h precipitation event.

HI.W.55. Installations must meet material storage area standards for water priority chemicals other than liquids (HAR 11-55, Appendix B, 6(c)(2)).

HI.W.55.1. Verify that material storage areas for water priority chemicals other than liquids subject to runoff, leaching, or wind incorporate drainage or other control features to minimize stormwater contact with the water priority chemicals.

WATER QUALITY MANAGEMENT

HI.W.56. Installations must meet truck and rail car loading and unloading area standards for water priority chemicals (HAR 11-55, Appendix B, 6(c)(3)).

HI.W.56.1. Verify that truck and rail car loading and unloading areas of water priority liquid chemicals have sufficient secondary containment or treatment capacity to hold or treat the following which is loaded or unloaded at the facility:

- the largest tank truck or rail car
- if the tanks are compartmented, the largest compartment of a tank truck or rail car.

HI.W.56.2. Verify that if secondary containment is provided in the treatment system, the system has adequate hydraulic capacity to contain a spill of the largest allowance for drainage from a 25-yr, 24-h precipitation event.

HI.W.57. Installations where secondary containment is not feasible must develop and implement a spill contingency and integrity testing plan (HAR 11-55, Appendix B, 6(b)).

HI.W.57.1. Determine if the installation handles water priority chemicals where secondary containment is not feasible in liquid storage areas or truck and rail car loading and unloading areas.

HI.W.57.2. Verify that the installation has implemented a spill contingency and integrity testing plan that demonstrates that secondary containment is not economically achieved.

HI.W.57.3. Verify that the spill contingency part of the plan includes the following:

- a description of response plans
- personnel needs
- methods of mechanical containment
- steps for the removal of spilled water priority chemicals
- access and availability of absorbents and other equipment.

HI.W.57.4. Verify that the testing component of the plan provides for conducting integrity testing of storage tanks at least once every 5 yr and integrity and leak testing of valves and piping a minimum of every year.

HI.W.57.5. Verify that the plan includes an actual commitment of manpower, equipment, and materials required to expeditiously control and remove any quantity of water priority chemicals that may result in a toxic discharge.

WATER QUALITY MANAGEMENT

HI.W.58. Installations must meet piping, processing equipment, and material handling equipment standards for plant areas where water priority chemicals are handled (HAR 11-55, Appendix B, 6(c)(4)).

HI.W.58.1. Verify that the areas where water priority chemicals are transferred, processed, or otherwise handled have piping, processing equipment, and material handling equipment that are operated to prevent discharges of water priority chemicals.

HI.W.58.2. Verify that materials used in piping and equipment are compatible with the substances handled.

HI.W.58.3. Verify that storage areas for water priority chemicals feature drainage control that minimizes stormwater contact with water priority chemicals.

(NOTE: Additional protection may be necessary, such as covers or guards, to prevent wind blowing, spraying, or releases from pressure relief vents from causing a discharge of water priority chemicals into the drainage system.)

HI.W.59. Installations must meet drainage standards from areas where water priority chemicals are handled, stored, or loaded (HAR 11-55, Appendix B, 6(c)(5)).

HI.W.59.1. Verify that drainage from the areas where water priority chemicals are either stored, loaded, unloaded, or otherwise handled is restrained by valves or other positive means to prevent the discharge of a spill or excessive leakage of water priority chemicals into the drainage system.

(NOTE: Containment units may be emptied by pumps or ejectors that are manually activated.)

HI.W.59.2. Verify that drain valves used to drain containment areas are of manual, open and closed design, not the flapper type design.

HI.W.59.3. Verify that if drainage is not controlled by restrain valves or drain valves, the facility's final discharge of all in-facility storm sewers are equipped with a diversion system so that if an uncontrolled spill of water priority chemicals occurs, the spilled material is returned to the facility.

HI.W.59.4. Verify that records are maintained of the frequency and estimated volume of discharges from the containment areas.

WATER QUALITY MANAGEMENT

HI.W.60. Installations with runoff from any part of a facility that may contain water priority chemicals must meet discharge standards (HAR 11-55, Appendix B, 6(c)(6)).

HI.W.60.1. Verify that any runoff that may contain water priority chemicals or spills of water priority chemicals has the necessary drainage or control features to prevent discharge of spilled or improperly disposed material and ensure the mitigation of pollutants in runoff or leachate.

HI.W.61. Installations with water priority chemical facilities must meet inspection standards (HAR 11-55, Appendix B, 6(c)(7)).

HI.W.61.1. Verify that all areas of the facility are inspected at specific intervals for leaks or possible discharges of water priority chemicals, or direct contact of stormwater with raw materials, intermediate materials, waste materials, or products.

HI.W.61.2. Verify that inspections include examination for leaks, wind blowing, corrosion, support or foundation failure, or other forms of deterioration or noncontainment.

HI.W.61.3. Verify that inspection intervals are specified in the storm· ater control plan.

HI.W.61.4. Verify that if leaks or conditions that may result in a significant release of water priority chemicals to the drainage systems are discovered, corrective action is immediately taken or the unit or process is shut down until corrective action can be taken.

HI.W.61.5. Verify that any contaminated soil or debris is promptly removed and disposed in accordance with applicable requirements.

HI.W.62. Installations with water priority chemical facilities must meet operational safety standards (HAR 11-55, Appendix B, 6(c)(8) through (10)).

HI.W.62.1. Verify that access to the facility is limited by fencing, lighting, vehicular traffic control and equipment, and building security to prevent accidental or intentional entry that could cause a discharge.

HI.W.62.2. Verify that facility employees and contractor personnel that work in areas where water priority chemicals are used or stored are trained in and informed about preventive measures.

HI.W.62.3. Verify that employee training is conducted at intervals specified in the plan but not less than once per year in matters of pollution control laws and regulations and in the stormwater pollution control plan.

HI.W.62.4. Verify that the plan designates a person who is accountable for spill prevention at the facility and has set up the necessary spill emergency procedures and reporting requirements.

HI.W.62.5. Verify that spill and emergency release procedures include isolation and containment to prevent a discharge of water priority chemicals.

HI.W.62.6. Verify that any contractor or temporary personnel are informed of facility operation and design features in order to prevent discharges or spills from occurring.

HI.W.62.7. Verify that the facility's stormwater pollution prevention plan is reviewed by a registered professional engineer and certified that the plan meets good engineering practices.

HI.W.62.8. Verify that the plan is recertified every 3 yr.

WATER AND SHORELINE QUALITY

HI.W.63. State waters are subject to monitoring and must meet established water quality standards (HAR 11-54-04(a) and (b)(2)).

(NOTE: State waters are classified by use. See Table 11-6 for these classifications.)

HI.W.63.1. Verify that the installation meets the general water quality criteria listed in Table 11-1.

HI.W.63.2. Verify that all state waters are free from pollutants in concentrations that exceed the acute standards given in Table 11-7.

HI.W.63.3. Verify that all state waters are free from pollutants in concentrations that on average during any 24-h period exceed the chronic standards given in Table 11-7.

HI.W.63.4. Verify that all state waters are free from pollutants in concentrations that on average during any 30-day period exceed the fish consumption standards for noncarcinogens given in Table 11-7.

HI.W.63.5. Verify that all state waters are free from pollutants in concentrations that on average during any 12-mo period exceed the fish consumption standards for carcinogens given in Table 11-7.

HI.W.64. Waters, for which quality is higher than established water quality standards, must not be lowered in quality unless approved by the Director of Health (HAR 11-54-01.1).

HI.W.64.1. Verify that the installation does not decrease the water quality without the approval of the Director of Health.

HI.W.65. A water quality certification is required for any discharges (HAR 11-54-09.1).

HI.W.65.1. Verify that the installation has certification for discharges and operates within the required conditions.

HI.W.66. Water quality analyses must be performed by an approved laboratory (HAR 11-54-10).

HI.W.66.1. Verify that the laboratory used for water quality analyses has been approved by the Department of Health.

HI.W.67. Inland water areas must be protected (HAR 11-54-05.1 and 11-54-05.2(a)).

HI.W.67.1. Verify that the installation does not discharge into any water areas in the following classes:

- Class 1.a includes:
  - all inland waters in preserves, reserves, sanctuaries, and refuges established by the Department of Land and Natural Resources under Chapter 195, HRS, or similar reserves for the protection of aquatic life established under Chapter 195, HRS
  - all inland waters in national and state parks

- all inland waters in state or Federal fish and wildlife refuges
- all inland waters which have been officially identified as a unique or critical habitat for threatened or endangered species
- Waimanu Estuarine Sanctuary (Hawaii); Kilauea and Lumahai estuaries (Kauai)

- Class 1.b includes all inland waters in protective subzones
- Class 2 includes all inland water areas not otherwise classified. Waipio (Hawaii) and Pearl Harbor estuaries are included in this class.

HI.W.67.2. Verify that the installation does not discharge wastes into any natural lakes, including natural saline lakes and anchialine pools.

HI.W.68. Installations with streams must meet specific water quality standards (HAR 11-54-05.2(b)).

HI.W.68.1. Determine if the installation has any discharges into any streams.

HI.W.68.2. Verify that the installation does not exceed the water column criteria for streams in Table 11-8.

HI.W.68.3. Verify that the streams do not exceed the following bottom standards:

- episodic deposits of floodborne soil sediment do not occur in quantities exceeding an equivalent thickness of 5 mm (0.20 in.) over hard bottoms 24 h after a heavy rainstorm
- episodic deposits of floodborne soil sediment do not occur in quantities exceeding an equivalent thickness of 10 mm (0.40 in.) over soft bottoms 24 h after a heavy rainstorm
- for soft bottom material in pool sections of streams, the oxidation-reduction potential (EH) in the top 10 cm (4 in.) is not less than +100 millivolts (mV)
- for soft bottom material in pool sections of streams, no more than 50 percent of the grain size distribution of sediment is smaller than 0.125 mm (0.005 in.) in diameter.

HI.W.69. Installations with elevated wetlands must meet specific water quality standards (HAR 11-54-05.2(c)).

HI.W.69.1. Verify that the pH in elevated wetlands meets the following standards:

- does not deviate more than 0.5 units from ambient conditions
- does not fall below 4.5 nor rise above 7.0 units.

WATER QUALITY MANAGEMENT

HI.W.70. Installations with estuaries must meet specific water quality standards (HAR 11-54-05.2(d)).

HI.W.70.1. Verify that estuaries do not exceed the criteria specified in Tables 11-9 and 11-10.

HI.W.71. Installations with embayments must meet specific water quality standards (HAR 11-54-06(a)).

HI.W.71.1. Determine if the installation discharges into any embayments in the classes listed in Table 11-11.

HI.W.71.2. Verify that the embayments do not exceed the criteria specified in Table 11-12.

HI.W.72. Installations with open coastal waters must meet specific water quality standards (HAR 11-54-06(b)).

HI.W.72.1. Determine if the installation discharges into any open coastal waters in the classes shown in Table 11-13.

HI.W.72.2. Verify that open coastal waters meet the criteria specified in Table 11-14.

HI.W.73. Installations with oceanic waters must meet specific standards (HAR 11-54-06(c)).

HI.W.73.1. Determine if the installation discharges into any oceanic waters.

HI.W.73.2. Verify that oceanic waters meet the criteria given in Table 11-15.

HI.W.74. Installations must meet protection standards for sand beaches (HAR 11-54-07(a)).

HI.W.74.1. Verify that sand beaches meet the following criteria:

- episodic deposits of floodborne sediment do not occur in quantities exceeding an equivalent thickness of 10 mm (0.40 in.) 24 h after a heavy rainstorm
- oxidation-reduction potential (EH) in the uppermost 10 cm (4 in.) of sediment is not less than +100 mV
- no more than 50 percent of the grain size distribution of sediment is smaller than 0.125 mm in diameter.

WATER QUALITY MANAGEMENT

HI.W.75. Installations must meet protection standards for lava rock shoreline and solution benches (HAR 11-54-07(b)).

HI.W.75.1. Verify that episodic deposits of floodborne sediment do not occur in quantities exceeding an equivalent thickness of 5 mm (0.20 in.) for longer than 24 h after a heavy rainstorm.

HI.W.76. Installations with marine pools and protected coves must meet specific standards (HAR 11-54-07(c)).

HI.W.76.1. Verify that the installation meets the following standards for marine pools and protected coves:

- for marine pools and coves with sand bottoms, the oxidation-reduction potential (EH) in the uppermost 10 cm (4 in.) of sediment is not less than +100 mV
- for marine pools and coves with sand bottoms, no more than 50 percent of the grain size distribution of the sediment is smaller than 0.125 mm in diameter
- episodic deposits of floodborne soil sediment do not occur in quantities exceeding equivalent thicknesses for longer than 24 h following a heavy rainstorm according to the following:
  - no thicker than an equivalent of 5 mm (0.20 in.) on hard bottoms
  - no thicker than an equivalent of 10 mm (0.40 in.) on soft bottoms.

HI.W.77. Installations must meet protection standards for artificial basins and soft bottom communities (HAR 11-54-07(d)).

HI.W.77.1. Verify that the oxidation-reduction potential (EH) in the uppermost 10 cm (4 in.) of sediment is not less than -100 mV.

HI.W.78. Installations must meet protection standards for reef flats and reef communities (HAR 11-54-07(e)).

HI.W.78.1. Determine if the installation has reef flats or reef communities in the classes specified in Table 11-16.

HI.W.78.2. Verify that the installation does not undertake any actions that would substantially risk damage, impairment, or alteration of the biological characteristics of reef flats or reef communities.

HI.W.78.3. Verify that the following criteria are not violated:

- no action is taken that would risk damage or alteration of the biological characteristics
- oxidation-reduction potential (EH) in the uppermost 10 cm (4 in.) of sand patches is not less than +100 mV
- episodic deposits of floodborne soil sediment do not occur in quantities exceeding equivalent thicknesses for longer than 24 h after a heavy rainstorm as follows:
  - no thicker than an equivalent of 2 mm (0.08 in.) on living coral surfaces
  - no thicker than an equivalent of 5 mm (0.2 in.) on other hard bottoms
  - no thicker than an equivalent of 10 mm (0.4 in.) on soft bottoms.

HI.W.79. Installations with inland recreation areas must meet specific water quality standards (HAR 11-54-08(a)).

HI.W.79.1. Verify that fecal coliform in inland recreational waters does not exceed the following standards during any 30-day sampling period:

- 200/100 mL in ten or more samples
- 400/100 mL in 10 percent of the samples.

HI.W.79.2. Verify that raw, inadequately treated sewage, sewage that has an unknown degree of treatment, or other pollutants determined by the Director to be of public health significance are not present in natural public swimming, bathing, or wading areas.

HI.W.80. Installations with marine recreational areas must meet specific water quality standards (HAR 11-54-08(b)).

HI.W.80.1. Verify that the enterococci content of marine recreational waters within 300 m (1000 ft) of the shorelines does not exceed a geometric mean of 7/100 mL in greater than five samples collected during a 25 to 30-day period.

HI.W.80.2. Verify that at locations where sampling is less frequent than five samples per 25 to 30 days, if one sample exceeds the standard by a factor of 10 or more, sampling is repeated until it is possible to determine the cause of the high bacterial counts.

HI.W.80.3. Verify that raw, inadequately treated sewage, sewage that has an unknown degree of treatment, or other pollutants determined by the Director to be of public health significance are not present in natural public swimming, bathing, or wading areas.

HI.W.81. Approval must be granted for zones of mixing (HAR 11-54-09).

HI.W.81.1. Determine if the installation has any zones of mixing.

HI.W.81.2. Verify that the discharge is within the conditions under which the zone of mixing was approved.

HI.W.81.3. Verify that the Director of Health is notified within 30 days of the permanent discontinuance of a discharge and the zone of mixing is terminated 30 days after the notification is received.

DRINKING WATER

ALL INSTALLATIONS

HI.W.82. Installations must install backflow prevention devices on the consumer side of the connection with the potable water source (HAR 11-21-5).

HI.W.82.1. Verify that the installation has installed backflow prevention devices on the consumer side of the connections to the potable water source as close to the water meter as possible.

HI.W.82.2. Verify that the backflow prevention device is not installed underground or in a vault without written approval by the Director.

(NOTE: The backflow prevention device should be installed according to the backflow preventor manufacturer's directions and in an easily accessible location.)

HI.W.82.3. Verify that the installation maintains all backflow preventors on the premises in good working order.

WATER QUALITY MANAGEMENT

HI.W.83. Installations must eliminate or protect any existing cross-connections between a public water system and any secondary water system by means of an approved backflow preventor (HAR 11-21-6).

HI.W.83.1. Determine if the installation utilizes a secondary water system.

HI.W.83.2. Verify that the installation has eliminated or protected all existing cross-connections between a public water system and any secondary water system.

PUBLIC WATER SYSTEMS

NEW SOURCES OF RAW WATER

HI.W.84. New raw drinking water sources for public water systems must be approved before use (HAR 11-20-29(a)).

HI.W.84.1. Determine if the installation is currently developing or has plans to develop a new raw water source.

HI.W.84.2. Verify that the installation is working with state and county agencies to obtain required approvals.

HI.W.84.3. Verify that the installation has not utilized a new source of raw water for a public water system without approval from the Director.

NEW OR MODIFIED PUBLIC WATER SYSTEMS

HI.W.85. New or substantially modified public water systems must be inspected and certified prior to delivering water to any user (HAR 11-20-30).

HI.W.85.1. Verify that the installation obtains a certificate of inspection and compliance from the Department for new or substantially modified public water systems prior to use.

WATER QUALITY MANAGEMENT

INORGANIC CHEMICAL MONITORING

HI.W.86. Installations with community, nontransient noncommunity, or transient noncommunity water systems must meet specific sampling standards for inorganic chemicals (HAR 11-20-11(a)).

HI.W.86.1. Verify that installations that monitor inorganic chemicals and utilize groundwater take a minimum of one sample at every entry point to the distribution system that is representative of each well after treatment beginning in the compliance period starting 1 January 1993.

HI.W.86.2. Verify that installations that monitor inorganic chemicals and utilize surface water take a minimum of one sample at every entry point to the distribution system after any application of treatment beginning in the compliance period beginning 1 January 1993.

(NOTE: Surface water systems include systems with a combination of surface and ground sources.)

HI.W.86.3. Verify that if the installation operates a water system that draws water from more than one source and the sources are combined before distribution, the system samples at an entry point to the distribution system during periods of normal operating conditions.

HI.W.87. Installations with public water systems must not exceed maximum contaminant levels (MCLs) for nitrate. (HAR 11-20-3(a) and (d)).

HI.W.87.1. Verify that public water systems do not exceed a nitrate (as N) level of 10.0 mg/L unless otherwise allowed by the Department.

HI.W.88. Public water systems must meet specific monitoring standards for nitrate (HAR 11-20-11(e) and (o)).

HI.W.88.1. Verify that installations that operate a public water system conduct monitoring to determine compliance with the MCL for nitrate according to the following requirements:

- community and nontransient noncommunity water systems served by groundwater systems must monitor annually beginning 1 January 1993

- community and nontransient noncommunity water systems served by surface water must monitor quarterly beginning 1 January 1993
- community and nontransient noncommunity water systems that utilize groundwater that have one sample in which the concentration is greater than 50 percent of the MCL must conduct repeat monitoring quarterly for at least a year after the occurrence
- each transient, noncommunity water system must monitor annually beginning 1 January 1993
- after the initial round of quarterly sampling, each community and nontransient noncommunity system which is monitoring annually must take subsequent samples during the quarter(s) which previously resulted in the highest analytical result.

HI.W.88.2. Verify that installations that operate a public water system conduct monitoring to determine compliance with the MCL for nitrite according to the following requirements:

- all public water systems must take one sample at each sampling point in the compliance period beginning 1 January 1993 and ending 31 December 1995
- after the initial sample, systems where an analytical result for nitrite is less than or equal to 50 percent of the MCL must monitor at a frequency specified by the Director
- community and nontransient noncommunity water systems that have one sample in which the concentration is greater than 50 percent of the MCL must conduct repeat monitoring quarterly for at least a year after the occurrence
- systems that monitor annually must take each subsequent sample during the quarter(s) which previously resulted in the highest analytical result.

HI.W.88.3. Verify that water systems with a sample that exceeds the nitrate or nitrite MCL do one of the following:

- collect a confirmation sample within 24 h
- if the water system is unable to collect a confirmation sample within 24 h, the consumers are immediately notified and within 2 weeks a confirmation sample is analyzed.

HI.W.88.4. Verify that if the mean of the original sample and the confirmation sample exceeds the MCL for nitrate, the Director and the public is notified.

WATER QUALITY MANAGEMENT

HI.W.89. Installations with community and nontransient noncommunity water systems must not exceed the MCLs for inorganic chemicals other than nitrate (HAR 11-20-3(a) through (c)).

HI.W.89.1. Verify that community and nontransient noncommunity water systems do not exceed the MCLs for inorganic chemicals listed in Table 11-17.

HI.W.89.2. Verify that community water systems do not exceed the MCLs for fluoride in Table 11-18 for the specified maximum daily air temperature for the location of the water system.

HI.W.90. Community and nontransient noncommunity water systems must meet the monitoring frequency standards for asbestos (HAR 11-20-11(b)).

HI.W.90.1. Verify that community and nontransient noncommunity water systems monitor for asbestos during the first 3-yr compliance period of each 9-yr compliance cycle starting 1 January 1993, unless granted a waiver by the Director.

HI.W.90.2. Verify that systems that exceed the MCL for asbestos monitor quarterly beginning in the next quarter after the violation.

HI.W.91. Community and nontransient noncommunity water systems must meet the monitoring frequency standards for specific inorganic chemicals (HAR 11-20-11(c)).

HI.W.91.1. Verify that the water system meets the following monitoring standards for barium, cadmium, chromium, fluoride, mercury, and selenium:

- groundwater systems collect one sample at each sampling point during each compliance period beginning in the compliance period starting 1 January 1993
- surface water systems collect one sample annually at each sampling point beginning 1 January 1993
- systems that exceed the MCLs for these inorganic chemicals monitor quarterly beginning in the next quarter after the violation occurred.

WATER QUALITY MANAGEMENT

ORGANIC CHEMICAL MONITORING

HI.W.92. Installations with community or nontransient noncommunity water systems must not exceed the MCLs for organic chemicals (HAR 11-20-4(a)).

HI.W.92.1. Verify that community water systems do not exceed an MCL of 0.0002 mg/L for chlorinated hydrocarbons (endrin).

HI.W.92.2. Verify that community water systems that serve a population of 10,000 or more individuals and add a disinfectant (oxidant) to the water do not exceed a TTHM level of 0.10 mg/L.

(NOTE: TTHM refers to the sum of the concentrations of bromodichloromethane, dibromochloromethane, tribromomethane (bromoform), and trichloromethane (chloroform).)

HI.W.92.3. Verify that installations with community or nontransient noncommunity water systems do not exceed the MCLs for the organic contaminants specified in Table 11-19.

(NOTE: Compliance for the organic MCLs in Group I of Table 11-19 is determined on the results of a running annual average of quarterly sampling for each sampling location.)

HI.W.92.4. Verify that the analysis for contaminants in Group II of Table 11-19 consists of a minimum of one sample at points in the distribution system that are representative of each source or at each entry point to the distribution system after treatment, with each sample taken at the same sampling point, unless conditions make another sampling point more representative of each source or treatment plant.

HI.W.92.5. Verify that for the organic MCLs in Group II of Table 11-19, the installation meets the following monitoring frequency:

- each community and nontransient noncommunity water system must take four consecutive quarterly samples for each contaminant during each compliance period
- systems serving greater than 3300 persons which do not detect a contaminant in the initial compliance period may reduce the sampling frequency to a minimum of two quarterly samples in 1 yr during each repeat compliance period
- systems serving greater than or equal to 3300 persons which do not detect a contaminant in the initial compliance period may reduce the sampling frequency to a minimum of one sample during each repeat compliance period.

HI.W.92.6. Verify that if an organic contaminant listed in Group II of Table 11-19 is detected in any sample, the installation monitors quarterly at each sampling point which resulted in a detection, until the Director determines the system is reliably and consistently below the MCL.

HI.W.93. Community water systems must meet the monitoring standards for endrin (HAR 11-20-12(a) through (c)).

HI.W.93.1. Verify that community water systems that utilize surface water sources, analyze for endrin during the period of the year designated by the Director and is repeated at least every 3 yr or more frequently if determined by the Director.

(NOTE: Community water systems that utilize groundwater sources must analyze for endrin as specified by the Director.)

HI.W.93.2. Verify that if the MCL for endrin is exceeded, the supplier of water notifies the Director in writing within 7 days and initiates three additional analyses within 1 mo.

HI.W.93.3. Verify that if the average of the four analyses exceeds the MCL for endrin, the following is done:

- the Director and the public is notified
- monitoring is conducted at a frequency designated by the Director until the MCL has not been exceeded in two successive samples or until a monitoring schedule becomes effective.

HI.W.94. Community and nontransient noncommunity water systems must meet the monitoring standards for the organic chemicals listed in Group I of Table 11-19 beginning 1 January 1993 (HAR 11-20-12(f)).

HI.W.94.1. Verify that groundwater systems take a minimum of one sample at every entry point to the distribution system that is representative of each well after treatment.

HI.W.94.2. Verify that surface water systems take a minimum of one sample at points in the distribution system that are representative of each source or at each entry point to the distribution system after treatment.

HI.W.94.3. Verify that if the system draws water from more than one source and the sources are combined before distribution, the system must sample at an entry point to the distribution system during periods of normal operating conditions.

HI.W.94.4. Verify that the water system takes four consecutive quarterly samples for each organic contaminant during the compliance period starting 1 January 1993.

(NOTE: If initial monitoring for the organic contaminants of Group I in Table 11-19 has been completed by 31 December 1992 and none were detected, the water system can collect one sample annually beginning 1 January 1993.)

HI.W.94.5. Verify that water systems that detect an organic contaminant that exceeds 0.0005 mg/L in any sample monitor quarterly at each sampling point that resulted in a detection.

HI.W.94.6. Verify that groundwater systems that have detected one or more of the following two-carbon organic compounds monitor quarterly for vinyl chloride at each sampling point that resulted in a detection:

- trichloroethylene
- tetrachloroethylene
- 1-2-dichloroethane
- 1,1,1-trichloroethane
- cis-1,2-dichloroethylene
- trans-1,2-dichloroethylene
- 1,1-dichloroethylene.

HI.W.94.7. Verify that systems that violate the MCL for Group I organic chemicals in Table 11-19 monitor quarterly until the Director determines that the system is reliable.

HI.W.95. Community and nontransient noncommunity water systems that were in operation before 1 January 1993 must meet specific monitoring standards for Group I organic chemicals 1 through 8 listed in Table 11-19 (HAR 11-20-12(g)).

HI.W.95.1. Verify that groundwater systems sample at points of entry to the distribution system representative of each well after any application of treatment.

HI.W.95.2. Verify that surface water systems sample at points in the distribution system representative of each source or at entry points to the distribution system after any application of treatment.

HI.W.95.3. Verify that sampling is conducted at the same location or a more representative location every 3 mo.

HI.W.95.4. Verify that if the system draws water from more than one source and sources are combined before distribution, the system must sample at an entry point to the distribution system during periods of normal operating conditions.

HI.W.95.5. Verify that groundwater systems that have detected one or more of the following two-carbon organic compounds monitor quarterly for vinyl chloride at each entry point that resulted in a detection:

- trichloroethylene
- tetrachloroethylene
- 1-2-dichloroethane
- 1,1,1-trichloroethane
- cis-1,2-dichloroethylene
- trans-1,2-dichloroethylene
- 1,1-dichloroethylene.

SPECIAL MONITORING FOR INORGANIC AND ORGANIC CHEMICALS

HI.W.96. Installations which operate community or nontransient noncommunity water systems must monitor for special inorganic and organic chemicals (HAR 11-20-37).

HI.W.96.1. Verify that the installation monitors for the special inorganic and organic chemicals listed in Table 11-20.

HI.W.96.2. Verify that systems which utilize surface water sample at points in the distribution system representative of each water source or at entry points to the distribution system after any application of treatment.

HI.W.96.3. Verify that systems which utilize groundwater sample at points of entry to the distribution system of each well after any application or treatment (a minimum of one sample per entry point must be collected).

HI.W.96.4. Verify that community and nontransient noncommunity water systems repeat the monitoring no less frequently than every 5 yr.

MONITORING FOR SODIUM

HI.W.97. Installations which operate a community public water system must collect and analyze for sodium concentration levels (HAR 11-20-33).

HI.W.97.1. Verify that the installation collects and analyzes one sample per plant at the entry point of the distribution system for the determination of sodium concentration levels.

HI.W.97.2. Verify that the installation samples annually for public water systems utilizing solely surface water sources in whole or in part and at least every 3 yr for public water systems utilizing groundwater sources.

HI.W.97.3. Verify that the installation reports to the Director the results of the analyses for sodium within the first 10 days of the month following the month in which the sample results were received or within the first 10 days following the end of the required monitoring period.

HI.W.97.4. Verify that the installation notifies the appropriate local and state public health officials of the sodium levels by written notification by direct mail within 3 mo.

TURBIDITY MONITORING

(NOTE: These turbidity monitoring requirements apply to all public water systems in operation after 29 June 1993.)

HI.W.98. Public water systems must not exceed specific MCLs for turbidity (HAR 11-20-5(b) and 11-20-10(b)).

HI.W.98.1. Verify that the turbidity level is less than or equal to the applicable value in 95 percent of the measurements taken every month, and does not exceed 5 NTU at any time for the following filter units:

- conventional treatment, direct filtration, and other filtration technologies, 0.5 NTU
- slow sand and diatomaceous earth, 1.0 NTU.

HI.W.98.2. Verify that the turbidity samples are collected at the filtration plant effluent or immediately prior to entry into the distribution system.

(NOTE: Sampling of the plant effluent is acceptable if there are no storage tanks between the sampling point and entry into the distribution system.)

HI.W.98.3. Verify that water systems with conventional treatment, direct, or diatomaceous earth filtration monitor turbidity by continuous monitoring or the collection of grab samples every 4 h.

MICROBIOLOGICAL MONITORING

HI.W.99. Installations must meet specific requirements for maximum microbiological contaminant levels (HAR 11-20-6(a) through (c)).

(NOTE: The MCL is based on the presence or absence of total coliforms in a sample, rather than coliform density.)

HI.W.99.1. Verify that for systems that collect 40 samples or more per month, no more than 5.0 percent of the samples collected during the month are *total coliform-positive.*

HI.W.99.2. Verify that for systems that collect less than 40 samples per month, no more than one sample collected during the month is total coliform-positive.

HI.W.99.3. Verify that if the installation has any fecal coliform-positive repeat sample or any total coliform-positive repeat sample following a fecal coliform-positive routine sample, the installation notifies the public.

(NOTE: Any fecal coliform-positive repeat sample or any total coliform-positive repeat sample following a fecal coliform-positive routine sample constitutes an acute violation.)

HI.W.99.4. Verify that the supplier of water determines compliance with the MCL for total coliforms for each month it is required to monitor for total coliforms.

HI.W.100. Installations which are suppliers of water must collect total coliform samples according to specific requirements (HAR 11-20-9(a)).

HI.W.100.1. Verify that the installation collects total coliform samples at sites which are representative of water throughout the distribution system according to a written sample siting plan.

HI.W.100.2. Verify that the installation collects total coliform samples at the applicable frequency in Table 11-21, based on population served by the system.

HI.W.100.3. Verify that the installation collects samples at regular time intervals throughout the month.

(NOTE: A system which uses only groundwater and serves 4900 persons or fewer may collect all required samples on a single day if the samples are taken from different sites and prior approval by the Director is obtained.)

HI.W.101. Installations must meet specific repeat monitoring if a routine sample it found to be total coliform-positive (HAR 11-20-9(b)).

HI.W.101.1. Verify that if a routine sample is total coliform-positive, the installation collects a set of repeat samples within 24 h of being notified of the positive result.

HI.W.101.2. Verify that the following number of repeat samples are collected:

- suppliers that normally collect more than one routine sample per month, collect at least three repeat samples for each total coliform-positive sample found
- suppliers that normally collect one routine sample per month, collect at least four repeat samples for each total coliform-positive sample found.

HI.W.101.3. Verify that repeat sampling meets the following collection standards:

- at least one repeat sample from the sampling tap where the original total coliform-positive sample was collected
- at least one repeat sample from a tap within five service connections upstream
- at least one repeat sample from a tap within five service connections downstream of the original sampling site.

(NOTE: A system with a single service connection may take all repeat samples from the same sample tap.)

HI.W.101.4. Verify that the installation collects all repeat samples on the same day.

HI.W.101.5. Verify that if one or more repeat samples in the set is total coliform-positive, the supplier collects an additional set of repeat samples, within 24 h of the notification of the coliform-positive result, unless the installation determines that the MCL for total coliforms has been exceeded and the Director is notified.

HI.W.101.6. Verify that if the installation normally collects fewer than five routine samples per month and has one or more total coliform-positive samples, the installation collects at least five routine samples during the next month the system provides water to the public.

HI.W.101.7. Verify that the installation includes all results of routine and repeat samples in determining compliance with the MCL for total coliforms.

(NOTE: A sample which has been invalidated by the Director may not be used towards meeting the minimum monitoring requirements.)

HI.W.102. Installations that collect four or fewer routine samples per month must conduct a sanitary survey (HAR 11-20-9(d)).

HI.W.102.1. Verify that installations with a community public water system undergo an initial sanitary survey by 29 June 1994 and undergo another sanitary survey every 5 yr thereafter.

HI.W.102.2. Verify that installations with a noncommunity water system undergo an initial sanitary survey by 24 June 1999 and undergo another sanitary survey every 5 yr thereafter.

(NOTE: Noncommunity water systems using only protected and disinfected groundwater must undergo subsequent sanitary surveys at least every 10 yr after the initial sanitary survey.)

HI.W.102.3. Verify that sanitary surveys are performed by the state or an agent approved by the Director.

HI.W.103. Installations must meet specific requirements to monitor for fecal coliform (HAR 11-20-9(e)(1)).

HI.W.103.1. Verify that if any routine or repeat sample is total coliform-positive, the laboratory analyzes the total coliform-positive culture medium to determine if fecal coliforms are present.

HI.W.104. Installations which have positive results for total coliforms or fecal coliforms must meet specific requirements (HAR 11-20-9(f)).

HI.W.104.1. Verify that when a positive result for total coliforms or fecal coliforms occurs, the positive result is reported to the Director.

HI.W.104.2. Verify that when a public water system has a fecal coliform-positive result, the installation issues a boil water notice to all affected consumers according to the following requirements:

- the boil water order is issued no later than 24 h after the system has been notified of the positive fecal coliform result
- the boil water notice is in effect until negative total coliform results are obtained from the affected tap and from all other required repeat sample sites.

HI.W.105. Installations that exceed the MCL for total coliforms must meet specific requirements (HAR 11-20-9(g)).

HI.W.105.1. Verify that if the installation exceeds the MCL for total coliforms, the violation is reported to the Director no later than the end of the next business day after learning of the violation.

HI.W.105.2. Verify that if the installation fails to comply with a coliform monitoring requirement, including the sanitary survey requirement, the monitoring violation is reported to the Director within 10 days and the public is notified.

RADIONUCLIDE MONITORING

HI.W.106. Community water systems must not exceed the MCL for radionuclides (HAR 11-20-7 and HAR 11-20-13(b)).

HI.W.106.1. Verify that community water systems do not exceed the following MCLs for gross alpha particle radioactivity:

- combined radium-226 and radium-228, 5 pCi/L

- gross alpha particle activity including radium-226 but excluding radon and uranium, 15 pCi/L.

HI.W.106.2. Verify that community water systems do not exceed the following MCLs for beta particle and photon radioactivity from manmade radionuclides:

- the average annual concentration of radioactivity does not produce an annual dose equivalent to the total body or any internal organ greater than 4 mrem/yr
- the specified total body or organ dose of 4 mrem/yr for tritium and strontium-90 listed in Table 11-22
- except for tritium and strontium-90, if two or more radionuclides are present, the sum of their annual dose equivalent to the total body or to any organ does not exceed 4 mrem/yr.

HI.W.106.3. Verify that the installation monitors for radioactivity in community water systems at the following frequencies:

- for gross alpha particle activity, radium-226, and radium-228, compliance is based on the analysis of an annual composite of four consecutive quarterly samples and is conducted at least once every 4 yr
- for manmade radioactivity, systems using surface water sources and serving more than 100,000 persons, compliance is based on analysis of a composite of four consecutive quarterly samples and is conducted at least once every 4 yr.

ADDITIVES

HI.W.107. Installations that operate a public water system must not add direct additives for water treatment without approval from the Director (HAR 11-20-38).

HI.W.107.1. Verify that the system does not add direct or indirect additives for water treatment to a public water system without approval from the Director.

WATER QUALITY MANAGEMENT

RECORDKEEPING

HI.W.108. Installations with public drinking water systems must keep specific records (HAR 11-20-19).

HI.W.108.1. Verify the following records are kept on file at the installation:

- bacteriological analyses for at least 5 yr
- chemical analyses for at least 10 yr
- corrective actions for at least 3 yr after last action for each violation
- sanitary survey reports for at least 10 yr after completion
- variances or exemptions for at least 5 yr after expiration
- public notices are kept for at least 5 yr following the date of notification.

REPORTING REQUIREMENTS

HI.W.109. Suppliers of water must report the results of tests or analyses to the state (HAR 11-20-17).

HI.W.109.1. Verify that the installation reports results of test measurements or analyses to the Director within the shortest of the following time periods:

- within the first 10 days following the month in which the test result is received
- within the first 10 days following the end of the required monitoring period as stipulated by the Director
- by 4:00 p.m. of the day that the supplier is notified of a positive total coliform or fecal coliform result or by 10:00 a.m. of the next business day if the installation is notified of the result at a time when the Director's office is closed.

HI.W.109.2. Verify that the installation notifies the Director by telephone within 48 h after the failure to comply with any primary drinking water regulations (including MCLs and monitoring schedules) and by written notice within 7 days.

(NOTE: If a state laboratory performs the analysis, the state laboratory will report the results instead of the installation.)

HI.W.109.3. Verify that if the installation must meet public notification requirements due to a violation, the installation submits to the Director within 10 days a copy of each type of notice distributed, published, posted, made available to the persons served by the system, and to the media.

WATER QUALITY MANAGEMENT

PUBLIC NOTIFICATION

HI.W.110. Suppliers of water must notify the public if any MCLs are exceeded, variances or exemptions granted, or if the system fails to comply with any schedule prescribed as part of a variance or exemption (HAR 11-20-18).

HI.W.110.1. Determine if there have been any instances where the installation's water system:

- has exceeded an MCL (see Tables 11-17 through 11-19)
- failed to comply with a treatment technique
- failed to comply with an applicable monitoring schedule.

HI.W.110.2. Verify that the public was notified of such events in the following manner:

- by publication in a daily newspaper of general circulation in the area served by the public water system as soon as possible, but in no case later than 14 calendar days after the violation or failure
- by mail delivery (by direct mail or with the water bill) or by hand delivery not later than 45 calendar days after the violation or failure
- for violations of the MCLs of contaminants that may pose an acute risk to human health, by furnishing a copy of the notice to the radio and television stations serving the area served by the public water system as soon as possible but in no case later than 72 h after the violation.

HI.W.110.3. Verify that the installation gave notice at least once every 3 mo by mail or hand delivery for as long as the violation or failure existed.

HI.W.110.4. Verify that the installation provides(ed) a copy of the most recent public notice for any outstanding violation of any MCL, treatment technique requirement, or monitoring schedule to all new billing units or new hookups prior to or at the time service begins.

HI.W.110.5. Verify that the public notification contains(ed) the following information:

- clear and readily understandable explanation of the violation
- any potential adverse health effects
- the population at risk

- the steps that the public water system is taking to correct such violation
- the necessity for seeking alternative water supplies, if any
- any preventive measures the consumer should take until the violation is corrected
- the telephone number of the supplier of water as an additional source of information concerning the notice.

Table 11 - 1

Basic Water Quality Criteria

(Source: HAR 11-54-04)

All waters shall be free of substances attributable to domestic, industrial, or other controllable sources of pollutants, including:

1. Materials that will settle to form objectionable sludge or bottom deposits

2. Floating debris, oil, grease, scum, or other floating materials

3. Substances in amounts sufficient to produce taste in the water, detectable off-flavor in the flesh of fish, or in amounts sufficient to produce objectionable color, turbidity, or other conditions in the receiving waters

4. High or low temperatures; biocides; pathogenic organisms; or toxic, radioactive, corrosive, or other deleterious substances at levels or in combination sufficient to be toxic or harmful to human, animal, plant or aquatic life, or in amounts sufficient to interfere with any beneficial use of the water

5. Substances, conditions, or combinations in concentrations that produce undesirable aquatic life

6. Soil particles resulting from erosion on land involved in earthwork, such as the construction of public works; highways; subdivisions; recreational, commercial, or industrial developments; or the cultivation and management of agricultural lands.

Table 11 - 2

Minimum Monitoring Requirements for Stormwater Discharges

(Source: HAR 11-55, Appendix B, Table 34.1)

Effluent Parameter	Discharge [1] Limitations (mg/ L)	Minimum Measurement Frequency	Sample Type
Flow (mgd)	Report	Annually	Calculated or Estimated
Biochemical Oxygen Demand (5-day)	Report	Annually	Composite
Chemical Oxygen Demand	Report	Annually	Composite
Total Suspended Solids	Report	Annually	Composite
Total Phosphorus	Report	Annually	Composite
Total Nitrogen	Report	Annually	Composite
Nitrate + Nitrite Nitrogen	Report	Annually	Composite
Oil and Grease	15	Annually	Grab
pH Range	[2]	Annually	Grab
Priority Pollutants[3]	[4]	Annually	[5]

[1] Pollutant levels exceeding discharge limitations must be reported to the Department of Health within 30 days after the installation becomes aware of the results. The installation must provide the Department of Health with an explanation of the pollutant origin. Monitoring results shall be submitted on the stormwater monitoring report form.

[2] pH value outside the range, as specified in Chapter 11-54 for applicable classification of the receiving waters, constitutes a violation of permit condition.

[3] Priority pollutants, as identified in Appendix D of the 40 CFR 122, need only be analyzed if they are identified as potential pollutants requiring monitoring in the stormwater pollution prevention plan.

[4] Effluent limitations are the acute water quality standard established in HAR 11-54-04 for either fresh or saline waters. For pollutants that do not have established acute water standards, any detected concentration greater than 0.01 mg/ L shall be reported.

[5] Cyanide and the volatile fraction of the toxic organic compounds shall be sampled by grab sample. All other priority pollutants (40 CFR 122.21, Appendix D, 1991, as amended) shall be sampled by composite sample.

Table 11 - 3

Minimum Monitoring Requirements of Discharges for Treated Effluent from Leaking UST Remedial Activities

(Source: HAR 11-55, Appendix D, Table 34.2)

	Discharge Limitations		Monitoring Requirements	
Effluent Characteristic	Daily Maximum for Saline Water	Daily Minimum for Fresh Water	Type of Sample	Minimum Frequency
Flow	Report	Report	Continuous	Continuous
Total Petroleum Hydrocarbons as Gasoline	N/A	N/A	Grab	Weekly
Total Petroleum Hydrocarbons as Diesel	N/A	N/A	Grab	Weekly
Benzene	1.7 mg/ L	1.8 mg/ L	Grab	Weekly
Toluene	2.1 mg/ L	5.8 mg/ L	Grab	Weekly
Xylenes	N/A	N/A	Grab	Weekly
Ethylbenzene	0.14 mg/ L	11 mg/ L	Grab	Weekly
Lead	0.14 mg/ L	0.029 mg/ L	Grab	Weekly
Organic Lead	N/A	N/A	Grab	Weekly
pH	Shall not be lower than 6.0 nor higher than 9.0 standard units		Grab	Weekly
Whole Effluent Toxicity	80% Survival in 100% effluent		Composite	Monthly

N/A - Not applicable, only monitoring and reporting required.

Table 11 - 4

Minimum Monitoring Requirements of Discharges for Once-Through Cooling Water Less Than One Million Gallons Per Day

(Source: HAR 11-55 Appendix E Table 34.3)

Effluent Characteristic	Discharge Limitations Daily Maximum (mg/ L or as specified)	Monitoring Requirements Type of Sample	Minimum Frequency
Flow, mgd	Report Only	Recorder/ Totalizer	Continuous
Temperature, °C	30 °C	Grab	Once/Quarter
Total Residual Oxidants (TRO)	0.013[1] or 0.019[2]	Grab	Once/Quarter
Total Suspended Solids (Net increase)	15	Grab	Once/Quarter
Oil and Grease	15	Grab	Once/Quarter
pH	Shall not violate applicable HAR 11-54 pH criteria	Grab	Once/Quarter

[1] - Applicable to discharges that enter saline waters as per HAR 11-54.

[2] - Applicable to discharges that enter fresh waters as per HAR 11-54.

TRO - The value obtained using the amperometric titration method for total residual chlorine described in 40 CFR 136.

Table 11 - 5

Minimum Monitoring Requirements for Construction Dewatering Discharges

(Source: HAR, Section 11-55, Appendix G, Table 34.4)

Effluent Parameter	Discharge[1] Limitations (mg/ L)	Minimum Measuring Frequency	Sample Type
Flow (gpm)	Report	(2)	Calculated or Estimated
Nonfilterable Residual	Report	(3)	Grab/Composite
Turbidity (NTU)	Report	(3)	Grab
Oil and Grease	15	(3)	Grab
pH Range	(4)	(3)	Grab
Priority Pollutants	(5)	(6)	(7)

(1) Pollutant levels exceeding discharge limitations must be reported to the Director within 24 h after the installation becomes aware of the results. The installation must provide the Director with an explanation of the pollutant origin.

(2) For intermittent discharges, flow measurement must be taken once per each discharge for the duration of the discharge. Continuous flow measurement is required for continuous discharge.

(3) For intermittent discharges, samples must be taken once per each discharge. At a minimum, sample must be taken once weekly for continuous discharge.

(4) Effluent pH value outside the range, as specified in Chapter 11-54 for applicable classification of the receiving waters, constitutes a violation of permit conditions.

(5) Discharge limitations are the acute water quality standard established in HAR 11-54-04 for either fresh or saline waters. Any detected concentration greater than 0.01 mg/ L must be reported for pollutants that do not have established acute water standards.

(6) Priority pollutants need to be analyzed prior to the proposed continuous discharge and during any observed physical changes in effluent discharges. Only those potential pollutants identified in the site characterization report need to be monitored for dewater processes involving only the treated stormwater discharges.

(7) Cyanide and the volatile fraction of the toxic organic compounds must be sampled by grab sample. All other priority pollutants (40 CFR 122.21, Appendix D, 1991, as amended) must be sampled by composite sample.

Table 11 - 6

Classifications of State Waters

(Source: HAR 11-54-02)

State waters are classified as either inland waters or marine waters. The following are descriptions of waters which are inland or marine:

Inland Waters

All inland waters are either fresh waters, brackish waters, or saline waters.

All inland fresh waters are classified as follows, based on their physical characteristics, ecological systems, and other natural criteria:

- streams (perennial or intermittent)
- springs and seeps, natural lakes, and reservoirs
- elevated wetlands
- low wetlands.

All inland waters which are brackish waters or saline waters are classified as follows, based on their physical characteristics, ecological systems, and other natural criteria:

- coastal wetlands
- estuaries
- anchialine pools
- saline lakes.

Marine Waters

All marine waters are either embayments, open coastal, or oceanic waters.

All marine waters which are embayments or open coastal waters are also classified according to the following bottom subtypes

- sand beaches
- lava rock shorelines and solution benches
- marine pools and protected coves
- artificial basins
- reef flats
- soft bottoms.

Inland Waters:

1. Class 1 - The objective is that these waters remain in their natural state as nearly as possible with an absolute minimum of pollution or alteration of water quality from any human-caused source. The wilderness character of these areas must be protected and waste discharge into these waters is prohibited.

(continued)

2. Class 1.a - The uses to be protected are scientific and educational purposes, protection of breeding stock and baseline references from which human-caused changes can be measured, compatible recreation, aesthetic enjoyment, and other nondegrading uses which are compatible with the protection of the ecosystems associated with waters of this class.

3. Class 1.b - The uses to be protected are domestic water supplies, food processing, the support and propagation of aquatic life, compatible recreation, and aesthetic enjoyment.

4. Class 2 - The objective is to protect their uses for recreational purposes, propagation of fish and other aquatic life, and agricultural and industrial water supplies, shipping, navigation, and propagation of shellfish. The uses to be protected are all uses compatible with the protection and propagation of fish, shellfish, and wildlife, and with recreation in and on these waters. These waters shall not act as receiving waters for any discharge which has not received the best degree of treatment or control compatible with the criteria established for this class. No new sewage discharges shall be permitted within estuaries. No new industrial discharges shall be permitted within estuaries, with the exception of the following:

a. Acceptable noncontact thermal and dry dock or marine railway discharges within Pearl Harbor, Oahu.
b. Stormwater discharges associated with industrial activities that meet, at the minimum, the basic water quality criteria applicable to all waters.
c. Discharges covered by a NPDES general permit, approved by the USEPA.

Marine Waters:

1. Class AA - The objective is that these waters remain in their natural pristine state as nearly as possible with an absolute minimum of pollution or alteration of water quality from any human-caused source or actions. The wilderness character of these areas shall be protected. No zones of mixing shall be permitted in this class within a defined reef area, in waters of a depth less than 18 m (10 fathoms), or in waters up to a distance of 300 m (1000 ft) off shore if there is no defined reef area and if the depth is greater than 18 m (10 fathoms). Protected uses are oceanographic research, the support and propagation of shellfish and other marine life, conservation of coral reefs and wilderness areas, compatible recreation, and aesthetic enjoyment. The classification of any water area as Class AA shall not preclude other uses of the waters compatible with these objectives and in conformance with the criteria applicable to them.

2. Class A - Protected uses include recreational purposes and aesthetic enjoyment. Other uses shall be permitted as long as they are compatible with the protection and the propagation of fish, shellfish, and wildlife and with recreation in and on these waters. These waters shall not act as receiving waters for any discharge which has not received the best degree of treatment or control compatible with the criteria established for this class. No new sewage discharges will be permitted within embayments. No new industrial discharges shall be permitted within embayments, with the exception of the following:

a) Acceptable noncontact thermal and dry dock or marine railway discharges in the following water bodies on Oahu: Honolulu Harbor, Barbers Point Harbor, Keehi Lagoon Marina Area, and Ala Wai Boat Harbor, and on Maui: Kahului Harbor
b) Stormwater discharges associated with industrial activities that meet, at the minimum, the basic water quality criteria applicable to all waters
c) Discharges covered by a NPDES general permit, approved by the USEPA.

(continued)

Marine Bottom Ecosystems:

1. Class I - The objective is that these waters remain in their natural pristine state with an absolute minimum of pollution from any human-induced source. Uses are passive human uses without intervention or alteration, such as for nonconsumptive scientific research, nonconsumptive education, aesthetic enjoyment, passive activities, and preservation.

2. Class II - Protected uses are all uses compatible with the protection and propagation of fish, shellfish, and wildlife and with recreation. Any action which may permanently or completely modify, alter, consume, or degrade marine bottoms may be allowed upon securing approval in writing from the Director of Health.

Table 11 - 7

Numeric Standards for Toxic Pollutants Applicable to All Waters

(In micrograms per liter)

(Source: HAR 11-54-04)

The freshwater standards apply where the dissolved inorganic ion concentration is less than 0.5 ppt.

	Freshwater		Saltwater		
Pollutant	**Acute**	**Chronic**	**Acute**	**Chronic**	**Consumption**
Acenaphthene	570	ns	320	ns	ns
Acrolein	23	ns	18	ns	250
Acrylonitrile*	2500	ns	ns	ns	0.21
Aldrin*	3.0	ns	1.3	ns	0.000026
Aluminum	750	260	ns	ns	ns
Antimony	3000	ns	ns	ns	15,000
Arsenic	360	190	69	36	ns
Benzene*	1800	ns	1700	ns	13
Benzidine*	800	ns	ns	ns	0.00017
Beryllium	43	ns	ns	ns	0.038
Cadmium	3+	3+	43	9.3	ns
Carbon tetrachloride*	12,000	ns	16,000	ns	2.3
Chlordane*	2.4	0.0043	0.09	0.004	0.000016
Chlorine	19	11	13	7.5	ns
Chloroethers-					
ethyl(bis-2)*	ns	ns	ns	ns	0.44
isopropyl	ns	ns	ns	ns	1400
methyl(bis)*	ns	ns	ns	ns	0.00060
Chloroform*	9600	ns	ns	ns	5.1
Chlorophenol(2)	1400	ns	ns	ns	ns
Chlorpyrifos	0.083	0.041	0.011	0.0056	ns
Chromium (VI)	16	11	1100	50	ns
Copper	6+	6+	2.9	2.9	ns
Cyanide	22	5.2	1	1	ns
DDT*	1.1	0.001	0.013	0.001	0.000008
metabolite TDE*	0.03	ns	1.2	ns	ns
Demeton	ns	0.1	ns	0.1	ns
Dichloro-					
benzenes*	370	ns	660	ns	850
benzidine*	ns	ns	ns	ns	0.007
ethane(1,2)*	39,000	ns	38,000	ns	79
ethylene(1,1)*	3900	ns	75,000	ns	0.60
phenol(2,4)	670	ns	ns	ns	ns
propanes	7700	ns	3400	ns	ns
propene(1,3)	2000	ns	260	ns	4.6
Dieldrin*	2.5	0.0019	0.71	0.0019	0.000025

(continued)

Table 11 - 7 (continued)

Pollutant	Freshwater Acute	Freshwater Chronic	Saltwater Acute	Saltwater Chronic	Human Health Consumption
Dinitro					
o-cresol(2,4)	ns	ns	ns	ns	250
toluenes*	110	ns	200	ns	3.0
Dioxin*	0.003	ns	ns	ns	0.000000005
Diphenylhydrazine(1,2)	ns	ns	ns	ns	0.018
Endosulfan	0.22	0.056	0.034	0.0087	52
Endrin	0.18	0.0023	0.037	0.0023	ns
Ethylbenzene	11,000	ns	140	ns	1070
Fluoranthene	1300	ns	13	ns	18
Guthion	ns	0.01	ns	0.01	ns
Heptachlor*	0.52	0.0038	0.053	0.0036	0.00009
Hexachloro-					
benzene*	ns	ns	ns	ns	0.00024
butadiene*	30	ns	11	ns	16
cyclohexane-					
alpha*	ns	ns	ns	ns	0.010
beta*	ns	ns	ns	ns	0.018
technical*	ns	ns	ns	ns	0.014
cyclopentadiene	2	ns	2	ns	ns
ethane*	330	ns	310	ns	2.9
Isophorone	39,000	ns	4300	ns	ns
Lead	29+	29+	140	5.6	ns
Lindane*	2.0	0.08	0.16	ns	0.020
Malathion	ns	0.1	ns	0.1	ns
Mercury	2.4	0.55	2.1	0.025	0.047
Methoxychlor	ns	0.03	ns	0.03	ns
Mirex	ns	0.001	ns	0.001	ns
Naphthalene	770	ns	780	ns	ns
Nickel	5+	5+	75	8.3	33
Nitrobenzene	9000	ns	2200	ns	ns
Nitrophenols*	77	ns	1600	ns	ns
Nitrosamines*	1950	ns	ns	ns	0.41
Nitroso					
dibutylamine-N*	ns	ns	ns	ns	0.19
diethylamine-N*	ns	ns	ns	ns	0.41
dimethylamine-N*	ns	ns	ns	ns	5.3
diphenylamine-N*	ns	ns	ns	ns	5.3
pyrrolidine-N*	ns	ns	ns	ns	30
Parathion	0.065	0.013	ns	ns	ns
Pentachloro-					
ethanes	2400	ns	130	ns	ns
benzene	ns	ns	ns	ns	28
phenol	20	13	13	ns	ns
Phenol	3400	ns	170	ns	ns
2,4-dimethyl	700	ns	ns	ns	ns

(continued)

Table 11 - 7 (continued)

Pollutant	Freshwater Acute	Freshwater Chronic	Saltwater Acute	Saltwater Chronic	Human Consumption
Phthalate esters					
dibutyl	ns	ns	ns	ns	50,000
diethyl	ns	ns	ns	ns	590,000
di-2-ethylhexyl	ns	ns	ns	ns	16,000
dimethyl	ns	ns	ns	ns	950,000
Polychlorinated biphenyls*	2.0	0.014	10	0.03	0.000079
Polynuclear aromatic hydrocarbons*	ns	ns	ns	ns	0.01
Selenium	20	5	300	71	ns
Silver	1+	1+	2.3	ns	ns
Tetrachlor-					
ethanes	3100	ns	ns	ns	ns
benzene(1,2,4,5)	ns	ns	ns	ns	16
ethane(1,1,2,2)*	ns	ns	3000	ns	3.5
ethylene*	1800	ns	3400	145	2.9
phenyl(2,3,5,6)	ns	ns	ns	440	ns
Thallium	470	ns	710	ns	16
Toluene	5800	ns	2100	ns	140,000
Toxaphene*	0.73	0.0002	0.21	0.0002	0.00024
Tributyltin	ns	0.026	ns	0.01	ns
Trichloro					
ethane(1,1,1)	6000	ns	10,400	ns	340,000
ethane(1,1,2)*	6000	ns	ns	ns	14
ethylene*	15,000	ns	700	ns	26
phenol(2,4,6)*	ns	ns	ns	ns	1.2
Vinyl chloride*	ns	ns	ns	ns	170
Zinc	22+	22+	95	86	ns

ns - No standard has been developed.
* - Carcinogen
+ - The value listed is the minimum standard. Depending upon the receiving water CaCO hardness, higher standards may be calculated using the respective formula in the USEPA publication *Quality Criteria for Water* (EPA 440/5-86-001, revised 1 May 1987).

(NOTE: Compounds listed in the plural in the Pollutant column represent complex mixtures of isomers. Numbers listed to the right of these compounds refer to the total allowable concentration of any combination of isomers of the compound, not only to concentrations of individual isomers.)

Table 11 - 8

Specific Criteria for Streams

(Source: HAR 11-54-05.2(b))

Parameter	Geometric mean not to exceed the given value	Not to exceed the given value more than 10 % of the time	Not to exceed the given value more than 2 % of the time
Total Nitrogen (µg N/ L)	250.0[1] 180.0[2]	520.0[1] 380.0[2]	800.0[1] 600.0[2]
Nitrate + Nitrite Nitrogen ($\mu g[NO_3 + NO_2]$-N/ L)	70.0[1] 30.0[2]	180.0[1] 90.0[2]	300.0[1] 170.0[2]
Total Phosphorus (µg P/ L)	50.0[1] 30.0[2]	100.0[1] 60.0[2]	150.0[1] 80.0[2]
Total Suspended Solids (mg/ L)	20.0[1] 10.0[2]	50.0[1] 30.0[2]	80.0[1] 55.0[2]
Turbidity (NTU)	5.0[1] 2.0[2]	15.0[1] 5.5[2]	25.0[1] 10.0[2]

[1]Wet season - 1 November through 30 April.

[2]Dry season - 1 May through 31 October.

NTU = Nephelometric Turbidity Units. A comparison of the intensity of light scattered by the sample under defined conditions with the intensity of light scattered by a standard reference suspension under the same conditions. The higher the intensity of scattered light, the higher the turbidity.

µg = microgram or 0.000001 grams

pH Units - Must not deviate more than 0.5 units from ambient conditions and must not be lower than 5.5 nor higher than 8.0.

Dissolved Oxygen - Not less than 80 percent saturation.

Temperature - Must not vary more than 1 °C from ambient conditions.

Specific Conductance - Not more than 300 microohms/cm.

Table 11 - 9

Specific Criteria for All Estuaries Except Pearl Harbor Estuary

(Source: HAR 11-54-05.2(d)(1))

Parameter	Geometric mean not to exceed the given value	Not to exceed the given value more than 10% of the time	Not to exceed the given value more than 2% of the time
Total Nitrogen (μg N/L)	200.00	350.00	500.00
Ammonia Nitrogen (μg NH_4 - N/L)	6.00	10.00	20.00
Nitrate + Nitrite Nitrogen (μg[NO_3 + NO_2]-N/L)	8.00	25.00	35.00
Total Phosphorus (μg P/L)	25.00	50.00	75.00
Chlorophyll *a* (μg/L)	2.00	5.00	10.00
Turbidity (NTU)	1.50	3.00	5.00

NTU = Nephelometric Turbidity Units. A comparison of the intensity of light scattered by the sample under defined conditions with the intensity of light scattered by a standard reference suspension under the same conditions. The higher the intensity of scattered light, the higher the turbidity.

pH Units - must not deviate more than 0.5 units from ambient conditions and must not be lower than 7.0 nor higher than 8.6.

Dissolved Oxygen - not less than 75 percent saturation.

Temperature - must not vary more than 1 °C from ambient conditions.

Salinity - must not vary more than 10 percent from ambient conditions.

Oxidation-Reduction Potential (EH) - must not be less than -100 mV in the uppermost 10 cm (4 in.) of sediment.

Table 11 - 10

Specific Criteria for Pearl Harbor Estuary

(Source: HAR 11-54-05.2(d)(1))

Parameter	Geometric mean not to exceed the given value	Not to exceed the given value more than 10% of the time	Not to exceed the given value more than 2% of the time
Total Nitrogen (µg N/L)	300.00	550.00	750.00
Ammonia Nitrogen (µg NH_4 - N/L)	10.00	20.00	30.00
Nitrate + Nitrite Nitrogen (µg[NO_3 + NO_2]-N/L)	15.00	40.00	70.00
Total Phosphorus (µg P/L)	60.00	130.00	200.00
Chlorophyll *a* (µg/L)	3.50	10.00	20.00
Turbidity (NTU)	4.00	8.00	15.00

NTU = Nephelometric Turbidity Units. A comparison of the intensity of light scattered by the sample under defined conditions with the intensity of light scattered by a standard reference suspension under the same conditions. The higher the intensity of scattered light, the higher the turbidity.

pH Units - must not deviate more than 0.5 units from ambient conditions and must not be lower than 7.0 nor higher than 8.6.

Dissolved Oxygen - not less than 75 percent saturation.

Temperature - must not vary more than 1 °C from ambient conditions.

Salinity - must not vary more than 10 percent from ambient conditions.

Oxidation-Reduction Potential (EH) - not less than -100 mV in the uppermost 10 cm (4 in.) of sediment.

Table 11 - 11

Classes of Embayments

(Source: HAR 11-54-06(a))

Class AA includes the following groups:

1. On Hawaii: Puako Bay, Waiulua Bay, Anaehoomalu Bay, Kiholo Bay, Kailua Harbor, Kealakekua Bay, and Honaunau Bay

2. On Oahu: Waialua Bay, Kahana Bay, Kaneohe Bay, and Hanauma Bay

3. On Kauai: Hanalei Bay

4. All embayments in preserves, reserves, sanctuaries, and refuges established by the Department of Land and Natural Resources

5. All waters in state or Federal fish and wildlife refuges and marine sanctuaries

6. All waters which have been officially identified as a unique or critical habitat for threatened or endangered species.

Class A includes the following groups:

1. On Hawaii: Hilo Bay (inside breakwater), Kawaihae Harbor, Honokohau Boat Harbor, and Keauhou Bay

2. On Maui: Kahului Bay, Lahaina Boat Harbor, and Maalaea Boat Harbor

3. On Lanai: Manele Boat Harbor and Kaumalapau Harbor

4. On Molokai: Hale o Lono Harbor, Kaunakakai Harbor, and Kaunakakai Boat Harbor

5. On Oahu: Kaiaka Bay, Paiko Peninsula to Koko Head, Ala Wai Boat Harbor, Kewalo Basin, Honolulu Harbor, Keehi Lagoon, Barbers Point Harbor, Pokai Bay, Heeia Kea Boat Harbor, Waianae Boat Harbor, Haleiwa Boat Harbor, and Ko Olina

6. On Kauai: Hanamaulu Bay, Nawiliwili Bay, Kukuiula Bay, Wahiawa Bay, Hanapepe Bay (inside breakwater), Kikiaola Boat Harbor, and Port Allen Boat Harbor.

Table 11 - 12

Specific Criteria for Embayments
(Based on Fresh Water Inflow)
(Source: HAR 11-54-06(a)(3))

Parameter	Geometric mean not to exceed the given value	Not to exceed the given value more than 10 % of the time	Not to exceed the given value more than 2 % of the time
Total Nitrogen (μg N/L)	200.00[1] 150.00[2]	350.00[1] 250.00[2]	500.00[1] 350.00[2]
Ammonia Nitrogen (μg NH_4 - N/L)	6.00[1] 3.50[2]	13.00[1] 8.50[2]	20.00[1] 15.00[2]
Nitrate + Nitrite Nitrogen (μg[NO_3 + NO_2]-N/L)	8.00[1] 5.00[2]	20.00[1] 14.00[2]	35.00[1] 25.00[2]
Total Phosphorus (μg P/L)	25.00[1] 20.00[2]	50.00[1] 40.00[2]	75.00[1] 60.00[2]
Chlorophyll *a* (μg/L)	1.50[1] 0.50[2]	4.50[1] 1.50[2]	8.50[1] 3.00[2]
Turbidity (NTU)	1.50[1] 0.40[2]	3.00[1] 1.00[2]	5.00[1] 1.50[2]

[1] Wet criteria applies when the average fresh water inflow from the land equals or exceeds 1 percent of the embayment volume per day.

[2] Dry criteria applies when the average fresh water inflow from the land is less than 1 percent of the embayment volume per day.

NTU = Nephelometric Turbidity Units. A comparison of the intensity of light scattered by the sample under defined conditions with the intensity of light scattered by a standard reference suspension under the same conditions. The higher the intensity of scattered light, the higher the turbidity.

μg = microgram or 0.000001 grams.

pH Units - must not deviate more than 0.5 units from 8.1, except at coastal locations where and when freshwater from stream, storm drain or groundwater discharge may depress the pH to a minimum level of 7.0.

Dissolved Oxygen - not less than 75 percent saturation, determined as a function of ambient water temperature and salinity.

(continued)

Table 11 - 12 (continued)

Salinity - must not vary more than 10 percent from natural or seasonal changes considering hydrologic input and oceanographic factors.

Temperature - must not vary more than 1 °C from ambient conditions.

Specific Conductance - not more than 300 microohms/cm.

Table 11 - 13

Classes for Open Coastal Waters

(Source: HAR 11-54-06(b))

Class AA includes the following groups (measured in a clockwise direction from the first-named to the second-named locations, where applicable):

1. Hawaii - The open coastal waters from Leleiwi Point to Waiulaula Point

2. Maui - The open coastal waters between Nakalele Point and Waihee Point, and between Huelo Point and Puu Olai

3. Kahoolawe - All open coastal waters surrounding the island

4. Lanai - All open coastal waters surrounding the island

5. Molokai - The open coastal waters between the westerly boundary of Hale o Lono Harbor to Lamaloa Head. Also, the open coastal waters from Cape Halawa to the easterly boundary of Kaunakakai Harbor

6. Oahu - Waimanalo Bay from the southerly boundary of Kaiona Beach Park, and including the waters surrounding Manana and Kaohikaipu Islands, to Makapuu Point. Also, Waialaua Bay from Kaiaka Point to Puaena Point, and the open coastal waters along Kaena Point between a distance of 5.6 km (3.5 mi) from Kaena Point towards Makua and 5.6 km (3.5 mi) from Kaena Point toward Mokuleia

7. Kauai - The open coastal waters between Hikimoe Valley and Makahoa Point. Also, the open coastal waters between Makahuena Point and the westerly boundary of Hoai Bay

8. Niihau - All open coastal waters surrounding the island

9. All other islands of the state

10. All open coastal waters surrounding the islands not classified in this section

11. All open waters in preserves, reserves, sanctuaries, and refuges established by the Department of Land and Natural Resources, or in the refuges or sanctuaries established by the U.S. Fish and Wildlife Service or the National Marine Fisheries Service.

(NOTE: Class AA includes all other open coastal waters not otherwise specified.)

Table 11 - 14

Specific Criteria for Open Coastal Waters

(Source: HAR 11-54-06(b))

Parameter	Geometric mean not to exceed the given value	Not to exceed the given value more than 10% of the time	Not to exceed the given value more than 2% of the time
Total Nitrogen (μg N/L)	150.00[1] 110.00[2]	250.00[1] 180.00[2]	350.00[1] 250.00[2]
Ammonia Nitrogen (μg NH_4 - N/L)	3.50[1] 2.00[2]	8.50[1] 5.00[2]	15.00[1] 9.00[2]
Nitrate + Nitrite Nitrogen (μg[NO_3 +NO_2]-N/L)	5.00[1] 3.50[2]	14.00[1] 10.00[2]	25.00[1] 20.00[2]
Total Phosphorus (μg P/L)	20.00[1] 16.00[2]	40.00[1] 30.00[2]	60.00[1] 45.00[2]
Light Extinction Coefficient (k units)	0.20[1] 0.10[2]	0.50[1] 0.30[2]	0.85[1] 0.55[2]
Chlorophyll *a* (μg/L)	0.30[1] 0.15[2]	0.90[1] 0.50[2]	1.75[1] 1.00[2]
Turbidity (NTU)	0.50[1] 0.20[2]	1.25[1] 0.50[2]	2.00[1] 1.00[2]

[1] Wet criteria applies when the open coastal waters receive more than 3 million gpd of fresh water discharge per shoreline mile.

[2] Dry criteria applies when the open coastal waters receive less than 3 million gpd of fresh water discharge per shoreline mile.

k units: the ratio of light measured at the water's surface to light measured at a particular depth.

Light Extinction Coefficient is only required for dischargers who have obtained a waiver pursuant to Section 301(h) of the *Federal Water Pollution Control Act of 1972* (33 USC 1251), as amended, and are required by USEPA to monitor it.

NTU: Nephelometric Turbidity Units: a comparison of the intensity of light scattered by the sample under defined conditions with the intensity of light scattered by a standard reference suspension under the same conditions. The higher the intensity of scattered light, the higher the turbidity.

(continued)

µg: microgram or 0.000001 grams

pH Units: must not deviate more than 0.5 units from a value of 8.1, except at coastal locations where and when freshwater from stream, storm drain, or groundwater discharge may depress the pH to a minimum level of 7.0.

Dissolved Oxygen: not less than 75 percent saturation.

Temperature: must not vary more than 1 °C from ambient conditions.

Salinity: must not vary more than 10 percent from natural or seasonal changes considering hydrologic input and oceanographic factors.

Table 11 - 15

Specific Criteria for Oceanic Waters

(Source: HAR 11-54-06(c))

Parameter	Geometric mean not to exceed the given value	Not to exceed the given value more than 10% of the time	Not to exceed the given value more than 2% of the time
Total Nitrogen (μg N/L)	50.00	80.00	100.00
Ammonia Nitrogen (μg NH_4 - N/L)	1.00	1.75	2.50
Nitrate + Nitrite Nitrogen (μg[NO_3 + NO_2]-N/L)	1.50	2.50	3.50
Total Phosphorus (μg P/L)	10.00	18.00	25.00
Chlorophyll *a* (μg/L)	0.06	0.12	0.20
Turbidity (NTU)	0.03	0.10	0.20

Dissolved Oxygen: not less than 75 percent saturation.

μg: microgram or 0.000001 grams.

NTU: Nephelometric Turbidity Units. A comparison of the intensity of light scattered by the sample under defined conditions with the intensity of light scattered by a standard reference suspension under the same conditions. The higher the intensity of scattered light, the higher the turbidity.

pH Units: must not deviate more than 0.5 units from a value of 8.1.

Salinity: must not vary more than 10 percent from natural or seasonal changes considering hydrologic input and oceanographic factors.

Temperature: must not vary more than 1 °C from ambient conditions.

Table 11 - 16

Classes for Reef Flats and Reef Communities

(Source: HAR 11-54-07(e))

Class I includes all of the following:

1. All reef flats and reef communities in preserves, reserves, sanctuaries, and refuges established by the Department of Land and Natural Resources, or similar reserves for the protection of marine life, or in refuges or sanctuaries established by the U.S. Fish and Wildlife Service or the National Marine Fisheries Service.

2. Nearshore Reef Flats

   On Hawaii: Puako

   On Maui: Honolua

   On Lanai: Northwest Lanai Reef

   On Molokai: Western Kalaupapa, Southeast Molokai Reef, Honomuni Harbor, and Kulaalamihi Fishpond

   On Oahu: Hanauma Bay

   On Kauai: Nualolokai and Hanalei (Anini to Haena)

3. Offshore Reef Flats

   Moku o Loe (Coconut Island, Kaneohe Bay, Oahu), Kure Atoll, Pearl and Hermes Atoll, Lisianski Island, Layson Island, Maro Reef, and French Frigate Shoals

4. Wave-Exposed Reef Communities

   On Hawaii: 1823 Lava Flow (Punaluu), 1840 Lava Flow (North Puna), 1868 Lava Flow (South Point), 1887 Lava Flow (South Point), 1955 Lava Flow (South Puna), 1960 Lava Flow (Kapoho), 1969 Lava Flow (Apuna Point), 1970 Lava Flow (Apuna Point), 1971 Lava Flow (Apuna Point), 1972 Lava Flow (Apuna Point), and 1973 Lava Flow (Apuna Point)

   On Maui: Hana Bay, Makuleia Bay, and (Honolua)

   On Molokini Island: All wave-exposed reef communities

   On Molokai: Moanui Kahinapohaku Waikolu - Kalawao, and Halawa Bay

   On Oahu: Sharks Cove (Pupukea), Moku Manu (Islands), Outer Hanauma Bay, Waimea Bay, Kawela Bay, and Kahana Bay

   On Kauai: Ke'e Beach, Poipu Beach, and Kipu Beach

(continued)

On Nihau: All wave-exposed reef communities

On Lehua (off Niihau): All wave-exposed reef communities

5. Protected Reef Communities

   On Hawaii: Puako, Honaunau, Kealakekua, Kiholo, Anaehoomalu, Hapuna, Kahaluu Bay, Keaweula (North Kohala), Milolii Bay to Keawaiki, Kailua-Kaiwi (Kona), Onomea Bay, 1801 Lava Flow (Keahole or Kiholo), 1850 Lava Flow (South Kona), 1859 Lava Flow (Kiholo), 1919 Lava Flow (Milolii), and 1926 Lava Flow (Milolii)

   On Maui: Honolua and Ahihi-La Perouse (including 1790 Lava Flow at Cape Kinau)

   Molokini Island: All protected reef communities

   On Lanai: Manele and Hulopoe

   On Molokai: Southeast Molokai, Kalaupapa, and Honomuni Harbor

   On Oahu: Hanauma Bay, Moki o Loe (Coconut Island, Kaneohe Bay)

   On Kauai: Hoai Bay (Poipu)

   On Northwestern Hawaiian Islands: Kure Atoll Lagoon, Pearl and Hermes Lagoon, Lisianski Lagoon, Maro Reef Lagoon, and French Frigate Shoals Lagoon

Class II includes all of the following:

1. Existing or planned harbors may be located within nearshore reef flats showing degraded habitats and only where feasible alternatives are lacking and upon written approval by the Director, considering environmental impact and the public interest.

2. Nearshore Reef Flats

   On Hawaii: Blonde Reef (Hilo Harbor), Kawihae Small Boat Harbor

   On Maui: Lahaina Harbor and Kahului Harbor

   On Lanai: Manele

   On Molokai: Kaunakakai Harbor, Hale o Lano Harbor, Palaau (2.4 km/1.5 mi, East Pakanaka Fishpond)

   On Oahu: Keehi Boat Harbor, Ala Moana Reef, Honolulu Harbor, Heeia Harbor, Kaneohe Yacht Club, Ala Wai Harbor, Haleiwa Boat Harbor, Maunalua Bay, Pearl Harbor, Kaneohe Bay, and Kahe

3. All other nearshore reef flats not in Class I

4. Offshore Reef Flats

   On Oahu: Kapapa Barrier Reef and Kaneohe Patch Reefs (Kaneohe Bay)

5. All other wave-exposed or protected reef communities not in Class I.

Table 11 - 17

Maximum Levels of Inorganic Chemicals, Other Than Fluoride

(Source: HAR 11-20-3(b))

Contaminant	MCL (mg/L)
Arsenic	0.05
Asbestos	7 million fibers/L (longer than 10 μm)
Barium	2.0
Cadmium	0.005
Chromium	0.1
Lead	0.05
Mercury	0.002
Nitrate	10 (as Nitrogen)
Nitrite	1 (as Nitrogen)
Total Nitrate and Nitrite	10 (as Nitrogen)
Selenium	0.05

(NOTE: Compliance for systems that conduct monitoring at a frequency greater than annual for asbestos, barium, cadmium, chromium, fluoride, mercury, and selenium is determined by a running annual average at each sampling point. If the average at any sampling point is greater than the MCL, then the system is out of compliance.

Compliance for systems that are monitoring annually, or less frequently, the system is out of compliance with the MCLs for asbestos, barium, cadmium, chromium, fluoride, mercury, and selenium if the level of a contaminant at any sampling point is greater than the MCL.)

Table 11 - 18

MCLs for Fluoride

(Source: HAR 11-20-3(c))

When the annual average of the maximum daily air temperatures for the location in which the community water system is situated is as follows, the MCLs for fluoride are:

°F	°C	Fluoride (mg/L)
53.7 and below	12.0 and below	2.4
53.8 to 58.3	12.1 to 14.6	2.2
58.4 to 63.8	14.7 to 17.6	2.0
63.9 to 70.6	17.7 to 21.4	1.8
70.7 to 79.2	21.5 to 26.2	1.6
79.3 to 90.5	26.3 to 32.5	1.4

Table 11 - 19

Maximum Organic Contaminant Levels

(Source: HAR 11-20-4(d))

Contaminant	MCL (mg/L)
GROUP I	
Vinyl chloride	0.002
Benzene	0.005
Carbon tetrachloride	0.005
1,2-Dichloroethane	0.005
Trichloroethylene	0.005
para-Dichlorobenzene	0.075
1,1-Dichloroethylene	0.007
1,1,1-Trichloroethane	0.2
cis-1,2-Dichloroethylene	0.07
1,2-Dichloropropane (DCP)	0.005
Ethylbenzene	0.7
Monochlorobenzene	0.1
o-Dichlorobenzene	0.6
Styrene	0.1
Tetrachloroethylene	0.005
Toluene	1.0
trans-1,2-Dichloroethylene	0.1
Xylenes (total)	10.0
GROUP II	
Alachlor	0.002
Atrazine	0.003
Carbofuran	0.04
Chlordane	0.002
Dibromochloropropane (DBCP)	0.00004
2,4-D	0.07
Ethylene dibromide (EDB)	0.00004
Heptachlor	0.0004
Heptachlor epoxide	0.0002
Lindane	0.0002
Methoxychlor	0.04
Polychlorinated biphenyls (PCBs)	0.0005
Pentachlorophenol	0.001
Toxaphene	0.003
2,4,5-TP (Silvex)	0.05
1,2,3-Trichloropropane (TCP	0.0008

Table 11 - 20

Inorganic and Organic Chemical Contaminants

(Source: HAR 11-20-37(e) and (h))

Table A

Community water systems and nontransient, noncommunity water systems must monitor for the following contaminants:

	Contaminant	CAS #
(1)	Chloroform	67-66-3
(2)	Bromodichloromethane	75-27-4
(3)	Chlorodibromomethane	124-48-1
(4)	Bromoform	75-25-2
(5)	m-Dichlorobenzene	541-73-1
(6)	Dichloromethane	75-09-2
(7)	Dibromomethane	74-95-3
(8)	1,1-Dichloropropene	563-58-6
(9)	1,1-Dichloroethane	75-34-3
(10)	1,1,2,2-Tetrachloroethane	79-34-5
(11)	1,3-Dichloropropane	142-28-9
(12)	Chloromethane	74-87-3
(13)	Bromomethane	74-83-9
(14)	1,1,1,2-Tetrachloroethane	630-20-6
(15)	Chloroethane	75-00-3
(16)	1,1,2-Trichloroethane	74-00-5
(17)	2,2-Dichloropropane	590-20-7
(18)	o-Chlorotoluene	95-49-8
(19)	p-Chlorotoluene	106-43-4
(20)	Bromobenzene	108-86-1
(21)	1,3-Dichloropropene	542-75-6

Table B

Monitoring for the following compounds is required if the Director determines the public water system is vulnerable to contamination:

	Contaminant	CAS #
(1)	1,2,4-Trimethylbenzene	95-63-6
(2)	1,2,4-Trichlorobenzene	120-82-1
(3)	1,2,3-Trichlorobenzene	87-61-6
(4)	n-Propylbenzene	103-65-1
(5)	n-Butylbenzene	104-51-8
(6)	Naphthalene	91-20-3
(7)	Hexachlorobutadiene	87-68-3

(continued)

Table 11 - 20 (continued)

Table B (continued)

	Contaminant	CAS #
(8)	1,3,5-Trimethylbenzene	108-67-8
(9)	p-Isopropyltoluene	99-87-6
(10)	Isopropylbenzene	98-82-8
(11)	Tert-butylbenzene	98-06-6
(12)	Sec-butylbenzene	135-98-8
(13)	Fluorotrichloromethane	75-69-4
(14)	Dichlorodifluoromethane	75-71-8
(15)	Bromochloromethane	74-97-5

CAS - Chemical Abstract Service.

Table 11 - 21

Total Coliform Monitoring Frequency

(Source: HAR 11-20-9(a))

Population Served		Minimum Number of Samples Per Month
25 to	1000[1]	1
1001 to	2500	2
2501 to	3300	3
3301 to	4100	4
4101 to	4900	5
4901 to	5800	6
5801 to	6700	7
6701 to	7600	8
7601 to	8500	9
8501 to	12,900	10
12,901 to	17,200	15
17,201 to	21,500	20
21,501 to	25,000	25
25,001 to	33,000	30
33,001 to	41,000	40
41,001 to	50,000	50
50,001 to	59,000	60
59,001 to	70,000	70
70,001 to	83,000	80
83,001 to	96,000	90
96,001 to	130,000	100
130,001 to	220,000	120
220,001 to	320,000	150
320,001 to	450,000	180
450,001 to	600,000	210
600,001 to	780,000	240
780,001 to	970,000	270
970,001 to	1,230,000	300
1,230,001 to	1,520,000	330
1,520,001 to	1,850,000	360
1,850,001 to	2,270,000	390
2,270,001 to	3,020,000	420
3,020,001 to	3,960,000	450
3,960,001 or	more	480

[1] Includes public water systems which have at least 15 service connections, but serve fewer than 25 persons.