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The Environmental Assessment and Management (TEAM) Guide: Iowa Supplement

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March 2006
Revised February 2010

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Final report

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Prepared for U.S. Army Corps of Engineers
Washington, DC 20314-1000

Abstract: Environmental assessments help determine compliance with current environmental regulations. The U.S. Air Force, U.S. Army, Defense Logistics Agency (DLA), and Corps of Engineers (Civil Works) have adopted environmental compliance programs that identify compliance problems before they are cited as violations by the U.S. Environmental Protection Agency.

Since 1984, the U.S. Army Construction Engineering Research Laboratory, in cooperation with numerous Department of Defense (DOD) components, has developed environmental compliance assessment checklist manuals. The Environmental Assessment and Management (TEAM) Guide was developed for use by all DOD components. Currently there are five participating DOD components: the Air Force, Air National Guard, Army, Civil Works, and DLA. These agencies have agreed to share the development and maintenance of this Guide.

The Guide combines Code of Federal Regulations and management practices into a series of checklists that show legal requirements and the specific operations or items to review. TEAM Guide is supplemented by DOD component-specific manuals detailing DOD component regulations and policies. The Iowa Supplement was developed to be used in conjunction with the TEAM Guide, using existing Iowa state environmental legislation and regulations as well as suggested management practices.

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FOREWORD

This is ERDC/CERL SR-06-10. The report is based on the information available on Enflex Federal and State Regulations of 1 February 2010..

The research was performed for AEC MIPR 0010005589, technical monitor Mark DItmore; ANG MIPR F9WFEV0028G001, technical monitor is Chuck Smith; AGB W45XMA00130245, technical monitor is Phil Dao; Army Reserve MIPR10CODCD201, technical monitor is Roc Tschirhart; Commerce MIPR 1301-09-SA00110, technical monitor is Greg Falzetta; USACE Fund account 96x3123, technical monitor is John Coho; DHS IAG HSHQDC-08-X-00456, technical monitor is Peter Wixted; DLA MIPR SP1001090, technical monitor is Pam Hillis; USPS MOA-05-CERL-01, technical monitor is Sharon Marsh; and, State Department IAG F3NF369350G002, technical monitor is Janice Smith.

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CERL is an element of the U.S. Army Engineer Research and Development Center (ERDC), U.S. Army Corps of Engineers. The Director of ERDC is Dr. James R. Houston, and the Commander is COL Gary Johnson.

NOTICE

This manual is intended as general guidance for personnel at Federal facilities. 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.

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SECTION 1

AIR EMISSIONS MANAGEMENT

Iowa Supplement, February 2010

This section covers the state requirements for Air Emissions Management and is intended to supplement the U.S. TEAM Guide. Refer to the U.S. TEAM Guide and the DOD Component Supplements for Federal, DOD, and service-specific requirements.

Federal Regulations Adopted by Reference

In IAC 567-23.1(2), the State of Iowa adopts by reference the Federal standards of performance for new stationary sources of 40 CFR 60 as amended or corrected through March 20, 2009, are adopted by reference, except § 60.530 through § 60.539b (Part 60, Subpart AAA), and shall apply to the following affected facilities listed in Appendix 1-8: [Revised May 1998; Revised April 2004; Revised April 2005; Revised April 2006; Revised February 2007; Revised February 2008; Revised February 2009; Revised February 2010]:

In IAC 567-23.1(3), the State of Iowa adopts by reference the Federal standards of emissions of hazardous air pollutants of 40 CFR 61 as amended and corrected through May 116, 2007, and 40 CFR 503 as adopted on August 4, 1999. (NOTE: 40 CFR 61.20 to 61.26, 61.90 to 61.97, 61.100 to 61.108, 61.120 to 61.127, 61.190 to 61.193, 61.200 to 61.205, 61.220 to 61.225, and 61.250 to 61.256 are **not** adopted.) The adopted regulations apply to the following sources/substances (listing here is not complete) [Revised February 2009]:

1. asbestos, including waste disposal, demolition activities, and renovation operations
 2. beryllium, including incinerators and machine shops that process beryllium, beryllium oxides, or any alloy containing more than 5 percent beryllium by weight; including beryllium rocket motor test sites
 3. mercury, including sludge incineration plants, sludge drying plants, and a combination of sludge incineration plants and sludge drying plants
 4. equipment leaks of benzene, including leaks occurring at any pumps, compressors, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, flanges, and other connectors, product accumulator vessels, and control devices or systems that handle benzene
 5. equipment leaks of volatile hazardous air pollutants, including leaks occurring at any pumps, compressors, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, flanges, and other connectors, product accumulator vessels, and control devices or systems that handle benzene
 6. benzene emissions from benzene storage vessels, unless exempted, including vessels storing benzene with a specific gravity within the range of gravities specified in American Society for Testing and Materials (ASTM) D 836-84 for Industrial Grade Benzene, ASTM D 835-85 for Refined Benzene-485, ASTM D 2359-85a for Refined Benzene-535, and ASTM D 4734-87 for Refined Benzene-545
 7. benzene waste operations, unless exempted, including facilities at which waste management units are used to treat, store, or dispose of waste generated by any manufacturing facility.
- In IAC 567-23.1(4) Emission Standard for Hazardous Air Pollutants of Source Categories. The federal standards for emissions of hazardous air pollutants for source categories, 40 Code of Federal Regulations Part 63 as amended through July 22, 2008, are adopted by reference, except those provisions which cannot be delegated to the states. The corresponding 40 CFR Part 63 Subpart designation is in parentheses. 40 CFR Part 63 Subpart B incorporates the requirements of Clean Air Act Sections 112(g) and 112(j) and does not adopt standards for a specific affected facility. Test methods (Appendix A), sources defined for early reduction provisions (Appendix B), and determination of the fraction biodegraded (F(bio)) in a biological treatment unit (Appendix C) of Part 63 also apply to the affected activities or facilities. For the purpose of this subrule "hazardous air pollutant" has the same meaning found in 567-22.100(455B). For the purposes of this subrule a "major source" means any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit considering controls, in the aggregate, 10 tons per

year or more, of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants, unless a lesser quantity is established, or in the case of radionuclides, where different criteria are employed. For the purposes of this subrule an "area source" means any stationary source of hazardous air pollutants that is not a major stationary source as defined in this paragraph. Paragraph 23.1(4)"a," general provisions (Subpart A) of Part 63, shall apply to owners or operators who are subject to subsequent subparts of 40 CFR Part 63 (except when otherwise specified in a particular subpart or in a relevant standard) as adopted by reference, see Appendix 1-5 [Revised February 2009; Revised February 2010].

Definitions

- *Act* - the Clean Air Act, 42 U.S.C. sections 7401, et seq (IAC 567-22.100) [Added May 1998].
- *Actual Emissions* - the actual rate of emissions of a pollutant from an emissions unit, as determined in accordance with the following (IAC 567-22.100) [Added May 1998]:
 1. In general, actual emissions as of a particular date shall equal the average rate, in tons per year, at which the unit actually emitted the pollutant during a two-year period which immediately precedes that date and which is representative of normal source operations. The director may allow the use of a different time period upon a demonstration that it is more representative of normal source operations. Actual emissions shall be calculated using the unit's actual operating hours, production rates, and types of materials processed, stored or combusted during the selected time period. Actual emissions for acid rain affected sources are calculated using a one-year period
 2. Lacking specific information to the contrary, the director may presume that source-specific allowable emissions for the unit are equivalent to the actual emissions of the unit
 3. For any emissions unit which has not begun normal operations on a particular date, actual emissions shall equal the potential to emit of the unit on that date
 4. For purposes of calculating early reductions of hazardous air pollutants, actual emissions shall not include excess emissions resulting from a malfunction or from startups and shutdowns associated with a malfunction.
- *Affected Source* - a source that includes one or more affected units subject to any emissions reduction requirement or limitation under Title IV of the Act (IAC 567-22.100) [Added May 1998].
- *Affected Unit* - a unit that is subject to any acid rain emissions reduction requirement or acid rain emissions limitation under Title IV of the Act (IAC 567-22.100) [Added May 1998].
- *Air Pollution Episode* - a combination of forecast or actual meteorological conditions and emissions of air contaminants which may or do present an imminent and substantial endangerment to the health of persons, during which the chief meteorological factors are the absence of winds that disperse air contaminants horizontally and a stable atmospheric layer which tends to inhibit vertical mixing through relatively deep layers (IAC 567-20.2).
- *Air Quality Standard* - an allowable level of air contaminant or atmospheric air concentration established by the commission (IAC 567-20.2) [Added May 1998].
- *Ambient Air* - that portion of atmosphere, external to buildings, to which the general public has access. Ambient air does not include the atmosphere over land owned or controlled by the source and to which public access is precluded by a fence or other physical barriers (IAC 567-20.2).
- *Anaerobic Lagoon* - an impoundment, the primary function of which is to store and stabilize organic wastes. The impoundment is designed to receive wastes on a regular basis and the design waste loading rates are such that the predominant biological activity in the impoundment will be anaerobic. An anaerobic lagoon does not include:
 1. a runoff control basin which collects and stores only precipitation induced runoff from an open feedlot feeding operation

2. a waste slurry storage basin which receives waste discharges from confinement feeding operations and which is designed for complete removal of accumulated wastes from the basin at least semiannually
 3. any anaerobic treatment system which includes collection and treatment facilities for all off gases (IAC 567-20.2).
- *Area Source* - any stationary source of hazardous air pollutants that is not a major source as defined in rule 567-22.100(455B) (IAC 567-22.100) [Added February 2007].
 - *B-Blend* - biodiesel blended fuel as defined in Iowa Code section 214A.1 with the blend including no more than 20 percent biodiesel (IAC 661-221.4) [Added February 2010].
 - *BTU* - British Thermal Unit, the quantity of heat required to raise the temperature of one pound of water from 59°F to 60°F (IAC 567-20.2) [Added May 1998].
 - *Control Equipment* - any equipment that has the function to prevent the formation of or the emission to the atmosphere of air contaminants from any fuel burning, incinerator or process equipment (IAC 567-20.2).
 - *Criteria* - information used as guidelines for decisions when establishing air quality goals, air quality standards, and the various air quality levels, and which in no case is to be confused or used interchangeably with air quality goals or standards (IAC 567-20.2).
 - *Director* - the director of the department of natural resources or the director's designee (IAC 567-20.2) [Added May 1998].
 - *E-10* - a blend of petroleum and ethanol including no more than 15 percent ethanol intended for use as a motor vehicle fuel (IAC 661-221.4) [Added April 2006; Revised February 2008].
 - *E-Blend* - a blend of petroleum and ethanol including more than 10 percent ethanol intended for use as a motor vehicle fuel (IAC 661-221.4) [Added April 2006; Revised February 2008].
 - *Emission Limitation (Emission Standard)* - a requirement established by a state, local government, or the administrator which limits the quantity, rate or concentration of emissions of air pollutants on a continuous basis, including any requirements which limit the level of opacity, prescribe equipment, set fuel specifications or prescribe operation or maintenance procedures for a source to assure continuous emission reduction (IAC 567-20.2) [Added May 1998].
 - *Equipment* - equipment capable of emitting air contaminants to produce air pollution such as fuel burning, combustion, or process devices or apparatus including but not limited to fuel-burning equipment, refuse burning equipment used for the burning of fuel or other combustible material from which the products of combustion are emitted: and including but not limited to apparatus, equipment, or process devices which generate heat and may emit products of combustion, and manufacturing, chemical, metallurgical, or mechanical apparatus or process devices which may emit smoke, particulate matter, or other air contaminants (IAC 567-20.2).
 - *Excess Emission* - any emission which exceeds either the applicable emission standard prescribed in chapter 23 or rule 567-22.5, or any emission limit specified in a permit or order (IAC 567-20.2) [Revised April 2000].
 - *Existing Equipment* - equipment, machines, devices, or installations that are in operation prior to 23 September 1970 (IAC 567-20.2).
 - *Fugitive Dust* - any airborne solid particulate matter emitted from any source other than a flue or stack (IAC 567-20.2) [Added May 1998].
 - *Garbage* - all solid and semisolid putrescible and nonputrescible animal and vegetable wastes resulting from the handling, preparing, cooking, storing, and serving of food or of material intended for use as food, but excluding recognized industrial by-products (IAC 567-20.2).

- *Gas Cleaning Device* - a facility designed to remove air contaminants from gases exhausted from equipment as defined herein (IAC 567-20.2).
- *Goal* - a level of air quality which is expected to be obtained (IAC 567-20.2) [Added May 1998].
- *High Risk Pollutant* - one of the following hazardous air pollutants listed in Table 1 in 40 C.F.R. 63.74 as amended through October 21, 1994 (IAC 567-22.100) [Added April 2003].
- *Hospital/Medical/Infectious Waste Incinerator or HMIWI* - any device that combusts any amount or combination of hospital or medical/infectious waste (IAC 567-23.1(5)(b)) [Added April 2001].
- *Hospital Waste* - discards generated at a hospital, except unused items returned to the manufacturer. The definition of hospital waste does not include human corpses, remains, and anatomical parts that are intended for interment or cremation (IAC 567-23.1(5)(b)) [Added April 2001].
- *Incinerator* - a combustion apparatus designed for high temperature operation in which solid, semisolid, liquid, or gaseous combustible refuse is ignited and burned efficiently, and from which the solid residues contain little or no combustible material (IAC 567-20.2).
- *Initiation of Construction, Installation, or Alteration* - significant permanent modification of a site to install equipment, control equipment, or permanent structures. Not included are activities incident to preliminary engineering, environmental studies, or acquisition of a site for a facility (IAC 567-20.2).
- *Landscape Waste* - any vegetable or plant wastes except garbage. The term includes trees, tree trimmings, branches, stumps, brush, weeds, grass, shrubbery, and yard trimmings (IAC 567-20.2).
- *Large HMIWI*: (IAC 567-23.1(5)(b)) [Added April 2001].
 1. An HMIWI whose maximum design waste burning capacity is more than 500 pounds per hour; or
 2. A continuous or intermittent HMIWI whose maximum charge rate is more than 500 pounds per hour; or
 3. A batch HMIWI whose maximum charge rate is more than 4,000 pounds per day.
- *Major Source* - any stationary source (or any group of stationary sources located on one or more contiguous or adjacent properties and under common control of the same person or of persons under common control) belonging to a single major industrial grouping that is any of the following (IAC 567-22.100) [Added May 1998]:
 1. A major stationary source of air pollutants, as defined in section 302 of the Act, that directly emits or has the potential to emit 100 tons per year (tpy) or more of any air pollutant (including any major source of fugitive emissions of any such pollutant). The fugitive emissions of a stationary source shall not be considered in determining whether it is a major stationary source for the purposes of section 302(j) of the Act, unless the source belongs to one of the stationary source categories listed in this chapter
 2. A major source of hazardous air pollutants according to section 112 of the Act as follows:
 - a. For pollutants other than radionuclides, any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit, in the aggregate, 10 tpy or more of any hazardous air pollutant which has been listed pursuant to section 112(b) of the Act and these rules or 25 tpy or more of any combination of such hazardous air pollutants. Notwithstanding the previous sentence, emissions from any oil or gas exploration or production well (with its associated equipment) and emission from any pipeline compressor or pump station shall not be aggregated with emissions from other similar units, whether or not such units are in a contiguous area or under common control, to determine whether such units or stations are major sources.
 - b. For radionuclides, "major source" shall have the meaning specified by the administrator by rule as of January 18, 1994.
 3. A major stationary source as defined in Part D of Title I of the Act, including:

- a. For ozone nonattainment areas, sources with the potential to emit 100 tpy or more of volatile organic compounds or oxides of nitrogen in areas classified as "marginal" or "moderate," 50 tpy or more in areas classified as "serious," 25 tpy or more in areas classified as "severe" and 10 tpy or more in areas classified as "extreme"; except that the references in this paragraph to 100, 50, 25, and 10 tpy of nitrogen oxides shall not apply with respect to any source for which the administrator has made a finding, under section 182(f)(1) or (2) of the Act, that requirements under section 182(f) of the Act do not apply;
 - b. For ozone transport regions established pursuant to section 184 of the Act, sources with potential to emit 50 tpy or more of volatile organic compounds;
 - c. For carbon monoxide nonattainment areas (1) that are classified as "serious" and (2) in which stationary sources contribute significantly to carbon monoxide levels, and sources with the potential to emit 50 tpy or more of carbon monoxide;
 - d. For particulate matter (PM-10), nonattainment areas classified as "serious," sources with the potential to emit 70 tpy or more of PM-10.
- *Manually Operated Equipment* - a machine or tool that is handheld, such as a handheld circular saw or compressed air chisel; a machine or tool for which the work piece is held or manipulated by hand, such as a bench grinder; a machine or tool for which the tool or bit is manipulated by hand, such as a lathe or drill press; and any dust collection system which is part of such machine or tool; but not including any machine or tool for which the extent of manual operation is to control power to the machine or tool and not including any central dust collection system serving more than one machine or tool (IAC 567-22.100) [Added April 2003]
 - *Medical/Infectious Waste* - any waste generated in the diagnosis, treatment, or immunization of human beings or animals, in research pertaining thereto, or in the production or testing of biologicals that is listed in numbered paragraphs "1" through "7" of this definition. The definition of medical/infectious waste does not include hazardous waste identified or listed under the regulations in 40 CFR Part 261; household waste, as defined in 40 CFR § 261.4(b)(1); ash from incineration of medical/infectious waste, once the incineration process has been completed; human corpses, remains, and anatomical parts that are intended for interment or cremation; and domestic sewage materials identified in 40 CFR § 261.4(a)(1) (IAC 567-23.1(5)(b)) [Added April 2001].
 1. Cultures and stocks of infectious agents and associated biologicals, including: cultures from medical and pathological laboratories; cultures and stocks of infectious agents from research and industrial laboratories; wastes from the production of biologicals; discarded live and attenuated vaccines; and culture dishes and devices used to transfer, inoculate, and mix cultures.
 2. Human pathological waste, including tissues, organs, and body parts and body fluids that are removed during surgery or autopsy or other medical procedures, and specimens of body fluids and their containers.
 3. Human blood and blood products including: liquid waste human blood, products of blood, items saturated or dripping with human blood; or items that were saturated or dripping with human blood that are now caked with dried human blood; including serum, plasma, and other blood components, and their containers, which were used or intended for use in patient care, testing and laboratory analysis or the development of pharmaceuticals. Intravenous bags are also included in this category.
 4. Sharps that have been used in animal or human patient care or treatment or in medical, research, or industrial laboratories, including hypodermic needles, syringes (with or without the attached needle), pasteur pipettes, scalpel blades, blood vials, needles with attached tubing, and culture dishes (regardless of presence of infectious agents). Also included are other types of broken or unbroken glassware that were in contact with infectious agents, such as used slides and cover slips.
 5. Animal waste including contaminated animal carcasses, body parts, and bedding of animals that were known to have been exposed to infectious agents during research (including research in veterinary hospitals), production of biologicals or testing of pharmaceuticals.
 6. Isolation wastes including biological waste and discarded materials contaminated with blood, excretions, exudates, or secretions from humans who are isolated to protect others from certain highly communicable diseases, or from isolated animals known to be infected with highly communicable diseases.
 7. Unused sharps including the following unused, discarded sharps: hypodermic needles, suture needles, syringes, and scalpel blades.
 - *Medium HMIWI*: (IAC 567-23.1(5)(b)) [Added April 2001]

1. A n HMIWI whose maximum design waste burning capacity is more than 200 pounds per hour but less than or equal to 500 pounds per hour; or
 2. A continuous or intermittent HMIWI whose maximum charge rate is more than 200 pounds per hour but less than or equal to 500 pounds per hour; or
 3. A batch HMIWI whose maximum charge rate is more than 1,600 pounds per day but less than or equal to 4,000 pounds per day.
- *Municipal Solid Waste Landfill or MSW Landfill* - an entire disposal facility in a contiguous geographical space where household waste is placed in or on land. A n MSW la ndfill may a lso r eceive o ther t ypes o f R CRA Subtitle D wastes such as commercial solid waste, nonhazardous sludge, and industrial solid waste. Portions of an MSW landfill may be separated by access roads. An MSW landfill may be publicly or privately owned. An MSW la ndfill may b e a n ew MSW la ndfill, a n e xisting M SW la ndfill o r a l a teral e xpansion (IAC 5 67-23.1(5)(a)) [Added April 2001].
 - *Opacity* - the degree to which emissions reduce the transmission of light and obscure the view of an object in the background (IAC 567-20.2).
 - *Open Burning* - any burning of combustible materials where the products of combustion are emitted into the open air without passing through a chimney or stack (IAC 567-20.2).
 - *Particulate Matter* - any material, except uncombined water, that exists in a finely divides form as a liquid or solid at standard conditions (IAC 567-20.2).
 - *PM₁₀* - particulate matter with an aerodynamic diameter less than or equal to a nominal 10 mm as measured by a USEPA-approved reference method (IAC 567-20.2).
 - *Potential to Emit* - the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation is enforceable by the administrator. This term does not alter or affect the use of this term for any other purposes under the Act, or the term "capacity factor" as used in Title IV of the Act or the regulations relating to acid rain. If the source is subject to n ew source c onstruction p ermit r eview, t hen p otential to e mit is d efined a s s tated a bove o r a s established in a federally enforceable permit (IAC 567-20.2) [Added May 1998].
 - *Process* - any action, operation or treatment, and all methods and forms of manufacturing or processing, that may e mit s moke, p articulate matter, g aseous matter o r o ther a ir c ontaminant (IAC 5 67-20.2) [Added May 1998].
 - *Process Weight* - the total weight of all materials introduced into any source operation Solid fuels charged will be considered as part of the process weight, but liquid and gaseous fuel and combustion air will not (IAC 567-20.2) [Added May 1998].
 - *Process Weight Rate* - continuous or long-run steady-state source operations, the total process weight for the entire period of continuous operation or for a typical portion thereof, divided by the number of hours of such period or portion thereof; or for a cyclical or batch source operation, the total process weight for a period that covers a complete operation or an integral number of cycles, divided by the number of hours of actual process operation during such a period. Where the nature of any process or operation, or the design of any equipment is such as to permit more than one interruption of this definition, the interpretation that results in the minimum value for allowable emission shall apply (IAC 567-20.2).
 - *Refuse* - garbage, rubbish, and all other putrescible and nonputrescible wastes, except sewage and water-carried trade wastes (IAC 567-20.2).

- *Regulated Air Pollutant (regulated Air Contaminant)* - the following (IAC 567-22.100) [Added May 1998; Revised April 1999]:
 1. Nitrogen oxides or any volatile organic compounds;
 2. Any pollutant for which a national ambient air quality standard has been promulgated;
 3. Any pollutant that is subject to any standard promulgated under section 111 of the Act;
 4. Any Class I or II substance subject to a standard promulgated under or established by Title VI of the Act;
 5. Any pollutant subject to a standard promulgated under section 112 or other requirements established under Section 112 of the Act, including Sections 112(g), (j), and (r) of the Act, including the following:
 - a. any pollutant subject to requirements under section 112(j) of the Act. If the administrator fails to promulgate a standard by the date established pursuant to Section 112(e) of the Act, any pollutant for which a subject source would be major shall be considered to be regulated on the date 18 months after the applicable date established pursuant to Section 112(e) of the Act; and
 - b. any pollutant for which the requirements of Section 112(g)(2) of the Act have been met, but only with respect to the individual source subject to the Section 112(g)(2) requirement
 6. With respect to Title V, total suspended particulate is not considered a regulated air pollutant for the purpose of determining whether a source is considered to be a major source.
- *Remote HMIWI* - a small HMIWI meeting the following conditions: (IAC 567-23.1(5)(b)) [Added April 2001]
 1. Located 50 miles from the boundary of the nearest standard metropolitan statistical area. The SMSA boundary is established by the political borders of the counties, provided in the definition of an SMSA, which are listed in parentheses.
 2. Burns less than 2,000 lb/week of hospital waste and medical/infectious waste.
- *Rubbish* - all waste materials of nonputrescible nature (IAC 567-20.2).
- *Shutdown* - the cessation of operation of any control equipment or process equipment or process for any purpose (IAC 567-20.2) [Added May 1998].
- *Small HMIWI*: (IAC 567-23.1(5)(b)) [Added April 2001]
 1. An HMIWI whose maximum design waste burning capacity is less than or equal to 200 pounds per hour; or
 2. A continuous or intermittent HMIWI whose maximum charge rate is less than or equal to 200 pounds per hour; or
 3. A batch HMIWI whose maximum charge rate is less than or equal to 1,600 pounds per day.
- *Source Operation* - the last operation preceding the emission of an air contaminant, and which results in the separation of the air contaminant from the process materials or in the conversion of the process materials into air contaminants, but is not an air pollution control operation (IAC 567-20.2).
- *Standard Conditions* - a gas temperature of 70 °F and a gas pressure of 29.92 in. Hg absolute (IAC 567-20.2).
- *Standard Metropolitan Statistical Area or SMSA* - any areas listed in OMB Bulletin No. 93-17 entitled "Revised Statistical Definitions for Metropolitan Areas" dated June 30, 1993. The following SMSAs are in Iowa or within 50 miles of Iowa border: Cedar Rapids (Linn County, IA), Davenport-Moline-Rock Island (Henry County, IL; Rock Island County, IL; Scott County, IA), Des Moines (Dallas County, Polk County, Warren County), Dubuque (Dubuque County), Iowa City (Johnson County), La Crosse (Houston County, MN; La Crosse County, WI), Omaha-Council Bluffs (Cass County, NE; Douglas County, NE; Pottawattamie County, IA; Sarpy County, NE; Washington County, NE), Rochester (Olmsted County, MN), St. Joseph (Andrew County, MO; Buchanan County, MO), Sioux City (Dakota County, NE; Woodbury County, IA), Sioux Falls (Lincoln County, SD; Minnehaha County, SD), and Waterloo-Cedar Falls (Black Hawk County) (IAC 567-23.1(5)(b)) [Added April 2001].
- *Standard Metropolitan Statistical Area* - an area which has at least one city with a population of at least 50,000 and such surrounding areas as geographically defined by the U.S. Bureau of the Budget (Department of Commerce) (IAC 567-20.2).

- *Start-Up* - the setting into operation of any control equipment or process equipment or process for any purpose (IAC 567-20.2).
- *Stationary Source* - any building, structure, facility, or installation which emits or may emit any air pollutant (IAC 567-20.2).
- *Stationary Source with De Minimis Emissions* (IAC 567-22.300(4)) [Added May 1998]:
 1. In every 12 month rolling period, the stationary source emits less than or equal to the following quantities of emissions
 - a. 5 tons per year of a regulated air pollutant (excluding HAPs), and
 - b. 2 tons per year of a single HAP, and
 - c. 5 tons per year of any combinations of HAPs
 2. In every 12-month rolling period, at least 90 percent of the stationary source's emissions are associated with an operation for which the throughput is less than or equal to one of the quantities specified in paragraphs "1" to "9" below:
 - a. 1400 gal of any combination of solvent containing materials but no more than 550 gallons of any one solvent-containing material, provided that the materials do not contain the following: methyl chloroform (1,1,1-trichloroethane), methylene chloride (dichloromethane), tetrachloroethylene (perchloroethylene), or trichloroethylene;
 - b. 750 gallons of any combination of solvent containing materials where the materials contain the following: methyl chloroform (1,1,1-trichloroethane), methylene chloride (dichloromethane), tetrachloroethylene (perchloroethylene), or trichloroethylene, but not more than 300 gallons of any one solvent-containing material;
 - c. 365 gallons of solvent-containing material used at a paint spray unit(s);
 - d. 4,400,000 gallons of gasoline dispensed from equipment with Phase I and II vapor recovery systems;
 - e. 470,000 gallons of gasoline dispensed from equipment without Phase I and II vapor recovery systems;
 - f. 1,400 gallons of gasoline combusted;
 - h. 1,600 gallons of diesel fuel combusted;
 - i. 500,000 gallons of distillate oil combusted; or
 - j. 71,400,000 cubic feet of natural gas combusted.
- *Trade Wastes* - any refuse resulting from the prosecution of any trade, business, industry, commercial venture (including farming and ranching), or utility or service activity, and any governmental or institutional activity, whether or not for profit (IAC 567-20.2).
- *Volatile Organic Compounds (VOC)* - any compounds included in the definition of volatile organic compounds found at 40 CFR Section 51.100(s) as amended through January 21, 2009 (IAC 567-20.2) [Revised April 2000; Revised February 2010].

**AIR EMISSIONS MANAGEMENT
GUIDANCE FOR IOWA CHECKLIST USERS**

REFER TO CHECKLIST ITEMS:

Missing Checklist Items	AE.2.1.IA.
State-Specific Requirements	
Permits/Notifications/Exemptions	AE.6.1.IA through AE.6.9.IA
Management/Administrative	AE.7.1.IA and AE.7.3.IA
Operations	AE.8.1.IA through AE.8.4.IA
Emission Limits	AE.9.1.IA through AE.9.3.IA
Ambient Air Quality	
(NOTE: In IAC 567-28.1, the State of Iowa adopts the National Primary and Secondary Ambient Air Quality Standards as published in 40 CFR 50 except that the annual PM ₁₀ standard specified in 40 CFR Section 50.6(b) shall continue to be applied for purposes of implementation of new source permitting provisions in 567 IAC Chapters 22 and 33.)	
Steam Generators	AE.10.1.IA. and AE.10.2.IA.
Mercury Budget Trading Program	AE.12.1.IA.
Miscellaneous Incinerators	AE.25.1.IA. through AE.25.3.IA.
Medical Waste Incinerators	
General	AE.30.1.IA. through AE.30.3.IA.
Monitoring	AE.32.1.IA. through AE.32.3.IA.
Recording/Recordkeeping Requirements	AE.34.1.IA. and AE.34.2.IA.
Gasoline / Fuels	AE.55.1.IA.
Fugitive Emissions	AE.65.1.IA. and AE.65.2.IA.
Toxic Emissions	AE.67.1.IA. through AE.67.4.IA.
Acid Production Units	AE.80.1.IA. through AE.80.4.IA.
CFCs and Halons	AE.90.1.IA. through AE.90.3.IA.
Coating Operations	AE.100.1.IA. and AE.100.2.IA.
Open Burning	AE.130.1.IA. through AE.130.3.IA.
Other Emissions/Sources	AE.155.1.IA. through AE.155.4.IA

**AIR EMISSIONS MANAGEMENT
GUIDANCE FOR IOWA APPENDIX USERS**

REFER TO APPENDIX NUMBERS:

REFER TO APPENDIX ITEMS:

1-1	Limitations of Particulate Matter Emissions Based on Process Weight
1-2a	Exemptions from Permit Requirements
1-2b	Sources Exempted and Included in Title V Permit Applications
1-3	Sources Ineligible for an Operating Permit by Rule for Small Sources
1-4	Activities Exempt from the Open Burning Prohibition
1-5	Adopted Federal Emission Standards for Hazardous Air Pollutants for Source Categories
1-6	Emission Limitations Small, Medium, and Large HMIWI
1-7	Emission Limitations for Remote HMIWI
1-8	Adopted Federal Emission Standards for New Source Performance



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AE.2. MISSING CHECKLIST ITEMS AE.2.1.IA. Federal facilities are required to comply with all applicable state regulatory requirements not contained in the checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of findings).	Determine whether any new regulations have been issued since the finalization of the manual. Determine whether the Federal facility has activities or facilities that are regulated but not addressed in the checklists. Verify that the Federal facility is in compliance with all applicable and newly issued regulations.

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STATE-SPECIFIC REQUIREMENTS AE.6. Permits/ Notifications AE.6.1.IA. Stationary sources must have construction and operating permits (IAC 567-20.1, 567-21.2(1), and 567-22.1(1) and (2)) [Revised April 2000; Revised April 2001; Revised April 2005; Revised February 2009]. AE.6.2.IA. Specific sources must have a Title V permit (IAC 567-22.101(1), 22.201(1) and 22.202) [Revised April 2003; Citation Revised April 2006 ; Revised February 2007 ; Revised February 2008].	Verify that both new and existing stationary sources that emit or may emit any air pollutant have both construction and operating permits from the Department. (NOTE: A stationary source may make application for a variance (or extension of a variance) from air pollution and control rules and standards.) Verify that the permit is obtained prior to the initiation of construction, installation, or alteration of any portion of a stationary source or anaerobic lagoon. (NOTE: Existing sources built prior to 23 September 1970, are not subject to this permit requirement, unless they have been modified, reconstructed, or altered on or after 23 September 1970.) (NOTE: The requirement to obtain a permit is not required for the equipment, control equipment, and processes listed in Appendix 1-2a.) Verify that records are maintained at the facility to support any exemptions claimed (see Appendix 1-2a for descriptions of the facilities and records). Verify that information is submitted to the Department for facilities claiming exemptions (see Appendix 1-2a for descriptions of the facilities and the information to be submitted). (NOTE: See AE.100.2.IA. for permit by rule requirements applicable to spray booths.) (NOTE: See Appendix 1-2b for Sources Exempted and Included in Title V Permit Applications.) Verify that no source operates without an operating permit, except in compliance with either: - a properly issued Title V operating permit - a properly issued voluntary operating permit - an operating permit by rule for small sources (see AE.6.3.IA through AE.6.7.IA.) Verify that the following sources obtain a Title V operating permit: - any affected source subject to the provisions of Title IV of the Act - any major source

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AE.6.3.IA. Sources that otherwise would be required to obtain a Title V operating permit may instead register for a nonoperation permit by rule for small sources if they meet specific requirements (IAC 567-22.300(1) through (3), (5), and (6)) [Revised April 2003].	- any source, including any nonmajor source, subject to a standard, limitation, or other requirement under Section 111 of the Act (567-subrule 23.1(2), new source performance standards; 567-subrule 23.1(5), emission guidelines) - any source, including any area source, subject to a standard or other requirement under Section 112 of the Act (567-subrules 23.1(3) and 23.1(4), emission standards for hazardous air pollutants), except that a source is not required to obtain a Title V permit solely because it is subject to regulations or requirements under Section 112(r) of the Act - any solid waste incinerator unit required to obtain a Title V permit under section 129(e) of the Act - any source category designated by the administrator pursuant to 40 CFR 70.3 as amended through December 19, 2005. Verify that permit holder is in compliance with all conditions of the Title V permit. (NOTE: A major source otherwise required to obtain a Title V operating permit may instead obtain a voluntary operating permit following successful demonstration of the following: - the potential to emit, as limited by the conditions of air quality permits obtained from the department, of each regulated air pollutant is limited to less than 100 tons per 12-month rolling period - the actual emissions of each regulated air pollutant have been and are predicted to be less than 100 tons per 12-month rolling period - the potential to emit of each regulated hazardous air pollutant, including fugitive emissions, is less than 10 tons per 12-month rolling period and the potential to emit of all regulated hazardous air pollutants, including fugitive emissions, is less than 25 tons per 12-month rolling period - the actual emissions of each regulated hazardous air pollutant, including fugitive emissions, have been and are predicted to be less than 10 tons per 12-month rolling period and the actual emissions of all regulated hazardous air pollutants, including fugitive emissions, have been and are predicted to be less than 25 tons per 12-month rolling period.) Verify that the potential to emit air contaminants is equal to or in excess of the threshold for a major stationary source of regulated air pollutants or hazardous air pollutants. Verify that the actual emissions of stationary sources are less than or equal to the following limitations for every 12 mo rolling period: - 50 percent of the major source thresholds for regulated air pollutants (excluding hazardous air pollutants) - 5 tons per year of a single hazardous air pollutant - 12.5 tons per year of any combination of hazardous air pollutants. (NOTE: Stationary sources may take into account the operation of air pollution control equipment on the capacity of the source to emit an air contaminant if the

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	equipment is required by Federal, state, or local air pollution control agency rules and regulations, or permits terms and conditions that are federally enforceable.) Verify that such air pollution control equipment is maintained and operated in a manner consistent with good air pollution control practice for minimizing emissions. Verify that a source operating under a permit by rule for small sources obtains any necessary permits prior to commencing any physical or operational change or activity that will result in actual emissions that exceed these emission limitations. Verify that a source operating under a permit by rule for small sources continues to meet any and all applicable Federal requirements including, but not limited to, a maximum achievable control technology (MACT) standard. (NOTE: Source categories eligible for a nonoperating permit by rule for small sources are listed in Appendix 1-3.)
AE.6.4.IA. Sources operating under a permit by rule for small sources must update their status when issued construction permits (IAC 567-22.300(9)).	Verify that, if the issuance of a construction permit acts to make the source no longer eligible for an operating permit by rule for small sources, an application for either a Title V operating permit or a voluntary operating permit is submitted within 12 mo of issuance of the construction permit. Verify that, if the issuance of a construction permit does not prevent the source from continuing to be eligible to operate under an operating permit by rule for small sources, a registration updated is provided to the Department within 30 days of issuance of the construction permit.
AE.6.5.IA. Sources operating under a permit by rule for small sources must meet registration and reporting requirements (IAC 567-22.300(8) and (12)) [Revised April 2003 ; Revised April 2006].	Verify that a small source qualifying for a small source permit by rule registers with the Air Quality Bureau. Verify that a registrant promptly submits supplementary facts or corrected information upon becoming aware of submitted incorrect information or incomplete information. (NOTE: At the time of registration for a nonoperating permit by rule for small sources each owner or operator of a stationary source shall submit to the department a standard registration form and required attachments including a certification of completeness and intention to operate under the criteria of the permit by rule.) Verify that the new owner notifies the Department in writing no later than 30 days after the change of ownership of equipment covered by a nonoperating permit by rule for small sources, including the following information: - the date of ownership change

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AE.6.6.IA. Sources operating under a permit by rule for small sources must meet recordkeeping requirements (IAC 567-22.300(7)) [Revised April 2003 ; Revised April 2006].	- the name, address and telephone number of the responsible official, the contact person and the owner of the equipment both before and after the change of ownership. (NOTE: The record-keeping requirements of this rule do not replace any record-keeping requirement contained in any operating permit, construction permit, or in a local, state, or federal rule or regulation.) Verify that non-de minimus sources maintain records for each permitted emission unit sufficient to determine actual emissions and summarize this information in a monthly log that is maintained on site for 5 yr. Verify that non de minimus stationary sources that contain a nonpermitted coating/solvent emission unit or use a coating, solvent, ink, or adhesive keep and maintain the following records: - a current list of all coatings, solvent, inks and adhesives in use including: - material safety data sheets (MSDS) - manufacturer's product specifications - material VOC content reports for each solvent (including solvents used in cleanup and surface preparation), coating, ink, and adhesive used - a description of any equipment used during and after coating/solvent application, including type, make and model; maximum design process rate or throughput; and control device(s) type and description (if any) - a monthly log of the consumption of each solvent (including solvents used in cleanup and surface preparation), coating, ink, and adhesive used - all purchases orders, invoices, and other documents to support information in the monthly log. Verify that non de minimus stationary sources that contain a non organic liquid storage unit keep and maintain the following records: - a monthly log identifying the liquid stored and monthly throughput - information on the tank design and specifications including control equipment. Verify that non de minimus stationary sources that contain a combustion emission unit keep and maintain the following records: - information on equipment type, make and model, maximum design process rate or maximum power input/output, minimum operating temperature (for thermal oxidizers) and capacity, control device(s) type and description (if any) and all source test information - a monthly log of hours of operation, fuel type, fuel usage, fuel heating value (for nonfossil fuels in terms of Btu/lb or Btu/gal), percent sulfur for fuel oil and coal.

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AE.6.7.IA. Sources with de minimus emissions must meet registration and recordkeeping requirements (IA C 5 67-22.300(4)) [Added April 2003].	Verify that non de minimus stationary sources that contain an emission control unit keep and maintain the following records: - information on the equipment type and description, make and model, and emission units served by the control unit - information on equipment design including, where applicable - pollutant(s) controlled - control effectiveness - maximum design or rated capacity - other design data as appropriate - monthly log of hours of operation including notation of any control equipment breakdowns, upsets, repairs, maintenance and any other deviations from design parameters. Verify that non de minimus stationary sources that contain an emission unit not included above keep and maintain the following records: - information on the process and equipment including the following: equipment type, description, make and model; maximum design process rate or throughput; control device(s) type and description (if any) - a monthly log of operating hours, each raw material used and its amount, each product produced and its production rate - purchase orders, invoices, and other documents to support information in the monthly log.
	(NOTE: Stationary sources with de minimus emissions must submit the standard registration form and must meet and fulfill all registration and reporting requirements as found in 22.300(8) (see AE.6.5.IA.).) (NOTE: For the purpose of this rule a stationary source with de minimis emissions means: - in every 12 month rolling period, the stationary source emits less than or equal to the following quantities of emissions: - 5 tons per year of a regulated air pollutant (excluding HAPs), and - 2 tons per year of a single HAP, and - 5 tons per year of any combinations of HAPs - in every 12-month rolling period, at least 90 percent of the stationary source's emissions are associated with an operation for which the throughput is less than or equal to one of the quantities specified below: - 1,400 gallons of any combination of solvent containing materials but no more than 550 gallons of any one solvent-containing material, provided that the materials do not contain the following: methyl chloroform (1,1,1-trichloroethane), methylene chloride (dichloromethane), tetrachloroethylene (perchloroethylene), or trichloroethylene - 750 gallons of any combination of solvent containing materials where the materials contain the following: methyl chloroform(1,1,1-trichloroethane), methylene chloride (dichloromethane), tetrachloroethylene (perchloroethylene), or trichloroethylene, but not

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AE.6.8.IA. Substantial small units must notify the department of construction, modification or when annual emissions exceed the cumulative notice threshold (IAC 567-22.1(2)(w)(5) through (8)) [Added April 2004; Revised April 2006].	more than 300 gallons of any one solvent-containing material - 365 gallons of solvent-containing material used at a paint spray unit(s) - 4,400,000 gallons of gasoline dispensed from equipment with Phase I and II vapor recovery systems - 470,000 gallons of gasoline dispensed from equipment without Phase I and II vapor recovery systems - 1,400 gallons of gasoline combusted - 16,600 gallons of diesel fuel combusted - 500,000 gallons of distillate oil combusted - 71,400,000 cubic feet of natural gas combusted.) Verify that, within 30 days of a written request by the state or the U.S. EPA, the owner or operator of a stationary source can demonstrate that the stationary source's emissions or throughput is not in excess of the applicable quantities. Verify that de minimus sources always maintain an annual log of each raw material used and its amount. Verify that the annual log and all related material safety data sheets (MSDS) for all materials are maintained for a period of not less than the most current 5 years. Verify that the annual log begin on the date the small source operating permit application is submitted, then on an annual basis, based on a calendar year. (NOTE: The record-keeping requirements of this rule shall not replace any record-keeping requirement contained in a construction permit or in a local, state, or federal rule or regulation.) Verify that the owner or operator notifies the department in writing at least 10 days prior to commencing construction of any new or modified "substantial small unit". Verify that the owner or operator notifies the department within 30 days after determining a new existing small unit meets the criteria of the "substantial small unit". Verify that notification includes the following: - the name of the business - the location where the unit will be installed - information describing the unit and quantifying its emissions. Verify that the owner or operator notifies the department within 90 days of the end of the calendar year for which the aggregate emissions from substantial small units at the facility have reached any of the cumulative notice thresholds. (NOTE: "Substantial small unit" means a small unit which emits more than the following amounts, as documented in the exemption justification document:

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AE.6.9.IA. Stationary sources must self identify best available retrofit technology (BART) applicability (IAC 567-22.9(2) and (3)) [Added April 2006; Revised February 2008].	- 30 pounds per year of lead and lead compounds expressed as lead - 3.75 tons per year of sulfur dioxide - 3.75 tons per year of nitrogen oxides - 3.75 tons per year of volatile organic compounds - 3.75 tons per year of carbon monoxide - 3.75 tons per year of particulate - 1.875 tons per year of PM10 - 3.75 tons per year of any hazardous air pollutant - 9.375 tons per year of any combination of hazardous air pollutants.) Verify that, within 5 working days from the date that it was determined that the cumulative notice threshold has been reached, the owner or operation submits a letter to the department establishing the date and within 90 days, applies for air construction permit(s). (NOTE: "Cumulative notice threshold" means the total combined emissions from all substantial small units using the small unit exemption which emit at the facility the following amounts, as documented in the exemption justification document: - 0.6 tons per year of lead and lead compounds expressed as lead - 40 tons per year of sulfur dioxide - 40 tons per year of nitrogen oxides - 40 tons per year of volatile organic compounds - 100 tons per year of carbon monoxide - 25 tons per year of particulate matter - 15 tons per year of PM10 - 10 tons per year of any hazardous air pollutant - 25 tons per year of any combination of hazardous air pollutants.) (NOTE: This checklist is applicable to the sources that meet the following criteria: - source falls within the stationary source category (see definitions) or is a fossil-fuel fired boiler individually totaling more than 250 M Btu per hour heat input - emission unit startup began after August 7, 1962 -construction of the emission unit commenced on or before August 7, 1977 - the sum of the potential to emit is equal to or greater than 250 tons per year or more of one of the following pollutants: nitrogen oxides, sulfur dioxide, particulate matter (PM10), or volatile organic compounds.) Verify that the owner or operator or designated representative of a facility submits 2 copies of a completed BART Eligibility Certification Form #542-8125 to the Air Quality Bureau, by September 1, 2005. Verify that the information submitted include source identification, description of processes, potential emissions, emission unit and emission point characteristics, date construction commenced and date of startup, and other information required

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STATE-SPECIFIC REQUIREMENTS AE.7. Management/ Administrative AE.7.1.IA. Facilities must plan abatement strategies for air pollution episodes (IAC 567-26.3(1)a, c, and d). AE.7.2.IA. Facilities must file oral reports of excess emissions (IAC 567 -24.1(2) and (3)). AE.7.3.IA. Facilities required to have continuous monitoring equipment must meet notification, reporting, and recordkeeping requirements for emission testing of new and existing equipment (IAC 567 -25.1(5), (6), and (7)) [Added February 2010].	Verify that the facility implements its abatement plan for coal- or oil-fired electric power generating facilities and coal- and oil-fired process steam generating facilities during air pollution episodes. Verify that abatement plans have been approved by the Director. Verify that excess emissions are reported either in person or by phone to the Department within 8 hours of the start of the first working day after their occurrence. (NOTE: Oral reports of excess emissions are not required for sources with operational continuous monitoring equipment if the excess incident occurs for less than 30 min and does not exceed the applicable emission standard by more than 10 percent or the applicable visible emission standard by more than 10 percent opacity.) Verify that oral excess emission reports have been followed by written excess emission reports, submitted to the Department within seven working days of the excess emission incident. Verify that the Department is notified in writing not less than 30 days before a required test or before a performance evaluation of a continuous emission monitor. Verify that the notice includes the time, the place, the name of the person who will conduct the tests and other information as required by the Department. (NOTE: If the owner or operator does not provide timely notice to the Department, the Department shall not consider the test results or performance evaluation results to be a valid demonstration of compliance with applicable rules or permit conditions.) Verify that a testing protocol is submitted to the Department no later than 15 days before the owner or operator conducts the compliance demonstration. Verify that results of the tests are submitted in writing to the Director in the form

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	of a comprehensive report within 6 weeks of the completion of the testing. Verify that tests of new equipment are conducted within 60 days of achieving maximum production but no later than 180 days of startup, unless a shorter time frame is specified in the permit. (NOTE: The Director may require a new emission test to be conducted on any existing equipment if the Director has reason to believe that the equipment does not comply with applicable requirements.) Verify that, for a minimum of two years, a file is kept of all information pertinent to each monitoring system including, but is not limited to, the following: - all emissions data (raw data, adjusted data, and any or all adjusted factors used to convert emissions from units of measurement to units of the applicable standard) - performance evaluations, calibrations and zero checks - records of all malfunctions of monitoring equipment or source and repair procedures performed. Verify that a written report is submitted of emissions for each calendar quarter pursuant to the provisions of Appendix P of 40 Code of Federal Regulations Part 51, as amended, no later than 30 calendar days following the end of the calendar quarter, on forms provided by the Director. Verify that the report includes the following: - periods of recorded emissions in excess of the applicable standards - results of all calibrations and zero checks and performance evaluations occurring during the reporting period - any periods of monitoring equipment malfunctions or source upsets and any apparent reasons for these malfunctions and upsets shall be included in the report.

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STATE-SPECIFIC REQUIREMENTS AE.8. Operations AE.8.1.IA. Facilities must take specific actions during alert level air pollution episodes (IAC 567-26.4(1)a). AE.8.2.IA. Facilities must take specific actions during warning level air pollution episodes (IAC 567-26.4(1)b).	Verify that the following general control actions are taken whenever an alert level air pollution episode is declared: - the open burning of tree waste, vegetation, refuse, and any form of debris ceases - the use of incinerators for the disposal of solid waste is limited to the hours between 12 noon and 4:00 p.m. - boiler lancing and soot blowing from fuel-burning equipment is performed only between 12 noon and 4:00 p.m. - the unnecessary [not defined] use of motor vehicles is eliminated. Verify that the following control actions for coal- or oil-fired electric generating units and coal- or oil-fired process steam generating facilities are taken whenever an alert level air pollution episode is declared: - use of fuels with low ash and sulfur content - maximum utilization of mid-day (i.e., 12 noon to 4 p.m.) atmospheric turbulence for boiler lancing or soot blowing - diversion of electric power generation to sources outside the alert level (for electric generating units) - substantial reduction of steam load demands consistent with continuing plant operations (for steam generating facilities). Verify that the following general control actions are taken whenever an warning level air pollution episode is declared: - the open burning of tree waste, vegetation, refuse, and any form of debris ceases - the use of incinerators for the disposal of solid waste is limited to the hours between 12 noon and 4:00 p.m. - boiler lancing and soot blowing from fuel-burning equipment is performed only between 12 noon and 4:00 p.m. - the use of car pools and mass transportation, as well as the elimination of unnecessary [not defined] motor vehicle operation. Verify that the following control actions for coal- or oil-fired electric generating units and coal- or oil-fired process steam generating facilities are taken whenever a warning level air pollution episode is declared: - use of fuels with the lowest ash and sulfur content - maximum utilization of mid-day (i.e., 12 noon to 4 p.m.) atmospheric

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AE.8.3.IA. Facilities must take specific actions during emergency level air pollution episodes (IAC 567-26.4(1)c).	turbulence for boiler lancing or soot blowing - diversion of electric power generation to sources outside the alert level (for electric generating units) - preparation for use of emergency plans in the event of an emergency development (for steam generating facilities). Verify that there is no open burning of tree waste, vegetation, refuse, and any form of debris during an emergency level air pollution episode. Verify that there is no use of incinerators for the disposal of solid or liquid waste during an emergency level air pollution episode. Verify that the following places of business or activity cease operations immediately during an emergency level air pollution episode: - all construction work, except what must proceed to avoid emergent physical harm - all wholesale trade establishments - offices of the Federal government, except those that are vital to public safety and welfare - all retail trade establishments, except pharmacies, surgical supply distributors, and grocery stores - banks, other financial institutions, and insurance agencies - advertising of fices, consumer credit reporting, adjustment and collection agencies, duplicating, addressing, blueprinting, photocopying, mailing, mailing lists and stenographic services, equipment rental services, commercial testing labs - wholesale and retail laundries, laundry services, cleaning and dyeing establishments, photographic studios, beauty shops, barber shops, shoe repair shops - automobile repair, automobile services, garages - amusement and recreational parks - movie theaters - institutions of learning. Verify that there is no use of motor vehicles during an emergency level air pollution episode, except for those used approved by local and state police for use in emergencies. Verify that the facility takes the following control actions for coal- or oil-fired electric generating units and coal- or oil-fired process steam generating facilities whenever an emergency level air pollution episode is declared: - use of fuels with the lowest ash and sulfur content (for electric generating units) - reduction of heat and steam demands to absolute necessities consistent with equipment damage prevention (for steam generating facilities) - maximum utilization of mid-day (i.e., 12 noon to 4 p.m.) atmospheric

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AE.8.4.IA. Facilities must maintain and repair sources or air pollution (IAC 567-24.2(1)).	turbulence for boiler lancing or soot blowing - diversion of electric power generation to sources outside the alert level (for electric generating units) - the use of emergency plans in the event of an emergency development (for steam generating facilities). Verify that the facility meets the following maintenance and repair requirements: - maintains and operates equipment and control equipment at all times, utilizing practices that minimize emission - remedies any cause of excess emissions in a non-expeditious [not defined] manner - minimizes the amount and duration of any excess emission to the maximum extent possible during periods of emissions - implements measures contained in a Director-approved contingency plan - schedules at a minimum routine maintenance of equipment or control equipment during periods of process shutdown to the maximum extent possible. (NOTE: Measures that can be taken to minimize the amount and duration of any excess emission to the maximum extent possible during periods of emissions include using clean fuels, cutting back production, and using alternative process units.)

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STATE-SPECIFIC REQUIREMENTS AE.9. Emission Limits AE.9.1.IA. Facilities must not exceed specific limitations for emissions of particulate matter from process equipment (IAC 567-23.3(2) a). AE.9.2.IA. Facilities must not exceed specific limitations for emissions of particulate matter from combustion units (IAC 567-23.3(2) b).	Verify that the facility does not allow particulate matter emissions from processes to exceed the limitations specified in Appendix 1-1. Verify that the facility does not allow particulate matter emissions from the combustion of fuel for indirect heating or power generation to exceed the limitations specified in the American Society of Mechanical Engineers, Standard APS-1, Second Edition, November 1968, <i>Recommended Guide for the Control of Dust Emission - Combustion for Indirect Heat Exchangers</i>. Verify that the facility does not allow particulate matter emissions from each stack of units combusting fuel for indirect heat or power generation to exceed the following limitations: - for existing units outside any standard metropolitan statistical area, 0.8 lb of particulate per MBtu input - for existing units inside any standard metropolitan statistical area, 0.6 lb of particulates per MBtu input - for new fossil-fired steam generating units of more than 250 MBtu/h heat input, the limitations specified in Appendix 1-1 - for new fossil-fuel steam generating units of between 150 and 250 MBtu/h (inclusively) 0.2 lb of particulates per MBtu of heat input - for new fossil-fuel steam generating units of less than 150 MBtu/h heat input, 0.6 lb of particulate per MBtu of heat input. Verify that, for fuel-burning sources in operation prior to 29 July 1977, which are not subject to Iowa particulate matter emissions requirements and which significantly impact a primary or secondary particulate standard nonattainment area, the following emissions limitations are not exceeded: - for a single stack with a total heat input capacity less than 250 MBtu/h, 0.60 lb of particulate matter per MBtu heat input - for a single stack with a total heat input capacity greater than or equal to 250 MBtu/h and less than 500 MBtu/h, 0.40 lb of particulate matter per MBtu heat input - for a single stack with a total heat input greater than or equal to 500 MBtu, 0.30 lb of particulate matter per MBtu heat input.

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REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
AE.9.3.IA. Facilities must meet specific requirements for visible emissions (IAC 5 67-23.3(2)d).	(NOTE: A significant impact is equal to or greater than 5 mg of particulate matter per cubic meter of air (24-h average) or 1 mg of particulate matter per cubic meter of air (annual average), based on a U.S. EPA-approved single source dispersion model. In the case of 2 or more boilers discharging into a common stack, the emissions limitation is based upon the heat input of the largest operating boiler.) Verify that the facility does not allow the emission of visible air contaminants in excess of 40 percent opacity from any of the following sources: - equipment - internal combustion engine - premise fire - open fire or stack. (NOTE: The following sources/emissions are exempt from the 40 percent opacity limitation for visible air contaminants: - residential heating equipment serving dwellings of 4 family units or less - emissions during initial startup and warmup of a cold engine - emissions during testing of an engine for trouble, diagnosis, or repair - the presence of uncombined water (e.g., condensed water vapor).) Verify that emissions of visible air contaminants from gasoline-powered motor vehicles do not last for more than 5 consecutive seconds. Verify that emissions of visible air contaminants from diesel-powered locomotives do not exceed 40 percent opacity (except for a maximum period of 40 consecutive seconds during acceleration under load, or for a period of 4 consecutive minutes when the locomotive is loaded after a period of idling).

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REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
AE.10. STEAM/GENERATORS AE.10.1.IA. Coal- and coal-gas-fired steam generating units with a rated capacity greater than 250 M Btu must operate continuous monitoring equipment (IAC 567-25.1(1)) [Revised February 2010]. AE.10.2.IA. Coal- and coal-gas-fired steam generating units required to operate continuous monitoring equipment must meet recordkeeping and reporting requirements (IAC 567-25.1(5) and (6)) [Revised April 2006].	Verify that any coal- and coal-gas-fired steam generating unit with a rated capacity greater than 250 M Btu operates, calibrates, and maintains continuous monitoring equipment for opacity. Verify that records of continuous monitoring and related information are maintained at the coal- and coal-gas-fired steam generating unit for at least 2 yr. Verify that the owner or operator of any facility required to install a continuous monitoring system or systems submits a written report of emissions for each calendar quarter (pursuant to the provisions of Appendix P of 40 Code of Federal Regulations Part 51, as amended) no later than 30 calendar days following the end of the calendar quarter. Verify that the report includes the following: - all periods of recorded emissions in excess of the applicable standards - the results of all calibrations and zero checks and performance evaluations occurring during the reporting period - any periods of monitoring equipment malfunctions or source upsets and any apparent reasons for these malfunctions and upsets are included in the report.

COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
MERCURY -BUDGET TRADING PROGRAM AE.12. AE.12.1.IA. Any stationary, coal-fired boiler or stationary, coal-fired combustion turbine serving a generator with a nameplate capacity of more than 25 megawatt electrical (MWe) producing electricity for sale must meet mercury testing requirements (IAC 567-25.3 (1) through (4)) [Added February 2010].	(NOTE: This checklist applies to any stationary, coal-fired boiler or stationary, coal-fired combustion turbine serving, at any time since November 15, 1990 or the start-up of the unit's combustion chamber, a generator with a nameplate capacity of more than 25 megawatt electrical (MWe) producing electricity for sale.) Verify that one stack test for mercury is completed in each calendar quarter for four consecutive calendar quarters. Verify that testing commences no later than the third calendar quarter in 2010 (July 1 - September 30). Verify that, when the four consecutive quarterly stack tests are completed and the test results are approved in writing by the Department, the owner or operator completes one stack test for mercury in each subsequent calendar year. Verify that the Department is notified in writing not less than 30 days before each stack test and a testing protocol is submitted to the Department no later than 15 days before the scheduled test date. Verify that within 6 weeks of the completion of the testing, the results of the tests are submitted in writing to the department in the form of a comprehensive test report. (NOTE: In lieu of complying with the above requirements: - the owner or operator of an affected source may submit a written request to the department to be classified as a low mass emitter (LME) for mercury - the owner or operator of an affected source may submit a request to the department to record mercury emissions data using a continuous emission monitoring system (CEMS) - if the owner or operator of an affected source is required by EPA to complete stack testing for mercury, the owner or operator may submit a written request to the department that the EPA-required stack test be allowed to fulfill all or part of the testing requirements.)

COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
AE.25. MISCELLANEOUS INCINERATORS AE.25.1.IA. Incinerators with a refuse burning capacity of 1000 lb/h or more must not exceed specific particulate matter emissions limitations (IAC 567-23.4(12)a). AE.25.2.IA. Incinerators with a refuse burning capacity of less than 1000 lb/h must not exceed specific particulate matter emissions limitations (IAC 567-23.4(12)a). AE.25.3.IA. Incinerator emissions must not exceed specific particulate matter emissions limitations (IAC 567-23.4(12)b).	Verify that incinerators with a refuse burning capacity of 1000 lb/h or more do not emit particulate matter in excess of 0.2 gr per standard cubic foot of exhaust gas, adjusted to 12 percent carbon dioxide. Verify that incinerators with a refuse burning capacity of less than 1000 lb/h do not emit particulate matter in excess of 0.35 gr per standard cubic foot of exhaust gas, adjusted to 12 percent carbon dioxide. Verify that no incinerator emits visible air contaminants in excess of 40 percent opacity. (NOTE: Visible emissions in excess of 60 percent may be emitted for a period or period aggregating not more than 3 min in any 60-min period.)

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REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
MEDICAL WASTE INCINERATORS AE.30. General AE.30.1.IA. Hospital/Medical/Infectious Waste Incinerators (HMIWIs) that construction was commenced on or before June 20, 1996 must comply with initial submittal requirements and permit requirements, or cease operation (IAC 567- 23.1(5)(b)(2), (5), (12), and (13)) [Added April 2001 ; Revised April 2006].	(NOTE: HMIWI requirements, 567-23.1(5)b, apply to each individual HMIWI for which construction was commenced on or before June 20, 1996, except for the following: - an combustor if it is burning only pathological waste, low-level radioactive waste, and/or chemotherapeutic waste, or any combination thereof, provided that the owner or operator of the incinerator: - notifies the director of an exemption claim - keeps records on a calendar quarterly basis of the periods of time when only pathological waste, low-level radioactive waste, or chemotherapeutic waste, or any combination thereof, is burned - a co-fired incinerator if the owner or operator of the incinerator: - notifies the director of an exemption claim - provides an estimate of the relative weight of hospital waste, medical/infectious waste, other fuels, and other wastes to be combusted - and keeps records on a calendar-quarter basis of the weight of hospital waste and medical/infectious waste combusted and the weight of all other fuels and wastes combusted at the co-fired combustor - any combustor required to have a permit under Section 3005 of the Federal Solid Waste Disposal Act - any combustor/incinerator which meets the applicability requirements under subpart Cb, Ea, or Eb of 40 CFR Part 60 (standards or guidelines for certain municipal waste combustors) - any pyrolysis unit, as defined in 40 CFR 60.51c - cement kilns firing hospital, medical or infectious waste, or any combination thereof - physical or operational changes made to an existing HMIWI unit solely for the purpose of complying with paragraph 23.1(5)b are not considered a modification and do not result in an existing HMIWI becoming subject to the provisions of 40 CFR Part 60, Subpart Ec.) Verify that the HMIWI applied for an operating permit no later than 15 September 2000. Verify that the HMIWI meets the requirements for a waste management plan listed in 40 CFR § 60.55c by 15 June 2002. Verify that retrofitting of a HMIWI is completed no later than 16 August 2002. Verify that, if the HMIWI is planning to shut down, shut down is completed by 16 August 2000.

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AE.30.2.IA. HMIWIs that commenced construction prior to 20 June 1996 must meet emission limitations (IAC 567-23.1(5)(b)(3)) [Added April 2001; Revised February 2010].	(NOTE: See AE.30.1.IA. for exemptions from HMIWI requirements.) Verify that any small, medium, or large HMIWI that commenced construction prior to 20 June 1996 complies with the emission limitations listed in Appendix 1-6. Verify that a remote HMIWI does not exceed the emission limits for each pollutant listed in Appendix 1-7. (NOTE: The 2,000 lb/week limitation for a remote HMIWI does not apply during performance tests.) Verify that, on or after the date on which the initial performance test is completed or is required to be completed under 40 CFR Section 60.8, whichever comes first, the owner or operator of an HMIWI does not cause any gases to be discharged into the atmosphere from the stack that exhibits greater than 10 percent opacity (6-minute block average).
AE.30.3.IA. Remote HMIWIs that commenced construction prior to 20 June 1996 must meet inspection requirements (IAC 567-23.1(5)(b)(6)) [Added April 2001; Revised March 2006].	(NOTE: See AE.30.1.IA. for exemptions from HMIWI requirements.) Verify that the remote HMIWI had an initial equipment inspection performed within by 16 August 2000. Verify that the equipment inspections are conducted annually, no more than 12 months after the previous inspection. Verify that, at a minimum, an inspection includes the following: - inspect all burners, pilot assemblies, and pilot sensing devices for proper operation and clean pilot flame sensor, as necessary - ensure proper adjustment of primary and secondary chamber combustion air, and adjust as necessary - inspect hinges and door latches and lubricate as necessary - inspect dampers, fans, and blowers for proper operation - inspect HMIWI door and door gaskets for proper sealing - inspect motors for proper operation - inspect primary chamber refractory lining; clean and repair/replace lining as necessary - inspect incinerator shell for corrosion and/or hot spots - inspect secondary/tertiary chamber and stack, clean as necessary - inspect mechanical loader, including limit switches, for proper operation, if applicable - visually inspect waste bed (grates), and repair/seal, as appropriate - for the burn cycle that follows the inspection, document that the incinerator is operating properly and make any necessary adjustments - inspect air pollution control device(s) for proper operation, if applicable - inspect waste heat boiler systems to ensure proper operation, if applicable - inspect bypass stack components

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	- ensure proper calibration of thermocouples, sorbent feed systems and any other monitoring equipment - generally observe that the equipment is maintained in good operating condition. Verify that, within 10 operating days following a new equipment inspection, all necessary repairs are completed. (NOTE: If the repairs cannot be accomplished within 10 operating days, then the owner or operator must obtain written approval from the Department requesting an extension.)

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MEDICAL WASTE INCINERATORS AE.32. Monitoring AE.32.1.IA. HMIWIs that commenced construction prior to 20 June 1996 must meet compliance, performance testing, and monitoring requirements (IA C 5 67-23.1(5)(b)(7)) [Added April 2001; Revised March 2006]. AE.32.2.IA. Remote HMIWIs that commenced construction prior to 20 June 1996 must meet compliance and performance testing requirements (IA C 5 67-23.1(5)(b)(8)) [Added April 2001; Revised March 2006].	(NOTE: See AE.30.1.IA. for exemptions from HMIWI requirements.) Verify that HMIWIs meet the requirements for compliance and performance testing listed in AE.30.2.US. through AE.30.6.US. and AE.32.1.US. (excluding the fugitive emissions testing requirements) and the requirements for monitoring listed in AE.32.2.US. (NOTE: See AE.30.1.IA. for exemptions from HMIWI requirements.) Verify that remote HMIWIs conduct the performance testing requirements in AE.32.1.US. (NOTE: The 2,000 lb/week limitation does not apply during performance tests.) Verify that the remote HMIWIs establish maximum charge rate and minimum secondary chamber temperature as site-specific operating parameters during the initial performance test to determine compliance with applicable emission limits. Verify that following the date on which the initial performance test is completed or is required to be completed, whichever date comes first, remote HMIWIs do not operate above the maximum charge rate or below the minimum secondary chamber temperature measured as three-hour rolling averages (calculated each hour as the average of the previous 3 operating hours) at all times except during periods of startup, shutdown and malfunction. (NOTE: Operating parameter limits do not apply during performance tests. Operation above the maximum charge rate or below the minimum secondary chamber temperature shall constitute a violation of the established operating parameter(s).) (NOTE: Operation of the remote HMIWI above the maximum charge rate and below the minimum secondary chamber temperature (each measured on a three-hour rolling average) simultaneously shall constitute a violation of the PM, CO, and dioxin/furan emission limits.) (NOTE: The owner or operator of the remote HMIWI may conduct a repeat performance test within 30 days of violation of applicable operating parameter(s))

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AE.32.3.IA. Remote HMIWIs that commenced construction prior to 20 June 1996 must meet monitoring requirements (IA C 5 67-23.1(5)(b)(9)) [Added April 2006; Revised March 2006].	to demonstrate that the facility is not in violation of the applicable emission limit(s). Repeat performance tests conducted pursuant to this paragraph must be conducted using the identical operating parameters that indicated a violation.) Verify that remote HMIWIs install, calibrate (to manufacturers' specifications), maintain, and operate a device for measuring and recording the temperature of the secondary chamber on a continuous basis, the output of which is recorded, at a minimum, once every minute throughout operation. Verify that remote HMIWIs install, calibrate (to manufacturers' specifications), maintain, and operate a device which automatically measures and records the date, time, and weight of each charge fed into the HMIWI. Verify that the owner or operator obtains monitoring data at all times during HMIWI operation except during periods of monitoring equipment malfunction, calibration, or repair. Verify that, at a minimum, valid monitoring data is obtained for 75 percent of the operating hours per day for 90 percent of the operating days per calendar quarter that the designated facility is combusting hospital, medical or infectious waste, or a combination thereof.

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MEDICAL WASTE INCINERATORS AE.34. Reporting/Recordkeeping Requirements AE.34.1.IA. HMIWIs that commenced construction prior to 20 June 1996 must meet reporting and recordkeeping requirements (IAC 567-23.1(5)(b)(10)) [Added April 2001; Revised March 2006]. AE.34.2.IA. Remote HMIWIs that commenced construction prior to 20 June 1996 must meet reporting and recordkeeping requirements (IAC 567-23.1(5)(b)(11)) [Added April 2001; Revised March 2006].	(NOTE: See AE.30.1.IA. for exemptions from HMIWI requirements.) Verify that HMIWIs meet the reporting and record-keeping requirements listed in AE.34.2.US. and AE.34.4.US., excluding requirements for fugitive emissions siting. (NOTE: See AE.30.1.IA. for exemptions from HMIWI requirements.) Verify that remote HMIWI maintain records of the annual equipment inspections, any required maintenance, and any repairs not completed within ten days of an inspection. Verify that remote HMIWIs submit an annual report containing information recorded above no later than 60 days following the year in which data were collected. Verify that subsequent annual reports are sent no later than 12 calendar months following the previous report. Verify that, once the remote HMIWI is subject to permitting requirements under Title V, the owner or operator submits reports semiannually. Verify that the annual or semiannual report is signed by the facility's manager.

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AE.55. GASOLINE/FUELS AE.55.1.IA. The dispensing of E-blend or B -blend fuel must meet equipment requirements (IA C 6 61-221.4(2)) [Added April 2006; Revised February 2008 ; Revised February 2010].	Verify that only a dispenser listed by an independent testing laboratory is compatible with ethanol blended gasoline is used to dispense E-blend or B-Blend fuel. Verify that the dispenser and the dispenser sump are visually inspected daily for leaks and equipment failure. Records of the visual inspection are kept for at least one year after the inspection and located on the premises of the retail dealer. Verify that, if a leak is detected, the Department of natural resources is notified. Verify that the retail dealer installs an under-dispenser containment system with electronic monitoring. (NOTE: This checklist item is repeated in PO.45.1.IA.

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AE.65. FUGITIVE EMISSIONS AE.65.1.IA. Facilities in attainment and unclassified areas must meet specific requirements to prevent fugitive dust (IAC 567-23.3(2)(c)(1)) [Revised February 2009]. AE.65.2.IA. Facilities in nonattainment areas must meet specific requirements to prevent fugitive dust (IAC 567-23.3(2)(c)(2)) [Revised April 1999 ; Citation Revised February 2009].	Verify that, in any attainment or unclassified area, the facility does not engage in the following fugitive dust-producing activities without taking reasonable precautions to prevent particulate matter emissions from becoming a nuisance: - handling, transporting, or storing materials - constructing, altering, repairing, or demolishing buildings - using construction appurtenances and haul roads. (NOTE: Dust generated by farming operations and ordinary [not defined] travel on unpaved public roads is excluded from the requirement to take reasonable precautions. Reasonable precautions include, but are not limited to, the following procedures: - where practical [not defined], the use of water or chemicals at demolition, construction, road grading, or land clearing sites - the application of asphalt, oil, water, or chemicals on unpaved roads, material stockpiles, race tracks, and other surfaces that give rise to airborne dust - the use of control equipment to enclose or otherwise limit emissions resulting from the handling and transfer of dusty materials (e.g., grain, fertilizer, and limestone) - at all times, the covering of open-bodied vehicles transporting materials likely to produce airborne dust - the prompt removal of earth or other material from paved streets transported there by trucks, earth-moving equipment, water erosion, or other means - reducing the speed of vehicles traveling over on-property surfaces.) Verify that, in any nonattainment area for particulate matter, the facility takes reasonable precautions to prevent any visible emission of fugitive dust to go beyond the lot line of the property on which a source subject to particulate matter emissions standards is located. (NOTE: For guidance on the types of controls that may constitute reasonable precautions, see the publication <i>Identification of Techniques for the Control of Industrial Fugitive Dust Emission</i>, which is available from the Department.)

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AE.67. TOXIC EMISSIONS AE.67.1.IA. MSW landfills constructed, reconstructed, or modified before 30 May 1991 must meet specific compliance dates (IAC 5 67-23.1(5)(a)(2) and (6)) [Added April 2001].	(NOTE: The designated facility to which the emission guidelines in 5 67-23.1(5)(a) apply is each existing MSW landfill for which construction, reconstruction or modification was commenced before 30 May 1991. Physical or operational changes made to an existing MSW landfill solely to comply with an emission guideline are not considered a modification or reconstruction and would not subject an existing MSW landfill to the requirements of 40 CFR Part 60, Subpart WWW (40 CFR 60.750).) (NOTE: The owner or operator of an MSW landfill with a design capacity less than 2.5 million megagrams or 2.5 million cubic meters is not required to obtain an operating permit for the landfill.) Verify that an MSW landfill with a design capacity greater than or equal to 2.5 million megagrams and 2.5 million cubic meters on or before 22 June 1998, submitted a Title V permit application to the Air Quality Bureau, Department of Natural Resources, no later than 20 September 1999. (NOTE: The owner or operator of a closed MSW landfill does not have to maintain an operating permit for the landfill if either of the following conditions are met: - the landfill was never subject to the requirements for a control system under subparagraph 23.1(5)(a)(3) (see AE.67.2.IA.) - the owner or operator meets the conditions for control system removal specified in 40 CFR 60.752(b)(2)(v).) Verify that planning, awarding of contracts, and installation of MSW landfill air emission collection and control equipment capable of meeting the emission guidelines is accomplished within 30 months after the date the initial N MOC emission rate report shows N MOC emissions greater than or equal to 50 megagrams per year. Verify that, for each existing MSW landfill whose NMOC emission rate is less than 50 megagrams per year on 20 August 1997, installation of collection and control systems capable of meeting emission guidelines was accomplished within 30 months of the date when the condition was found (i.e., the date of the first annual nonmethane organic compounds emission rate which equals or exceeds 50 megagrams per year). (NOTE: Emission guidelines apply to: - landfills that have accepted waste at any time since 8 November 1987, or has additional design capacity available for future waste deposition - landfills that have a design capacity greater than or equal to 2.5 million
AE.67.2.IA. MSW landfills meeting specific conditions must meet emission guidelines (IAC 567-	

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23.1(5)(a)(3)) [Added April 2001; Revised April 2006].	megagrams or 2.5 million cubic meters - landfills that have a nonmethane organic compound (NMOC) emission rate of 50 megagrams per year or more.) (NOTE: The landfill may calculate design capacity in either megagrams or cubic meters for comparison with the exemption values. Any density conversions shall be documented and submitted with the report. All calculations used to determine the maximum design capacity must be included in the design capacity report.) Verify that a design capacity report was submitted to the director by 18 November 1997. Verify that the planning and installation of a collection and control system meets the conditions provided in 40 CFR 60.752(b)(2)(ii) at each MSW. Verify that the MSW landfill emissions are collected through the use of control devices meet the following requirements (except as provided in 40 CFR 60.24 after approval by the Director and the U.S. Environmental Protection Agency): - an open flare designed and operated in accordance with the parameters established in 40 CFR 60.18 - a control system designed and operated to reduce NMOC by 98 weight percent or - an enclosed combustor designed and operated to reduce the outlet NMOC concentration to 20 parts per million as hexane by volume, dry basis at 3 percent oxygen, or less.
AE.67.3.IA. MSW landfills meeting specific conditions must meet testing and procedures requirements (IAC 567-23.1(5)(a)(4)) [Added April 2001].	(NOTE: See AE.67.2.IA. for applicable conditions.) Verify that the calculation of the landfill NMOC emission rate listed in 40 CFR 60.754, as applicable, is used to determine whether the landfill emission rate of 50 megagrams per year or more. Verify that the operational standards in 40 CFR 60.753 are met. Verify that the compliance provisions in 40 CFR 60.755 are met. Verify that the monitoring provisions in 40 CFR 60.756 are met.
AE.67.4.IA. MSW landfills meeting specific conditions must meet reporting and recordkeeping requirements (IAC 567-23.1(5)(a)(5)) [Added April 2001].	(NOTE: See AE.67.2.IA. for applicable conditions.) Verify that the record-keeping and reporting provisions listed in 40 CFR 60.757 and 60.758, as applicable (except as provided under 40 CFR 60.24 after approval by the Director and U.S. Environmental Protection Agency) are met.

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AE.80. ACID PRODUCTION UNITS AE.80.1.IA. Sulfuric dioxide emissions from sulfuric acid plants must not exceed specific limitations (IAC 567-23.3(3)c). AE.80.2.IA. Acid mist emissions from sulfuric acid plants must not exceed specific limitations (IAC 567-23.3(3)d). AE.80.3.IA. Sulfuric acid plants with a production capacity greater than 300 tons/day must operate continuous monitoring equipment (IAC 567-25.1(4) and (6)) [Revised February 2010]. AE.80.4.IA. Sulfuric acid plants with a production capacity greater than 300 tons/day operating continuous monitoring equipment must meet recordkeeping and reporting requirements (IAC 567-25.1(5) and (6)) [Revised April 2005; Revised February 2010].	Verify that sulfuric dioxide emissions from sulfuric acid plants do not exceed 30 lb of sulfuric dioxide (maximum 3-h average) per ton of product calculated as 100 percent sulfuric acid. Verify that acid mist emissions from sulfuric acid plants do not exceed 0.5 lb (maximum 3-h average) per ton of product calculated as 100 percent sulfuric acid. Verify that any sulfuric acid plant with a production capacity greater than 300 ton/day (production expressed as 100 percent acid) installs, calibrates, maintains, and operates continuous monitoring equipment for sulfur dioxide emissions. Verify that records of continuous monitoring and related information are maintained at the sulfuric acid plant for at least 2 yr. Verify that the owner or operator of any facility required to install a continuous monitoring system or systems submits a written report of emissions for each calendar quarter pursuant to the provisions of Appendix P of 40 Code of Federal Regulations Part 51, as amended, no later than 30 calendar days following the end of the calendar quarter, on forms provided by the Director. Verify that the report includes the following: - all periods of recorded emissions in excess of the applicable standards - the results of all calibrations and zero checks and performance evaluations occurring during the reporting period - any periods of monitoring equipment malfunctions or source upsets and any apparent reasons for these malfunctions and upsets are included in the report.

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AE.90.

CFCS AND HALONS

AE.90.1.IA. Appliance
demanufacturing must meet
refrigerant removal
requirements (IA C 5 67-
118.9(1) through (4)) [Added
April 2002; Revised February
2008].

Verify that all owners of refrigerant recovery and recycling equipment provide certification to EPA that they have acquired and are using EPA-approved equipment.

Verify that all refrigerants in appliances are recovered to EPA standards using equipment meeting EPA requirements 40 CFR Part 82.162.

(NOTE: Refrigerants may be removed prior to delivery to the appliance demanufacturer if it is removed by an appliance service or repair facility employee certified for the removal of refrigerant.

Verify that the removal of refrigerants from refrigeration appliances takes place in an area where the temperature of the surrounding air and of the appliance being demanufactured is 45 degrees Fahrenheit or greater.

Verify that all facilities that are not EPA-certified refrigerant reclaimers ship recovered refrigerant to an EPA-certified reclamation facility or properly dispose of the refrigerant at an EPA-permitted facility.

Verify that the reclamation only takes place on site if the appliance manufacturing facility is certified as a reclaimer by the EPA.

Verify that any refrigerants that cannot be reclaimed or recycled are properly disposed of by incineration or other acceptable means.

AE.90.2.IA. Appliance
demanufacturing m ust m eet
compressor oil r equirements
(IAC 5 67-118.9(5)) [Added
April 2002; Revised February
2008].

Verify that compressor oil from refrigeration unit compressors that is removed during the de-manufacturing process is stored in accordance with 567-119.5(455D, 455B).

(NOTE: Compressor oils are not hazardous and may be burned in used oil-fired space heaters, provided the heaters have a capacity of 0.5 BTUs (British thermal units) per hour or more.)

Verify that compressor oils are burned in used-oil-fired space heaters that have a capacity of 0.5 BTUs (British thermal units) per hour or more.

(NOTE: Compressor oils may be sold to a marketer of used oil.)

AE.90.3.IA. Ammonia gas operated refrigerators and air conditioners must meet

Verify that ammonia gas is vented into water.

COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT Iowa Supplement	
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specific disposal requirements (IAC 567-118.9(6)) [Added April 2002].	Verify that sodium chromate is removed from all refrigeration equipment. Verify that sodium chromate liquid is disposed of at an EPA-permitted facility. Verify that the removal of sodium chromate liquid takes place on an impervious surface. Verify that in case of a spill, the spilled liquid and the material used as absorbent is handled as a hazardous waste and disposed of as a hazardous waste. Verify that all sodium chromate is stored in a DOT-approved container that shows no sign of damage. Verify that the container is labeled with a proper EPA-approved chromium label stating "chromium" or "hazardous waste" in both English and the predominant language of any non-English-reading workers. Verify that prior to shipment, sodium chromate is packaged to prevent leakage, and all containers are sealed. Verify that persons generating sodium chromate waste obtains a EPA identification number and maintains records to determine if they are small- or large-quantity hazardous waste generators based on a yearly accumulation. Verify that asbestos insulation found on refrigerant lines is removed. Verify that asbestos are moistened and double bagged prior to disposal at the approved landfill for the person's area. (NOTE: A person who needs to dispose of asbestos must contact the landfill and make arrangements for the disposal and further packaging and handling procedures.)

COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
AE.100. COATING OPERATIONS AE.100.1.IA. Particulate matter emissions from painting and surface coating operations must not exceed specific limitations (IAC 567-23.4(13)). AE.100.2.IA. Spray booths that meet specific requirements are deemed to have a permit by rule (IAC 567-22.8) [Added April 1999; Citation Revised February 2007; Revised February 2010].	Verify that particulate matter emissions from painting and surface coating operations do not exceed 0.01 gr per standard cubic foot of exhaust gas. (NOTE: Spray booths which comply with these requirements will be deemed to be in compliance with the requirements to obtain an air construction permit, an air operating permit, and to have Federally enforceable limits so that their potential emissions are less than the major source limits for regulated air pollutants and hazardous air pollutants.) Verify that facilities spraying 1 gal/day or less of sprayed material facility wide meet the following requirements: - record sprayed material use daily - maintain the records of daily sprayed material use for 18 mo from the date to which the records apply. Verify that facilities spraying more than 1 gal/day but never more than 3 gal/day facility wide meet the following requirements: - record sprayed material use daily - maintain the records of daily sprayed material use for 18 mo from the date to which the records apply - vent emissions from spray booths through stacks that are at least 22 ft tall, measured from ground level. (NOTE: Facilities which facility-wide spray more than 3 gallons per day are not eligible to use the permit by rule for spray booths and must apply for a construction permit.) Verify that facilities that meet the above provisions for permitting submit to the Department a written notification letter certifying that the facility meets the following conditions: - all paint booths and associated equipment are in compliance - all paint booths and associated equipment are in compliance with all applicable requirements including, but not limited to, the allowable particulate emission rate for painting and surface coating operations of 0.01 gr/scf of exhaust gas

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	- all paint booths and associated equipment currently are or will be in compliance with or otherwise exempt from the national emissions standards for hazardous air pollutants (NESHAP) for paint stripping and miscellaneous surface coating at area sources (40 CFR Part 63, Subpart HHHHHH) and the NESHAP for metal fabricating and finishing at area sources (40 CFR Part 63, Subpart XXXXXX) by the applicable NESHAP compliance dates.

COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
AE.130. OPEN BURNING AE.130.1.IA. Open burning is prohibited (IAC 567-23.2 (1), (2), (3) (a) through (f) and 23.2.(4)) [Revised April 2004; Revised April 2006 ; Revised February 2007]. AE.130.2.IA. Training fires must meet specific management requirements (IAC 567-23.2(3) (g)) [Added February 2007].	Verify that the facility does not allow open burning to be conducted on its premises unless the burning meets the conditions for exempted burning. (NOTE: No exemptions for the open burning of trees or tree trimmings, residential or landscape waste or agricultural structures are available in the cities of Cedar Rapids, Marion, Hiawatha, Council Bluffs, Carter Lake, Des Moines, West Des Moines, Clive, Windsor Heights, Urbandale, and Pleasant Hill.) (NOTE: See Appendix 1 -4 for a list of exemptions from the open burning prohibition.) (NOTE: A "training fire" is a fire set for the purposes of conducting bona fide training of public or industrial employees in firefighting methods. For purposes of this paragraph, "bona fide training" means training that is conducted according to the National Fire Protection Association 1403 Standard of Live Fire Training Evolutions (2002 Edition) or a comparable training fire standard.) Verify that, when a training fire is conducted on a building, it is structurally intact. Verify that a training fire is does not the controlled burn of a demolished building. Verify that, if the training fire is to be conducted on a building, written notification is provided to the department on DNR Form 542-8010, Notification of an Iowa Training Fire-Demolition or a Controlled Burn of a Demolished Building, and is postmarked or delivered to the director at least 10 working days before such action commences. Verify that all asbestos-containing materials are removed prior to the training fire. Verify that asphalt roofing is burned in the training fire only if notification to the director contains testing results indicating that no one of the layers of asphalt roofing contain asbestos. Verify that, during each calendar year, each fire department conducts no more than 2 training fires on buildings where asphalt roofing has not been removed, provided that for each of those training fires the asphalt roofing material present has been tested to ensure that it does not contain asbestos. Verify that rubber tires are not burned during a training fire.

COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
AE.130.3.IA. Agricultural related open burning must meet specific management requirements (IA C 5 67-23.2(3) (h) and (i)) [Added February 2007].	Verify that, when open burning is used to dispose of paper or plastic pesticide containers (except those formerly containing organic forms of beryllium, selenium, mercury, lead, cadmium or arsenic) and seed corn bags resulting from farming activities, it is limited to areas located at least one-fourth mile from any building inhabited by other than the landowner or tenant conducting the open burning, livestock area, wildlife area, or water source. Verify that the amount of paper or plastic pesticide containers and seed corn bags disposed of by open burning does not exceed one day's accumulation or 50 pounds, whichever is less. (NOTE: When the burning of paper or plastic pesticide containers or seed corn bags causes a nuisance, the director may take action to secure relocation of the burning operation. Since the concentration levels of pesticide combustion products near the fire may be hazardous, the person conducting the open burning should take precautions to avoid inhalation of the pesticide combustion products.) Verify that the open burning of agricultural structures meets the following conditions: - the open burning occurs on the premises and, for agricultural structures located within a city or town, at least one-fourth mile from any building inhabited by a person other than the landowner, a tenant, or an employee of the landowner or tenant conducting the open burning unless a written waiver in the form of an affidavit is submitted by the owner of the building to the department prior to the open burning - all chemicals and asphalt roofing are removed - burning is conducted only when weather conditions are favorable with respect to surrounding property - permission from the local fire chief is secured in advance of the burning - rubber tires are not used to ignite agricultural structures. (NOTE: The asbestos National Emission Standard for Hazardous Air Pollutants (NESHAP), as amended through January 16, 1991, requires the burning of agricultural structures to be conducted in accordance with 40 CFR Section 61.145, "Standard for Demolition and Renovation."

COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
AE.155. OTHER EMISSIONS/ SOURCES AE.155.1.IA. Meat smokehouses must not emit particulate matter in excess of specific limitations (IAC 567-23.4(9)). AE.155.2.IA. Liquid fuel-burning units must not emit sulfur dioxide in excess of specific limitations (IAC 567-23.3(3)b). AE.155.3.IA. Solid fuel-burning units must not emit sulfur dioxide in excess of specific limitations (IAC 567-23.3(3)a).	Verify that particulate matter emissions from any meat smokehouse do not exceed 0.2 g/scf of exhaust gas. (NOTE: The following fossil fuel-fired steam generators subject to Federal New Source Performance Standards are subject also to Iowa requirements for sulfur dioxide emissions from liquid fuel use: - fossil fuel-fired generating units of more than 250 MBtu heat input for which construction, reconstruction, or modification commenced after 17 August 1971 - electric utility steam generating units capable of combusting more than 250 MBtu/h (73 MW) heat input of fossil fuel for which construction, reconstruction, or modification commenced after 18 September 1978 - electric utility combined cycle gas turbine capable of combusting more than 250 MBtu/h (73 MW) heat input of fossil fuel in the steam generator - industrial-commercial-institutional steam generating units with a heat input capacity of more than 100 MBtu/h for which construction, reconstruction, or modification commenced after 31 August 1983.) Verify that liquid fuel-burning units do not emit sulfur dioxide in excess of 2.5 lb of sulfur dioxide per MBtu of heat input (replicated maximum 3-h average). (NOTE: See AE.155.2.IA. for applicability.) (NOTE: Existing solid fuel-burning units are those in operation, for which components had been purchased, or which were under construction before 23 September 1970. New solid fuel-burning units are those in operation, for which components had been purchased, or which were under construction on or after 23 September 1970.) Verify that emissions of sulfur dioxide from existing solid fuel-burning units located in the following counties do not exceed 6 lb/MBtu heat input (replicated maximum 3-h average): - Black Hawk - Clinton - Des Moines

COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
AE.155.4.IA. Sulfur dioxide emissions from process sources other than sulfuric acid plants must not exceed specific limitations (IAC 567-23.3(3)e).	- Dubuque - Jackson - Lee - Linn - Louisa - Muscatine - Scott. Verify that emissions of sulfur dioxide from existing solid fuel-burning units located in the remaining 89 Iowa counties do not exceed 5 lb/MBtu heat input (replicated maximum 3-h average). Verify that emissions of sulfur dioxide from new solid fuel-burning units with a capacity of 250 MBtu/h or less heat input do not exceed 6 lb/MBtu heat input (replicated maximum 3-h average). (NOTE: See AE.155.2.IA. for applicability.) Verify that sulfur dioxide emissions from processes other than sulfuric acid plants do not exceed 500 ppmv.

Appendix 1-1

Limitations of Particulate Matter Emissions Based on Process Weight

(Source: IAC 567-23.3(2) and Table I)

Process Weight Rate		Emission Rate	Process Weight Rate		Emission Rate
lb/h	ton/h	lb/h	lb/h	ton/h	lb/h
100	0.05	0.55	16,000	8.00	16.5
200	1.10	0.88	18,000	9.00	17.9
400	0.20	1.40	20,000	10.00	19.2
600	0.30	1.83	30,000	15.00	25.2
800	0.40	2.22	40,000	20.00	30.5
1000	0.50	2.58	50,000	25.00	35.4
1500	0.75	3.38	60,000	30.00	40.0
2000	1.00	4.10	70,000	35.00	41.3
2500	1.25	4.76	80,000	40.00	42.5
3000	1.50	5.38	90,000	45.00	43.6
3500	1.75	5.96	100,000	50.00	44.6
4000	2.00	6.52	120,000	60.00	46.3
5000	2.50	7.58	140,000	70.00	47.8
6000	3.00	8.56	160,000	80.00	49.0
7000	3.50	9.49	200,000	100.00	51.2
8000	4.00	10.4	1,000,000	500.00	69.0
9000	4.50	11.2	2,000,000	1000.00	77.6
10,000	5.00	5.00	6,000,000	3000.00	92.7
12,000	6.00	6.00			

(NOTE: Interpolation of the data in the above table for process weight rates up to 60,000 lb/h is accomplished by the use of the equation $E = 4.10P^{0.67}$, where E = rate of emission in lb/h and where P = process weight in tons/h. Interpolation and extrapolation of the data for process weights rates in excess of 60,000 lb/h is accomplished by the use of the equation $E = 55.0 P^{0.11} - 40$, where E = rate of emission in lb/h and where P = process weight in tons/h.)

Appendix 1-2a

Exemptions from Construction and Operating Permit Requirements

(Source: IAC 567-22.1(2))

[Added May 1998; Revised April 1999; Revised April 2001; Revised April 2003; Revised April 2004; Revised April 2005; Revised February 2007; Revised February 2009; Revised February 2010]

22.1(2) Exemptions. The requirement to obtain a permit in 567--subrule 22.1(1) is not required for the equipment, control equipment, and processes listed in this subrule.

The permitting exemptions in this subrule do not relieve the owner or operator of any source from any obligation to comply with any other applicable requirements.

Equipment, control equipment, or processes subject to rule 22.4(455B), prevention of significant deterioration requirements, or rule 22.5(455B), special requirements for nonattainment areas, may not use the exemptions from construction permitting listed in this subrule. Equipment, control equipment, or processes subject to 567--subrule 23.1(2), new source performance standards (40 CFR Part 60 NSPS); 567--subrule 23.1(3), emission standards for hazardous air pollutants (40 CFR Part 61 NESHAP); 567-subrule 23.1(4), emission standards for hazardous air pollutants for source categories (40 CFR Part 63 NESHAP); or 567-subrule 23.1(5), emission guidelines, may still use the exemptions from construction permitting listed in this subrule provided that a permit is not needed to create federally enforceable limits that restrict potential to emit. If equipment is permitted under the provisions of rule 22.8(455B), then no other exemptions shall apply to that equipment.

Records shall be kept at the facility for exemptions that have been claimed under the following paragraphs: 22.1(2)"a" (for equipment > 1 million Btu per hour input), 22.1(2)"b," 22.1(2)"e," 22.1(2)"r" or 22.1(2)"s." The records shall contain the following information: the specific exemption claimed and a description of the associated equipment. These records shall be made available to the department upon request.

The following paragraphs are applicable to 22.1(2)"g" and "i." A facility claiming to be exempt under the provisions of paragraph "g" or "i" shall provide to the department the information listed below. If the exemption is claimed for a source not yet constructed or modified, the information shall be provided to the department at least 30 days in advance of the beginning of construction on the project. If the exemption is claimed for a source that has already been constructed or modified and that does not have a construction permit for that construction or modification, the information listed below shall be provided to the department within 60 days of March 20, 1996. After that date, if the exemption is claimed by a source that has already been constructed or modified and that does not have a construction permit for that construction or modification, the source shall not operate until the information listed below is provided to the department:

- A detailed emissions estimate of the actual and potential emissions, specifically noting increases or decreases, for the project for all regulated pollutants (as defined in rule 22.100(455B)), accompanied by documentation of the basis for the emissions estimate;
- A detailed description of each change being made;
- The name and location of the facility;
- The height of the emission point or stack and the height of the highest building within 50 feet;
- The date for beginning actual construction and the date that operation will begin after the changes are made;
- A statement that the provisions of rules 22.4(455B) and 22.5(455B) do not apply; and
- A statement that the accumulated emissions increases associated with each change under paragraph 22.1(2)"i," when totaled with other net emissions increases at the facility contemporaneous with the proposed change (occurring within five years before construction on the particular change commences), have not exceeded significant levels, as defined in 40 CFR 52.21(b)(23) as amended through March 12, 1996, and adopted in rule 22.4(455B), and will not prevent the attainment or maintenance of the ambient air quality standards specified in 567-Chapter 28. This statement shall be accompanied by documentation for the basis of these statements.

The written statement shall contain certification by a responsible official as defined in rule 22.100(455B) of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

- a. Fuel-burning equipment for indirect heating and reheating furnaces or cooling units using natural gas or liquefied petroleum gas with a capacity of less than ten million Btu per hour input per combustion unit.
- b. Fuel-burning equipment for indirect heating or cooling with a capacity of less than one million Btu per hour input per combustion unit when burning coal, untreated wood, untreated seeds or pellets, other untreated vegetative materials, or fuel oil. Used oils meeting the specification from 40 CFR 279.11 as amended through May 3, 1993, are acceptable fuels for this exemption.
- c. Mobile internal combustion and jet engines, marine vessels and locomotives.
- d. Equipment used for cultivating land, harvesting crops, or raising livestock other than anaerobic lagoons. This exemption is not applicable if the equipment is used to remove substances from grain which were applied to the grain by another person. This exemption is also not applicable to equipment used by a person to manufacture commercial feed, as defined in Iowa Code section 198.3, which is normally not fed to livestock, owned by the person or another person, in a feedlot, as defined in Iowa Code section 172D.1, subsection 6, or a confinement building owned or operated by that person and located in this state.
- e. Incinerators and pyrolysis cleaning furnaces with a rated refuse burning capacity of less than 25 pounds per hour. Pyrolysis cleaning furnace exemption is limited to those units that use only natural gas or propane. Salt bath units are not included in this exemption.
- f. Fugitive dust controls unless a control efficiency can be assigned to the equipment or control equipment.
- g. Equipment or control equipment which reduces or eliminates all emission to the atmosphere. If a source wishes to obtain credit for emission reductions, a permit must be obtained for the reduction prior to the time the reduction is made. If a construction permit has been previously issued for the equipment or control equipment, all other conditions of the construction permit remain in effect.
- h. Equipment (other than anaerobic lagoons) or control equipment which emits odors unless such equipment or control equipment also emits particulate matter, or any other regulated air contaminant (as defined in rule 22.100(455B)).
- i. Construction, modification or alteration to equipment which will not result in a net emissions increase (as defined in paragraph 22.5(1)"f") of more than 1.0 lb/hr of any regulated air pollutant (as defined in rule 22.100(455B)). Emission reduction achieved through the installation of control equipment, for which a construction permit has not been obtained, does not establish a limit to potential emissions.

Hazardous air pollutants (as defined in rule 22.100(455B)) are not included in this exemption except for those listed in Table 1. Further, the net emissions rate INCREASE must not equal or exceed the values listed in Table 1.

Table 1.

Pollutant	Ton/year
Lead	0.6
Asbestos	0.007
Beryllium	0.0004
Vinyl Chloride	1
Fluorides	3

This exemption is ONLY applicable to vertical discharges with the exhaust stack height 10 or more feet above the highest building within 50 feet. If a construction permit has been previously issued for the equipment or control equipment, the conditions of the construction permit remain in effect. In order to use this exemption, the facility must comply with the information submission to the department as described above.

The department reserves the right to require proof that the expected emissions from the source which is being exempted from the air quality construction permit requirement, in conjunction with all other emissions, will not

prevent the attainment or maintenance of the ambient air quality standards specified in 567-Chapter 28. If the department finds, at any time after a change has been made pursuant to this exemption, evidence of violations of any of the department's rules, the department may require the source to submit to the department sufficient information to determine whether enforcement action should be taken. This information may include, but is not limited to, any information that would have been submitted in an application for a construction permit for any changes made by the source under this exemption, and air quality dispersion modeling.

j. Residential heaters, cookstoves, or fireplaces, which burn untreated wood, untreated seeds or pellets, or other untreated vegetative materials.

k. Asbestos demolition and renovation projects subject to 40 CFR 61.145 as amended through January 16, 1991.

l. The equipment in laboratories used exclusively for nonproduction chemical and physical analyses. Nonproduction analyses means analyses incidental to the production of a good or service and includes analyses conducted for quality assurance or quality control activities, or for the assessment of environmental impact.

m. Storage tanks with a capacity of less than 19,812 gallons and an annual throughput of less than 200,000 gallons.

n. Stack or vents to prevent escape of sewer gases through plumbing traps. Systems which include any industrial waste are not exempt.

o. A nonproduction surface coating process that uses only hand-held aerosol spray cans.

p. Brazing, soldering or welding equipment or portable cutting torches used only for nonproduction activities.

q. Cooling and ventilating equipment: Comfort air conditioning not designed or used to remove air contaminants generated by, or released from, specific units of equipment.

r. An internal combustion engine with a brake horsepower rating of less than 400 measured at the shaft, provided that the owner or operator meets all of the conditions in this paragraph. For the purposes of this exemption, the manufacturer's nameplate rated capacity at full load shall be defined as the brake horsepower output at the shaft. The owner or operator of an engine that was manufactured, ordered, modified or reconstructed after [insert effective date of these amendments] may use this exemption only if the owner or operator, prior to installing, modifying or reconstructing the engine, submits to the department a completed registration, on forms provided by the department, certifying that the engine is in compliance with the following federal regulations:

- (1) New source performance standards (NSPS) for stationary compression ignition internal combustion engines (40 CFR Part 60, Subpart IIII); or
- (2) New source performance standards (NSPS) for stationary spark ignition internal combustion engines (40 CFR Part 60, Subpart JJJJ); and
- (3) National emission standards for hazardous air pollutants (NESHAP) for reciprocating internal combustion engines (40 CFR Part 63, Subpart ZZZZ).

Use of this exemption does not relieve an owner or operator from any obligation to comply with NSPS or NESHAP requirements.

s. Equipment that is not related to the production of goods or services and used exclusively for academic purposes, located at educational institutions (as defined in Iowa Code section 455B.161). The equipment covered under this exemption is limited to: lab hoods, art class equipment, wood shop equipment in classrooms, wood fired pottery kilns, and fuel-burning units with a capacity of less than one million Btu per hour fuel capacity. This exemption does not apply to incinerators.

t. Any container, storage tank, or vessel that contains a fluid having a maximum true vapor pressure of less than 0.75 psia. "Maximum true vapor pressure" means the equilibrium partial pressure of the material considering:

- For material stored at ambient temperature, the maximum monthly average temperature as reported by the National Weather Service, or

- For material stored above or below the ambient temperature, the temperature equal to the highest calendar-month average of the material storage temperature.

u. Equipment for carving, cutting, routing, turning, drilling, machining, sawing, surface grinding, sanding, planing, buffing, sandblast cleaning, shot blasting, shot peening, or polishing ceramic artwork, leather, metals (other than beryllium), plastics, concrete, rubber, paper stock, and wood or wood products, where such equipment is either used for non-production activities or exhausted inside a building.

v. Manually operated equipment, as defined in 567-22.100(455B), used for buffing, polishing, carving, cutting, drilling, machining, routing, sanding, sawing, scarfing, surface grinding, or turning.

w. Small unit exemption.

- (1) "Small unit" means any emission unit and associated control (if applicable) that emits less than the following:
 1. 40 pounds per year of lead and lead compounds expressed as lead;
 2. 5 tons per year of sulfur dioxide;
 3. 5 tons per year of nitrogen oxides;
 4. 5 tons per year of volatile organic compounds;
 5. 5 tons per year of carbon monoxide;
 6. 5 tons per year of particulate matter (particulate matter as defined in 40 CFR Part 51.100(pp));
 7. 2.5 tons per year of PM₁₀; or
 8. 5 tons per year of hazardous air pollutants (as defined in rule 22.100(455B)).

For the purposes of this exemption, "emission unit" means any part or activity of a stationary source that emits or has the potential to emit any pollutant subject to regulation under the Act. This exemption applies to existing and new or modified "small units."

An emission unit that emits hazardous air pollutants (as defined in rule 22.100(455B)) is not eligible for this exemption if the emission unit is required to be reviewed for compliance with 567-subrule 23.1(3), emission standards for hazardous air pollutants (40 CFR 61, NESHAP), or 567-subrule 23.1(4), emission standards for hazardous air pollutants for source categories (40 CFR 63, NESHAP).

An emission unit that emits air pollutants that are not regulated air pollutants as defined in rule 22.100(455B) shall not be eligible to use this exemption.

- (2) Permit requested. If requested in writing by the owner or operator of a small unit, the director may issue a construction permit for the emission point associated with that emission unit.
- (3) An owner or operator that utilizes the small unit exemption must maintain on site an "exemption justification document." The exemption justification document must document conformance and compliance with the emission rate limits contained in the definition of "small unit" for the particular emission unit or group of similar emission units obtaining the exemption. Controls which may be part of the exemption justification document include, but are not limited to, the following: emission control devices, such as cyclones, filters, or baghouses; restricted hours of operation or fuel; and raw material or solvent substitution. The exemption justification document for an emission unit or group of similar emission units must be made available for review during normal business hours and for state or EPA on-site inspections, and shall be provided to the director or the director's representative upon request. If an exemption justification document does not exist, the applicability of the small unit exemption is voided for that particular emission unit or group of similar emission units. The controls described in the exemption justification document establish a limit on the potential emissions. An exemption justification document shall include the following for each applicable emission unit or group of similar emission units:
 1. A narrative description of how the emissions from the emission unit or group of similar emission units were determined and maintained at or below the annual small unit exemption levels.
 2. If air pollution control equipment is used, a description of the air pollution control equipment used on the emission unit or group of similar emission units and a statement that the emission unit or group of similar emission units will not be operated without the pollution control equipment operating.
 3. If air pollution control equipment is used, applicant shall maintain a copy of any report of manufacturer's testing results of any emissions test, if available. The department may require a test if it believes that a test is necessary for the exemption claim.
 4. A description of all production limits required for the emission unit or group of similar emission units to comply with the exemption levels.

5. Detailed calculations of emissions reflecting the use of any air pollution control devices or production or throughput limitations, or both, for applicable emission unit or group of similar emission units.
 6. Records of actual operation that demonstrate that the annual emissions from the emission unit or group of similar emission units were maintained below the exemption levels.
 7. Facilities designated as major sources with respect to rules 22.4(455B) and 22.101(455B), or subject to any applicable federal requirements, shall retain all records demonstrating compliance with the exemption justification document for five years. The record retention requirements supersede any retention conditions of an individual exemption.
 8. A certification from the responsible official that the emission unit or group of similar emission units have complied with the exemption levels specified in 22.1(2)"w"(1).
- (4) Requirement to apply for a construction permit. An owner or operator of a small unit will be required to obtain a construction permit or take the unit out of service if the emission unit exceeds the small unit emission levels.
1. If, during an inspection or other investigation of a facility, the department believes that the emission unit exceeds the emission levels that define a "small unit," then the department will submit calculations and detailed information in a letter to the owner or operator. The owner or operator shall have 60 days to respond with detailed calculations and information to substantiate a claim that the small unit does not exceed the emission levels that define a small unit.
 2. If the owner or operator is unable to substantiate a claim to the satisfaction of the department, then the owner or operator that has been using the small unit exemption must cease operation of that small unit or apply for a construction permit for that unit within 90 days after receiving a letter of notice from the department. The emission unit and control equipment may continue operation during this period and the associated initial application review period.
 3. If the notification of nonqualification as a small unit is made by the department following the process described above, the owner or operator will be deemed to have constructed an emission unit without the required permit and may be subject to applicable penalties.
- (5) Required notice for construction or modification of a "substantial small unit." The owner or operator shall notify the department in writing at least 10 days prior to commencing construction of any new or modified "substantial small unit" as defined in 22.1(2)"w"(6). The owner or operator shall notify the department within 30 days after determining an existing small unit meets the criteria of the "substantial small unit" as defined in 22.1(2)"w"(6). Notification shall include the name of the business, the location where the unit will be installed, and information describing the unit and quantifying its emissions. The owner or operator shall notify the department within 90 days of the end of the calendar year for which the aggregate emissions from substantial small units at the facility have reached any of the cumulative notice thresholds listed below.
- (6) For the purposes of this paragraph, "substantial small unit" means a small unit which emits more than the following amounts, as documented in the exemption justification document:
1. 30 pounds per year of lead and lead compounds expressed as lead;
 2. 3.75 tons per year of sulfur dioxide;
 3. 3.75 tons per year of nitrogen oxides;
 4. 3.75 tons per year of volatile organic compounds;
 5. 3.75 tons per year of carbon monoxide;
 6. 3.75 tons per year of particulate matter (particulate matter as defined in 40 CFR Part 51.100(pp));
 7. 1.875 tons per year of PM₁₀; or
 8. 3.75 tons per year of any hazardous air pollutant or 3.75 tons per year of any combination of hazardous air pollutants.
- An emission unit is a "substantial small unit" only for those substances for which annual emissions exceed the above-indicated amounts.
- (7) Required notice that a cumulative notice threshold has been reached. Once a "cumulative notice threshold," as defined in 22.1(2)"w"(8), has been reached for any of the listed pollutants, the owner or operator at the facility must apply for air construction permits for all substantial small units for which the cumulative notice threshold for the pollutant(s) in question has been reached. The owner or operator shall have 90 days from the date it determines that the cumulative notice threshold has been reached in which to apply for construction permit(s). The owner or operator shall submit a letter to the department, within 5 working days of making this determination, establishing the date the owner or operator determined that the cumulative notice threshold had been reached.

(8) "Cumulative notice threshold" means the total combined emissions from all substantial small units using the small unit exemption which emit at the facility the following amounts, as documented in the exemption justification document:

1. 0.6 tons per year of lead and lead compounds expressed as lead;
2. 40 tons per year of sulfur dioxide;
3. 40 tons per year of nitrogen oxides;
4. 40 tons per year of volatile organic compounds;
5. 100 tons per year of carbon monoxide;
6. 25 tons per year of particulate matter (particulate matter as defined in 40 CFR Part 51.100(pp));
7. 15 tons per year of PM₁₀; or
8. 10 tons per year of any hazardous air pollutant or 25 tons per year of any combination of hazardous air pollutants.

x. The following equipment, processes, and activities:

- (1) Cafeterias, kitchens, and other facilities used for preparing food or beverages primarily for consumption at the source.
- (2) Consumer use of office equipment and products, not including printers or businesses primarily involved in photographic reproduction.
- (3) Janitorial services and consumer use of janitorial products.
- (4) Internal combustion engines used for lawn care, landscaping, and groundskeeping purposes.
- (5) Laundry activities located at a stationary source that uses washers and dryers to clean, with water solutions of bleach or detergents, or to dry clothing, bedding, and other fabric items used on site. This exemption does not include laundry activities that use dry cleaning equipment or steam boilers.
- (6) Bathroom vent emissions, including toilet vent emissions.
- (7) Blacksmith forges.
- (8) Plant maintenance and upkeep activities and repair or maintenance shop activities (e.g., groundskeeping, general repairs, cleaning, painting, welding, plumbing, retarring roofs, installing insulation, and paving parking lots), provided that these activities are not conducted as part of manufacturing process, are not related to the source's primary business activity, and do not otherwise trigger a permit modification. Cleaning and painting activities qualify if they are not subject to control requirements for volatile organic compounds or hazardous air pollutants as defined in 22.100(455B).
- (9) Air compressors and vacuum, pumps, including hand tools.
- (10) Batteries and battery charging stations, except at battery manufacturing plants.
- (11) Equipment used to store, mix, pump, handle or package soaps, detergents, surfactants, waxes, glycerin, vegetable oils, greases, animal fats, sweetener, corn syrup, and aqueous salt or caustic solutions, provided that appropriate lids and covers are utilized and that no organic solvent has been mixed with such materials.
- (12) Equipment used exclusively to slaughter animals, but not including other equipment at slaughterhouses, such as rendering cookers, boilers, heating plants, incinerators, and electrical power generating equipment.
- (13) Vents from continuous emissions monitors and other analyzers.
- (14) Natural gas pressure regulator vents, excluding venting at oil and gas production facilities.
- (15) Equipment used by surface coating operations that apply the coating by brush, roller, or dipping, except equipment that emits volatile organic compounds or hazardous air pollutants as defined in 22.100(455B).
- (16) Hydraulic and hydrostatic testing equipment.
- (17) Environmental chambers not using gases which are hazardous air pollutants as defined in 22.100(455B).
- (18) Shock chambers, humidity chambers, and solar simulators.
- (19) Fugitive dust emissions related to movement of passenger vehicles on unpaved road surfaces, provided that the emissions are not counted for applicability purposes and that any fugitive dust control plan or its equivalent is submitted as required by the department.
- (20) Process water filtration systems and demineralizers, demineralized water tanks, and demineralizer vents.
- (21) Boiler water treatment operations, not including cooling towers or lime silos.
- (22) Oxygen scavenging (deaeration) of water.
- (23) Fire suppression systems.
- (24) Emergency road flares.
- (25) Steam vents, safety relief valves, and steam leaks.
- (26) Steam sterilizers.

(27) Application of hot melt adhesives from closed-pot systems using polyolefin compounds, polyamides, acrylics, ethylene vinyl acetate and urethane material when stored and applied at the manufacturer's recommended temperatures. Equipment used to apply hot melt adhesives shall have a safety device that automatically shuts down the equipment if the hot melt temperature exceeds the manufacturer's recommended application temperature.

y. Direct-fired equipment burning natural gas, propane, or liquefied propane with a capacity of less than 10 million Btu per hour input, and direct-fired equipment burning fuel oil with a capacity of less than 1 million Btu per hour input, with emissions that are attributable only to the products of combustion. Emissions other than those attributable to the products of combustion shall be accounted for in a nonenforceable permit condition or shall otherwise be exempt under this subrule.

z. Closed refrigeration systems, including storage tanks used in refrigeration systems, but excluding any combustion equipment associated with such systems.

aa. Pretreatment application processes that use aqueous-based chemistries designed to clean a substrate, provided that the chemical concentrate contains no more than 5 percent organic solvents by weight. This exemption includes pretreatment processes that use aqueous-based cleaners, cleaner-phosphatizers, and phosphate conversion coating chemistries.

bb. Indoor-vented powder coating operations with filters or powder recovery systems.

cc. Electric curing ovens or curing ovens that run on natural gas or propane with a maximum heat input of less than 10 million Btu per hour and that are used for powder coating operations, provided that the total cured powder usage is less than 75 tons of powder per year at the stationary source. Records shall be maintained on site by the owner or operator for a period of at least two calendar years to demonstrate that cured powder usage is less than the exemption threshold.

dd. Each production painting, adhesive or coating unit using an application method other than a spray system and associated cleaning operations that use 1,000 gallons or less of coating and solvents annually, unless the production painting, adhesive or coating unit and associated cleaning operations are subject to work practice, process limits, emissions limits, stack testing, record-keeping or reporting requirements under 567-subrule 23.1(2), 567-subrule 23.1(3), or 567-subrule 23.1(4). Records shall be maintained on site by the owner or operator for a period of at least two calendar years to demonstrate that paint, adhesive, or solvent usage is at or below the exemption threshold.

ee. Any production surface coating activity that uses only nonrefillable hand-held aerosol cans, where the total volatile organic compound emissions from all these activities at a stationary source do not exceed 5.0 tons per year.

ff. Production welding.

(1) Welding using a consumable electrode, provided that the consumable electrodes used fall within American Welding Society specification A5.18/A5.18M for Gas Metal Arc Welding (GMAW), A5.1 or A5.5 for Shielded Metal Arc Welding (SMAW), and A5.20 for Flux Core Arc Welding (FCAW), and provided that the quantity of all electrodes used at the stationary source of the acceptable specifications is below 200,000 pounds per year for GMAW and 28,000 pounds per year for SMAW or FCAW. Records that identify the type and annual amount of welding electrode used shall be maintained on site by the owner or operator for a period of at least two calendar years.

For stationary sources where electrode usage exceeds these levels, the welding activity at the stationary source may be exempted if the amount of electrode used (Y) is less than:

Y = the greater of $1380x - 19,200$ or 200,000 for GMAW, or
Y = the greater of $187x - 2,600$ or 28,000 for SMAW or FCAW

Where x is the minimum distance to the property line in feet, and Y is the annual electrode usage in pounds per year.

If the stationary source has welding processes that fit into both of the specified exemptions, the most stringent limits must be applied.

(2) Resistance welding, submerged arc welding, or arc welding that does not use a consumable electrode, provided that the base metals do not include stainless steel, alloys of lead, alloys of arsenic, or alloys of beryllium and provided that the base metals are uncoated, excluding manufacturing process lubricants.

gg. Electric hand soldering, wave soldering, and electric solder paste reflow ovens.

hh. Pressurized piping and storage systems for natural gas, propane, liquefied petroleum gas (LPG), and refrigerants, where emissions could only result from an upset condition.

ii. Emissions from the storage and mixing of paints and solvents associated with the painting operations, provided that the emissions from the storage and mixing are accounted for in an enforceable permit condition or are otherwise exempt.

jj. Product labeling using laser and ink-jet printers with target distances less than or equal to six inches and an annual material throughput of less than 1,000 gallons per year as calculated on a stationary sourcewide basis.

kk. Equipment related to research and development activities at a stationary source, provided that:

(1) Actual emissions from all research and development activities at the stationary source based on a 12-month rolling total are less than the following levels:

40 pounds per year of lead and lead compounds expressed as lead;

5 tons per year of sulfur dioxide;

5 tons per year of nitrogen dioxides;

5 tons per year of volatile organic compounds;

5 tons per year of carbon monoxide;

5 tons per year of particulate matter (particulate matter as defined in 40 CFR Part 51.100(pp) as amended through November 29, 2004);

2.5 tons per year of PM₁₀; and

5 tons per year of hazardous pollutants (as defined in rule 22.100(455B)); and

(2) The owner or operator maintains records of actual operations demonstrating that the annual emissions from all research and development activities conducted under this exemption are below the levels listed in subparagraph (1) above. These records shall:

1. Include a list of equipment that is included under the exemption;

2. Include records of actual operation and detailed calculations of actual annual emissions, reflecting the use of any control equipment and demonstrating that the emissions are below the levels specified in the exemption;

3. Include, if air pollution equipment is used in the calculation of emissions, a copy of any report of manufacturer's testing, if available. The department may require a test if it believes that a test is necessary for the exemption claim; and

4. Be maintained on site for a minimum of two years, be made available for review during normal business hours and for state and EPA on-site inspections, and be provided to the director or the director's designee upon request. Facilities designated as major sources pursuant to rules 22.4(455B) and 22.101(455B), or subject to any applicable federal requirements, shall retain all records demonstrating compliance with this exemption for five years.

(3) An owner or operator using this exemption obtains a construction permit or ceases operation of equipment if operation of the equipment would cause the emission levels listed in this exemption to be exceeded.

For the purposes of this exemption, "research and development activities" shall be defined as activities:

1. That are operated under the close supervision of technically trained personnel; and

2. That are conducted for the primary purpose of theoretical research or research and development into new or improved processes and products; and

3. That do not manufacture more than de minimis amounts of commercial products; and

4. That do not contribute to the manufacture of commercial products by collocated sources in more than a de minimis manner.

ll. A regional collection center (RCC), as defined in 567--Chapter 211, involved in the processing of permitted hazardous materials from households and conditionally exempt small quantity generators (CESQG), not to exceed

1,200,000 pounds of VOC containing material in a 12-month rolling period. Latex paint drying may not exceed 120,000 pounds per year on a 12-month rolling total. Other nonprocessing emission units (e.g., standby generators and waste oil heaters) shall not be eligible to use this exemption.

mm. Cold solvent cleaning machines that are not in-line cleaning machines, where the maximum vapor pressure of the solvents used shall not exceed 0.7 kPa (5 mmHg or 0.1 psi) at 20° C (68° F). The machine must be equipped with a tightly fitted cover or lid that shall be closed at all times except during parts entry and removal. This exemption cannot be used for cold solvent cleaning machines that use solvent containing methylene chloride (CAS # 75-09-2), perchloroethylene (CAS # 127-18-4), trichloroethylene (CAS # 79-01-6), 1,1,1-trichloroethane (CAS # 71-55-6), carbon tetrachloride (CAS # 56-23-5) or chloroform (CAS # 67-66-3), or any combination of these halogenated HAP solvents in a total concentration greater than 5 percent by weight.

nn. Emissions from mobile over-the-road trucks, and mobile agricultural and construction internal combustion engines that are operated only for repair or maintenance purposes at equipment repair shops or equipment dealerships, and only when the repair shops or equipment dealerships are not major sources as defined in rule 567-22.100(455B).

oo. A non-road diesel fueled engine, as defined in 40 CFR 1068.30 and as amended through October 8, 2008, with a brake horsepower rating of less than 1,100 at full load measured at the shaft, used to conduct periodic testing and maintenance on natural gas pipelines. For the purposes of this exemption, the manufacturer's name-plate rating shall be defined as the brake horsepower output at the shaft at full load.

1. To qualify for the exemption, the engine must:

- a. Be used for periodic testing and maintenance on natural gas pipelines outside the compressor station, which shall not exceed 330 hours in any 12-month consecutive period at a single location; or
- b. Be used for periodic testing and maintenance on natural gas pipelines within the compressor station, which shall not exceed 330 hours in any 12-month consecutive period.

2. The owner or operator shall maintain a monthly record of the number of hours the engine operated and a record of the rolling 12-month total of the number of hours the engine operated for each location outside the compressor station and within the compressor station. These records shall be maintained for two years. Records shall be made available to the department upon request.

3. This exemption shall not apply to the replacement or substitution of engines for backup power generation at a pipeline compressor station.>>

Appendix 1-2b

Sources Exempted and Included in Title V Permit Applications

(Source: IAC 567-22.102 and 22.103) [Added April 2003; Revised April 2006]

22.102 The following source categories are exempt from the obligation to obtain a Title V operating permit:

- a. All sources and source categories that would be required to obtain a Title V permit solely because they are subject to 40 CFR 60, Subpart AAA, Standards of Performance for New Residential Wood Heaters, as amended through December 14, 2000;
- b. All sources and source categories that would be required to obtain a Title V permit solely because they are subject to 40 CFR 61, Subpart M, National Emission Standard for Hazardous Air Pollutants for Asbestos, Section 61.145, Standard for Demolition and Renovation, as amended through July 20, 2004;
- c. All sources and source categories that would be required to obtain a Title V permit solely because they are subject to any of the following subparts from 40 CFR 63:
 1. Subpart M, National Perchloroethylene Air Emission Standards for Dry Cleaning Facilities, as amended through December 19, 2005.
 2. Subpart N, National Emission Standards for Chromium Emissions from Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks, as amended through December 19, 2005.
 3. Subpart O, Ethylene Oxide Emissions Standards for Sterilization Facilities, as amended through December 19, 2005.
 4. Subpart T, National Emission Standards for Halogenated Solvent Cleaning, as amended through December 19, 2005.
 5. Subpart RRR, National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production, as amended through December 19, 2005.
 6. Subpart VVV, National Emission Standards for Hazardous Air Pollutants: Publicly Owned Treatment Works, as amended through June 23, 2003.

22.103(1) Insignificant activities excluded from Title V operating permit application. In accordance with 40 CFR 70.5 (as amended through July 21, 1992), these activities need not be included in the Title V permit application.

- a. Mobile internal combustion and jet engines, marine vessels, and locomotives.
- b. Equipment, other than anaerobic lagoons, used for cultivating land, harvesting crops, or raising livestock. This exemption is not applicable if the equipment is used to remove substances from grain which were applied to the grain by another person. This exemption also is not applicable to equipment used by a person to manufacture commercial feed, as defined in Iowa Code section 198.3, when that feed is normally not fed to livestock:
 - (1) Owned by that person or another person, and
 - (2) Located in a feedlot, as defined in Iowa Code section 172D.1(6), or in a confinement building owned or operated by that person, and
 - (3) Located in this state.
- c. Equipment or control equipment which eliminates all emissions to the atmosphere.
- d. Equipment (other than anaerobic lagoons) or control equipment which emits odors unless such equipment or control equipment also emits particulate matter or any other air pollutant or contaminant.
- e. Air conditioning or ventilating equipment not designed to remove air contaminants generated by or released from associated equipment.
- f. Residential wood heaters, cookstoves, or fireplaces.
- g. The equipment in laboratories used exclusively for nonproduction chemical and physical analyses. Nonproduction analyses means analyses incidental to the production of a good or service and includes analyses conducted for quality assurance or quality control activities, or for the assessment of environmental impact.
- h. Recreational fireplaces.
- i. Barbecue pits and cookers except at a meat packing plant or a prepared meat manufacturing facility.

- j. Stacks or vents to prevent escape of sewer gases through plumbing traps for systems handling domestic sewage only. Systems which include any industrial waste are not exempt.
- k. Retail gasoline and diesel fuel handling facilities.
- l. Photographic process equipment by which an image is reproduced upon material sensitized to radiant energy.
- m. Equipment used for hydraulic or hydrostatic testing.
- n. General vehicle maintenance and servicing activities at the source, other than gasoline fuel handling.
- o. Cafeterias, kitchens, and other facilities used for preparing food or beverages primarily for consumption at the source.
- p. Equipment using water, water and soap or detergent, or a suspension of abrasives in water for purposes of cleaning or finishing provided no organic solvent has been added to the water, the boiling point of the additive is not less than 100°C (212°F), and the water is not heated above 65.5°C (150°F).
- q. Administrative activities including, but not limited to, paper shredding, copying, photographic activities, and blueprinting machines. This does not include incinerators.
- r. Laundry dryers, extractors, and tumblers processing clothing, bedding, and other fabric items used at the source that have been cleaned with water solutions of bleach or detergents provided that any organic solvent present in such items before processing that is retained from cleanup operations shall be addressed as part of the volatile organic compound emissions from use of cleaning materials.
- s. Housekeeping activities for cleaning purposes, including collecting spilled and accumulated materials at the source, but not including use of cleaning materials that contain organic solvent.
- t. Refrigeration systems, including storage tanks used in refrigeration systems, but excluding any combustion equipment associated with such systems.
- u. Activities associated with the construction, on-site repair, maintenance or dismantlement of buildings, utility lines, pipelines, wells, excavations, earthworks and other structures that do not constitute emission units.
- v. Storage tanks of organic liquids with a capacity of less than 500 gallons, provided the tank is not used for storage of any material listed as a hazardous air pollutant pursuant to Section 112(b) of the Clean Air Act.
- w. Piping and storage systems for natural gas, propane, and liquefied petroleum gas, excluding pipeline compressor stations and associated storage facilities.
- x. Water treatment or storage systems, as follows:
 - (1) Systems for potable water or boiler feedwater.
 - (2) Systems, including cooling towers, for process water provided that such water has not been in direct or indirect contact with process steams that contain volatile organic material or materials listed as hazardous air pollutants pursuant to Section 112(b) of the Clean Air Act.
- y. Lawn care, landscape maintenance, and grounds keeping activities.
- z. Containers, reservoirs, or tanks used exclusively in dipping operations to coat objects with oils, waxes, or greases, provided no organic solvent has been mixed with such materials.
- aa. Cold cleaning degreasers that are not in-line cleaning machines, where the vapor pressure of the solvents used never exceeds 2 kPa (15 mmHg or 0.3 psi) measured at 38°C (100°F) or 0.7 kPa (5 mmHg or 0.1 psi) at 20°C (68°F). (NOTE: Cold cleaners subject to 40 CFR Part 63 Subpart T are not considered insignificant activities.)
- bb. Manually operated equipment used for buffing, polishing, carving, cutting, drilling, machining, routing, sanding, sawing, scarfing, surface grinding or turning.
- cc. Use of consumer products, including hazardous substances as that term is defined in the Federal Hazardous Substances Act (15 U.S.C. 1261 et seq.), when the product is used at a source in the same manner as normal consumer use.
- dd. Activities directly used in the diagnosis and treatment of disease, injury or other medical condition.
- ee. Firefighting activities and training in preparation for fighting fires conducted at the source. (NOTE: Written notification pursuant to 567-paragraph 23.2(3)"g" is required at least ten working days before such action commences.)
- ff. Activities associated with the construction, repair or maintenance of roads or other paved or open areas, including operation of street sweepers, vacuum trucks, spray trucks and other vehicles related to the control of fugitive emissions of such roads or other areas.
- gg. Storage and handling of drums or other transportable containers when the containers are sealed during storage and handling.
- hh. Individual points of emission or activities as follows:

- (1) Individual flanges, valves, pump seals, pressure relief valves and other individual components that have the potential for leaks.
- (2) Individual sampling points, analyzers, and process instrumentation, whose operation may result in emissions.
- (3) Individual features of an emission unit such as each burner and soot blower in a boiler or each use of cleaning materials on a coating or printing line.
- ii. Construction activities at a source solely associated with the modification or building of a facility, an emission unit or other equipment at the source. (NOTE: Notwithstanding the status of this activity as insignificant, a particular activity that entails modification or construction of an emission unit or construction of air pollution control equipment may require a construction permit pursuant to 22.1(455B) and may subsequently require a revised Title V operating permit. A revised Title V operating permit may also be necessary for operation of an emission unit after completion of a particular activity if the existing Title V operating permit does not accommodate the new state of the emission unit.)
- jj. Activities at a source associated with the maintenance, repair, or dismantlement of an emission unit or other equipment installed at the source, including preparation for maintenance, repair or dismantlement, and preparation for subsequent startup, including preparation of a shutdown vessel for entry, replacement of insulation, welding and cutting, and steam purging of a vessel prior to startup.

22.103(2) Insignificant activities which must be included in Title V operating permit applications.

a. The following are insignificant activities based on potential emissions:

An emission unit which has the potential to emit less than:

- 5 tons per year of any regulated air pollutant, except:
- 2.5 tons per year of PM-10,
- 40 lbs per year of lead or lead compounds,
- 2500 lbs per year of any combination of hazardous air pollutants except high-risk pollutants,
- 1000 lbs per year of any individual hazardous air pollutant except high-risk pollutants,
- 250 lbs per year of any combination of high-risk pollutants, or
- 100 lbs per year of any individual high-risk pollutant.

The definition of "high risk pollutant" is found in 22.100(455B).

b. The following are insignificant activities:

- (1) Fuel-burning equipment for indirect heating and reheating furnaces using natural or liquefied petroleum gas with a capacity of less than 10 million Btu per hour input per combustion unit.
- (2) Fuel-burning equipment for indirect heating with a capacity of less than 1 million Btu per hour input per combustion unit when burning coal, untreated wood, or fuel oil.
- (3) Incinerators with a rated refuse burning capacity of less than 25 pounds per hour.
- (4) Gasoline, diesel fuel, or oil storage tanks with a capacity of 1,000 gallons or less and an annual throughput of less than 40,000 gallons.
- (5) A storage tank which contains no volatile organic compounds above a vapor pressure of 0.75 pounds per square inch at the normal operating temperature of the tank when other emissions from the tank do not exceed the levels in paragraph 22.103(2)"a."
- (6) Internal combustion engines that are used for emergency response purposes with a brake horsepower rating of less than 400 measured at the shaft. The manufacturer's nameplate rating at full load shall be defined as the brake horsepower output at the shaft.

Appendix 1-3

Sources Ineligible for an Operating Permit by Rule for Small Sources

(Source: IAC 567-22.300(3)) [Added May 1998; Revised April 2006; Revised February 2008]

- a. Any affected source subject to the provisions of Title IV of the Act or any solid waste incinerator unit required to obtain a Title V operating permit under Section 129(e) of the Act is not eligible for an operating permit by rule for small sources.
- b. Sources which meet the registration criteria established in 22.300(2)"a" and meet all applicable requirements of rule 22.300(455B), and are subject to a standard or other requirement under 567 -- subrule 23.1(2) (standards of performance for new stationary sources) or Section 111 of the Act are eligible for an operating permit by rule for small sources. These sources shall be required to obtain a Title V operating permit when the exemptions specified in subrule 22.102(1) or 22.102(2) no longer apply.
- c. Sources which meet the registration criteria established in 22.300(2)"a" and meet all applicable requirements of rule 22.300(455B), and are subject to a standard or other requirement under 567 -- subrule 23.1(3) (emissions standards for hazardous air pollutants), 567 -- subrule 23.1(4) (emission standards for hazardous air pollutants for source categories) or Section 112 of the Act are eligible for an operating permit by rule for small sources. These sources shall be required to obtain a Title V operating permit when the exemptions specified in subrule 22.102(1) or 22.102(2) no longer apply.

Appendix 1-4

Activities Exempt from the Open Burning Prohibition

(Source: IAC 567-23.2(2) and (3))

[Revised April 1999; Revised April 2004; Revised April 2006; Revised February 2007]

(NOTE: The open burning exemptions specified in this Appendix shall not be construed as exemptions from any other applicable environmental regulations. In particular, the exemptions do not absolve any person from compliance with the rules for solid waste disposal, including ash disposal, and solid waste permitting or the rules for storm water runoff and storm water permitting)

The following open burning activities/materials are exempt from the open burning prohibition, unless local ordinances forbid them:

- *Variances* - Any activity for which the Department has issued a variance.
- *Disaster Rubbish* - open burning of rubbish, including landscape waste, for the duration of any community disaster period in cases where an officially declared emergency condition exists.
- *Trees and Tree Trimmings* - open burning of trees and tree trimmings not originated on the premises provided that the burning site is operated by a local governmental entity, the burning site is fenced and access is controlled, burning is conducted on a regularly scheduled basis and is supervised at all times, burning is conducted only when weather conditions are favorable with respect to surrounding property, and the burning site is limited to areas at least one-quarter mile from any inhabited building.

(NOTE: The *Trees and Tree Trimmings* exemption does not apply within the area classified as the PM₁₀ (inhalable) particulate Group II area of Mason City. This Group II area is described as follows: the area in Cerro Gordo County, Iowa, in Lincoln Township including Sections 13, 24 and 25; in Lime Creek Township including Sections 18, 19, 20, 21, 27, 28, 29, 30, 31, 32, 33, 34 and 35; in Mason Township the western half of Section 1, Sections 2, 3, 4, 5, 8, 9, the northern half of Section 11, the northwestern quarter of section 12, the northern half of Section 16, the northern half of Section 17 and the portions of Sections 10 and 15 north and west of the line from U.S. Highway 18 south on Kentucky Avenue to 9th Street southwest; thence west on 9th Street southeast to the Minneapolis and Saint Louis railroad tracks; thence south on Minneapolis and Saint Louis railroad tracks to 19th Street southeast; thence west on 19th Street southeast to the section line between Sections 15 and 16.)

- *Flare Stacks* - open burning or flaring of waste gases, as long as open burning or flaring is conducted in compliance with the open burning criteria for *Landscape Waste* and *Recreational Fires* in this appendix.
- *Landscape Waste* - disposal by open burning of landscape waste originating on the premises. However, the burning of landscape waste produced in clearing, grubbing, and construction operations shall be limited to areas located at least one-fourth mile from any inhabited building. Rubber tires must not be used to ignite landscape waste.
- *Recreational Fires* - open fires for cooking, heating, recreation and ceremonies, as long as they comply with the open burning criteria for Landscape Waste in this appendix. Burning rubber tires is prohibited from this activity.
- *Residential Waste* - backyard burning of residential waste at dwellings of four-family units or less.

(NOTE: The open residential waste is prohibited in the following cities: Cedar Rapids, Marion, Hiawatha, Council Bluffs, Carter Lake, Des Moines, West Des Moines, Clive, Windsor Heights, Urbandale, and Pleasant Hill.)

Appendix 1-5

Adopted Federal Emission Standards for Hazardous Air Pollutants for Source Categories

(Source: IAC 567-23.1(4))

[Added April 2001; Revised April 2006; Revised February 2008; Revised February 2009; Revised February 2010]

- a. General Provisions. General provisions apply to owners or operators of affected activities or facilities except when otherwise specified in a particular subpart or in a relevant standard. (Subpart A)
- b. Requirements for control technology determinations for major sources in accordance with Clean Air Act Sections 112(g) and 112(j). (40 CFR Part 63, Subpart B)
 - (1) Section 112(g) requirements. For the purposes of this subparagraph, the definitions shall be the same as the definitions found in 40 CFR 63.2 and 40 CFR 63.41 as amended through December 27, 1996. The owner or operator of a new or reconstructed major source of hazardous air pollutants must apply maximum achievable control technology (MACT) for new sources or to the new or reconstructed major source. If the major source in question has been specifically regulated or exempted from regulation under a standard issued pursuant to Section 112(d), Section 112(h), or Section 112(j) of the Clean Air Act and incorporated in another subpart of 40 CFR part 63, excluded in 40 CFR 63.40(e) and (f), or the owner or operator of such major source has received all necessary air quality permits for such construction or reconstruction project before June 29, 1998, then the major source in question is not subject to the requirements of this subparagraph. The owner or operator of an affected source shall apply for a construction permit as required in 567 -- paragraph 22.1(1)"b." The construction permit application shall contain an application for a case-by-case MACT determination for the major source.
 - (2) Section 112(j) requirements. The owner or operator of a new or existing major source of hazardous air pollutants which includes one or more stationary sources included in a source category or subcategory for which the U.S. Environmental Protection Agency has failed to promulgate a new emission standard within 18 months of the deadline established under CAA 112(d) must submit a MACT application (parts 1 and 2) in accordance with the provisions of 40 CFR 63.52 as amended through April 5, 2002 by the CAA Section 112(j) deadline. In addition, the owner or operator of a new emission unit may submit an application for a Notice of MACT Approval before construction, as defined in 40 CFR 63.41, in accordance with the provisions of 567-paragraph 22.1(3)"a."
- c. Reserved.
- d. Compliance Extensions for Early Reductions of Hazardous Air Pollutants. Compliance extensions for early reductions of hazardous air pollutants are available to certain owners or operators of an existing source who wish to obtain a compliance extension from a standard issued under Section 112(d) of the Act. (Subpart D)
- e. Reserved.
- f. Emission Standards for Organic Hazardous Air Pollutants from the Synthetic Chemical Manufacturing Industry. These standards apply to chemical manufacturing process units that are part of a major source. These standards include applicability provisions, definitions and other general provisions that are applicable to Subparts F, G, and H of 40 CFR 63. (Subpart F)
- g. Emission Standards for Organic Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry for Process Vents, Storage Vessels, Transfer Operations, and Wastewater. These standards apply to all process vents, storage vessels, transfer racks, and wastewater streams within a source subject to Subpart F of 40 CFR 63. (Subpart G)
- h. Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks. These standards apply to emissions of designated organic hazardous air pollutants from specified processes that are located at a plant site that is a major source. Affected equipment includes: pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, surge control vessels, bottoms receivers, instrumentation systems and control devices or systems required by this subpart that are intended to operate in

organic hazardous air pollutant service 300 hours or more during the calendar year within a source subject to the provisions of a specific subpart in 40 CFR Part 63. In organic hazardous air pollutant or in organic HAP service means that a piece of equipment either contains or contacts a fluid (liquid or gas) that is at least 5 percent by weight of total organic HAPs as determined according to the provisions of 40 CFR Part 63.161. The provisions of 40 CFR Part 63.161 also specify how to determine that a piece of equipment is not in organic HAP service. (Subpart H)

i. Emission Standards for Organic Hazardous Air Pollutants for Certain Processes Subject to Negotiated Regulation for Equipment Leaks. These standards apply to emissions of designated organic hazardous air pollutants from specified processes (defined in 40 CFR 63.190) that are located at a plant site that is a major source. Subject equipment includes pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, and instrumentation systems at certain source categories. These standards establish the applicability of Subpart H for sources that are not classified as synthetic organic chemical manufacturing industries. (Subpart I)

j. Emission standards for hazardous air pollutants for polyvinyl chloride and copolymers production. This standard applies to a polyvinyl chloride (PVC) or copolymer production facility that is located at, or is part of, a major source of hazardous air pollutant (HAP) emissions (Part 63, Subpart J)

k. Reserved.

l. Emission Standards for Coke Oven Batteries. These standards apply to existing coke oven batteries, including by-product and nonrecovery coke oven batteries and to new coke oven batteries, or as defined in the subpart. (Subpart L)

m. Perchloroethylene air emission standards for dry cleaning facilities (40 CFR Part 63, Subpart M). These standards apply to the owner or operator of each dry cleaning facility that uses perchloroethylene (also known as perc). The specific standards applicable to dry cleaning facilities, including the compliance deadlines, are set out in the federal regulations contained in Subpart M. In general, dry cleaning facilities must meet the following requirements, which are set out in greater detail in Subpart M:

- (1) New and existing major source dry cleaning facilities are required to control emissions to the level of the maximum achievable control technology (MACT).
- (2) New and existing area source dry cleaning facilities are required to control emissions to the level achieved by generally available control technologies (GACT) or management practices.
- (3) New area sources that are located in residential buildings and that commence operation after July 13, 2006, are prohibited from using perc.
- (4) New area sources located in residential buildings that commenced operation between December 21, 2005, and July 13, 2006, must eliminate all use of perc by July 27, 2009.
- (5) Existing area sources located in residential buildings must eliminate all use of perc by December 21, 2020.
- (6) New area sources that are not located in residential buildings are prohibited from operating transfer machines.
- (7) Existing area sources that are not located in residential buildings are prohibited from operating transfer machines after July 27, 2008.
- (8) All sources must comply with the requirements in Subpart M for emissions control, equipment specifications, leak detection and repair, work practice standards, record keeping and reporting."

n. Emission Standards for Chromium Emissions from Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks. These standards limit the discharge of chromium compound air emissions from existing and new hard chromium electroplating, decorative chromium electroplating, and chromium anodizing tanks at major and area sources. (Subpart N)

o. Emission Standards for Hazardous Air Pollutants for Ethylene Oxide Commercial Sterilization and Fumigation Operations. New and existing major source ethylene oxide commercial sterilization and fumigation operations are required to control emissions to the level of the maximum achievable control technology (MACT). New and existing area source ethylene oxide commercial sterilization and fumigation operations are required to control emissions to the level achieved by generally available control technologies (GACT). Certain sources are exempt as described in 40 CFR 63.360. (Subpart O)

- p. Emission Standards for Primary Aluminum Reduction Plants. These standards apply to each new or existing potline, paste production plant, or anode bake furnace associated with a primary aluminum reduction plant, and for each new pitch storage tank associated with a primary aluminum production plant, except existing furnaces not located on the same site as the primary aluminum reduction plant. (Subpart LL)
- q. Emission Standards for Hazardous Air Pollutants for Industrial Process Cooling Towers. These standards apply to all new and existing industrial process cooling towers that are operated with chromium-based water treatment chemicals on or after September 8, 1994, and are either major sources or are integral parts of facilities that are major sources. (Subpart Q)
- r. Emission Standards for Hazardous Air Pollutants for Sources Categories: Gasoline distribution: (Stage 1). These standards apply to all existing and new bulk gasoline terminals and pipeline breakout stations that are major sources of hazardous air pollutants or are located at plant sites that are major sources. Bulk gasoline terminals and pipeline breakout stations located within a contiguous area or under common control with a refinery complying with 40 CFR Subpart CC are not subject to 40 CFR Subpart R standards. (Subpart R)
- s. Emission standards for hazardous air pollutants for pulp and paper (noncombustion). These standards apply to pulping and bleaching process sources at kraft, soda, sulfite, and stand-alone semichemical pulp mills. Affected sources include pulp mills and integrated mills (mills that manufacture pulp and paper/paperboard) that chemically pulp wood fiber (using kraft, sulfite, soda, or semichemical methods); pulp secondary fiber; pulp nonwood fiber, and mechanically pulp wood fiber. (Subpart S)
- t. Emission Standards for Hazardous Air Pollutants: Halogenated solvent cleaning. These standards require batch vapor solvent cleaning machines and in-line solvent cleaning machines to meet emission standards reflecting the application of maximum achievable control technology (MACT) for major and area sources; area source batch cold cleaning machines are required to achieve generally available control technology (GACT). The subpart regulates the emissions of the following halogenated hazardous air pollutant solvents: methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, and chloroform. (Subpart T)
- u. Emission Standards for Hazardous Air Pollutants: Group I Polymers and Resins. Applicable to existing and new major sources that emit organic HAP during the manufacture of one or more elastomers including but not limited to producers of butyl rubber, halobutyl rubber, epichlorohydrin elastomers, ethylene propylene rubber, Hypalon [trademark], neoprene, nitrile butadiene rubber, nitrile butadiene latex, polybutadiene rubber/styrene butadiene rubber by solution, polysulfide rubber, styrene butadiene rubber by emulsion, and styrene butadiene latex. MACT is required for major sources. (Subpart U)
- v. Reserved.
- w. Emission Standards for Hazardous Air Pollutants for Epoxy Resins Production and Nonnylon Polyamides Production. These standards apply to all existing, new and reconstructed manufacturers of basic liquid epoxy resins and manufacturers of wet strength resins that are located at a plant site that is a major source. (Subpart W)
- x. National Emission Standards for Hazardous Air Pollutants from Secondary Lead Smelting. These standards apply to all existing and new secondary lead smelters sources which use blast, reverberatory, rotary, or electric smelting furnaces for lead recovery of scrap lead that are located at major or area sources. The provisions apply to smelting furnaces, refining kettles, agglomerating furnaces, dryers, process fugitive sources, and fugitive dust. Excluded from the rule are primary lead smelters, lead refiners, and lead remelters. Hazardous air pollutants regulated under this standard include but are not limited to lead compounds, arsenic compounds, and 1,3-butadiene. (Subpart X)
- y. Emission Standards for Marine Tank Vessel Loading Operations. This standard requires existing and new major sources to control emissions using maximum achievable control technology (MACT) to control hazardous air pollutants (HAP). (Subpart Y)
- z. Reserved.

aa. Emission standards for hazardous air pollutants for phosphoric acid manufacturing. These standards apply to all new and existing major sources of phosphoric acid manufacturing. Affected processes include, but are not limited to, wet process phosphoric acid process lines, superphosphoric acid process lines, phosphate rock dryers, phosphate rock calciners, and purified phosphoric acid process lines. (Subpart AA)

ab. Emission standards for hazardous air pollutants for phosphate fertilizers production. These standards apply to all new and existing major sources of phosphate fertilizer production plants. Affected processes include, but are not limited to, diammonium and monoammonium phosphate process lines, granular triple superphosphate process lines, and granular triple superphosphate storage buildings. (Subpart BB)

ac. National Emission Standards for Hazardous Air Pollutants: Petroleum Refineries. These standards apply to petroleum refining process units and colocated emission points at new and existing major sources. Affected sources include process vents, equipment leaks, storage vessels, transfer operations, and wastewater streams. The standards also apply to marine tank vessel and gasoline loading racks. Excluded from the standard are catalyst regeneration from catalytic cracking units and catalytic reforming units, and vents from sulfur recovery units. Compliance with the standard includes emission control and prevention. (Subpart CC)

ad. Emission Standards for Hazardous Air Pollutants for Off-Site Waste and Recovery Operations. This rule applies to major sources of HAP emissions which receive certain wastes, used oil, and used solvents from off-site locations for storage, treatment, recovery, or disposal at the facility. Maximum achievable control technology (MACT) is required to reduce HAP emissions from tanks, surface impoundments, containers, oil-water separators, individual drain systems and other material conveyance systems, process vents, and equipment leaks. Regulated entities include but are not limited to businesses that operate any of the following: hazardous waste treatment, storage, and disposal facilities; Resource Conservation and Recovery Act (RCRA) exempt hazardous wastewater treatment facilities other than publicly owned treatment works; used solvent recovery plants; RCRA exempt hazardous waste recycling operations; used oil re-refineries. The regulations also apply to federal agency facilities that operate any of the waste management or recovery operations. (Subpart DD)

ae. Emission Standards for Magnetic Tape Manufacturing Operations. These standards apply to major sources performing magnetic tape manufacturing operations. (Subpart EE)

af. Reserved.

ag. National Emission Standards for Hazardous Air Pollutants for Source Categories: Aerospace Manufacturing and Rework Facilities. These standards apply to major sources involved in the manufacture, repair, or rework of aerospace components and assemblies, including but not limited to airplanes, helicopters, missiles, and rockets for civil, commercial, or military purposes. Hazardous air pollutants regulated under this standard include chromium, cadmium, methylene chloride, toluene, xylene, methyl ethyl ketone, ethylene glycol, and glycol ethers. (Subpart GG)

ah. Emission standards for hazardous air pollutants for oil and natural gas production. These standards apply to all new and existing major sources of oil and natural gas production. Affected sources include, but are not limited to, processing of liquid or gaseous hydrocarbons, such as ethane, propane, butane, pentane, natural gas, and condensate extracted from field natural gas. (Subpart HH)

ai. Emission Standards for Hazardous Air Pollutants for Shipbuilding and Ship Repair (Surface Coating) Operations. Requires existing and new major sources to control hazardous air pollutant (HAP) emissions using the maximum achievable control technology (MACT). (Subpart II)

aj. Emission Standards for Hazardous Air Pollutants for Hazardous Air Pollutant (HAP) Emissions from Wood Furniture Manufacturing Operations. These standards apply to each facility that is engaged, either in part or in whole, in the manufacture of wood furniture or wood furniture components and that is located at a plant site that is a major source. (Subpart JJ)

ak. Emission Standards for Hazardous Air Pollutants for the Printing and Publishing Industry. Existing and new major sources are required to control hazardous air pollutants (HAP) using the maximum achievable control technology (MACT). Affected units are publication rotogravure, product and packaging rotogravure, and wide-web flexographic printing. (Subpart KK)

al. Emission standards for hazardous air pollutants for primary aluminum reduction plants. These standards apply to each new or existing potline, paste production plant, and anode bake furnace associated with a primary aluminum reduction plant, and for each new pitch storage tank associated with a primary aluminum production plant. (Part 63, Subpart LL)

am. Emission standards for hazardous air pollutants for chemical recovery combustion sources at kraft, soda, sulfite, and stand-alone semichemical pulp mills. (Part 63, Subpart MM)

an. to ar. Reserved.

ao. Emission standards for tanks - level 1. These provisions apply when another paragraph under this rule references the use of this paragraph for such air emission control. These air emission standards are placed here for administrative convenience and only apply to those owners and operators of facilities subject to the referencing paragraph. The provisions of paragraph 23.1(4)"a," general provisions (Subpart A), do not apply to this paragraph except as specified in a referencing paragraph. (Part 63, Subpart OO)

ap. Emission standards for containers. These provisions apply when another paragraph under this rule references the use of this paragraph for such air emission control. These air emission standards are placed here for administrative convenience and only apply to those owners and operators of facilities subject to the referencing paragraph. The provisions of paragraph 23.1(4)"a," general provisions (Subpart A), do not apply to this paragraph except as specified in a referencing paragraph. (Part 63, Subpart PP)

aq. Emission standards for surface impoundments. These provisions apply when another paragraph under this rule references the use of this paragraph for such air emission control. These air emission standards are placed here for administrative convenience and only apply to those owners and operators of facilities subject to the referencing paragraph. The provisions of paragraph 23.1(4)"a," general provisions (Subpart A), do not apply to this paragraph except as specified in a referencing paragraph. (Part 63, Subpart QQ)

ar. Emission standards for individual drain systems. These provisions apply when another paragraph under this rule references the use of this paragraph for such air emission control. These air emission standards are placed here for administrative convenience and only apply to those owners and operators of facilities subject to the referencing paragraph. The provisions of paragraph 23.1(4)"a," general provisions (Subpart A), do not apply to this paragraph except as specified in a referencing paragraph. (Part 63, Subpart RR)

as. Emission standards for closed vent systems, control devices, recovery devices and routing to a fuel gas system or a process. These provisions apply when another paragraph under this rule references the use of this paragraph for such air emission control. These air emission standards are placed here for administrative convenience and only apply to those owners and operators of facilities subject to the referencing paragraph. The provisions of paragraph 23.1(4)"a," general provisions, (Subpart A), do not apply to this paragraph except as specified in a referencing paragraph. (Subpart SS)

at. Emission standards for equipment leaks -- control level 1. These provisions apply to the control of air emissions from equipment leaks for which another paragraph under this rule references the use of this paragraph for such emission control. These air emission standards for equipment leaks are placed here for administrative convenience and only apply to those owners and operators of facilities subject to the referencing paragraph. The provisions of paragraph 23.1(4)"a," general provisions, (Subpart A), do not apply to this paragraph except as specified in a referencing paragraph. (Subpart TT)

au. Emission standards for equipment leaks -- control level 2 standards. These provisions apply to the control of air emissions from equipment leaks for which another paragraph under this rule references the use of this paragraph for such air emission control. These air emission standards for equipment leaks are placed here for administrative

convenience and only apply to those owners and operators of facilities subject to the referencing paragraph. The provisions of paragraph 23.1(4)"a", general provisions, (Subpart A), do not apply to this paragraph except as specified in a referencing paragraph. (Subpart UU)

av. Emission standards for oil-water separators and organic-water separators. These provisions apply when another paragraph under this rule references the use of this paragraph for such air emission control. These air emission standards are placed here for administrative convenience and only apply to those owners and operators of facilities subject to the referencing paragraph. The provisions of paragraph 23.1(4)"a," general provisions (Subpart A), do not apply to this paragraph except as specified in a referencing paragraph. (Part 63, Subpart VV)

aw. Emission standards for storage vessels (tanks) -- control level 2. These provisions apply to the control of air emissions from storage vessels for which another paragraph under this rule references the use of this paragraph for such air emission control. These air emission standards for storage vessels are placed here for administrative convenience and only apply to those owners and operators of facilities subject to the referencing paragraph. The provisions of paragraph 23.1(4)"a", general provisions, (Subpart A), do not apply to this paragraph except as specified in a referencing paragraph. (Subpart WW)

ax. Reserved.

ay. Emission standards for hazardous air pollutants: generic maximum achievable control technology (Generic MACT). These standards apply to new and existing major sources of acetal resins (AR) production, acrylic and modacrylic fiber (AMF) production, hydrogen fluoride (HF) production and polycarbonate (PC) production. Affected processes include, but are not limited to, producers of homo-polymers and copolymers of alternating oxymethylene units, acrylic fiber, modacrylic fiber synthetics composed of acrylonitrile (AN) units, hydrogen fluoride and polycarbonate. (Subpart YY)

az. to bb. Reserved.

bc. Emission standards for hazardous air pollutants for steel pickling -- HCL process facilities and hydrochloric acid regeneration plants. Unless exempted, these standards apply to all new and existing major sources of hydrochloric acid process steel pickling facilities and hydrochloric acid regeneration plants. Affected processes include, but are not limited to, equipment and tanks configured for the pickling process, including the immersion, drain and rinse tanks and hydrochloric acid regeneration plants. (Subpart CCC)

bd. Emission standards for hazardous air pollutants for mineral wool production. These standards apply to all new and existing major sources of mineral wool production. Affected processes included, but are not limited to, cupolas and curing ovens. (Subpart DDD)

be. Emission standards for hazardous air pollutants from hazardous waste combustors. These standards apply to all hazardous waste combustors: hazardous waste incinerators, hazardous waste burning cement kilns, and hazardous waste burning lightweight aggregate kilns, except as provided in the rule. Both area sources and major sources are subject to this subpart as of April 19, 1996, and are subject to the requirement to apply for and obtain a Title V permit. (Part 63, Subpart EEE)

bf. Reserved.

bg. Emission standards for hazardous air pollutants for pharmaceutical manufacturing. These standards apply to producers of finished dosage forms of drugs, for example, tablets, capsules, and solutions, that contain an active ingredient generally, but not necessarily, in association with inactive ingredients. Pharmaceuticals include components whose intended primary use is to furnish pharmacological activity or other direct effect in the diagnosis, cure, mitigation, treatment, or prevention of disease, or to affect the structure or any function of the body of humans or other animals. The regulations do not apply to research and development facilities. (Subpart GGG)

bh. Emission standards for hazardous air pollutants for natural gas transmission and storage. These standards apply to all new and existing major sources of natural gas transmission and storage. Natural gas transmission and storage facilities are those that transport or store natural gas prior to its entering the pipeline to a local distribution company.

Affected sources include, but are not limited to, mains, valves, meters, boosters, regulators, storage vessels, dehydrators, compressors and delivery systems. (Subpart HHH)

bi. Emission standards for hazardous air pollutants for flexible polyurethane foam production. These standards apply to producers of slabstock, molded, and rebond flexible polyurethane foam. The regulations do not apply to processes dedicated exclusively to the fabrication (i.e., gluing or otherwise bonding foam pieces together) of flexible polyurethane foam or to research and development. (Subpart III)

bj. Emission Standards for Hazardous Air Pollutants: Group IV Polymers and Resins. Applicable to existing and new major sources that emit organic HAP during the manufacture of the following polymers and resins: acrylonitrile butadiene styrene resin (ABS), styrene acrylonitrile resin (SAN), methyl methacrylate acrylonitrile butadiene styrene resin (MABS), methyl methacrylate butadiene styrene resin (MBS) polystyrene resin, poly (ethylene terephthalate) resin (PET), and nitrile resin. MACT is required for major sources. (Subpart JJJ)

bk. Reserved.

bl. Emission standards for hazardous air pollutants for Portland cement manufacturing operations. These standards apply to all new and existing major and area sources of Portland cement manufacturing unless exempted. Cement kiln dust (CKD) storage facilities, including CKD piles and landfills, are excluded from this standard. Affected processes include, but are not limited to, all cement kilns and in-line kiln/raw mills, unless they burn hazardous waste. (Subpart LLL)

bm. Emission standards for hazardous air pollutants for pesticide active ingredients production. These standards apply to all new and existing major sources of pesticide active ingredient production that manufacture organic pesticide active ingredients (PAI), including herbicides, insecticides and fungicides. Affected processes include, but are not limited to, processing equipment, connected piping and ducts, associated storage vessels, pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves and connectors. Exempted sources include research and development facilities, storage vessels already subject to another 40 CFR Part 63 NESHAP, production of ethylene, storm water from segregated sewers, water from fire-fighting and deluge systems (including testing of such systems) and various spills. (Subpart MMM)

bn. Emission standards for hazardous air pollutants for wool fiberglass manufacturing. These standards apply to all new and existing major sources of wool fiberglass manufacturing. Affected processes include, but are not limited to, all glass-melting furnaces, rotary spin (RS) manufacturing lines that produce bonded building insulation, flame attenuation (FA) manufacturing lines producing bonded pipe insulation and new FA manufacturing lines producing bonded heavy-density products. (Subpart NNN)

bo. Emission standards for hazardous air pollutants for amino/phenolic resins production. These standards apply to new or existing facilities that own or operate an amino or phenolic resins production unit. (Part 63, Subpart OOO)

bp. Emission standards for hazardous air pollutants for polyether polyols production. These standards apply to all new and existing major sources of polyether polyols. Polyether polyols are compounds formed through polymerization of ethylene oxide, propylene oxide or other cyclic ethers with compounds having one or more reactive hydrogens to form polyethers. Affected processes include, but are not limited to, storage vessels, process vents, heat exchange systems, equipment leaks and wastewater operations. (Subpart PPP)

bq. to bs. Reserved.

bt. Emission standards for hazardous air pollutants for primary lead smelting. These standards apply to all new and existing major sources of primary lead smelting. Affected processes include, but are not limited to, sintering machines, blast furnaces, dross furnaces and process fugitive sources. (Subpart TTT)

bu. Emission standards for hazardous air pollutant for petroleum refineries: catalytic cracking units, catalytic reforming units, and sulfur recovery units. This standard applies to a new or existing petroleum refinery that is located at a major source of hazardous air pollutants (HAPs emissions). (Part 63, Subpart UUU)

bv. Emission standards for hazardous air pollutants publicly owned treatment works (POTW). (Part 63, Subpart VVV)

bw. Reserved.

bx. Emission standards for hazardous air pollutants for ferroalloys production: ferromanganese and silicomanganese. These standards apply to all new and existing major sources of ferroalloys production of ferromanganese and silicomanganese. Affected processes include, but are not limited to, submerged arc furnaces, metal oxygen refining (MOR) processes, crushing and screening operations, and fugitive dust sources. (Subpart XXX)

by. to bz. Reserved.

ca. Emission standards for hazardous air pollutants: municipal solid waste landfills. This standard applies to existing and new municipal solid waste (MSW) landfills. (Part 63, Subpart AAAA)

cb. Reserved.

cc. Emission standards for hazardous air pollutants for the manufacturing of nutritional yeast. (Part 63, Subpart CCCC)

cd. Emission standards for hazardous air pollutants for plywood and composite wood products (formerly plywood and particle board manufacturing). These standards apply to new and existing major sources with equipment used to manufacture plywood and composite wood products. This equipment includes dryers, refiners, blenders, formers, presses, board coolers, and other process units associated with the manufacturing process. This also includes coating operations, on-site storage and wastewater treatment. However, only certain process units (defined in the federal rule) are subject to control or work practice requirements. (Part 63, Subpart DDDD)

ce. Emission standards for hazardous air pollutants for organic liquids distribution (non-gasoline). These standards apply to new and existing major source organic liquids distribution (non-gasoline) operations, which are carried out at storage terminals, refineries, crude oil pipeline stations, and various manufacturing facilities. (Part 63, Subpart EEEE)

cf. Emission standards for hazardous air pollutants for miscellaneous organic chemical manufacturing (MON). These standards establish emission limits and work practice standards for new and existing major sources with miscellaneous organic chemical manufacturing process units, wastewater treatment and conveyance systems, transfer operations, and associated ancillary equipment. (Part 63, Subpart FFFF)

cg. Emission standards for hazardous air pollutants for solvent extraction for vegetable oil production. (Part 63, Subpart GGGG)

ch. Emission standards for hazardous air pollutants for wet-formed fiberglass mat production. This standard applies to wet-formed fiberglass mat production plants that are major sources of hazardous air pollutants. These plants may be stand-alone facilities or located with asphalt roofing and processing facilities. (Part 63, Subpart HHHH)

ci. Emission standards for hazardous air pollutants for surface coating of automobiles and light-duty trucks. These standards apply to new, reconstructed, or existing affected sources, as defined in the standard, that are located at a facility which applies topcoat to new automobile or new light-duty truck bodies or body parts for new automobiles or new light-duty trucks and that is a major source, is located at a major source, or is part of a major source of emissions of hazardous air pollutants. Additional applicability criteria and exemptions from these standards may apply. (Part 63, Subpart IIII)

cj. Emission standards for hazardous air pollutants: paper and other web coating. This standard applies to a facility that is engaged in the coating of paper, plastic film, metallic foil, and other web surfaces located at a major source of hazardous air pollutant (HAP) emissions. (Part 63, Subpart JJJJ)

ck. Emission standards for hazardous air pollutants for surface coating of metal cans. These standards apply to a metal can surface coating operation that uses at least 5,700 liters (1,500 gallons (gal)) of coatings per year and is a major source, is located at a major source, or is part of a major source of hazardous air pollutant emissions. Coating operations located at an area source are not subject to this rule. Additional applicability criteria and exemptions from these standards may apply. (Part 63, Subpart KKKK)

cm. Emission standards for hazardous air pollutants for surface coating of miscellaneous metal parts and products. These standards apply to miscellaneous metal parts and products surface coating facilities that are a major source, are located at a major source, or are part of a major source of hazardous air pollutant emissions. A miscellaneous metal parts and products surface coating facility that is located at an area source is not subject to this standard. Certain sources are exempt as described in the standard. (Part 63, Subpart MMMM)

cn. Emission standards for hazardous air pollutants: surface coating of large appliances. This standard applies to a facility that applies coatings to large appliance parts or products, and is a major source, is located at a major source, or is part of a major source of emissions of hazardous air pollutants (HAPs). The large appliances source category includes facilities that apply coatings to large appliance parts or products. Large appliances include "white goods" such as ovens, refrigerators, freezers, dishwashers, laundry equipment, trash compactors, water heaters, comfort furnaces, electric heat pumps and most HVAC equipment intended for any application. (Part 63, Subpart NNNN)

co. Emission standards for hazardous air pollutants for printing, coating, and dyeing of fabrics and other textiles. These standards apply to new and existing facilities with fabric or other textile coating, printing, slashing, dyeing, or finishing operations, or group of such operations, that are a major source of hazardous air pollutants or are part of a facility that is a major source of hazardous air pollutants. Coating, printing, slashing, dyeing, or finishing operations located at an area source are not subject to this standard. Several exclusions from this source category are listed in the standard. (Part 63, Subpart OOOO)

cp. Emission standards for surface coating of plastic parts and products. These standards apply to new and existing major sources with equipment used to coat plastic parts and products. The surface coating application process includes drying/curing operations, mixing or thinning operations, and cleaning operations. Coating materials include, but are not limited to, paints, stains, sealers, topcoats, basecoats, primers, inks, and adhesives. (Part 63, Subpart PPPP)

cq. Emission standards for hazardous air pollutants for surface coating of wood building products. These standards establish emission limitations, operating limits, and work practice requirements for wood building products surface coating facilities that use at least 1,100 gallons of coatings per year and are a major source, are located at a major source, or are part of a major source of hazardous air pollutant emissions. Wood building products surface coating facilities located at an area source are not subject to this standard. Several exclusions from this source category are listed in the standard. (Part 63, Subpart QQQQ)

cr. Emission standards for hazardous air pollutants: surface coating of metal furniture. This standard applies to a metal furniture surface coating facility that is a major source, is located at a major source, or is part of a major source of HAP emissions. A metal furniture surface coating facility is one that applies coatings to metal furniture or components of metal furniture. Metal furniture means furniture or components that are constructed either entirely or partially from metal. (Part 63, Subpart RRRR)

cs. Emission standards for hazardous air pollutants: surface coating of metal coil. This standard requires that all new and existing "major" air toxics sources in the metal coil coating industry meet specific emission limits. Metal coil coating is the process of applying a coating (usually protective or decorative) to one or both sides of a continuous strip of sheet metal. Industries using coated metal include: transportation, building products, appliances, can manufacturing, and packaging. Other products using coated metal coil include measuring tapes, ventilation systems for walls and roofs, lighting fixtures, office filing cabinets, cookware, and sign stock material. (Part 63, Subpart SSSS)

ct. Emission standards for hazardous air pollutants for leather finishing operations. This standard applies to a new or existing leather finishing operation that is a major source of hazardous air pollutants (HAPs) emissions or that is located at, or is part of, a major source of HAP emissions. In general, a leather finishing operation is a single process

or group of processes used to adjust and improve the physical and aesthetic characteristics of the leather surface through multistage application of a coating comprised of dyes, pigments, film-forming materials, and performance modifiers dissolved or suspended in liquid carriers. (Part 63, Subpart TTTT)

cu. Emission standards for hazardous air pollutants for cellulose products manufacturing. This standard applies to a new or existing cellulose products manufacturing operation that is located at a major source of HAP emissions. Cellulose products manufacturing includes both the miscellaneous viscose processes source category and the cellulose ethers production source category. (Part 63, Subpart UUUU)

cv. Emission standards for hazardous air pollutants for boat manufacturing. (Part 63, Subpart VVVV)

cw. Emission standards for hazardous air pollutants: reinforced plastic composites production. This standard applies to a new or an existing reinforced plastic composites production facility that is located at a major source of HAP emissions. (Part 63, Subpart WWWW)

cx. Emission standards for hazardous air pollutants: rubber tire manufacturing. This standard applies to a rubber tire manufacturing facility that is located at, or is a part of, a major source of hazardous air pollutant (HAP) emissions. Rubber tire manufacturing includes the production of rubber tires and/or the production of components integral to rubber tires, the production of tire cord, and the application of puncture sealant. (Part 63, Subpart XXXX)

cy. Emission standards for hazardous air pollutants for stationary combustion turbines. These standards apply to stationary combustion turbines which are located at a major source of hazardous air pollutant emissions. Several subcategories have been defined within the stationary combustion turbine source category. Each subcategory has distinct requirements as specified in the standards. These standards do not apply to stationary combustion turbines located at an area source of hazardous air pollutant emissions. (Part 63, Subpart YYYY)

cz. Emission standards for stationary reciprocating internal combustion engines. These standards apply to new and existing major sources with stationary reciprocating internal combustion engines (RICE). For purposes of these standards, stationary RICE means any reciprocating internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. (Part 63, Subpart ZZZZ, as amended through April 20, 2006)

da. Emission standards for hazardous air pollutants for lime manufacturing plants. These standards regulate hazardous air pollutant emissions from new and existing lime manufacturing plants that are major sources, are colocated with major sources, or are part of major sources. Additional applicability criteria and exemptions from these standards may apply. (Part 63, Subpart AAAAA)

db. Emission standards for hazardous air pollutants: semiconductor manufacturing. These standards apply to new and existing major sources with semiconductor manufacturing. (Part 63, Subpart BBBB)

dc. Emission standards for hazardous air pollutants for coke ovens: pushing, quenching, and battery stacks. This standard applies to a new or existing coke oven battery at a plant that is a major source of HAP emissions. (Part 63, Subpart CCCCC)

dd. Emission standards for industrial, commercial and institutional boilers and process heaters. These standards apply to new and existing major sources with industrial, commercial or institutional boilers and process heaters. (Part 63, Subpart DDDDD) *As of April 15, 2009, the adoption by reference of Part 63, Subpart DDDDD, is rescinded. On July 30, 2007, the United States Court of Appeals for the District of Columbia Circuit issued its mandate vacating 40 CFR Part 63, Subpart DDDDD, in its entirety, and requiring EPA to repromulgate final standards for industrial, commercial or institutional boilers and process heaters at new and existing major sources

de. Emission standards for hazardous air pollutants for iron and steel foundries. These standards apply to each new or existing iron and steel foundry that is a major source of hazardous air pollutant emissions. A new affected source is an iron and steel foundry for which construction or reconstruction began after December 23, 2002. An existing affected source is an iron and steel foundry for which construction or reconstruction began on or before December 23, 2002. (Part 63, Subpart EEEEE)

df. Emission standards for hazardous air pollutants for integrated iron and steel manufacturing. These standards apply to affected sources at an integrated iron and steel manufacturing facility that is, or is part of, a major source of hazardous air pollutant emissions. The affected sources are each new or existing sinter plant, blast furnace, and basic oxygen process furnace (BOPF) shop at an integrated iron and steel manufacturing facility that is, or is part of, a major source of hazardous air pollutant emissions. (Part 63, Subpart FFFFFF)

dg. Emission standards for hazardous air pollutants: site remediation. These standards apply to new and existing major sources with certain types of site remediation activity on the source's property or on a contiguous property. These standards control hazardous air pollutant (HAP) emissions at major sources where remediation technologies and practices are used at the site to clean up contaminated environmental media (e.g., soil, groundwater, or surface water) or certain stored or disposed materials that pose a reasonable potential threat to contaminate environmental media.

Some site remediations already regulated by rules established under the Comprehensive Environmental Response and Compensation Liability Act (CERCLA) or the Resource Conservation and Recovery Act (RCRA) are not subject to these standards, as specified in Subpart GGGGG. There are also exemptions for short-term remediation and for certain leaking underground storage tanks, as specified in Subpart GGGGG. (Part 63, Subpart GGGGG)

dh. Emission standards for hazardous air pollutants for miscellaneous coating manufacturing. These standards establish emission limits and work practice requirements for new and existing miscellaneous coating manufacturing operations, including but not limited to, process vessels, storage tanks, wastewater, transfer operations, equipment leaks, and heat exchange systems. (Part 63, Subpart HHHHH)

di. Emission standards for mercury emissions from mercury cell chlor-alkali plants. These standards apply to the chlorine production source category. This source category contains the mercury cell chlor-alkali plant subcategory and includes all plants engaged in the manufacture of chlorine and caustic in mercury cells. These standards define two affected sources: mercury cell chlor-alkali production facilities and mercury recovery facilities. (Part 63, Subpart IIIII)

dj. Emission standards for hazardous air pollutants for brick and structural clay products manufacturing. These standards apply to new and existing brick and structural clay products manufacturing facilities that are, are located at, or are part of a major source of hazardous air pollutant emissions. (Part 63, Subpart JJJJJ)* As of April 15, 2009, the adoption by reference of Part 63, Subpart JJJJJ, is rescinded. On June 18, 2007, the United States Court of Appeals for the District of Columbia Circuit issued its mandate vacating 40 CFR Part 63, Subpart JJJJJ, in its entirety, and requiring EPA to repromulgate final standards for brick and structural clay products manufacturing at new and existing major sources.

dk. Emission standards for hazardous air pollutants for clay ceramics manufacturing. These standards apply to clay ceramics manufacturing facilities that are, are located at, or are part of a major source of hazardous air pollutant emissions. The clay ceramics manufacturing source category includes those facilities that manufacture pressed floor tile, pressed wall tile, and other pressed tile; or sanitaryware, such as toilets and sinks. (Part 63, Subpart KKKKK)

dl. Emission standards for hazardous air pollutants: asphalt processing and asphalt roofing manufacturing. This standard applies to an existing or new asphalt processing or asphalt roofing manufacturing facility that is a major source of hazardous air pollutants (HAPs) emissions, or is located at, or is part of a major source of HAP emissions. (Part 63, Subpart LLLLL)

dm. Emission standards for hazardous air pollutants: flexible polyurethane foam fabrication operations. This standard applies to a new or existing source at a flexible polyurethane foam fabrication facility. The standard defines two affected sources (units or collections of units to which a given standard or limit applies) corresponding to the two subcategories, loop slitter adhesive use or flame lamination. (Part 63, Subpart MMMMM)

dn. Emission standards for hazardous air pollutants: hydrochloric acid production. This standard applies to a new or existing HCl production facility that produces a liquid HCl product at a concentration of 30 weight percent or greater during its normal operations and is located at, or is part of, a major source of HAP. This does not include

HCl production facilities that only occasionally produce liquid HCl product at a concentration of 30 weight percent or greater. (Part 63, Subpart NNNNN)

do. Reserved.

dp. Emission standards for hazardous air pollutants: engine test cells/stands. This standard applies to an engine test cell/stand that is located at a major source of HAP emissions. An engine test cell/stand is any apparatus used for testing uninstalled stationary or uninstalled mobile engines. (Part 63, Subpart PPPPP)

dq. Emission standards for hazardous air pollutants for friction materials manufacturing facilities. This standard applies to a new or existing friction materials manufacturing facility that is (or is part of) a major source of hazardous air pollutants (HAPs) emissions. Friction materials manufacturing facilities produce friction materials for use in brake and clutch assemblies. (Part 63, Subpart QQQQQ)

dr. Emission standards for hazardous air pollutants: taconite iron ore processing. These standards apply to new and existing taconite iron ore processing plants that are, or are part of, a major source of HAP emissions. (Part 63, Subpart RRRRR)

ds. Emission standards for hazardous air pollutants for refractory products manufacturing. This standard applies to a new or existing refractory products manufacturing facility that is, is located at, or is part of, a major source of hazardous air pollutant (HAP) emissions. (Part 63, Subpart SSSSS)

dt. Emission standards for hazardous air pollutants: primary magnesium refining. These standards apply to primary magnesium refining plants that are, or are part of, a major source of HAP emissions. (Part 63, Subpart TTTTT)

du. Reserved.

dw. Emission standards for hazardous air pollutants for hospital ethylene oxide sterilizer area sources. This standard applies to a hospital that is an area source for hazardous air pollutant emissions and that owns or operates a new or existing ethylene oxide sterilization facility. (Part 63, Subpart WWWW)

dy. Emission standards for hazardous air pollutants for electric arc furnace steelmaking area sources. This standard applies to new or existing electric arc furnace (EAF) steelmaking facilities that are area sources for hazardous air pollutant emissions. (Part 63, Subpart YYYYY)

dz. Emission standards for hazardous air pollutants for iron and steel foundry area sources. This standard applies to new or existing iron and steel foundries that are area sources for hazardous air pollutant emissions. (Part 63, Subpart ZZZZ)

ea. to ek. Reserved.

el. Emission standards for hazardous air pollutants for acrylic and modacrylic fibers production area sources. This standard applies to acrylic and modacrylic fibers production plants that are area sources for hazardous air pollutant emissions. (Part 63, Subpart LLLLL)

em. Emission standards for hazardous air pollutants for carbon black production area sources. This standard applies to carbon black production plants that are area sources for hazardous air pollutants. (Part 63, Subpart MMMMM)

en. Emission standards for hazardous air pollutants for chemical manufacturing-chromium compounds area sources. This standard applies to plants that produce chromium compounds and are area sources for hazardous air pollutants. (Part 63, Subpart NNNNN)

eo. Emission standards for hazardous air pollutants for flexible polyurethane foam production and fabrication area sources. This standard applies to plants that produce flexible polyurethane foam or rebond foam, and plants that fabricate polyurethane foam, that are area sources for hazardous air pollutants. This standard applies to both new and existing area sources. An affected source is existing if construction or reconstruction commenced on or before April

4, 2007. An affected source is new if construction or reconstruction commenced after April 4, 2007. (Part 63, Subpart OOOOOO)

ep. Emission standards for hazardous air pollutants for lead acid battery manufacturing area sources. This standard applies to lead acid battery manufacturing plants that are area sources for hazardous air pollutants. Affected sources include all grid casting facilities, paste mixing facilities, three-process operation facilities, lead oxide manufacturing facilities, lead reclamation facilities, and any other lead-emitting operation that is associated with a lead acid battery manufacturing plant. This standard applies to both new and existing area sources. An affected source is existing if construction or reconstruction commenced on or before April 4, 2007. An affected source is new if construction or reconstruction commenced after April 4, 2007. (Part 63, Subpart PPPPPP)

eq. Emission standards for hazardous air pollutants for wood preserving area sources. This standard applies to wood preserving operations that are area sources for hazardous air pollutants. This standard applies to both new and existing area sources. An affected source is existing if construction or reconstruction commenced on or before April 4, 2007. An affected source is new if construction or reconstruction commenced after April 4, 2007. (Part 63, Subpart QQQQQQ)

er. Emission standards for hazardous air pollutants for clay ceramics manufacturing area sources. This standard applies to any new or existing clay ceramics manufacturing facility with an atomized glaze spray booth or kiln that fires glazed ceramic ware, that processes more than 50 tons per year of wet clay, and that is an area source for hazardous air pollutant emissions. (Part 63, Subpart RRRRRR)

es. Emission standards for hazardous air pollutants for glass manufacturing area sources. This standard applies to any new or existing glass manufacturing facility that is an area source for hazardous air pollutant emissions and meets the following criteria: (1) manufactures flat glass, glass containers or pressed and blown glass by melting a mixture of raw materials to produce molten glass and form the molten glass into sheets, containers or other shapes; and (2) uses one or more continuous furnaces to produce glass at a rate of at least 50 tons per year and that contains compounds of one or more "glass manufacturing metal HAP," as defined in 40 CFR 63.11459, as raw materials in a glass manufacturing batch formulation. (Part 63, Subpart SSSSSS)

et. Emission standards for hazardous air pollutants for secondary nonferrous metals processing area sources. This standard applies to any new or existing secondary nonferrous metals processing facility that is an area source for hazardous air pollutant emissions. This standard applies to all crushing and screening operations at a secondary zinc processing facility and to all furnace melting operations located at any secondary nonferrous metals processing facility. (Part 63, Subpart TTTTTT)

eu. and ev. Reserved.

ew. Emission standards for hazardous air pollutants for area sources: plating and polishing. This standard applies to plating and polishing activities at new and existing facilities that are area sources for hazardous air pollutant emissions. (Part 63, Subpart WWWWWW)

ex. Emission standards for hazardous air pollutants for area sources: metal fabrication and finishing. This standard applies to new and existing facilities in which the primary activity or activities at the facility are metal fabrication and finishing and that are area sources for hazardous air pollutant emissions. (Part 63, Subpart XXXXXX)

Appendix 1-6

Emission Limitations Small, Medium, and Large HMIWI

(Source: (IAC 567-23.1(5)(b)(3) Table 1)) [Added April 2001; Citation Revised February 2008]

Pollutant Units (7 percent O(2) basis, dry basis)		Small	Medium	Large
Particulate Matter	Milligrams per dry standard cubic meter (grains per dry standard cubic foot)	115 (0.05)	69 (0.03)	34 (.015)
Carbon monoxide	Parts per million by volume	40	40	40
Dioxins/furans	Nanograms per dry standard cubic meter total dioxins/furans (grains per billion dry standard cubic feet)	125 (55)	125 (55)	125 (55)
	Nanograms per dry standard cubic meter TEQ (grains per billion dry standard cubic feet)	2.3 (1.0)	2.3 (1.0)	2.3 (1.0)
Hydrogen chloride	Parts per million by volume, or	100	100	100
	Percent Reduction	93	93	93
Sulfur dioxide	Parts per million by volume	55	55	55
Nitrogen oxide	Parts per million by volume	250	250	250
Lead	Milligrams per dry standard cubic meter (grains per thousand dry standard cubic feet)	1.2 (0.52)	1.2 (0.52)	1.2 (0.52)
	Percent Reduction	70	70	70
Cadmium	Milligrams per dry standard cubic meter (grains per thousand dry standard cubic feet)	0.16 (0.07)	0.16 (0.07)	0.16 (0.07)
	Percent Reduction	65	65	65
Mercury	Milligrams per dry standard cubic meter (grains per thousand dry standard cubic feet)	0.55 (0.24)	0.55 (0.24)	0.055 (0.024)
	Percent Reduction	85	85	85

Appendix 1-7

Emission Limitations for Remote HMIWI

(Source: (IAC 567-23.1(5)(b)(3) Table 2)) [Added April 2001; Citation Revised February 2008].

Pollutant Units (7 percent O(2) basis, dry basis)		Emission Limit
Particulate Matter	Milligrams per dry standard cubic meter (grains per dry standard cubic foot)	197 (0.086)
Carbon monoxide	Parts per million by volume	40
Dioxins/furans	Nanograms per dry standard cubic meter total dioxins/furans (grains per billion dry standard cubic feet)	800 (350)
	Nanograms per dry standard cubic meter TEQ (grains per billion dry standard cubic feet)	15 (6.6)
Hydrogen chloride	Parts per million by volume, or	3100
Sulfur dioxide	Parts per million by volume	55
Nitrogen oxide	Parts per million by volume	250
Lead	Milligrams per dry standard cubic meter (grains per thousand dry standard cubic feet)	10 (4.4)
Cadmium	Milligrams per dry standard cubic meter (grains per thousand dry standard cubic feet)	4 (1.7)
Mercury	Milligrams per dry standard cubic meter (grains per thousand dry standard cubic feet) or percent reduction	7.5 (3.3)

Appendix 1-8

Adopted Federal Emission Standards for New Source Performance (Source: IAC 567-23.1(2)) [Added February 2009; Revised February 2010]

- a. Fossil Fuel-fired Steam Generators. A fossil fuel-fired steam generating unit of more than 250 million BTU heat input for which construction, reconstruction, or modification is commenced after August 17, 1971. Any facility covered under paragraph "z" is not covered under this paragraph. (Subpart D)
- b. Incinerators. An incinerator of more than 50 tons per day charging rate. (Subpart E)
- c. Portland Cement Plants. Any of the following in a portland cement plant: Kiln; clinker cooler; raw mill system; finish mill system; raw mill dryer; raw material storage; clinker storage; finished product storage; conveyor transfer points; bagging and bulk loading and unloading systems. (Subpart F)
- d. Nitric Acid Plants. A nitric acid production unit. (Subpart G)
- e. Sulfuric Acid Plants. A sulfuric acid production unit. (Subpart H)
- f. Asphalt Concrete Plants. An asphalt concrete plant. (Subpart I)
- g. Petroleum Refineries. Any of the following at a petroleum refinery: Fluid catalytic cracking unit catalyst regenerator; fluid catalytic cracking unit incinerator-waste heat boilers; fuel gas combustion devices; and Claus sulfur recovery plants greater than 20 long tons per day. (Subpart J)
- h. Secondary Lead Smelters. Any of the following in a secondary lead smelter: pot furnaces of more than 250 kilograms (550 pounds) charging capacity; blast (cupola) furnaces; and reverberatory furnaces. (Subpart L)
- i. Secondary Brass and Bronze Ingot Production Plants. Any of the following at a secondary brass and bronze ingot production plant; reverberatory and electric furnaces of 1000/kilograms (2205 pounds) or greater production capacity and blast (cupola) furnaces of 250 kilograms per hour (550 pounds per hour) or greater production capacity. (Subpart M)
- j. Iron and Steel Plants. A basic oxygen process furnace. (Subpart N)
- k. Sewage Treatment Plants. An incinerator which burns the sludge produced by municipal sewage treatment plants. (Subpart O of 40 CFR 60 and Subpart E of 40 CFR 503.)
- l. Steel Plants. Either of the following at a steel plant: electric arc furnaces and dust-handling equipment, the construction, modification, or reconstruction of which commenced after October 21, 1974, and on or before August 17, 1983. (Subpart AA)
- m. Primary Copper Smelters. Any of the following at a primary copper smelter: dryer, roaster, smelting furnace and copper converter. (Subpart P)
- n. Primary Zinc Smelters. Either of the following at a primary zinc smelter: a roaster or a sintering machine. (Subpart Q)
- o. Primary Lead Smelter. Any of the following at a primary lead smelter: sintering machine, sintering machine discharge end, blast furnace, dross reverberatory furnace, converter and electric smelting furnace. (Subpart R)
- p. Primary Aluminum Reduction Plants. Either of the following at a primary aluminum reduction plant: potroom groups and anode bake plants. (Subpart S)
- q. Wet Process Phosphoric Acid Plants in the Phosphate Fertilizer Industry. A wet process phosphoric acid plant, which includes any combination of the following: reactors, filters, evaporators and hotwells. (Subpart T)

- r. Superphosphoric Acid Plants in the Phosphate Fertilizer Industry. A superphosphoric acid plant which includes any combination of the following: evaporators, hotwells, acid sumps, and cooling tanks. (Subpart U)
- s. Diammonium Phosphate Plants in the Phosphate Fertilizer Industry. A granular diammonium phosphate plant which includes any combination of the following: reactors, granulators, dryers, coolers, screens and mills. (Subpart V)
- t. Triple Superphosphate Plants in the Phosphate Fertilizer Industry. A triple superphosphate plant which includes any combination of the following: mixers, curing belts (dens), reactors, granulators, dryers, cookers, screens, mills and facilities which store run-of-pile triple superphosphate. (Subpart W)
- u. Granular Triple Superphosphate Storage Facilities in the Phosphate Fertilizer Industry. A granular triple superphosphate storage facility which includes any combination of the following: storage or curing piles, conveyors, elevators, screens and mills. (Subpart X)
- v. Coal Preparation Plants. Any of the following at a coal preparation plant which processes more than 200 tons per day: thermal dryers; pneumatic coal cleaning equipment (air tables); coal processing and conveying equipment (including breakers and crushers); coal storage systems; and coal transfer and loading systems. (Subpart Y)
- w. Ferroalloy Production. Any of the following: electric submerged arc furnaces which produce silicon metal, ferrosilicon, calcium silicon, silicomanganese zirconium, ferrochrome silicon, silvery iron, high-carbon ferrochrome, charge chrome, standard ferromanganese, silicomanganese, ferromanganese silicon, or calcium carbide; and dust-handling equipment. (Subpart Z)
- x. Kraft Pulp Mills. Any of the following in a kraft pulp mill: digester system; brown stock washer system; multiple effect evaporator system; black liquor oxidation system; recovery furnace; smelt dissolving tank; lime kiln; and condensate stripper system. In pulp mills where kraft pulping is combined with neutral sulfite semichemical pulping, the provisions of the standard of performance are applicable when any portion of the material charged to an affected facility is produced by the kraft pulping operation. (Subpart BB)
- y. Lime Manufacturing Plants. A rotary lime kiln or a lime hydrator used in the manufacture of lime at other than a kraft pulp mill. (Subpart HH)
- z. Electric Utility Steam Generating Units. An electric utility steam generating unit that is capable of combusting more than 250 million Btus per hour (73 megawatts) heat input of fossil fuel for which construction or modification or reconstruction is commenced after September 18, 1978, or an electric utility combined cycle gas turbine that is capable of combusting more than 250 million Btus per hour (73 megawatts) heat input. "Electric utility steam generating unit" means any steam electric generating unit that is constructed for the purpose of supplying more than one-third of its potential electric output capacity and more than 25 MW net-electrical output to any utility power distribution system for sale. Also, any steam supplied to a steam distribution system for the purpose of providing steam to a steam electric generator that would produce electrical energy for sale is considered in determining the electrical energy output capacity of the affected facility. (Subpart Da)
- aa. Stationary Gas Turbines. Any simple cycle gas turbine, regenerative cycle gas turbine or any gas turbine portion of a combined cycle steam/electric generating system that is not self propelled. It may, however, be mounted on a vehicle for portability. (Subpart GG)
- bb. Petroleum Storage Vessels. Unless exempted, any storage vessel for petroleum liquids for which the construction, reconstruction, or modification commenced after June 11, 1973, and prior to May 19, 1978, having a storage capacity greater than 151,412 liters (40,000 gallons). (Subpart K)
- cc. Petroleum Storage Vessels. Unless exempted, any storage vessel for petroleum liquids for which the construction, reconstruction, or modification commenced after May 18, 1978, and prior to July 23, 1984, having a storage capacity greater than 151,416 liters (40,000 gallons). (Subpart Ka)
- dd. Glass Manufacturing Plants. Any glass melting furnace. (Subpart CC)

ee. Automobile and Light-Duty Truck Surface Coating Operations at Assembly Plants. Any of the following in an automobile or light-duty truck assembly plant: Prime coat operations, guide coat operations, and topcoat operations. (Subpart MM)

ff. Ammonium Sulfate Manufacture. Any of the following in the ammonium sulfate industry: Ammonium sulfate dryers in the caprolactam by-product, synthetic, and coke oven by-product sectors of the industry. (Subpart PP)

gg. Surface Coating of Metal Furniture. Any metal furniture surface coating operation in which organic coatings are applied. (Subpart EE)

hh. Lead-Acid Battery Manufacturing Plants. Any lead-acid battery manufacturing plant which uses any of the following: Grid casting, paste mixing, three-process operation, lead oxide manufacturing, lead reclamation, other lead-emitting operations. (Subpart KK)

ii. Phosphate Rock Plants. Any phosphate rock plant which has a maximum plant production capacity greater than four tons per hour including the following: Dryers, calciners, grinders, and ground rock handling and storage facilities, except those facilities producing or preparing phosphate rock solely for consumption in elemental phosphorus production. (Subpart NN)

jj. Graphic Arts Industry. Publication rotogravure printing. Any publication rotogravure printing press except proof presses. (Subpart QQ)

kk. Industrial Surface Coating-Large Appliances. Any surface coating operation in a large appliance surface coating line. (Subpart SS)

ll. Metal Coil Surface Coating. Any of the following at a metal coil surface coating operation: Prime coat operation, finish coat operation, and each prime and finish coat operation combined when the finish coat is applied wet on wet over the prime coat and both coatings are cured simultaneously. (Subpart TT)

mm. Asphalt Processing and Asphalt Roofing Manufacturing. Any saturator, mineral handling and storage facility at asphalt roofing plants; and any asphalt storage tank and any blowing still at asphalt processing plants, petroleum refineries, and asphalt roofing plants. (Subpart UU)

nn. Equipment Leaks of Volatile Organic Compounds (VOC) in the synthetic organic chemicals manufacturing industry. Standards for affected facilities in the synthetic organic chemicals manufacturing industry (SOCMI) that commenced construction, reconstruction, or modification after January 5, 1981, and on or before November 7, 2006, are set forth in Subpart VV. Standards for affected SOCMI facilities that commenced construction, reconstruction or modification after November 7, 2006, are set forth in Subpart VVa. The standards apply to >> pumps, compressors, pressure relief devices, sampling systems, open-ended valves or lines (OEL), valves, and flanges or other connectors which handle VOC. (Subpart VV and Subpart VVa)

oo. Beverage Can Surface Coating. Any beverage can surface coating lines for two-piece steel or aluminum containers in which soft drinks or beer are sold. (Subpart WW)

pp. Bulk Gasoline Terminals. The total of all loading racks at bulk gasoline terminals which deliver liquid product into gasoline tank trucks. (Subpart XX)

qq. Pressure Sensitive Tape and Label Surface Coating Operations. Any coating line used in the tape manufacture of pressure sensitive tape and label materials. (Subpart RR)

rr. Metallic Mineral Processing Plants. Any ore processing and handling equipment. (Subpart LL)

ss. Synthetic Fiber Production Facilities. Any solvent-spun synthetic fiber process that produces more than 500 megagrams of fiber per year. (Subpart HHH)

tt. Equipment Leaks of VOC in Petroleum Refineries. A compressor and all equipment (defined in 40 C.F.R., Part 60.591) within a process unit for which the construction, reconstruction, or modification commenced after January 4, 1983. (Subpart GGG)

uu. Flexible Vinyl and Urethane Coating and Printing. Each rotogravure printing line used to print or coat flexible vinyl or urethane products. (Subpart FFF)

vv. Petroleum Dry Cleaners. Petroleum dry cleaning plant with a total manufacturer's rated dryer capacity equal to or greater than 38 kilograms (84 pounds): Petroleum solvent dry cleaning dryers, washers, filters, stills, and settling tanks. (Subpart JJJ)

ww. Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 17, 1983. Steel plants that produce carbon, alloy, or specialty steels: Electric arc furnaces, argon-oxygen decarburization vessels, and dust handling systems. (Subpart AAa)

xx. Wool Fiberglass Insulation Manufacturing Plants. Rotary spin wool fiberglass manufacturing line. (Subpart PPP)

yy. Iron and Steel Plants. Secondary emissions from basic oxygen process steelmaking facilities for which construction, reconstruction, or modification commenced after January 20, 1983. (Subpart Na)

zz. Equipment Leaks of VOC from On-Shore Natural Gas Processing Plants. A compressor and all equipment defined in 40 CFR, Part 60.631, unless exempted, for which construction, reconstruction, or modification commenced after January 20, 1984. (Subpart KKK)

aaa. On-Shore Natural Gas Processing: SO₂ Emissions. Unless exempted, each sweetening unit and each sweetening unit followed by a sulfur recovery unit for which construction, reconstruction, or modification commenced after January 20, 1984. (Subpart LLL)

bbb. Nonmetallic Mineral Processing Plants. Unless exempted, each crusher, grinding mill, screening operation, bucket elevator, belt conveyor, bagging operation, storage bin, enclosed truck or rail car loading station in fixed or portable nonmetallic mineral processing plants for which construction, reconstruction, or modification commenced after August 31, 1983. (Subpart OOO)

ccc. Industrial-Commercial-Institutional Steam Generating Units. Unless exempted, each steam generating unit for which construction, reconstruction, or modification commenced after June 19, 1984, and which has a heat input capacity of more than 100 million BTU/hour. (Subpart Db)

ddd. Volatile Organic Liquid Storage Vessels. Unless exempted, volatile organic liquid storage vessels for which construction, reconstruction, or modification commenced after July 23, 1984. (Subpart Kb)

eee. Rubber Tire Manufacturing Plants. Unless exempted, each undertread cementing operation, each sidewall cementing operation, each tread end cementing operation, each bead cementing operation, each green tire spraying operation, each Michelin-A operation, each Michelin-B operation, and each Michelin-C automatic operation that commences construction or modification after January 20, 1983. (Subpart BBB)

fff. Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines. Each spray booth in which plastic parts for use in the manufacture of business machines receive prime coats, color coats, texture coats, or touch-up coats for which construction, modification, or reconstruction begins after January 8, 1986. (Subpart TTT)

ggg. VOC Emissions From Petroleum Refinery Wastewater Systems. Each individual drain system, each oil-water separator, and each aggregate facility for which construction, modification or reconstruction is commenced after May 4, 1987. (Subpart QQQ)

hhh. Magnetic Tape Coating Facilities. Unless exempted, each coating operation and each piece of coating mix preparation equipment for which construction, modification, or reconstruction is commenced after January 22, 1986. (Subpart SSS)

iii. Polymeric Coating of Supporting Substrates. Unless exempted, each coating operation and any on-site coating mix preparation equipment used to prepare coatings for the polymeric coating of supporting substrates for which construction, modification, or reconstruction begins after April 30, 1987. (Subpart VVV)

jjj. VOC Emissions from Synthetic Organic Chemical Manufacturing Industry Air Oxidation Unit Processes. Unless exempted, any air oxidation reactor, air oxidation reactor and recovery system or combination of two or more reactors and the common recovery system used in the production of any of the chemicals listed in 40 CFR § 60.617 for which construction, modification or reconstruction commenced after October 21, 1983. (Subpart III)

kkk. VOC Emissions from Synthetic Organic Chemical Manufacturing Industry Distillation Operations. Unless exempted, any distillation unit, distillation unit and recovery system or combination of two or more distillation units and the common recovery system used in the production of any of the chemicals listed in 40 CFR § 60.667 for which construction, modification or reconstruction commenced after December 30, 1983. (Subpart NNN)

lll. Small Industrial-Commercial-Institutional Steam Generating Units. Each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989, and that has a maximum design heat input capacity of 100 million BTU per hour or less, but greater than or equal to 10 million BTU per hour. (Subpart Dc)

mmm. VOC Emissions from the Polymer Manufacturing Industry. Each of the following process sections in the manufacture of polypropylene and polyethylene-raw materials preparation, polymerization reaction, material recovery, product finishing, and product storage; each material recovery section of polystyrene manufacturing using a continuous process; each polymerization reaction section of poly(ethylene terephthalate) manufacturing using a continuous process; each material recovery section of poly(ethylene terephthalate) manufacturing using a continuous process that uses dimethyl terephthalate; each raw material section of poly(ethylene terephthalate) manufacturing using a continuous process that uses terephthalic acid; and each group of fugitive emissions equipment within any process unit in the manufacturing of polypropylene, polyethylene, or polystyrene (including expandable polystyrene). The applicability date for construction, modification or reconstruction for polystyrene and poly(ethylene terephthalate) affected facilities and some polypropylene and polyethylene affected facilities is September 30, 1987. For the other polypropylene and polyethylene affected facilities the applicability date for these regulations is January 10, 1989. (Subpart DDD)

nnn. Municipal Waste Combustors. Unless exempted, a municipal waste combustor with a capacity greater than 225 megagrams per day of municipal solid waste for which construction is commenced after December 20, 1989, and on or before September 20, 1994, and modification or reconstruction is commenced after December 20, 1989, and on or before June 19, 1996. (Subpart Ea)

ooo. Grain Elevators. A grain terminal elevator or any grain storage elevator except as provided under 40 CFR 60.304(b), August 31, 1993. A grain terminal elevator means any grain elevator which has a permanent storage capacity of more than 2.5 million U.S. bushels except those located at animal food manufacturers, pet food manufacturers, cereal manufacturers, breweries, and livestock feedlots. A grain storage elevator means any grain elevator located at any wheat flour mill, wet corn mill, dry corn mill (human consumption), rice mill, or soybean oil extraction plant which has a permanent grain storage capacity of 1 million bushels. Any construction, modification, or reconstruction after August 3, 1978, is subject to this paragraph. (Subpart DD)

ppp. Mineral Processing Plants. Each calciner and dryer at a mineral processing plant unless excluded for which construction, modification, or reconstruction is commenced after April 23, 1986. (Subpart UUU)

qqq. VOC emissions from synthetic organic chemical manufacturing industry reactor processes. Unless exempted, each affected facility that is part of a process unit that produces any of the chemicals listed in 40 CFR § 60.707 as a product, coproduct, by-product, or intermediate for which construction, modification, or reconstruction commenced after June 29, 1990. Affected facility is each reactor process not discharging its vent stream into a recovery system, each combination of a reactor process and the recovery system into which its vent stream is discharged, or each combination of two or more reactor processes and the common recovery system into which their vent streams are discharged. (Subpart RRR)

rrr. Municipal solid waste landfills, as defined by 40 CFR 60.751. Each municipal solid waste landfill that commenced construction, reconstruction or modification or began accepting waste on or after May 31, 1991, must comply. (Subpart WWW)

sss. Municipal waste combustors. Unless exempted, a municipal waste combustor with a capacity greater than 35 megagrams per day of municipal solid waste for which construction is completed after September 20, 1994, or for which modification or reconstruction is commenced after June 19, 1996. (Subpart Eb)

ttt. Hospital/medical/infectious waste incinerators. Unless exempted, a hospital/medical/infectious waste incinerator for which construction is commenced after June 20, 1996, or for which modification is commenced after March 16, 1998. (Subpart Ec)

uuu. New small municipal waste combustion units. Unless exempted, this standard applies to a small municipal waste combustion unit that commenced construction after August 30, 1999, or small municipal waste combustion units that commenced reconstruction or modification after June 6, 2001. (Part 60, Subpart AAAA)

vvv. Commercial and industrial solid waste incineration. Unless exempted, this standard applies to units for which construction is commenced after November 30, 1999, or for which modification or reconstruction is commenced on or after June 1, 2001. (Part 60, Subpart CCCC)

www. Other solid waste incineration (OSWI) units. Unless exempted, this standard applies to other solid waste incineration (OSWI) units for which construction is commenced after December 9, 2004, or for which modification or reconstruction is commenced on or after June 16, 2006. (Part 60, Subpart EEEE)

xxx. Reserved.

yyy. Stationary compression ignition internal combustion engines. Unless otherwise exempted, these standards apply to each stationary compression ignition internal combustion engine whose construction, modification or reconstruction commenced after July 11, 2005. (Part 60, Subpart IIII)

zzz. Stationary spark ignition internal combustion engines. These standards apply to each stationary spark ignition internal combustion engine whose construction, modification or reconstruction commenced after June 12, 2006. (Part 60, Subpart JJJJ).

aaaa. Stationary combustion turbines. Unless otherwise exempted, these standards apply to stationary combustion turbines with a heat input at peak load equal to or greater than 10 MMBtu per hour, based on the higher heating value of the fuel, that commence construction, modification, or reconstruction after February 18, 2005. (Part 60, Subpart KKKK)

SECTION 2

CULTURAL RESOURCES MANAGEMENT

Iowa Supplement, February 2010

This section covers the state requirements for Cultural Resources Management and is intended to supplement the U.S. TEAM Guide. Refer to the U.S. TEAM Guide and the DOD Component Supplements for Federal, DOD, and service-specific requirements.

Definitions

- *Ancient Human Remains* - those remains found within the state which are more than 150 yr old (Iowa Code 263B.7) [Citation Revised February 2008].

CULTURAL RESOURCES MANAGEMENT GUIDANCE FOR IOWA CHECKLIST USERS								
REFER TO CHECKLIST ITEMS:								
<table><tr><td>Missing Checklist Items</td><td>CR.2.1.IA.</td></tr><tr><td>Historic Properties</td><td>CR.5.1.IA. through CR.5.5.IA.</td></tr><tr><td>Archaeological/Indian Sites</td><td>CR.15.1.IA.</td></tr><tr><td>Collection Management and Curation</td><td>[Deleted]</td></tr></table>	Missing Checklist Items	CR.2.1.IA.	Historic Properties	CR.5.1.IA. through CR.5.5.IA.	Archaeological/Indian Sites	CR.15.1.IA.	Collection Management and Curation	[Deleted]
Missing Checklist Items	CR.2.1.IA.							
Historic Properties	CR.5.1.IA. through CR.5.5.IA.							
Archaeological/Indian Sites	CR.15.1.IA.							
Collection Management and Curation	[Deleted]							

COMPLIANCE CATEGORY: CULTURAL RESOURCES MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
CR.2. MISSING CHECKLIST ITEMS CR.2.1.IA. Federal facilities are required to comply with all applicable state regulatory requirements not contained in the checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of findings).	Determine whether any new regulations have been issued since the finalization of the manual. Determine whether the Federal facility has activities or facilities that are regulated but not addressed in the checklists. Verify that the Federal facility is in compliance with all applicable and newly issued regulations.

COMPLIANCE CATEGORY: CULTURAL RESOURCES MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
CR.5. HISTORIC PROPERTIES CR.5.1.IA. The exteriors of buildings within historical preservation districts must not be altered, restored, moved or demolished without a pproval by t he Commission (ICA 303.27) [Revised F ebruary 2009].	Verify that, after the establishment of a historical preservation district, an exterior portion of any b uilding, e xterior f ixture, o r o ther e xterior s tructure, o r a ny aboveground ut ility s tructure o r a ny t ype o f o utdoor a dvertising s ign is not erected, altered, restored, moved or demolished within the district until approved by the Commission. (NOTE: The Commission s hall not c onsider o r a ttempt to c ontrol the i nterior arrangement of any building in the district.)
CR.5.2.IA. [Deleted February 2009].	(NOTE: Guidelines f or A rcheology a nd H istic P reservation (36 CF R P art 800.4a(2) are followed.)
CR.5.3.IA. [Deleted February 2009].	(NOTE: Guidelines for Archeology a nd H istic P reservation (36 CF R P art 800.4a(2) are followed.)
CR.5.4.IA. [Deleted February 2009].	(NOTE: Guidelines f or A rcheology a nd H istic P reservation (36 CF R P art 800.4a(2) are followed.)
CR.5.5.IA. [Deleted February 2009].	(NOTE: Guidelines f or A rcheology and H istic P reservation (36 CF R P art 800.4a(2) are followed.)

COMPLIANCE CATEGORY: CULTURAL RESOURCES MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
CR.15. INDIAN SITES CR.15.1.IA. The Office of State Archeologist (OSA) must be contacted regarding the discovery of ancient human remains (IAC 685-11.1) [Revised February 2009].	Verify that the OSA is contacted regarding the discovery of human physical remains or suspected human physical remains believed to be over 150 yr old. Verify that the OSA is notified of the location of areas believed to represent ancient burial grounds. (NOTE: The Director of the OSA may deny permission to disinter human physical remains from aboriginal ossuaries, grave sites, cemeteries, or any other archaeological deposit that is determined to have state and national significance from the standpoint of history or science.)

COMPLIANCE CATEGORY: CULTURAL RESOURCES MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
CR.20. COLLECTION MANAGEMENT AND CURATION CR.20.1.IA. [Deleted February 2009].	(NOTE: Guidelines for Archaeology and Historic Preservation (36 CFR Part 800.4a(2)) are followed.)

SECTION 3

HAZARDOUS MATERIALS MANAGEMENT

Iowa Supplement, February 2010

This section covers the state requirements for Hazardous Materials Management and is intended to supplement the U.S. TEAM Guide. Refer to the U.S. TEAM Guide and the DOD Component Supplements for Federal, DOD, and service-specific requirements.

State Adoptions of Federal Regulations

- Motor carrier safety regulations. The Iowa department of transportation adopts the Federal Motor Carrier Safety Regulations, 49 CFR Parts 385 and 390 - 399 (October 1, 2008) (IAC 761-520.1 (1)(a)) [Revised February 2010].
 - The following intrastate vehicle operations are exempt from the motor carrier safety regulations concerning inspection in 49 CFR Part 396.17 as adopted in rule 761-520.1(321) (IAC 761-520.3):
 - a. Implements of husbandry including nurse tanks as defined in Iowa Code section 321.1.
 - b. Special mobile equipment (SME) as defined in Iowa Code section 321.1.
 - c. Unregistered farm trailers as defined in 761 -- subrule 400.1(3), pursuant to Iowa Code section 321.123.
 - d. Motor vehicles registered for a gross weight of 5 tons or less when used by retail dealers or their employees to deliver hazardous materials, fertilizers, petroleum products and pesticides to farm customers.
 - These exemptions apply to the regulations adopted in IAC 761-520.1(IAC 761-520.4) 1:
 - Pursuant to Iowa Code section 321.450, unnumbered paragraph 3, "retail dealers of fertilizers, petroleum products, and pesticides and their employees while delivering fertilizers, petroleum products and pesticides to farm customers within a 100-air-mile radius of their retail place of business" are exempt from 49 CFR 177.804; and, pursuant to Iowa Code Supplement section 321.449(4), they are exempt from 49 CFR Parts 391 and 395. However, pursuant to Iowa Code section 321.449, the retail dealers and their employees under the specified conditions are subject to the regulations in 49 CFR Parts 390, 392, 393, 396 and 397.
 - Pursuant to Iowa Code section 321.450, unnumbered paragraph 3, "motor vehicles registered for a maximum gross weight of five tons or less shall be exempt from the requirements of placarding and of carrying hazardous materials shipping papers if the hazardous materials which are transported are clearly labeled." This exemption shall apply only to the retail dealers and their employees under the statutory conditions specified in that paragraph.
- Hazardous materials regulations. The Iowa department of transportation adopts the Federal Hazardous Materials Regulations, 49 CFR Parts 107, 171 - 173, 177, 178, and 180 (October 1, 2008) (IAC 761-520.1 (1)(b)) [Revised February 2010].

Definitions

- *Active Cleanup* - removal, treatment, or isolation of a contaminant from groundwater or associated environment through the directed efforts of humans (Iowa Administrative Code (IAC) 567-133.2).
- *Aggravated Risk* - a contamination situation which presents a potentially catastrophic or an immediate and substantial risk of harm to human life or health or to the environment. Examples include exposure of humans, animals, or the food chain to acutely toxic substances, contamination of a drinking water supply, threat of fire or explosion, or similar situations (IAC 567-133.2).
- *Best Available Technology* - those processes which most effectively remove, treat, or isolate contaminants from groundwater or associated environment, as determined through professional judgment considering a actual

equipment or techniques currently in use, published technical articles and research results, engineering reference materials, consultation with known experts in the field, and guidelines or rules of other regulatory agencies (IAC 567-133.2).

- *Best Management Practices* - maintenance procedures, schedules or activities, prohibition of practices, and other management practices, or a combination thereof, which, after problem assessment and evaluation of alternatives is determined to be the most effective means of preventing or abating contamination at a location (IAC 567-133.2).
- *Cleanup* - actions necessary to contain, collect, control, identify, analyze, clean up, treat, disperse, remove, or dispose of a hazardous substance (Iowa Code (IC) 455B.381).
- *Commissions* - the environmental protection commission (IAC 567-144.2).
- *Contaminant* - any chemical, ion, radionuclide, synthetic organic compound, microorganism, waste, or other substance which does not occur naturally in groundwater or which occurs naturally at a lower concentration, and includes all hazardous substances as defined in 42 United States Code (USC) 9601, and any element, compound, mixture, solution, or substance designated pursuant to 40 CFR 302.4 as of 13 September 1988 (IAC 567-133.2).
- *Corrosive* - causing or producing visible destruction or irreversible alterations in human skin tissue at the site of contact, or in the case of leakage of a hazardous substance from its packaging, causing or producing a severe destruction of other materials through chemical processes (IAC 567-131.1).
- *Department* - the Department of Natural Resources (IAC 567-144.2).
- *Groundwater* - any water of the state as defined in IC section 455B.171 which occurs beneath the surface of the earth in a saturated geologic formation of rock or soil (IAC 567-133.2).
- *Hazardous Condition* - any condition involving the actual, imminent, or probable spillage, leakage, or release of a hazardous substance onto the land or into a water of the state, or into the atmosphere, which because of the quantity, strength, and toxicity of the hazardous substance, its mobility in the environment and its persistence, creates an immediate or potential danger to the public health, safety, or to the environment (IAC 567-131.1).
- *Hazardous Substance* - any substance or mixture of substances that presents a danger to the public health or safety and includes, but is not limited to, a substance that is toxic, corrosive, or flammable, or that is an irritant or that, in confinement, generates pressure through decomposition, heat, or other means. The following are examples of substances which, in sufficient quantity, may be hazardous: acids; alkalis; explosives; fertilizers; heavy metals such as chromium, arsenic, mercury, lead, and cadmium; industrial chemicals; paint thinners; paints; pesticides; petroleum products; poisons; radioactive materials; sludges; and organic solvents. Hazardous substances may include any hazardous waste identified or listed by the administrator of the USEPA under the *Solid Waste Disposal Act* as amended by the *Resource Conservation Act* of 1976, or any toxic pollutant listed under section 307 of the *Federal Water Pollution Control Act* as amended to 1 January 1977, or any hazardous substance designated under section 311 of the *Federal Water Pollution Control Act* as amended to 1 January 1977, or any hazardous material designated by the secretary of transportation under the *Hazardous Materials Transportation Act* (49 CFR 172.101) (IAC 567-131.1).
- *Informational Signs* - signs which explain the household hazardous materials program and direct consumers to the location of informational booklets or other information available in the store (IAC 567-144.2) [Revised April 2003].
- *Irritant* - a substance causing or producing dangerous or intensely irritating fumes upon contact with fire or when exposed to air (IAC 567-131.1).

- *Manufacturer* - a person who manufactures or produces a household hazardous material for resale in this state (IAC 567-144.2).
- *Passive Cleanup* - the removal or treatment of a contaminant in groundwater, or associated environment, through management practices or the construction of barriers, trenches and other similar facilities for prevention of contamination, as well as the use of natural processes such as groundwater recharge, natural decay, and chemical or biological decomposition (IAC 567-133.2).
- *Person Having Control Over a Hazardous Substance* - a person who at any time produces, handles, stores, uses, transports, refines, or disposes of a hazardous substance the release of which creates a hazardous condition, including bailees, carriers, and any other person in control of a hazardous substance when a hazardous condition occurs, whether the person owns the hazardous substances or is operating under a lease, contract, or other agreement with the legal owner of the hazardous substance. *Person Having Control Over a Hazardous Substance* does not include a person who holds indicia of ownership in a hazardous condition site, if the person satisfies all of the following:
 1. holds indicia of ownership primarily to protect that person's security interest in the hazardous condition site, where the indicia of ownership was acquired either for the purpose of securing payment of a loan or other indebtedness, or in the course of protecting the security interest
 2. does not exhibit managerial control of, or managerial responsibility for, the daily operation of the hazardous condition site through the actual, direct, and continual or recurrent exercise of management control over the hazardous condition site in which that person holds a security interest, which managerial control materially divests the borrower, debtor, or obligor of control
 3. has taken no subsequent action with respect to the site which causes or exacerbates a release or threatened release of a hazardous substance (Iowa Code Annotated Title XI Chapter 445B, Section 445B.381 (ICA XI: 445B.381)) [Citation Revised February 2008].
- *Preventative or Prevention* - in the context of these rules, the actions or efforts taken to minimize or stop further contamination in a situation where contamination already exists or is imminent (IAC 567-133.2).
- *Release* - a threatened or real emission, discharge, spillage, leakage pumping, pouring, emptying, or dumping of a hazardous substance into or onto the land, air, or waters of the state unless one of the following applies:
 1. the release is done in compliance with the conditions of a federal or state permit
 2. the hazardous substance is confined and expected to stay confined to property owned, leased, or otherwise controlled by the person having control over the hazardous substance
 3. in the use of pesticides, the application is done in accordance with the product label (ICA 445B.381) [Citation Revised February 2008].
- *Remedial Action Plan* - a written report which includes all relevant information, findings, and conclusions from a site assessment, including all analytical results and identification of contaminant migration pathways; identification and evaluation of cleanup alternatives, including both active and passive measures using best available technology and best management practices; a recommended cleanup action or combination of action, including identification of expected cleanup levels consistent with the cleanup goal; a monitoring network and schedule to document cleanup levels; a proposed schedule of implementation (IAC 567-133.2).
- *Responsible Person* - any person who is legally liable for the contamination in question or who is legally responsible for abating contamination under any applicable law, including IC chapters 445B and 445E, and the common law. This may include the person causing, allowing, or otherwise participating in the activities or events which cause the contamination, persons who have failed to conduct their activities so as to prevent the release of contaminants into groundwater, property owners who are obligated to abate a condition, or persons responsible for or successor to such persons (IAC 567-133.2).
- *Retailer* - a person offering for sale or selling a household hazardous material to the ultimate consumer within the state (IAC 567-144.2).
- *Significant Risk* - any of the following:

1. the presence in groundwater of a contaminant in excess of an action level
 2. the presence of a contaminant in the soils, surface water, or other environment in proximity to groundwater which may reasonably be expected to contaminate the groundwater to an action level; or
 3. the presence of a contaminant or contaminants in the groundwater, or in the soils, surface water, or other environment in proximity of groundwater which may be expected to contaminate groundwater in quantities, concentrations, or combinations which may significantly adversely impact the public health, safety, environment, or quality of life. This criterion would normally be applied where there is no established action level or where combinations of more than one contaminant are present (IAC 567-133.2).
- *Toxic* - causing or producing a dangerous physiological, anatomic, or biochemical change in a biological system (IAC 567-131.1).
 - *Waters of the State* - rivers, streams, lakes, and any other bodies of surface and subsurface water lying within or forming a part of the boundaries of the state which are not entirely confined and located completely upon lands owned, leased, or otherwise controlled by a single person or by two or more persons jointly or as tenants in common. Waters of the state includes waters of the United States lying within the state (ICA XI: 455B.381) [Citation Revised February 2008].
 - *Wholesaler or Distributor* - a person other than a manufacturer or manufacturer's agent who engages in the business of selling or distributing a household hazardous material within the state for the purpose of resale (IAC 567-144.2).

HAZARDOUS MATERIALS MANAGEMENT GUIDANCE FOR IOWA CHECKLIST USERS												
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State-Specific Hazardous Materials Requirements	HM.5.1.IA. through HM.5.4.IA.											
Personnel Training	[Deleted]											
Releases of Hazardous Materials	HM.20.1.IA. through HM.20.6.IA.											
Emergency Planning	HM.25.1.IA. and HM.25.2.IA.											
Right-to-Know	HM.30.1.IA.											

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REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
HM.2. MISSING CHECKLIST ITEMS HM.2.1.IA. Federal facilities are required to comply with all applicable state regulatory requirements not contained in the checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of findings).	Determine whether any new regulations have been issued since the finalization of the manual. Determine whether the Federal facility has activities or facilities that are regulated but not addressed in the checklists. Verify that the Federal facility is in compliance with all applicable and newly issued regulations.

COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
HM.5. STATE SPECIFIC HAZARDOUS MATERIALS REQUIREMENTS HM.5.1.IA. Retailers that sell specific household hazardous materials must provide information to the customer (IAC 567-144.3 and 144.4(3)) [Revised April 2003; Revised February 2007]. HM.5.2.IA. Retailers that sell household hazardous materials must meet specific sign requirements (IAC 567-144.4(1) and 144.4(3), (4), and (5)) [Revised April 2003].	Verify the information is provided for any brand, grade, size, or volume of the following products: - motor oils and motor oil additives - motor oil filters - gasoline additives - diesel fuel additives - degreasers - waxes and polishes (excluding nail polish) - solvents (excluding water) - paints (excluding latex-based paints) - lacquers - thinners (excluding water) - caustic household cleaners - spot and stain removers with a petroleum base - petroleum-based fertilizers - color cathode ray tubes (CRTs). (NOTE: A household hazardous material does not include laundry detergents or soaps, dishwashing compounds, chlorine bleach, personal care products, personal care soaps, cosmetics, animal and human medications, or pharmaceuticals.) Verify that information signs are displayed at locations in the store close to shelves where household hazardous materials are offered for sale and in the location where informational materials are available. Verify that the signs are located so that they will be clearly visible to customers. (NOTE: The informational signs are not required at every location where products are sold, but they should be displayed at areas where there are concentrations of such products.) (NOTE: See HM.5.2.IA. for a list of household hazardous materials.) Verify that signs are at least 8 1/2 x 11 in. and contain the program symbol of at least 2 in. in size. Verify that signs explain the significance of, the relationship of improper disposal of household hazardous materials to the contamination of groundwater, and direct

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HM.5.3.IA. Retailers that sell household hazardous materials must provide informational materials (IAC 567-144.5) [Revised April 2003].	consumers to the location of informational materials in the store. (NOTE: Retailers may print their own informational signs so long as they are at least the same size and contain all of the information found on those provided by the Department. Retailers may also obtain signs from the Department. Retailers wishing to use other signs must request and receive a variance from the Department. A variance is not required to use informational signs which are larger than those required.) (NOTE: See HM.5.2.IA. for a list of household hazardous materials.) Verify that retailers make a available consumer information bulletins about household hazardous materials. (NOTE: Manufacturers or distributors of household hazardous materials who authorize independent contractor retailers to sell products on a person-to-person basis are required to provide each independent contractor with sufficient quantities of the consumer information bulletins, as well as a list of household hazardous materials.) Verify that during the course of a sale of household hazardous material by a contractor retailer, the customer is provided with a copy of both the list and the consumer information booklet; in subsequent sales to the same customer, the list and booklet is noted as being available if desired. Verify that all materials are made available to customers at no charge. (NOTE: Consumer information booklets must contain at a minimum the following types of information: information on the kinds of products considered to be household hazardous materials, options for use and the proper disposal of household hazardous products, emergency phone numbers in case of a spill, and an explanation of the groundwater concerns related to the household hazardous materials program. Retailers may print their own information booklets so long as the text of the booklets is identical to that provided by the Department.)
HM.5.4.IA. Anhydrous ammonia must meet storage and handling requirements (IAC 21-43.6) [Added May 1998].	Verify that personnel who handle, transfer, transport, or otherwise work with ammonia are trained once each calendar year prior to handling to understand the properties of ammonia, to become competent in safe operating practices, and to take appropriate actions in the event of a leak or an emergency. Verify that canisters are not opened until ready for use and are discarded after use. Verify that canisters are discarded and replaced when the shelf life expiration date marked on the canister is exceeded. Verify that anhydrous ammonia is not vented into the air. Verify that anhydrous ammonia is vented into 10 gal of water for each gallon of

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	liquid ammonia or fraction thereof that is contained in the hose or vessel to be vented.

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HM.10. PERSONNEL TRAINING HM.10.1.IA. [Deleted April 2001]	(NOTE: Regulation revised.)

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REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
HM.20. RELEASES OF HAZARDOUS MATERIALS HM.20.1.IA. [Deleted February 2010]. HM.20.2.IA. Facilities that manufacture, store, handle, transport, or dispose of a hazardous substance where there is a no occurrence of a hazardous condition (see Definitions) must comply with notification requirements (IAC 567-131.2) [Citation Revised February 2007 ; Revised February 2008].	(NOTE: Management Practice deleted.) Verify that facilities which manufacture, store, handle, transport, or dispose of a hazardous substance (see Definitions) notify the Department of Natural Resources at (515) 281-8694 and the local police department or the office of the sheriff of the affected county of the occurrence of a hazardous condition as soon as possible but not later than 6 h after the onset of the hazardous condition or discovery of the hazardous condition. Verify that a written report of the hazardous condition is submitted to the Department of Natural Resources within 30 days and contains the following information: - the exact location of the hazardous condition - the time and date of onset or discovery of the hazardous condition - the name of the material, the manufacturer's name and the volume of each material involved in the hazardous condition in addition to contaminants within the material if they by themselves could cause a hazardous condition - the medium (land, water, or air) in which the hazardous condition occurred or exists - the name, address, and telephone number of the party responsible for the hazardous condition - the time and date of the verbal report to the Department of Natural Resources of the hazardous condition - the weather conditions at the time of the hazardous condition onset or discovery - the name, mailing address, and telephone number of the person reporting the hazardous condition - the name and telephone number of the person closest to the scene of the hazardous condition who can be contacted for further information and action - any other information such as the circumstances leading to the hazardous condition, visible effects, and contaminant measures taken that may assist in proper evaluation by the Department of Natural Resources. Verify that all subsequent findings and laboratory results are reported and submitted to the Department of Natural Resources as soon as they become available.

COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
HM.20.3.IA. Samples taken and analyses made to document contamination from hazardous conditions must be conducted in accordance with specific rules (IAC 567-133.3(1)).	(NOTE: Repeated in PO.15.2.IA.) (NOTE: The USEPA or Department of Natural Resources may require specific sampling and analyses or other methods may be approved by the Department of Natural Resources for a specific situation.) Verify that samples taken and analyses performed to document contamination or cleanup levels for a specific situation are conducted in accordance with the following: - for samples: <i>A Compendium of Superfund Field Operations Methods</i>, USEPA, Office of Emergency and Remedial Response, Washington, D C 20460 (USEPA/ 540/ P-87/001, Office of Solid Waste and Emergency Response Directive 93.55.0-14, December 1987) - for analyses: <i>Test Methods for Evaluation of Solid Waste, Physical-Chemical Methods</i> (SW-846), USEPA, Third Edition, November 1986, as revised through December 1988. (NOTE: Until the Department of Natural Resources adopts rules regarding certification of laboratories, analyses must be conducted by a laboratory that certifies to the Department that the appropriate analytical procedure is utilized, or a laboratory which is approved under the USEPA's Contract Laboratory Program. Upon adoption of rules by the Department of Natural Resources regarding certification of laboratories, all analyses must be made at a certified laboratory.)
HM.20.4.IA. Contamination from hazardous conditions must be prevented (IAC 567-133.4(1)).	Verify that in cases where an active source of contamination is identified, which is readily corrected, the source is removed, repaired, or otherwise contained, or the contaminating practices ceased, immediately upon discovery of the source. Verify that readily accessible contaminants are promptly removed to avoid or minimize further contamination in the groundwater.
HM.20.5.IA. When the contamination from hazardous conditions presents an aggravated risk, specific actions must be taken (IAC 567-133.4(2)).	Verify that when the contamination presents an aggravated risk, the preventative, investigatory, and remedial measures listed in H M.20.3.IA are taken and the following actions are taken by the responsible parties, if necessary, to protect the public health or environment: - provide alternate water supplies - install security fencing or other measures limiting access - take extraordinary measures to control the source of the release - remove the hazardous substances to an approved site for storage, treatment, or disposal - place physical barriers deterring the spread of the release - recommend to appropriate authorities the evacuation of threatened persons - use other materials to restrain the spread of the contaminant or to mitigate its

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HM.20.6.IA. When the contamination from hazardous conditions presents a significant risk, investigatory and remedial measures must be implemented (IAC 567 - 133.4(3)).	effects - execute damage control or salvage operations. Verify that the responsible party determines the extent and levels of contamination through a site assessment conducted under the supervision of a registered professional engineer, an expert in the field of hydrogeology, or other qualified person. Verify that a site assessment plan is submitted to the Department of Natural Resources within 45 days of notice by the Department of Natural Resources, unless a shorter time is required or a longer time is authorized by the Department of Natural Resources. Verify that the site assessment is conducted within a reasonable time and a remedial action plan is submitted to the Department of Natural Resources, within the time directed or approved by the Department of Natural Resources. Verify that where significant amounts of contaminants are documented as being present in the soils or other environment, such that groundwater contamination is occurring or is likely, active cleanup of the contaminated soils or other environment is implemented to the extent reasonable and necessary to prevent or minimize release to the groundwater. (NOTE: Passive cleanup may be allowed in extraordinary circumstances.)

COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
HM.25. EMERGENCY PLANNING HM.25.1.IA. Facilities subject to the requirements of Section 302, <i>Emergency Planning and Community Right-to-Know Act</i>, 42 U.S.C. 11002, must comply with specific notification requirements (IA C 6 05-104.1). HM.25.2.IA. Facilities must meet specific release reporting and notification requirements (IA C 6 05-104.2).	Verify that facilities subject to the planning notification requirement [Section 302 of 42 U.S.C. 11002] notify the Department of Public Defense, Emergency Management Division, which the facilities are subject to the requirements of Section 302, <i>Emergency Planning and Community Right-to-Know Act</i>, 42 U.S.C. 11002. Verify that notification is made on the Iowa Tier Two form and submitted to the Division of Labor Services by 1 March for covered chemicals in its possession. Verify that facilities subject to the requirements of Section 313, <i>Emergency Planning and Community Right-to-Know Act</i>, 42 U.S.C. 11023, submit the toxic chemical release form for the previous calendar year by 1 July of the following year. Verify that each release subject to the requirements of Section 304, <i>Emergency Planning and Community Right-to-Know Act</i>, 42 U.S.C. 11004, is reported to the Department of Natural Resources. Verify that notification of releases is telephoned to the Department at 515-281-8694 immediately with a written follow-up emergency notice made within 30 days.

COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
HM.30. RIGHT-TO-KNOW HM.30.1.IA. Facilities that are required to prepare or have available a material safety data sheet for a hazardous chemical under the <i>Occupational Safety and Health Act</i> of 1970 must comply with specific reporting requirements (IA C 605-104.3).	Verify that facilities required to prepare or have available a material safety data sheet for a hazardous chemical under the <i>Occupational Safety and Health Act</i> of 1970 submit a list of each chemical required to be submitted under Section 311, <i>Emergency Planning and Community Right-to-Know Act</i>, 42 USC 11021. Verify that the list is submitted to the Department of Employment Services, Labor Services Division, in addition to the appropriate local emergency planning committee and the fire department in whose jurisdiction the facility is located. Verify that facilities required to prepare or have available a material safety data sheet for a hazardous chemical under the <i>Occupational Safety and Health Act</i> of 1970 submit emergency and hazardous chemical inventory information required to be submitted under Section 312, <i>Emergency Planning and Community Right-to-Know Act</i>, 42 USC 11022. Verify that the information is submitted to the Department of Employment Services, Labor Services Division in addition to the appropriate local emergency planning committee and the fire department in whose jurisdiction the facility is located by March 1 for the chemicals in its inventory the preceding calendar year. Verify that the information is submitted on the Iowa Tier Two form.

SECTION 4
HAZARDOUS WASTE MANAGEMENT

Iowa Supplement, February 2010

This section covers the state requirements for Hazardous Waste Management and is intended to supplement the U.S. TEAM Guide. Refer to the U.S. TEAM Guide and the DOD Component Supplements for Federal, DOD, and service-specific requirements.

State Adoptions of Federal Regulations

The State of Iowa has adopted the following Federal regulations:

- 40 Code of Federal Regulations (CFR) 260, as amended through 15 July 1985, provided that underground source of drinking water means an aquifer or its portion which meets either of the following requirements:
 1. supplies any public water system
 2. contains a sufficient quantity of groundwater to supply a public water system and meets either of the following:
 - a. currently supplies drinking water for human consumption
 - b. contains fewer than 10,000 mg/L total dissolved solids (Adopted in Iowa Administrative Code (IAC) 567-141.1.)
- 40 CFR 261, as amended through 23 October 1985, provided that any general reference to 40 CFR 124 means IAC 567-141.13 (Adopted in IAC 567-141.2.)
- 40 CFR 262, as amended through 15 July 1985, provided that:
 1. advance notification of international shipments required by 40 CFR 262.50(b) is made to U.S. EPA administrator rather than to the Director
 2. if an exception report is required by 40 CFR 262.42, the generator sends a copy of the exception report to all of the following:
 - a. the Director
 - b. the state agency administering the hazardous waste program where the facility designated on the manifest is located
 - c. the state agency administering the hazardous waste program where for the facility to which the shipment may have been delivered (Adopted in IAC 567-141.3.)
- 40 CFR 263, as amended through 1 April 1983, provided that if a hazardous waste in transit is discharged in the state, the transporter shall notify local and state offices as required in Chapter 131 of these rules (see HW.100.1. in this supplement) (Adopted in IAC 567-141.4.)
- 40 CFR 264, as amended through 15 July 1985, provided that:
 1. an independent certified public accountant, eligible to practice in Iowa, writes the reports required in the following sections:
 - a. 264.143(f)(3)(ii) and (iii)
 - b. 264.145(f)(3)(ii)
 - c. 264.147(f)(3)(ii) and (iii)
 2. the certification of closure requirement under 264.115 is performed by both an independent professional engineer registered in Iowa and the owner or operator
 3. an independent professional land surveyor, registered in Iowa, prepares and certifies the survey plat indicating the location and dimension of the disposal areas in accordance with 264.119
 4. any reference to 40 CFR 124 means IAC 567-141.13 (Adopted in IAC 567-141.5.)
- 40 CFR 265, as amended through 15 July 1985, provided that:

1. an independent certified public accountant, eligible to practice in Iowa, writes the reports required in the following sections:
 - a. 265.143(e)(3)(ii) and (iii)
 - b. 265.145(e)(3)(ii)
 - c. 265.147(f)(3)(ii) and (iii)
 2. the certification of closure requirement under 265.115 is performed by both an independent professional engineer registered in Iowa and the owner or operator
 3. an independent professional land surveyor, registered in Iowa, prepares and certifies the survey plat indicating the location and dimension of the disposal areas in accordance with 264.119
 4. any reference to 40 CFR 124 means IAC 567-141.13 (Adopted in IAC 567-141.6.).
- 40 CFR 270, as amended through 24 April 1984, provided that a permit required by the USEPA for hazardous waste management facilities may serve in lieu of a state permit until its expiration or replacement by a state permit (Adopted in IAC 567-141.14.).

Unless specifically stated otherwise, references in 40 CFR 260 through 40 CFR 265 to USEPA or regional administrator are deemed to be references to the Iowa Department of Natural Resources.

Definitions

- *Containment* - any chemical, ion, radionuclide, synthetic organic compound, microorganism, waste or other substance which does not occur naturally or which does occur naturally at a lower concentration, and includes all hazardous substances (IAC 567-148.2).
- *Conditionally Exempt Small Quantity Generator (CESQG)* - a generator that in a calendar month generates no more than 100 kilograms of hazardous waste in that month and is further defined by 40 CFR 261.5 (IAC 567-123.2) [Added February 2007].
- *Consolidation Center for CESQG and HHM* - a building for the sorting, packaging, and temporary storage of materials collected from mobile events. Household hazardous materials (HHM) are not collected from the public at the consolidation center (IAC 567-123.2) [Added February 2007].
- *Department* - Iowa Department of Natural Resources (IAC 567-131.1).
- *Director* - the Director of the Iowa Department of Natural Resources.
- *Disposal* - the discharge, deposit, injection, dumping, spilling, leaking, or placing of a hazardous waste or hazardous substance into or on land or water so that the hazardous waste or hazardous substance, or a constituent of the hazardous waste or hazardous substance, may enter the environment or be emitted into the air or discharged into any waters, including groundwater (IAC 567-148.2).
- *End-of-life Vehicle* - any vehicle which is sold, given, or otherwise conveyed to a vehicle recycler or scrap recycling facility for the purpose of recycling and that does not exceed 10,000 pounds gross vehicle weight (IAC 567-215.3) [Added February 2007].
- *Groundwater* - any water of the state which occurs beneath the surface of the earth in a saturated geologic formation of rock or soil (IAC 567-148.2).
- *Hazardous Condition* - any situation involving the actual, imminent, or probable spillage, leakage, or release of a hazardous substance onto the land, into a water of the state or into the atmosphere which, because of the quantity, strength and toxicity of the hazardous substance, its mobility in the environment and its persistence, creates an immediate or potential danger to the public health or safety or to the environment (IAC 567-131.1).

- *Hazardous Waste* - any substance or mixture or substances that presents a danger to the public health or safety and includes but is not limited to, a substance that is toxic, corrosive, or flammable, or that is an irritant or that, in confinement, generates pressure through decomposition, heat, or other means (IAC 567-131.1).
- *Hazardous Waste Contractor* - a private company that provides proper management (e.g., disposal, recycling) of hazardous waste. "Hazardous waste contractor" does not include regional collection centers (IAC 567-123.2) [Added February 2007].
- *Household Hazardous Materials (HHM)* - the same as defined in Iowa Code subsection 455F.1(4) (IAC 567-123.2) [Added February 2007].
- *Mercury-added Switch* - a light switch that contains mercury which was installed in a motor vehicle by a manufacturer (IAC 567-215.3) [Added February 2007].
- *Mobile Unit Collection and Consolidation Center or "MUCCC"* - a government agency or private agency under contract with a government agency as part of a solid waste comprehensive plan that provides HHM collection events at temporary sites. Collection events are held a minimum of 16 hours per month in each county served by the MUCCC. MUCCCs do not provide public access to a fixed facility. Materials collected are consolidated and stored for removal by a hazardous waste contractor. MUCCCs do not include RCCs that utilize a mobile collection unit along with access to a permanent facility (IAC 567-123.2) [Added February 2007].
- *Mobile Unit for CESQG and HHM* - a unit that can be moved to different sites within a service area. The mobile unit is used to perform collection events and to transport collected materials to a fixed RCC or consolidation center (IAC 567-123.2) [Added February 2007].
- *Public Access* - the public has regularly scheduled right of access during the facility's hours of operation as specified in the facility's permit (IAC 567-123.2) [Added February 2007].
- *Regional Collection Center(RCC)* - a secured facility at which collection, sorting, and packaging of household hazardous materials and hazardous materials from CESQGs is accomplished prior to transportation of these wastes to the final disposal site. RCCs have regular hours during which the public may drop off hazardous materials. An RCC may be a government agency or a private agency under contract with a government agency as part of a solid waste comprehensive plan. RCCs are referred to as temporary collection sites in Iowa Code subsection 455F.8A(1) (IAC 567-123.2) [Added February 2007].
- *Scrap Recycling Facility* - a fixed location where machinery and equipment are utilized for processing and manufacturing scrap metal into prepared grades and whose principal products are scrap iron, scrap steel, or nonferrous metallic scrap for sale for remelting purposes (IAC 567-215.3) [Added February 2007].
- *Secondary Containment* - providing an impervious surface that is curbed, sloped, or sumped to retain spilled materials with storage volume equal to the largest container or 10 percent of all containers, whichever is larger (IAC 567-123.2) [Added February 2007].
- *Vehicle Recycler* - any person engaged in the business of acquiring, dismantling, or destroying six or more vehicles in a calendar year for the primary purpose of resale of the vehicles' parts (IAC 567-215.3) [Added February 2007].
- *Water of the State* - any stream, lake, pond, marsh, watercourse, waterway, well, spring, reservoir, aquifer, irrigation system, drainage system, and any other body or accumulation of water, surface or underground, natural or artificial, public or private, which are contained within, flow through, or border upon the state or any portion thereof (Iowa Code 455B.171).

**HAZARDOUS WASTE MANAGEMENT
GUIDANCE FOR IOWA CHECKLIST USERS**

REFER TO CHECKLIST ITEMS:

Missing Checklist Items	HW.2.1.IA.
State-Specific Hazardous Waste Requirements	
General	HW.5.1.IA.
Hazardous Waste Recycle/Reuse	HW.7.1.IA.
Hazardous Waste Turn-In/Collection points	HW.8.1.IA. through HW.8.7.IA.
All Sizes of Generators	HW.10.1.IA.
Transportation of Hazardous Waste	HW.100.1.IA.
All TSDFs	
General	HW.105.1.IA. through HW.105.3.IA.
Additional State-Specific Requirements	HW.175.1.IA.

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
HW.2. MISSING CHECKLIST ITEMS HW.2.1.IA. Federal facilities are required to comply with all applicable state regulatory requirements not contained in the checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of findings).	Determine whether any new regulations have been issued since the finalization of the manual. Determine whether the Federal facility has activities or facilities that are regulated but not addressed in the checklists. Verify that the Federal facility is in compliance with all applicable and newly issued regulations.

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
STATE-SPECIFIC HAZARDOUS WASTE REQUIREMENTS HW.5. General HW.5.1.IA. All persons who generate or transport hazardous waste or own or operate a treatment, storage, and disposal facility (TSDF) must notify the Department (IAC 567-140.3).	Verify that all persons who generate or transport hazardous waste or own or operate a TSDF notify the Department of the activity.

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
STATE-SPECIFIC HAZARDOUS WASTE REQUIREMENTS HW.7. Hazardous Waste Recycle/Reuse HW.7.1.IA. All mercury-added switches must be removed prior to delivery of an end-of-life vehicle to a scrap recycling facility (IAC 567-215.4(1) and 567-215.5) [Added February 2007].	Verify that, prior to delivery to a scrap recycling facility, a person who sells, gives, or otherwise conveys ownership of a new end-of-life vehicle to the scrap recycling facility for recycling removes all mercury-added switches from the vehicle unless the mercury-added switch is inaccessible due to significant damage to the end-of-life vehicle in the area where the mercury-added switch is located. (NOTE: A person shall not represent that mercury-added switches have been removed from a vehicle or vehicle hulk being sold, given, or otherwise conveyed for recycling if that person has not removed such mercury-added switches or arranged with another person to remove such switches.) (NOTE: By September 30, 2006, each manufacturer of vehicles sold in this state shall, individually or as part of a group, develop and publish a plan for a system to remove, collect, and recover mercury-added switches from end-of-life vehicles that were manufactured by the manufacturer.)

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
STATE-SPECIFIC HAZARDOUS WASTE REQUIREMENTS HW.8. Hazardous Waste Turn- In/Collection points HW.8.1.IA. Regional collection centers (RCC) and mobile unit collection and consolidation center (MUCC) must be permitted by the Department (IAC 567-123.3) [Added February 2007]. HW.8.2.IA. Regional collection centers (RCC) and mobile unit collection and consolidation center (MUCC) staff prepare and maintain an operations plan, an education plan, and a closure plan (IAC 567-123.9) [Added February	Verify that the RCC or MUCCC is not constructed or operated without a permit from the Department. (NOTE: If an RCC or MUCCC is located at a permitted recycling or composting facility or sanitary disposal project, the RCC or MUCCC is not required to have its own permit; instead, the RCC or MUCCC activities may be amended into the host facility's permit.) Verify that every RCC and MUCCC is in compliance with all state and federal statutes and regulations regarding the management, storage, transportation and disposition of household hazardous materials and hazardous materials from conditionally exempt small quantity generators. Verify that the RCC or MUCCC is constructed and operated according to the plans and specifications approved by the Department and the conditions of the permit. (NOTE: The approved plans and specifications constitute a condition of the permit.) Verify that the Department is notified before a facility begins operations. Verify that no household hazardous materials or hazardous waste from conditionally exempt small quantity generators is accepted by the facility until it has been inspected and approved by the Department. Verify that the facility submits a request for permit modification in writing to the Department with supporting documentation and materials. Verify that the operations plans include, at a minimum, the following information. - schedule of operations including hours of operations for RCCs and a schedule of collection events including dates, hours, and locations for MUCCs - site selection procedures for mobile unit collections - standard receiving procedures for household and CESQG wastes - procedures for managing unknown materials - procedures for handling open or leaking containers

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
2007]. HW.8.3.IA. Regional collection centers (RCC) and mobile unit collection and consolidation center (MUCC) sites must meet specific requirements (IAC 567-123.6) [Added February 2007].	- procedures for managing large quantities of wastes - recycling procedures for usable materials - disposal of nonhazardous waste - personal protection equipment (PPE) - initial training requirements and continuing education of staff. (NOTE: MUCCC collections shall total, at a minimum, 16 hours per month in each county in the service area. At least 4 of the 16 hours shall be on a Saturday.) Verify that the education plan demonstrates a commitment to educate the local population through a program that addresses alternatives to the purchase of toxic materials and the proper disposal for toxic materials. Verify that education is directed to both the general population and CESQGs. Verify that the permit holder notifies the Department at least 30 days prior to ceasing operations. Verify that the closure plan includes, at a minimum, the following information. - a description of how the RCC will notify the public within its service area that the facility is closing and how household hazardous materials should be managed after closure of the facility - a description of how all household hazardous materials and hazardous waste from CESQGs will be removed from the facility and properly managed within 45 days of the RCC's or MUCCC's ceasing operations. Verify that the RCC site or a mobile unit collection for CESQG and HHM site is sited on public property, or on private property if an agreement exists that guarantees public access. (NOTE: A consolidation center for CESQG and HHM does not need to be sited on public property.) Verify that the RCC or a consolidation center site is designed to provide adequate secondary containment in case of a spill or other possible onsite contamination. Verify that the site meets all applicable zoning requirements. Verify that the site is adequately sized to accommodate all structures, units and activities that will take place on the site. Verify that the RCC site or a consolidation center for CESQG and HHM site is fenced to control access, and a gate is provided at the entrance to the site and is locked when personnel are not on duty.
HW.8.4.IA. Regional	Verify that all structures are sized to adequately accommodate the sorting, bulk

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
collection centers (RCC) and mobile unit collection and consolidation center (MUCC) structures must meet specific requirements (IAC 567-123.7) [Added February 2007].	and lab packing, and temporary storage of household hazardous materials and hazardous materials from conditionally exempt small quantity generators brought to the RCC or collected at mobile events. Verify that all permanent structures meet the requirements of applicable building codes. Verify that the structures and mobile units are designed to prevent run-on from entering from adjacent areas. Verify that all mobile units and the containers used to package collected materials comply with applicable Iowa department of transportation (DOT) rules and guidelines. Verify that, at each mobile unit site, the unit rests on a pad of an impervious, smooth material that provides secondary containment in case of a spill, and a canopy or roof provides protection from inclement weather. Verify that all receiving areas have a storage capacity of at least one day's processing capacity. Verify that all receiving, sorting, bulking, transfer and storage area surfaces are constructed of an impervious, smooth material so designed to be easily cleaned, nonreactive with the waste, and with proper drainage, in the form of plastic-lined pits or concrete sumps, according to applicable codes. Verify that areas used for the receiving, bulking, transferring, lab packing and storing of exempt hazardous materials are provided with secondary containment and are protected from exposure to the weather. Verify that construction plans and specifications for the RCC include a receiving area, sorting area, separate storage areas for incompatible materials, roads, structures, fences and gates, landscaping and screening devices, personnel and maintenance facilities, and utility lines. Verify that construction plans and specifications for the consolidation center include a sorting area, separate storage areas for incompatible materials, roads, structures, fences and gates, landscaping and screening devices, personnel and maintenance facilities, and utility lines.
HW.8.5.IA. Regional collection centers (RCC) and mobile unit collection and consolidation center (MUCC) staff must meet training requirements (IAC 567-123.8) [Added February 2007].	Verify that all RCC and MUCCC staff handling hazardous materials have received applicable training including but not limited to the following: - OSHA 24-hour health and safety training as described by 29 CFR 1910.120 - hazardous materials chemistry - personnel and site safety - proper lab packing techniques - proper transporting of hazardous materials

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
HW.8.6.IA. Regional collection centers (RCC) and mobile unit collection and consolidation center (MUCC) must have an emergency response and remedial action plan (ERRAP) (IAC 567 - 123.10) [Added February 2007].	- U.S. Department of Transportation 8-hour hazardous materials training for the operation of a mobile unit for hazardous materials collection. Verify that a n updated ERRAP is included with any request for permit modification to incorporate a facility expansion or significant changes in facility operation that require modification of the currently approved ERRAP. Verify that the content of ERRAP documents are concise and readily usable as a reference manual by facility managers and operators under emergency conditions. Verify that the ERRAP document content addresses primary issues in detail, unless project conditions render the specific issue not applicable. Verify that the rationale for exclusion of any issue areas that are determined not to be applicable is provided in either the body of the plan or as a supplement to facilitate Department review. Verify that additional emergency response and remedial action plan requirements unique to the facility are addressed, as applicable. (NOTE: IAC 567-123.10(3) lists complete issues to be considered.)
HW.8.7.IA. Regional collection centers (RCC) and mobile unit collection and consolidation center (MUCC) must submit a hazardous material collection semiannual report (ERRAP) (IAC 567-123.10) [Added February 2007] . (IAC 567-123.11) [Added February 2007].	Verify that, on a form supplied by the Department, each RCC and MUCC submits a completed hazardous material collection semiannual report. Verify that the report includes, but is not limited to, the pounds of materials managed through a reuse program, hazardous waste contractors, and by nonhazardous waste contractors. Verify that all hazardous waste contractor invoices are attached. Verify that invoices depict hazardous material types, net weight of hazardous materials, and associated disposal costs charged by the hazardous waste contractor to the RCC or MUCC. (NOTE: Hazardous material collection semiannual reports shall be submitted by September 1 for the portion of the fiscal year January 1 through June 30, and by March 1 for the portion of the fiscal year July 1 through December 31.)

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
HW.10. ALL SIZES OF GENERATORS HW.10.1.IA. All hazardous waste generators must meet specific notification requirements in the event of a hazardous condition (IAC 567-131.2).	Verify that as soon as possible, but not later than 6 h after the occurrence or discovery of a hazardous condition, the generator notifies the Department and the local police department or the office of the sheriff of the affected county. Verify that a written report disclosing the details of the hazardous occurrence is submitted to the Department within 30 days of the initial notification.

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
HW.100. TRANSPORTATION HW.100.1.IA. All hazardous waste transporters must meet specific notification requirements in the event of a hazardous condition (IAC 567-131.2).	Verify that as soon as possible, but not later than 6 h after the occurrence or discovery of a hazardous condition, the transporter notifies the Department and the local police department or the office of the sheriff of the affected county. Verify that a written report disclosing the details of the hazardous occurrence is submitted to the Department within 30 days of the initial notification.

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
ALL TSDFS HW.105. General HW.105.1.IA. All TSDFS must have a permit (IAC 567-140.4). HW.105.2.IA. All hazardous waste TSDFS must meet specific notification requirements in the event of a hazardous condition (IAC 567-131.2). HW.105.3.IA. Written approval of the Director is required for specific changes in status of TSDFS (IAC 567-148.6(5)) [Citation Revised February 2007].	Verify that all TSDFS have a permit issued by the Department. Verify that as soon as possible but not later than 6 hours after the occurrence or discovery of a hazardous condition, the TSDF notifies the Department and the local police department or the office of the sheriff of the affected county. Verify that a written report disclosing the details of the hazardous occurrence is submitted to the Department within 30 days of the initial notification. Verify that Director approval is obtained prior to any of the following changes: - any substantial change in the use of the TSDF - sale, conveyance, or transfer of title of the TSDF.

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
ALL TSDFS HW.175. Additional State Specific Requirements HW.175.1.IA. Hazardous waste must not be disposed of in wells (IAC 567-141.7).	Verify that hazardous waste is not disposed of in wells.

SECTION 5

NATURAL RESOURCES MANAGEMENT

Iowa Supplement, February 2010

This section covers the state requirements for Natural Resources Management and is intended to supplement the U.S. TEAM Guide. Refer to the U.S. TEAM Guide and the DOD Component Supplements for Federal, DOD, and service-specific requirements.

Definitions

- *Agricultural Levees or Dikes* - levees or dikes constructed to provide limited flood protection to land used primarily for agricultural purposes (Iowa Administrative Code (IAC) 567-70.2).
- *Backwater* - the increase in water surface level immediately upstream from any structure, dam, obstruction, or deposit, erected, used, or maintained in the floodway or on the flood plains caused by the resulting reduction in conveyance area (IAC 567-70.2).
- *Building* - all residential housing including mobile homes, cabins, factories, warehouses, storage sheds, and other walled, roofed structures constructed for occupation by people or animals or for storage of materials (IAC 567-70.2).
- *Channel* - a natural or artificial flow path of a stream with definite bed and banks to collect and conduct the normal flow of water (IAC 567-70.2).
- *Channel Change* - either of the following:
 1. the alteration of the location of a channel of a stream, or
 2. a substantial modification of the size, slope, or flow characteristics of a channel of a stream for a purpose related to the use of the stream's flood plain surface rather than for the purpose of actually using the water itself, or putting the water to a new use.Diversions of water subject to the permit requirements of Iowa Code sections 455B.268 and 455B.269 usually are not channel changes. Increasing the cross sectional area of a channel by less than 10 percent is not considered a substantial modification of the size, slope, or flow characteristics of a channel of a stream (IAC 567-70.2).
- *Dam* - a barrier which impounds or stores water (IAC 567-70.2).
- *Development* - a structure, dam, obstruction, deposit, excavation, or flood control work in a floodway or flood plain (IAC 567-70.2).
- *Drainage District Ditch* - a channel located within the boundaries of a drainage district and excavated to establish a design channel-bottom profile for efficient conveyance of water discharged from agricultural tile systems and open drains (IAC 567-70.2).
- *Elevating* - raising buildings by fill or other means to or above a minimum level of flood protection (IAC 567-70.2).
- *Encroachment Limits* - the boundaries of the floodway established in the flood plains and designating the width of the channel and minimum width of the overbank areas needed for the conveyance of the 100-yr floodplain (IAC 567-70.2).
- *Endangered Species* - any species of fish, plant life, or wildlife which is in danger of extinction throughout all or a significant part of its range (IAC 571-77.1).

- *Equal and Opposite Conveyance* - the location of development offsets from stream banks so that flood plain lands on each side of a stream convey a share of the flood flows proportionate to the total conveyance available on each respective side of the stream (IAC 567-70.2).
- *Flood Control Works* - physical structures such as dams, levees, floodwalls, and channel improvements or relocations undertaken to provide moderate to high degree of flood protection to existing or proposed structures or land uses (IAC 567-70.2).
- *Flood Hazard Area* - the area including the flood plains and the river or stream channel (IAC 567-70.2).
- *Flood Plain* - the land adjacent to a stream which has been or may be inundated by a flood having the magnitude of the regional flood (IAC 567-70.2).
- *Flood Proofing* - a combination of structural provisions, changes, or adjustments in construction to buildings, structures, or properties subject to flooding primarily for the reduction or elimination of flood damages (IAC 567-70.2).
- *Floodway Fringe* - those portions of the flood plains located landward of the encroachment limits (IAC 567-70.2).
- *Height of Dam* - the vertical distance from the top of the dam to the natural bed of the stream or watercourse measured at the downstream toe of the dam or to the lowest elevation of the outside limit of the dam if it is not across a watercourse (IAC 567-70.2).
- *Minimum Level of Flood Protection* - the elevation corresponding to the water surface profile of the regulatory flood associated with a damage potential classification plus any freeboard specified in these rules (IAC 567-70.2).
- *Probable Maximum Flood* - the flood that may be expected from the most severe combination of critical meteorological and hydrologic conditions that are reasonably possible in the region, and is derived from probable maximum precipitation, the theoretical greatest depth of precipitation for a given duration that is physically possible over a particular drainage area at a certain time of year. The probable maximum precipitation within designated zones in Iowa has been determined by the National Weather Service. The probable maximum flood for any location within Iowa is determined by the Department (IAC 567-70.2).
- *Protected Stream* - a stream designated by the Department, including streams designated as protected pursuant to IAC 567-72.51 and listed in IAC 567-72.50 (2). Streams hydrologically connected to protected streams are not protected streams unless specifically listed as protected streams (IAC 567-72.50(1)).
- *Regional Flood* - a flood representative of the largest floods which have been observed on streams in Iowa (IAC 567-70.2).
- *Repair and Maintenance of a Drainage District Ditch* - the restoration of the original grade line, cross sectional area, or other design specifications of a drainage district ditch lawfully established as part of a drainage district formed and operating under the provisions of Iowa Code chapter 468 (IAC 567-70.2).
- *Road Projects* - the construction and maintenance of any bridges, culverts, road embankments, and temporary stream crossings (IAC 567-70.2).
- *Rural Areas* - any area not defined or designated as an urban area (IAC 567-70.2).
- *Special Concern Species* - any species about which problems of status or distribution are suspected, but not documented, and for which no special protection is afforded under this rule (IAC 571-77.1).

- *Stream* - a watercourse that either drains an area of at least 2 mi² or has been designated as a protected stream (IAC 567-70.2).
- *Threatened Species* - any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range (IAC 571-77.1).
- *Urban Areas* - incorporated municipalities (IAC 567-70.2).
- *Watercourse* - any lake, river, creek, ditch, or other body of water or channel having definite banks and bed with visible evidence of the flow or occurrence of water, except such lakes or ponds without outlet to which only one landowner is riparian (IAC 567-70.2).

NATURAL RESOURCES MANAGEMENT GUIDANCE FOR IOWA CHECKLIST USERS	

REFER TO CHECKLIST ITEMS:	

Missing Checklist Items	NR.2.1.IA.
Land Management	NR.10.1.IA. through NR.10.14.IA.
Wildlife	NR.20.1.IA.

NATURAL RESOURCES MANAGEMENT GUIDANCE FOR IOWA APPENDIX USERS	

REFER TO APPENDIX NUMBER:	REFER TO APPENDIX ITEMS:

5-1

Endangered, Threatened, and Special Concern Animals Species of Iowa

5-2

Endangered, Threatened, and Special Concern Plants of Iowa

COMPLIANCE CATEGORY: NATURAL RESOURCES MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
NR.2. MISSING CHECKLIST ITEMS NR.2.1.IA. Federal facilities are required to comply with all applicable state regulatory requirements not contained in the checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of findings).	Determine whether any new regulations have been issued since the finalization of the manual. Determine whether the Federal facility has activities or facilities that are regulated but not addressed in the checklists. Verify that the Federal facility is in compliance with all applicable and newly issued regulations.

COMPLIANCE CATEGORY: NATURAL RESOURCES MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
NR.10. LAND MANAGEMENT NR.10.1.IA. A permit must be obtained for certain kinds of development in floodways or flood plains (IAC 567 - 70.4(1)). NR.10.2.IA. Engineering plans must be submitted for developments in floodways and flood plains (IAC 567 - 70.4(3)). NR.10.3.IA. Department approval is necessary for development on flood plains in certain instances (IAC 567-71.1).	Verify that any development in a floodway or flood plain that exceeds the thresholds listed in NR.10.3.IA through NR.10.14.IA, and is not otherwise regulated by a Department flood plain management order or a Department-approved, locally adopted flood plain management ordinance, has a Department flood plain development permit. Verify that the engineering plans contain information specified by the Department, including specifications, operation procedures, and other information relating to environmental aspects. Verify that the engineering plans are certified by a registered professional engineer, or, if applicable, a registered land surveyor (NOTE: These requirements may be waived by the Department if it determines that engineering data is not required to determine that the project conforms to all applicable administrative and statutory criteria; or if adequate engineering data used to evaluate the dimensions and effects of the project are already available to the engineering staff.) Verify that the construction, operation, and maintenance of bridges, culverts, temporary stream crossings, and road embankments are approved by the Department in the following instances: - in rural areas, bridges, culverts, road embankments, and temporary stream crossings in or on the floodway of any river or stream draining more than 100 mi² (channel modifications associated with bridge, culvert, or roadway projects may need approval) - road embankments located in a rural area in the floodway or flood plains, but not crossing the channel of a river or stream draining more than 10 mi², where no works occupy more than 3 percent of the cross sectional area of the channel at bankfull stage or where such works obstruct more than 15 percent of the total cross sectional area of the flood plain at any stage (in determining a 15 percent occupancy of the flood plain, the concept of equal and opposite conveyance applies) - in urban areas, bridges, culverts, road embankments, and temporary stream crossings in or on the floodway or flood plains of any river or stream more than 2 mi².
NR.10.4.IA. Department	Verify that the construction, operation, and maintenance of channel changes in

COMPLIANCE CATEGORY: NATURAL RESOURCES MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
	exceed the applicable thresholds in this rule. (NOTE: Approval is required to maintain a pre-existing dam only if the Department determines that the dam poses a significant threat to the well-being of the public or environment and should therefore be removed or repaired and safely maintained.) (NOTE: Public Road embankments with culverts that impound water only in temporary storage are exempt from the above rules.)
NR.10.6.IA. Department approval is necessary for construction, operation, and maintenance of levees or dikes in specific instances (IAC 567-71.4).	Verify that in rural areas, any levees or dikes located on the flood plain or floodway of any stream or river draining more than 10 mi² are approved by the Department. Verify that in urban areas, any levees or dikes along any river or stream draining more than 2 mi² are approved by the Department.
NR.10.7.IA. Department approval is necessary for the construction, operation, and maintenance of waste or water treatment facilities in certain circumstances (IAC 567-71.5).	Verify that in rural areas, any waste or water treatment facilities on the flood plains or floodway of any river or stream draining more than 10 mi² are approved by the Department. Verify that in urban areas, any waste or water treatment facilities on the flood plains or floodway of any river or stream draining more than 2 mi² are approved by the Department.
NR.10.8.IA. Department approval is necessary in certain instances for the construction, operation, and maintenance of sanitary landfills (IAC 567-71.6).	Verify that any sanitary landfills in rural areas that are located on the flood plain or floodway of any stream draining more than 10 mi² at the landfill site are approved by the Department. Verify that any sanitary landfills located on the flood plain or floodway of any stream draining more than 2 mi² at the landfill site in urban areas are approved by the Department.
NR.10.9.IA. Department approval is necessary for construction, use, and maintenance of buildings and for placement of fill in specific thresholds (IAC 567-71.7).	Verify that in urban areas construction, use, and maintenance of buildings in the floodway or flood plain of any stream draining more than 2 mi² at the location of the structure is approved by the Department as follows: - construction of any new building (new construction includes replacement or relocation of an existing building and placement and grading of fill materials in a manner that creates an elevated building site) - any addition which increases the original floor area of a building by 25 percent or more, and all additions constructed after 4 July 1965 are added to any proposed addition in determining whether the total increase in original

COMPLIANCE CATEGORY: NATURAL RESOURCES MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
	floor space exceeds 25 percent - lowering a floor of a building (NOTE: Approval is not required for elevating an existing building. However, when a building is elevated the lowest floor must be elevated to the appropriate minimum protection level.) - reconstruction of any portion of a building if the cost of reconstruction exceeds 50 percent of the market value of the existing building or if reconstruction increases the market value by more than 50 percent. (NOTE: These thresholds must be met in order for the Department to grant approval to buildings and associated fill in rural areas within 2 mi. of municipal corporate limits. Department approval must be granted in rural areas not within 2 mi. of municipal corporate limits, with the exception that approval is required only when the drainage area at the location of the building or associated fill is over 10 mi².) Verify that new construction, additions, lowering, or reconstruction and associated fill as described in the first verify statement above in buildings and associated fill are approved by the Department, without regard to the drainage area if the proximity of the building to a dam regulated by the Department is as follows: - adjacent to an impoundment if the lowest floor level including any basement is lower than the top of the dam - downstream from a dam at any location where flooding can be reasonably anticipated from principal or emergency spillway discharges. (NOTE: If the dam does not substantially comply with high hazard criteria, approval is required for a building and associated fill at any location where flooding can be reasonably anticipated from overtopping and failure of the dam.)
NR.10.10.IA. Department approval is necessary for the construction, operation, and maintenance of pipeline crossings under certain circumstances (IAC 5 67-71.8).	(NOTE: Department approval is not required for the construction, operation, and maintenance of buried pipeline crossings if the natural contours of the channel and flood plain are maintained.) Verify that the construction, operation, and maintenance of all other pipeline is approved by the Department in the following instances: - in rural areas, pipeline crossings on any river or stream draining over 100 mi² - in urban areas, pipeline crossings on any river or stream draining more than 2 mi².
NR.10.11.IA. Department approval is necessary in certain instances for the construction, operation, and maintenance of stream bank protective devices (IAC 5 67-	(NOTE: Stream bank protective devices include wing dikes, jetties, et cetera.) Verify that, in rural areas, the construction, operation, and maintenance of stream bank protective devices is approved by the Department in the following instances: - all stream bank protective devices along any river or stream draining more

COMPLIANCE CATEGORY: NATURAL RESOURCES MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
71.9). NR.10.12.IA. Department approval is required for all boat docks located in any stream other than a lake and do not float on the water's surface (IAC 567-71.10). NR.10.13.IA. Department approval for excavations is necessary under certain circumstances (IAC 567-71.11).	than 100 mi² - stream bank protective devices along any river or stream draining between 10 and 100 mi² where the cross-sectional area of the river or stream channel is reduced more than 3 percent. Verify that, in urban areas, the construction, operation, and maintenance of stream bank protective devices is approved by the Department in the following instances: - stream bank protective devices along any river or stream draining over 100 mi² - stream bank protective devices along any river or stream draining between 2 and 100 mi² where the cross-sectional area of the river or stream channel is reduced more than 3 percent. Verify that all boat docks that are located in any stream other than a lake and which do not float on the surface of the water are approved by the Department. (NOTE: Recreational nonfloating type boat docks located on the Mississippi and Missouri rivers, and the conservation pools of the Coralville, Rathbun, Red Rock, and Saylorville reservoirs do not require Departmental approval, other than a permit obtained from the Parks, Recreation, and Preserves Division of the Department.) Verify that excavations in rural areas are approved by the Department in the following instances: - excavation in the channel on any river or stream draining more than 10 mi² where said excavation increases the cross sectional area of said channel below bankfull stage by more than 10 percent - excavation on any flood plain of any river or stream draining more than 10 mi² where said excavation is within 100 ft of the normal stream or river bank. (NOTE: The cross sectional area of the channel is determined based on the current engineering plans, or the original engineering plans, if performed by a drainage district. If an original plan is not available, the current engineering plan must be used to determine the original cross sectional area of the channel. The drainage district must submit a copy of the engineering plan for increasing the cross sectional area of the channel to the Department prior to approval by the board of supervisors or trustees regardless of the size of the increase.) (NOTE: Excavation in relation to highway projects is exempt except as otherwise provided for in NR.10.3.IA.) (NOTE: Excavation for the repair and maintenance of a drainage district ditch is not considered an excavation within the intent of this rule if the drainage area of

COMPLIANCE CATEGORY: NATURAL RESOURCES MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
NR.10.14.IA. Department approval is necessary for the construction, operation, and maintenance of miscellaneous structures, obstructions, or deposits in specific instances (IAC 567-71.12).	the ditch at the location of the proposed work is less than 100 mi².) Verify that excavations on the floodway of any stream draining more than 2 mi² in urban areas are approved by the Department. Verify that any miscellaneous structures, obstructions, or deposits on the floodway or flood plain of any stream draining more than 10 mi² in rural areas where such works obstruct more than 3 percent of the cross sectional area of the stream channel at bankfull stage or where such works obstruct more than 15 percent of the total cross sectional area of the flood plain at any stage are approved by the Department. (NOTE: In determining a 15 percent obstruction of the flood plain, the concept of equal and opposite conveyance applies.) Verify that, in urban areas, miscellaneous structures, obstructions, or deposits on the floodway or flood plains of any river or stream draining over 2 mi² are approved by the Department.

COMPLIANCE CATEGORY: NATURAL RESOURCES MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
NR.20. WILDLIFE NR.20.1.IA. State-listed endangered and threatened species may be collected only under specific conditions (IAC 571-77.4).	Verify that species of plant, fish, or wildlife protected by the state (see Appendices 5-1 and 5-2) are not collected, held, salvaged, or possessed without a scientific collecting permit or education project permit. (NOTE: Persons may buy or offer to buy a part or product of a species of fish or wildlife appearing on the state or Federal lists as long as it is imported from a legal source outside the state and required documentation are provided.) (NOTE: Drainage district repairs and improvements to existing open ditch facilities are excluded from the department's protection efforts for the Topeka shiner. This includes facilities of levee and drainage districts established and maintained under Iowa Code chapter 468. This exclusion does not apply to new channelization, deepening, or leveeing of existing streams and rivers with permanent flow or existing streams with off-channel water areas capable of supporting fish.)

Appendix 5-1

Endangered and Threatened Animal Species of Iowa

(Source: IAC 571-77.2) [Revised April 2002; Revised April 2004; Revised February 2010]

Mammals

Indiana Bat	<i>Myotis sodalis</i>
Plains Pocket Mouse	<i>Perognathus flavescens</i>
Red-backed Vole	<i>Clethrionomys gapperi</i>
Spotted Skunk	<i>Spilogale putorius</i>

Birds

Red-shouldered Hawk	<i>Buteo lineatus</i>
Northern Harrier	<i>Circus cyaneus</i>
Piping Plover	<i>Charadrius melodus</i>
Common Barn Owl	<i>Tyto alba</i>
Least Tern	<i>Sterna antillarum</i>
King Rail	<i>Rallus elegans</i>
Short-eared Owl	<i>Asio flammeus</i>

Fish

Lake Sturgeon	<i>Acipenser fulvescens</i>
Pallid Sturgeon	<i>Scaphirhynchus albus</i>
Pugnose Shiner	<i>Notropis anogenus</i>
Weed Shiner	<i>Notropis texanus</i>
Pearl Dace	<i>Semotilus margarita</i>
Freckled Madtom	<i>Noturus nocturnus</i>
Bluntnose Darter	<i>Etheostoma chlorosomum</i>
Least Darter	<i>Etheostoma microperca</i>

Reptiles

Yellow Mud Turtle	<i>Kinosternon flavescens</i>
Wood Turtle	<i>Clemmys insculpta</i>
Great Plains Skink	<i>Eumeces obsoletus</i>
Copperbelly Water Snake	<i>Nerodia erythrogaster neglecta</i>
Western Hognose Snake	<i>Heterodon nasicus</i>
Copperhead	<i>Agkistrodon contortrix</i>
Prairie Rattlesnake	<i>Crotalus viridis</i>
Massasauga Rattlesnake	<i>Sistrurus catenatus</i>

Amphibians

Blue-spotted Salamander	<i>Ambystoma laterale</i>
Crawfish Frog	<i>Rana areolata</i>

Butterflies

Dakota Skipper	<i>Hesperia dacotae</i>
Ringlet	<i>Coenonympha tullia</i>

Land Snails

Iowa Pleistocene Snail	<i>Discus macclintocki</i>
Minnesota Pleistocene Ambersnail	<i>Novisuccinea new species A</i>
Iowa Pleistocene Ambersnail	<i>Novisuccinea new species B</i>
Frigid Ambersnail	<i>Catinella gelida</i>
Briarton Pleistocene Vertigo	<i>Vertigo briarensis</i>
Bluff Vertigo	<i>Vertigo meramecensis</i>
Iowa Pleistocene Vertigo	<i>Vertigo new species</i>

Fresh Water Mussels

Spectacle Case	<i>Cumberlandia monodonta</i>
Slippershell	<i>Alasmodonta viridis</i>
Buckhorn	<i>Tritogonia verrucosa</i>

Ozark Pigtoe
Bullhead
Ohio River Pigtoe
Slough Sandshell
Yellow Sandshell
Higgin's-eye Pearly Mussel

Fusconaia ozarkensis
Plethobasus cyphus
Pleurobema sintoxia
Lampsilis teres teres
Lampsilis teres anodontoides
Lampsilis higgins

77.2(2) Threatened animal species:

Mammals

Least Shrew
Southern Bog Lemming

Cryptotis parva
Synaptomys cooperi

Birds

Forster's Tern
Black Tern
Peregrine Falcon
Bald Eagle

Sterna forsteri
Chlidonias niger
Falco peregrinus
Haliaeetus leucocephalus

Fish

Chestnut Lamprey
American Brook Lamprey
Grass Pickerel
Blacknose Shiner
Topeka Shiner
Western Sand Darter
Black Redhorse
Burbot
Orangethroat Darter

Ichthyomyzon castaneus
Lampetra appendix
Esox americanus
Notropis heterolepis
Notropis topeka
Ammocrypta clara
Moxostoma duquesnei
Lota lota
Etheostoma spectabile

Reptiles

Slender Glass Lizard
Common Musk Turtle
Blanding's Turtle
Ornate Box Turtle
Diamondback Water Snake
Western Worm Snake
Speckled Kingsnake

Ophisaurus attenuatus
Sternotherus odoratus
Emydoidea blandingii
Terrapene ornata
Nerodia rhombifera
Carphophis amoenus vermis
Lampropeltis getulus

Amphibians

Mudpuppy
Central Newt

Necturus maculosus
Notophthalmus viridescens

Butterflies

Powesheik Skipperling
Byssus Skipper
Mulberry Wing
Silvery Blue
Baltimore

Oarisma powesheik
Problema byssus
Poanes massasoit
Glaucopsyche lygdamus
Euphydryas phaeton

Snails

Midwest Pleistocene Vertigo
Occult Vertigo

Vertigo hubrichti
Vertigo occulta

Fresh Water Mussels

Cylinder
Strange Floater
Creek Heelsplitter
Purple Pimpleback
Butterfly
Ellipse

Anodontoides ferussacianus
Strophitus undulatus
Lasmigona compressa
Cyclonaias tuberculata
Ellipsaria lineolata
Venustaconcha ellipsiformis

77.2(3) Special concern animal species:

Mammals

Southern Flying Squirrel

Glaucomys volans

Birds

Forester's Tern

Sterna forsteri

Black Tern

Chlidonias niger

Fish

Pugnose Minnow

Notropis emiliae

Pirate Perch

Aphredoderus sayanus

Reptiles

Smooth Green Snake

Opheodrys vernalis

Bullsnake

Pituophis catenifer sayi

Butterflies

Dreamy Duskywing

Erynnis icelus

Sleepy Duskywing

Erynnis brizo

Columbine Duskywing

Erynnis lucilius

Wild Indigo Duskywing

Erynnis baptisiae

Ottoo Skipper

Hesperia ottoe

Leonardus Skipper

Hesperia l. leonardus

Pawnee Skipper

Hesperia leonardus pawnee

Beardgrass Skipper

Atrytone arogos

Zabulon Skipper

Poanes zabulon

Broad-winged Skipper

Poanes viator

Sedge Skipper

Euphyes dion

Two-spotted Skipper

Euphyes bimacula

Dusted Skipper

Atrytonopsis hianna

Salt-and-pepper Skipper

Amblyscirtes hegon

Pipevine Swallowtail

Battus philenor

Zebra Swallowtail

Eurytides marcellus

Olympia White

Euchloe olympia

Purplish Copper

Lycaena helloides

Acadian Hairstreak

Satyrium acadicum

Edward's Hairstreak

Satyrium edwardsii

Hickory Hairstreak

Satyrium caryaevorum

Striped Hairstreak

Satyrium liparops

Swamp Metalmark

Calephelis mutica

Regal Fritillary

Speyeria idalia

Baltimore

Euphydryas phaeton ozarka

e

Appendix 5-2

Endangered and Threatened Plants of Iowa (Source: IAC 571-77.3) [Revised April 2002]

PLANTS

Common Name	Scientific Name	State Status
Northern wild monkshood	<i>Aconitum noveboracense</i>	T
Round-stemmed false foxglove	<i>Agalinus gattererii</i>	T
Pale false foxglove	<i>Agalinus skinneriana</i>	E
Blue giant-hyssop	<i>Agastache foeniculum</i>	E
Nodding wild onion	<i>Allium cernuum</i>	T
Fragrant false indigo	<i>Amorpha nana</i>	T
Bearberry	<i>Arctostaphylos uva-ursa</i>	E
Virginia snakeroot	<i>Aristolochia serpentaria</i>	T
Black chokecherry	<i>Aronia melanocarpa</i>	E
Eared milkweed	<i>Asclepias engelmanniana</i>	E
Woolly milkweed	<i>Asclepias lanuginosa</i>	T
Mead's milkweed	<i>Asclepias meadii</i>	E
Showy milkweed	<i>Asclepias speciosa</i>	T
Narrow-leaved milkweed	<i>Asclepias stenophylla</i>	E
Ricebutton aster	<i>Aster dumosus</i>	E
Forked aster	<i>Aster furcatus</i>	T
Rush aster	<i>Aster junciformis</i>	T
Flax-leaved aster	<i>Aster linariifolius</i>	T
Large-leaved aster	<i>Aster macrophyllus</i>	E
Schreber's aster	<i>Aster schreberi</i>	E
Fern-leaved false foxglove	<i>Aureolaria pedicularia</i>	E
Water parsnip	<i>Berula erecta</i>	T
Kittentails	<i>Besseyia bullii</i>	T
Bog birch	<i>Betula pumila</i>	T
Pagoda plant	<i>Blephilia ciliata</i>	T
Matricary grape fern	<i>Botrychium matricariifolium</i>	E
Leathery grapefern	<i>Botrychium multifidum</i>	T
Little grapefern	<i>Botrychium simplex</i>	T
Sweet Indian-plantain	<i>Cacalia suaveolens</i>	T
Poppy mallow	<i>Callirhoe alcaeoides</i>	T
Poppy mallow	<i>Callirhoe triangulata</i>	E
Cordroot sedge	<i>Carex chordorrhiza</i>	E
Pipsissewa	<i>Chimaphila umbellata</i>	T
Golden saxifrage	<i>Chrysosplenium iowense</i>	T
Dayflower	<i>Commelina erecta</i>	T
Spotted coralroot	<i>Corallorhiza maculata</i>	T
Bunchberry	<i>Cornus canadensis</i>	T
Golden corydalis	<i>Corydalis aurea</i>	T
Large-bracted corydalis	<i>Corydalis curvisiliqua</i>	E
Pink corydalis	<i>Corydalis sempervirens</i>	T
Showy lady's slipper	<i>Cypripedium reginae</i>	T
Silky prairie-clover	<i>Dalea villosa</i>	E
Swamp-loosestrife	<i>Decodon verticillatus</i>	E
Northern panic-grass	<i>Dichanthelium boreale</i>	E
Slim-leaved panic-grass	<i>Dichanthelium linearifolium</i>	T

Common Name	Scientific Name	State Status
Jeweled shooting star	Dodecatheon amethystinum	T
Roundleaved sundew	Drosera rotundifolia	E
Glandular wood fern	Dryopteris intermedia	T
Marginal shield fern	Dryopteris marginalis	T
Woodland horsetail	Equisetum sylvaticum	T
Slender cottongrass	Eriophorum gracile	T
Yellow trout lily	Erythronium americanum	T
Queen of the prairie	Filipendula rubra	T
False mermaid	Floerkea proserpinacoides	E
Blue ash	Fraxinus quadrangulata	T
Bog bedstraw	Galium labradoricum	E
Black huckleberry	Gaylussacia baccata	T
Oak fern	Gymnocarpium dryopteris	T
Poverty grass	Hudsonia tomentosa	E
Green violet	Hybanthus concolor	T
Northern St. Johnswort	Hypericum boreale	E
Pineweed	Hypericum gentianoides	E
Winterberry	Ilex verticillata	E
Black-based quillwort	Isoetes melanopoda	E
Twinleaf	Jeffersonia diphylla	T
Creeping juniper	Juniperus horizontalis	T
Water-willow	Justicia americana	E
Dwarf dandelion	Krigia virginica	E
Intermediate pinweed	Lechea intermedia	T
Hairy pinweed	Lechea villosa	T
Prairie bush clover	Lespedeza leptostachya	T
Cleft conobea	Leucospora multifida	E
Twinflower	Linnaea borealis	T
Whiskbroom parsley	Lomatium foeniculaceum	E
Western parsley	Lomatium orientale	T
Wild lupine	Lupinus perennis	T
Running clubmoss	Lycopodium clavatum	E
Tree clubmoss	Lycopodium dendroideum	T
Bog clubmoss	Lycopodium inundatum	E
Rock clubmoss	Lycopodium porophyllum	T
Annual skeletonweed	Lygodesmia rostrata	E
Hairy waterclover	Marsilea vestita	T
Water marigold	Megalodonta beckii	E
Bog buckbean	Menyanthes trifoliata	T
Northern lungwort	Mertensia paniculata	E
Winged monkeyflower	Mimulus alatus	T
Yellow monkeyflower	Mimulus glabratus	T
Partridge berry	Mitchella repens	T
Pinesap	Monotropa hypopithys	T
Small sundrops	Oenothera perennis	T
Little pricklypear	Opuntia fragilis	T
Bigroot pricklypear	Opuntia macrorhiza	E
Clustered broomrape	Orobanche fasciculata	E
Ricegrass	Oryzopsis pungens	E
Cinnamon fern	Osmunda cinnamomea	E
Royal fern	Osmunda regalis	T
Philadelphia panic-grass	Panicum philadelphicum	T

Common Name	Scientific Name	State Status
Purple cliffbrake	<i>Pellaea atropurpurea</i>	E
Arrow arum	<i>Peltandra virginica</i>	E
Slender beardtongue	<i>Penstemon gracilis</i>	T
Pale green orchid	<i>Platanthera flava</i>	E
Hooker's orchid	<i>Platanthera hookeri</i>	T
Northern bog orchid	<i>Platanthera hyperborea</i>	T
Eastern prairie fringed orchid	<i>Platanthera leucophaea</i>	E
Western prairie fringed orchid	<i>Platanthera praeclara</i>	T
Purple fringed orchid	<i>Platanthera psycodes</i>	T
Clammyweed	<i>Polanisia jamesii</i>	E
Crossleaf milkwort	<i>Polygala cruciata</i>	E
Pink milkwort	<i>Polygala incarnata</i>	T
Purple milkwort	<i>Polygala polygama</i>	E
Jointweed	<i>Polygonella articulata</i>	E
Douglas' knotweed	<i>Polygonum douglasii</i>	E
Silverweed	<i>Potentilla anserina</i>	T
Shrubby cinquefoil	<i>Potentilla fruticosa</i>	T
Pennsylvania cinquefoil	<i>Potentilla pensylvanica</i>	T
Three-toothed cinquefoil	<i>Potentilla tridentata</i>	E
Canada plum	<i>Prunus nigra</i>	E
Frenchgrass	<i>Psoralea onobrychis</i>	E
Pink shinleaf	<i>Pyrola asarifolia</i>	E
One-sided shinleaf	<i>Pyrola secunda</i>	T
Meadow beauty	<i>Rhexia virginica</i>	T
Beaked rush	<i>Rhynchospora capillacea</i>	T
Northern currant	<i>Ribes hudsonianum</i>	T
Prickly rose	<i>Rosa acicularis</i>	E
Shining willow	<i>Salix lucida</i>	T
Bog willow	<i>Salix pedicellaris</i>	T
Low nutrush	<i>Scleria verticillata</i>	T
Meadow spikemoss	<i>Selaginella eclipses</i>	E
Buffaloberry	<i>Shepherdia argentea</i>	T
Rough-leaved goldenrod	<i>Solidago patula</i>	E
Bog goldenrod	<i>Solidago uliginosa</i>	E
Scarlet globemallow	<i>Sphaeralcea coccinea</i>	T
Slender ladies-tresses	<i>Spiranthes lacera</i>	T
Yellow-lipped ladies-tresses	<i>Spiranthes lucida</i>	E
Oval ladies-tresses	<i>Spiranthes ovalis</i>	T
Hooded ladies-tresses	<i>Spiranthes romanzoffiana</i>	T
Spring ladies-tresses	<i>Spiranthes vernalis</i>	T
Rosy twisted-stalk	<i>Streptopus roseus</i>	T
Pickering morning-glory	<i>Stylisma pickeringii</i>	E
Fameflower	<i>Talinum parviflorum</i>	T
Rough-seeded fameflower	<i>Talinum rugospermum</i>	E
Waxy meadowrue	<i>Thalictrum revolutum</i>	E
Long beechfern	<i>Thelypteris phegopteris</i>	E
Large arrowgrass	<i>Triglochin maritimum</i>	T
Small arrowgrass	<i>Triglochin palustre</i>	T
Low sweet blueberry	<i>Vaccinium angustifolium</i>	T
Velvetleaf blueberry	<i>Vaccinium myrtilloides</i>	T
False hellebore	<i>Veratrum woodii</i>	T
Large-leaved violet	<i>Viola incognita</i>	E

Common Name	Scientific Name	State Status
Kidney-leaved violet	<i>Viola renifolia</i>	T
Rusty woodsia	<i>Woodsia ilvensis</i>	E
Oregon woodsia	<i>Woodsia oregana</i>	T
Yellow-eyed grass	<i>Xyris torta</i>	E

SECTION 6

OTHER ENVIRONMENTAL ISSUES

Iowa Supplement, February 2010

This section covers the state requirements for Other Environmental Issues and is intended to supplement the U.S. TEAM Guide. Refer to the U.S. TEAM Guide and the DOD Component Supplements for Federal, DOD, and service-specific requirements.

Definitions

- *Disposal* - the discharge, deposit, injection, dumping, spilling, leaking, or placing of a hazardous waste or hazardous substance into or on land or water so that the hazardous waste or hazardous substance, or a constituent of the hazardous waste or hazardous substance, may enter the environment or be emitted into the air or discharged into any waters, including groundwater (IAC 567-148.2) [Citation Revised April 2004].
- *Hazardous Substance* - a hazardous substance as defined in 42 U.S.C. 9601, and any element, compound, mixture, solution, or substance designated pursuant to 40 CFR 302.4 (IAC 567-148.2) [Citation Revised April 2004].
- *Hazardous Waste* - a waste or combination of wastes as defined in Iowa Code section 455B.411 (IAC 567-148.2) [Citation Revised April 2004].
- *Hazardous Waste or Hazardous Substance Disposal Site* - real property which has been used for the disposal of hazardous waste or azides substances either illegally or prior to regulation as a hazardous substance under Iowa Code subsection 455B.411(4) and any adjoining real property and groundwater affected by the disposal activity (IAC 567-148.2) [Citation Revised April 2004].

**OTHER ENVIRONMENTAL ISSUES
GUIDANCE FOR IOWA CHECKLIST USERS**

REFER TO CHECKLIST ITEMS:

The NEPA Process

Refer to the U.S. TEAM Guide and the DOD Component Supplements for Federal, DOD, and service-specific requirements.

Missing Checklist Items O1.2.1.IA.

Environmental Noise

Missing Checklist Items O2.2.1.IA.

State-Specific Requirements O2.5.1.IA.

CERCLA Cleanup Sites

Refer to the U.S. TEAM Guide and the DOD Component Supplements for additional Federal, DOD, and service-specific requirements.

Missing Checklist Items O3.2.1.IA.

State-Specific Requirements O3.20.1.IA.

Pollution Prevention

Iowa has a program that requires that consumers be provided information about hazardous household products (see HM.5.IA, the U.S. TEAM Guide, and the DOD Component Supplements for Federal, DOD, and service-specific requirements).

Missing Checklist Items O4.2.1.IA.

Program Management

Refer to the U.S. TEAM Guide and the DOD Component Supplements for Federal, DOD, and service-specific requirements.

COMPLIANCE CATEGORY: OTHER ENVIRONMENTAL ISSUES Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
THE NEPA PROCESS O1.2. Missing Checklist Items O1.2.1.IA. Federal facilities are required to comply with all applicable state regulatory requirements not contained in the checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of findings).	Determine whether any new regulations have been issued since the finalization of the manual. Determine whether the Federal facility has activities or facilities that are regulated but not addressed in the checklists. Verify that the Federal facility is in compliance with all applicable and newly issued regulations.

COMPLIANCE CATEGORY: OTHER ENVIRONMENTAL ISSUES Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
ENVIRONMENTAL NOISE O2.2. Missing Checklist Items O2.2.1.IA. Federal facilities are required to comply with all applicable state regulatory requirements not contained in the checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of findings).	Determine whether any new regulations have been issued since the finalization of the manual. Determine whether the Federal facility has activities or facilities that are regulated but not addressed in the checklists. Verify that the Federal facility is in compliance with all applicable and newly issued regulations.

COMPLIANCE CATEGORY: OTHER ENVIRONMENTAL ISSUES Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
ENVIRONMENTAL NOISE O2.5. State-Specific Requirements O2.5.1.IA. Motor vehicles must be equipped with mufflers (Iowa Code Annotated, Section 321.436).	Verify that motor vehicles are equipped with mufflers in good working order. Verify that muffler cutouts, bypasses, and other muffler-circumventing devices are not installed or operated on motor vehicles.

COMPLIANCE CATEGORY: OTHER ENVIRONMENTAL ISSUES Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
CERCLA CLEANUP SITES O3.2. Missing Checklist Items O3.2.1.IA. Federal facilities are required to comply with all applicable state regulatory requirements not contained in the checklist (a finding under this checklist item will have the citation of the applicable regulation as a basis of findings).	Determine whether any new regulations have been issued since the finalization of the manual. Determine whether the Federal facility has activities or facilities that are regulated but not addressed in the checklists. Verify that the Federal facility is in compliance with all applicable and newly issued regulations.

COMPLIANCE CATEGORY: OTHER ENVIRONMENTAL ISSUES Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
CERCLA CLEANUP SITES O3.20. State-Specific Requirements O3.20.1.IA. Hazardous waste or hazardous substance disposal sites may require specific actions (IAC 5 67-148.5).	Determine whether the Federal facility has a known or suspected hazardous waste or hazardous substance disposal site. Determine whether the hazardous waste or hazardous substance disposal site has been classified as one of following: - classification a : causing or representing an imminent danger of causing irreversible or irreparable damage to the public health or the environment - classification b: significant threat to the environment--action required - classification d: site properly closed--requires continued management - classification e: site properly closed, no evidence of present or potential adverse impact--no further action required. Verify that the Federal facility meets any requirements imposed by the Director. Verify that written approval is obtained from the Director prior to any substantial change in the use of a listed site or prior to selling, conveying, or transferring the title of a listed site.

COMPLIANCE CATEGORY: OTHER ENVIRONMENTAL ISSUES Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
POLLUTION PREVENTION O4.2. Missing Checklist Items O4.2.1.IA. Federal facilities are required to comply with all applicable state regulatory requirements not contained in the checklist (a finding under this checklist item will have the citation of the applicable regulation as a basis of findings).	Determine whether any new regulations have been issued since the finalization of the manual. Determine whether the Federal facility has activities or facilities that are regulated but not addressed in the checklists. Verify that the Federal facility is in compliance with all applicable and newly issued regulations.

SECTION 7

PESTICIDE MANAGEMENT

Iowa Supplement, February 2010

Iowa Supplement, February 2008 This section covers the state requirements for Pesticide Management and is intended to supplement the U.S. TEAM Guide. Refer to the U.S. TEAM Guide and the DOD Component Supplements for Federal, DOD, and service-specific requirements.

Definitions

- *Active Ingredient* - (Iowa Code Annotated (ICA) Title V, Chapter 206 Section 206.2 (ICA V: 206.2) [Citation Revised February 2008]:
 1. in the case of a pesticide other than a plant growth regulator, defoliant or desiccant, an ingredient which will prevent, destroy, repel, or mitigate insects, nematodes, fungi, rodents, weeds, or other pests
 2. in the case of a plant growth regulator, an ingredient which, through physiological action, will accelerate or retard the rate of growth or rate of 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 tissue (Pesticide Act of Iowa 206.2).
- *Adulterated* - applies to any pesticide if its strength or purity falls below the professed standard or quality as expressed on labeling or under which it is sold, or if any substance has been substituted wholly or in part for the article, or if any valuable constituent of the article has been wholly or in part abstracted (ICA V: 206.2) [Citation Revised February 2008].
- *Aerial Applicator* - a commercial applicator who is certified in #11- Aerial Application and who applies the pesticide by using an aircraft (IAC 21-44.1) [Added January 2009].
- *Aerial Applicator* - a licensed commercial applicator, certified in category #11, Aerial Application, who applies pesticides by using aircraft in compliance with Federal Aviation Administration regulations under Title 14 CFR Part 137 (1-1-08 Edition) (IAC 21-45.1) [Added February 2010].
- *Aerial Applicator Consultant* - a person who is a resident of Iowa and holds a valid applicator certification in category #11, Aerial Application, and either an Iowa commercial applicator license or pesticide dealer license, who coordinates the commercial application of pesticides by aerial applicators (IAC 21-45.1) [Added February 2010].
- *Antidote* - the most practical immediate treatment in case of poisoning, and includes first aid treatment (ICA V: 206.2) [Citation Revised February 2008].
- *Bulk Pesticide* - any registered pesticide which is transported or held in an individual container in undivided quantities of greater than 55 gal liquid measure or 100 lb net dry weight (Iowa Administrative Code (IAC) 21-44.1).
- *Bulk Repackaging* - the transfer of a registered pesticide from one bulk container (containing undivided quantities of greater than 55 gal liquid measure or 100 lb net dry weight) in an unaltered state in preparation for sale or distribution to another person (IAC 21-44.1).
- *Certified Applicator* - any individual who is certified under this chapter as authorized to use any pesticide (ICA V: 206.2) [Citation Revised February 2008].

- *Certified Commercial Applicator* - a pesticide applicator or individual who applies or uses a pesticide or device on any property of another for compensation (IAC 21-44.1) [Citation Revised February 2008; Citation February 2009].
- *Certified Handler* - a person employed by a licensed commercial applicator, noncommercial applicator, public applicator, or pesticide dealer who handles pesticides in other than unopened containers for the purposes of preparing, mixing, or loading pesticides for a application by another person, repackaging bulk pesticides or disposing of pesticide-related wastes from these activities (IAC 21-45.1).
- *Certified Private Applicator* - a certified applicator who uses or supervises the use of any pesticide which is classified for restricted use on property owned or rented by the applicator or the applicator's employer or, if applied without compensation other than trading of personal services between producers of agricultural commodities, on the property of another person (ICA V: 206.2) [Citation Revised February 2008].
- *Chemigation* - the application of a chemical to land or plants, if the chemical is injected into water used in an irrigation distribution system as provided in rules adopted by the department (ICA V: 206.2) [Citation Revised February 2008].
- *Commercial Applicator* - a person, corporation, or employee of a person or corporation who enters into a contract or an agreement for the sake of monetary payment and agrees to perform a service by applying a pesticide but does not include a farmer trading work with another, a person employed by a farmer not solely as a pesticide applicator who applies pesticide as an incidental part of the person's general duties, or a person who applies pesticide as an incidental part of a custom farming operation (ICA V: 206.2) [Citation Revised February 2008].
- *Defoliant* - any substance or mixture of substances intended for causing the leaves or foliage to drop from the plant with or without causing abscission (IAC 21-45.1).
- *Department* - the Pesticide Bureau of the Iowa Department of Agriculture and Land Stewardship (IAC 21-45.100).
- *Desiccant* - any substance or mixture of substances intended for artificially accelerating the drying of plant tissue (IAC 21-45.1).
- *Device* - any instrument or contrivance intended for trapping, destroying, repelling, or mitigating insects, birds, or rodents or destroying, repelling, or mitigating fungi, nematodes, weeds, or such other pests as may be designated by the secretary, but not including equipment used for the application of pesticides when sold separately therefrom (IAC 21-45.1).
- *Distribute* - to offer for sale, hold for sale, sell, barter, or supply pesticides in this state (IAC 21-45.1).
- *Fungi* - all nonchlorophyll-bearing thallophytes, that is, all nonchlorophyll-bearing plants of a lower order than mosses or liverworts, as for example, rusts, smuts, mildew, molds, yeasts, and bacteria except those on or in living man or other animals (IAC 21-45.1).
- *Fungicide* - any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any fungi (IAC 21-45.1).
- *Hazard* - a probability that a given pesticide will have an adverse effect on man or the environment in a given situation, the relative likelihood of danger or ill effect being dependent on a number of interrelated factors being present at any given time (ICA V: 206.2) [Citation Revised February 2008].
- *Herbicide* - any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any undesirable weed or plant (IAC 21-45.1).

- *Inert Ingredient* - an ingredient which is not an active ingredient (ICA V: 206.2) [Citation Revised February 2008].
- *Ingredient Statement* - is either (ICA V: 206.2) [Citation Revised February 2008]:
 1. a statement of the name and percentage by weight of each active ingredient, together with the total percentage of the inert ingredients, in the pesticide
 2. when the pesticide contains arsenic in any form, the ingredient statement shall also include percentages of total and water soluble arsenic, each calculated as elemental arsenic (*Pesticide Act of Iowa 206.2*).
- *Insect* - any of the numerous small invertebrate animals generally having the body more or less obviously segmented, for the most part belonging to the class Insecta, comprising six-legged, usually winged forms, as for example, beetles, bugs, bees, flies and to other allied classes of arthropods whose members are wingless and usually have more than six legs, as for example, spiders, mites, ticks, centipedes, and wood lice (IAC 21-45.1).
- *Insecticide* - any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any insects and related forms which may be present in any environment whatsoever (IAC 21-45.1).
- *Label* - the written, printed, or graphic matter on, or attached to, the pesticide or device, or the immediate container thereof, and the outside container or wrapper of the retail package, if any there be, of the pesticide or device (ICA V: 206.2) [Citation Revised February 2008].
- *Labeling* - all labels and other written, printed, or graphic matter (ICA V: 206.2) [Citation Revised February 2008]:
 1. upon the pesticide or device or any of its containers or wrappers
 2. accompanying the pesticide or device at any time
 3. to which reference is made on the label or in literature accompanying the pesticide or device.
- *Misbranded* - applies to (ICA V: 206.2) [Citation Revised February 2008]:
 1. any pesticide or device if its labeling bears any statement, design, or graphic representation relative thereto, or to its ingredients, which is false or misleading in any particular
 2. any pesticide that is an imitation of, or is offered for sale under, the name of another pesticide
 3. any pesticide if its labeling bears any reference to registration under this chapter, when not so registered
 4. any pesticide if the labeling accompanying it does not contain directions for use which are necessary and if complied with adequate for the protection of the public
 5. any pesticide if the label does not contain a warning or caution statement which may be necessary and if complied with adequate to prevent injury to living persons and other vertebrate animals
 6. any pesticide if the label does not bear an ingredient statement on that part of the immediate container and on the outside container or wrapper, if there is to be one, through which the ingredient statement on the container cannot be clearly read, of the retail package which is presented or displayed under customary conditions of purchase
 7. any pesticide if any word, statement, or any other information required by or under a authority of this chapter to appear on the label or labeling is not prominently placed thereon with such conspicuousness as compared with other words, statements, designs, or graphic matter in the labeling and in such terms as to render it likely to be read and understood by the ordinary individual under customary conditions of purchase and use
 8. any pesticide if in the case of an insecticide, nematocide, fungicide, or herbicide when used as directed or in accordance with commonly recognized practice it shall be injurious to living persons or other vertebrate animals, or vegetation, except weeds, to which it is applied, or to the persons applying such pesticide
 9. any pesticide if in the case of a plant growth regulator, defoliant, or desiccant when used as directed it shall be injurious to living man or other vertebrate animals, or vegetation to which it is applied, or to the person applying such pesticide; provided, that physical or physiological effects on plants or parts thereof shall not be deemed to be injury, when this is the purpose for which the plant growth regulator, defoliant, or desiccant was applied, in accordance with the label claims and recommendations.

- *Mobile Containers* - containers designed and used for transporting pesticide materials (IAC 21-44.1).
- *Nematocide* - any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating nematodes or subterranean pests (IAC 21-45.1).
- *Nematode* - invertebrate animals of the phylum nemathelminthes and class nematoda, that is, unsegmented round worms with elongated, fusiform or saclike bodies covered with cuticle and inhabiting soil, water, plants or plant parts; may also be called nemas or eelworms (IAC 21-45.1).
- *Noncommercial Applicator* - any person who applies restricted use pesticides on lands or property owned, rented, or leased by the applicator or the applicator's employer. This definition shall not apply to private applicators using restricted use pesticides in the production of agricultural commodities (IAC 21-45.1).
- *Nonmobile Containers* - all containers not defined as mobile (IAC 21-44.1).
- *Permanent Pesticide Storage and Mixing Site* - site where pesticides are being stored for more than 30 days per year and at which more than 300 gal of liquid pesticide or 300 lb of dry pesticide are being mixed, repackaged, or transferred from one container to another within a 30-day period (IAC 21-44.1).
- *Permit* - a written certificate, issued by the secretary or the secretary's agent under rules adopted by the department authorizing the use of certain state restricted use pesticides (*Pesticide Act of Iowa 206.2*).
- *Person* - any individual, partnership, association, corporation, or organized group of persons whether incorporated or not (ICA V: 206.2) [Citation Revised February 2008].
- *Pesticide* - (ICA V: 206.2) [Revised February 2008]:
 1. any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating directly or indirectly any insects, rodents, nematodes, fungi, weeds, and other forms of plant or animal life or viruses, except viruses on or in living persons, which the secretary shall declare to be a pest
 2. any substances intended for use as a plant growth regulator, defoliant, or desiccant .
- *Pesticide Dealer* - any person who distributes restricted use pesticides; pesticide for use by commercial or public pesticide applicators; or general use pesticides labeled for agricultural or lawn and garden use with the exception of dealers whose gross annual pesticide sales are less than ten thousand dollars for each business location owned or operated by the dealer (ICA V: 206.2) [Citation Revised February 2008].
- *Plant Growth Regulator* - any substance or mixture of substances intended, through physiological action, for accelerating or retarding the rate of growth or rate of maturation, or for otherwise altering the behavior of ornamental or crop plants or the produce thereof, but shall not include substances to the extent that they are intended as plant nutrients, trace elements, nutritional chemicals, plant inoculants, and soil amendments (ICA V: 206.2) [Citation Revised February 2008].
- *Public Applicator* - an individual who applies pesticides as an employee of a state agency, county, municipal corporation, or other governmental agency. This term does not include employees who work only under the direct supervision of a public applicator (ICA V: 206.2) [Citation Revised February 2008].
- *Registrant* - the person registering any pesticide or device or who has obtained a certificate of license from the department pursuant to the provisions of this chapter (ICA V: 206.2) [Citation Revised February 2008].
- *Restricted-Use Pesticide* - any pesticide restricted as to use by rule of the secretary as adopted under section 206.20 (ICA V: 206.2) [Citation Revised February 2008].
- *Rodent* - any animal of the order Rodentia, including but not limited to, rats, mice, rabbits, gophers, prairie dogs, and squirrels (IAC 21-45.1).

- *Rodenticide* - any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating rodents or any other vertebrate animal which the secretary shall designate to be a pest (IAC 21-45.1).
- *Secondary Containment* - any structure used to prevent runoff or leaching of pesticide materials (IAC 21-44.1).
- *State Restricted-Use Pesticide* - a pesticide which is restricted for sale, use, or distribution under section 455B.491 (ICA V: 206.2) [Citation Revised February 2008].
- *Toxic to Humans* - not generally recognized as safe as provided by the United States Food and Drug Administration pursuant to 21 C.F.R. pt. 182 (ICA V: 206.2) [Citation Revised February 2008].
- *Under the Direct Supervision Of* - the act or process whereby the application of a pesticide is made by a competent person acting under the instructions and control of a certified applicator or a state licensed commercial applicator who is available if and when needed, even though such certified applicator is not physically present at the time and place the pesticide is applied (ICA V: 206.2) [Citation Revised February 2008].
- *Unreasonable Adverse Effects on the Environment* - any unreasonable risk to man or the environment, taking into account the economic, social, and environmental costs and benefits of the use of any pesticide (ICA V: 206.2) [Citation Revised February 2008].
- *Use of a Pesticide Contrary To Its Labeling* - to use any registered pesticide in a manner not permitted by the labeling, provided that the phrase shall not include (IAC 21-45.1):
 1. applying a pesticide for agricultural or horticultural purposes only at any dosage, concentration, or frequency less than that specified on the labeling
 2. applying a pesticide for agricultural or horticultural purposes only against any target pest not specified on the labeling if the application is to the crop, animal, or site specified on the labeling unless the labeling specifically states that the pesticide may be used only for the pests specified on the labeling; or
 3. employing any method of application not prohibited by the labeling for agricultural or horticultural purposes only
 4. mixing pesticides or mixing pesticide with a fertilizer when such mixture is not prohibited by the labeling for agricultural or horticultural purposes only.
- *Weed* - any plant which grows where not wanted (IAC 21-45.1).

**PESTICIDE MANAGEMENT
GUIDANCE FOR IOWA CHECKLIST USERS**

REFER TO CHECKLIST ITEMS:

Missing Checklist Items	PM.2.1.IA.
Pesticide Applicators	PM.5.1.IA. through PM.5.4.IA.
Pesticide Application	
General: Labeling	PM.10.1.IA. through PM.10.9.IA.
Equipment	PM.15.1.IA.
Agriculture	PM.20.1.IA. through PM.20.3.IA.
Aerial	PM.25.1.IA. through PM.25.4.IA.
Other	PM.35.1.IA. and PM.35.2.IA.
Documentation	PM.40.1.IA.
Storage/Mixing/Handling	PM.45.1.IA. through PM.45.6.IA.
Transportation	PM.50.1.IA.
Disposal	PM.55.1.IA. and PM.55.2.IA.
Bulk Pesticides	PM.60.1.IA. through PM.60.5.IA.
Specific Requirements for Counties and Local Areas	PM.65.1.IA.

**PESTICIDE MANAGEMENT
GUIDANCE FOR IOWA APPENDIX USERS**

REFER TO APPENDIX NUMBER:

REFER TO APPENDIX ITEMS:

7-1

Atrazine Management Areas

COMPLIANCE CATEGORY: PESTICIDE MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
PM.2. MISSING CHECKLIST ITEMS PM.2.1.IA. Federal facilities are required to comply with all applicable state regulatory requirements not contained in the checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of findings).	Determine whether any new regulations have been issued since the finalization of the manual. Determine whether the Federal facility has activities or facilities that are regulated but not addressed in the checklists. Verify that the Federal facility is in compliance with all applicable and newly issued regulations.

COMPLIANCE CATEGORY: PESTICIDE MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
PM.5. PESTICIDE APPLICATORS PM.5.1.IA. Pesticide applicators must meet specific licensing requirements (IAC 21-45.22 (1), (2), (7), (9), and 45.30). PM.5.2.IA. Employees of licensed pesticide applicators must be certified to perform specific activities (IAC 21-45.22(15)) [Revised April 2005]. PM.5.3.IA. Unlicensed persons applying general use pesticides must comply with specific requirements (IAC	(NOTE: Iowa adopts the Federal restricted use pesticide list in 40 CFR 162.31, as of 1 July 1983. See U. S. TEAM Guide.) Verify that commercial, noncommercial, and public applicators are properly licensed. Verify that the applicator is complying with the conditions of the license. Verify that prior to any application of a restricted-use pesticide, a commercial, noncommercial, or public applicator is certified. Verify that an uncertified applicator applies restricted-use pesticide under the direct supervision of a certified applicator. Verify that certified applicators acting in a supervisory role demonstrate a practical knowledge of Federal and state supervisory requirements. (NOTE: The licensing requirements do not apply to the following individuals: - persons using hand-powered or self-propelled equipment not exceeding seven and one-half horsepower to apply pesticides to lawns, or ornamental shrubs, or trees not to exceed 12 ft high, as an incidental part of taking care of household lawns and yards - an employee of a public agency who applies pesticides classified for general use and which are in ready-to-use formulations.) Verify that anyone employed by a licensed commercial applicator, licensed noncommercial applicator, or a licensed public applicator to handle pesticides in open containers for the purposes of preparing, mixing, or loading pesticides for application by another person, repackaging bulk pesticides, or disposing of pesticide-related wastes from these activities, is a certified handler. Verify that a certified handler works under the direct supervision of a certified commercial, certified noncommercial, or certified public applicator employed by the same firm or agency. Verify that an unlicensed individual applying a general use pesticide has provided the secretary with evidence that the application is under the direct supervision of a licensed commercial or public applicator.

COMPLIANCE CATEGORY: PESTICIDE MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
21-45.29). PM.5.4.IA. Private pesticide applicators must be certified (IAC 21-45.22(3)).	Verify that a private applicator is certified by the Department of Agriculture and Land Stewardship. Verify that the applicator is in compliance with the certification requirements.

COMPLIANCE CATEGORY: PESTICIDE MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
PESTICIDE APPLICATION PM.10. General PM.10.1.IA. Pesticide application must be conducted according to labeling requirements (ICA V: 206.11(3)(b)) [Citation Revised February 2008]. PM.10.2.IA. Commercial and public applicators who apply pesticides within urban areas in municipalities must comply with specific notification procedures (IA C 21-45.50).	Verify that pesticide use is consistent with its labeling. Verify that a commercial or public applicator who applies pesticides within urban areas posts notification signs at the start of the application and for at least 24 h following the application, or longer if required by the reentry directions on the label. Verify that the material used for the signs, as well as the information conveyed by them, complies with state requirements. Verify that notification signs for an application to a residential lawn: - project at least 12 in. above the top of the grass line or 18 in. to the top of the signs - are posted on a lawn or yard between 2 and 5 ft from the sidewalk or street, or in the case of open backyards, between 2 and 5 ft from the back lot line - if landscaping or other obstructions prevent compliance with the letter of this rule, the sign is posted in a way that reasonably complies with the rule's intent. Verify that notification signs for an application to a golf course: - are posted in a conspicuous manner near the first tee of any nine hole course - are constructed of a weather-resistant material and a minimum size of 8.5 in. by 11 in. - the signs read: PESTICIDES ARE PERIODICALLY APPLIED TO THE GOLF COURSE. IF DESIRED, YOU MAY CONTACT YOUR GOLF COURSE SUPERINTENDENT OR PERSON IN CHARGE FOR FURTHER INFORMATION - the sign is displayed prior to the application of any pesticide on the golf course and left in place for at least 24 h following any pesticide application. Verify that notification signs for parks, athletic fields, playgrounds, or other similar recreational property are conspicuously posted immediately adjacent to areas within the property where pesticides have been applied, and at or near the

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	entrances to the property where pesticides have been applied. Verify that notification signs for an application to public rights-of-way of highways, roads, streets, alleys, sidewalks, and recreational trails within the corporate limits of municipalities have the following characteristics: - posted in a manner that provides reasonable notice to the occupants of properties immediately adjacent to the area being treated - at least one sign is posted at both the beginning and the end of each residential block - placed in a manner to be readable from the adjacent property - a minimum of 2 signs are posted to denote the beginning and the end of the area to be treated. (NOTE: The requirements of this rule do not apply to the application of pesticides within a structure or within 6 ft of the outside perimeter of a structure, or to pesticide applications made by a homeowner or tenant to their property.) (NOTE: In lieu of the requirement for public notification, a facility may maintain a registry of persons requesting to receive notification prior to pesticide application and provide notification to those individuals at least 24 h prior to a pesticide application made adjacent to their property.)
PM.10.3.IA. Pesticide applicators using thallium must comply with specific requirements (IAC 21-45.23).	Verify that the use of thallium or any thallium compound is limited to a facility in its official duties in pest control, to regularly licensed pest control operators for use in their own service work, or in conjunction with research or chemical laboratories in their respective fields.
PM.10.4.IA. The application of pesticides containing dichloro diphenyl trichloroethane (DDT) or dichloro diphenyl dichloroethane (DDD) must comply with specific requirements (IAC 21-45.32).	Verify that pesticides containing dichloro diphenyl trichloroethane (DDT) or dichloro diphenyl dichloroethane (DDD) are not used except for control of pests of public health importance and pests subject to state and Federal quarantines.
PM.10.5.IA. Pesticide applicators using inorganic arsenic must have the approval of the Department (IAC 21-45.33).	Verify that formulations of inorganic arsenic are not used or distributed as a pesticide except as permitted by the Department.

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PM.10.6.IA. Pesticide applicators must not use the pesticide heptachlor to prevent, destroy, or repel mosquitoes or flies (IAC 21-45.34).	Verify that a pesticide applicator does not use or distribute heptachlor to prevent, destroy, or repel mosquitoes or flies.
PM.10.7.IA. Pesticide applicators using lindane must comply with specific requirements (IAC 21-45.35).	Verify that formulations of pesticides containing lindane or crystalline lindane are not used or distributed when the lindane is to be vaporized through the use of thermal vaporizing devices.
PM.10.8.IA. Pesticide applicators using any pesticide containing the active ingredient atrazine must comply with specific requirements (IAC 21-45.51).	Verify that all pesticides containing the active ingredient atrazine, or any combination of active ingredients including atrazine, are used by certified applicators only. Verify that the application rate for the actual active ingredient atrazine is limited to 3 lb or less actual active ingredient per acre per calendar year. Verify that pesticides or any other substance with the active ingredient atrazine are not applied within 50 ft of a sinkhole, well, cistern, lake, water impoundment, or other similar areas. Verify that pesticides, or any other substance containing the active ingredient atrazine, are not mixed, loaded, or repackaged within 100 ft of any well, cistern, sinkhole, streambed, lake, water impoundment, or other similar areas. Verify that atrazine mixing, loading, and equipment cleanout is carried out in a manner that meets the secondary containment requirements, or in the field of application, provided all other restrictions are followed regarding the application of atrazine, or rinsates containing atrazine, to labeled use areas. Verify that equipment and container wash waters are applied to labeled use areas, or used as part of dilution makeup water and applied to labeled use areas, in accordance with the label instructions or any other restrictions that might apply. (NOTE: Persons conducting research with atrazine are exempt from the use limitations described in this rule provided that such research is under the supervision of a federal or state agency or educational institution authorized to conduct research and properly certified.)

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PESTICIDE APPLICATION PM.15. Equipment PM.15.1.IA. Facilities that wash pesticide handling equipment at a permanent pesticide mixing and storage site (see definitions) must comply with specific requirements (I AC 2 1-44.10(2), (4), and (5)).	Verify that any washing of pesticide handling equipment at a permanent pesticide storage and mixing site is conducted within an area that drains to a watertight containment structure. Verify that pesticide rinsates or wash waters from pesticide equipment are not disposed in the following manner: - through storm sewer systems - through sanitary sewer systems unless a National Pollutant Discharge Elimination System Permit is obtained - through sanitary sewers connected to a publicly owned treatment works unless prior approval of the sanitary sewer authority is obtained and in accordance with the discharge limitations of a pretreatment agreement or sewer use ordinance. Verify that any drainage into a containment structure is monitored and properly managed. Verify that any rinsates and minor spillages which have accumulated in the secondary containment structure are disposed of as provided by the product's original labeling. Verify that the facility is equipped with adequate personal protective equipment as required by each label of each pesticide handled, and as needed for the number of employees handling these pesticides. Verify that emergency first-aid provisions are maintained in an area immediately accessible by all employees, if and when needed.

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PM.20. Agriculture	
PM.20.1.IA. [Deleted February 2008].	(NOTE: ICA VL 206A, Chemigation, was repealed.)
PM.20.2.IA. Pesticide application using the pesticide Command 6 EC must comply with specific requirements (IAC 21-45.46).	Verify that the pesticide Command 6 EC herbicide USEPA registration number 279-3054, or a n y i d e n t i c a l l y f o r m u l a t e d c o m p o u n d, i s s o i l i n c o r p o r a t e d i m m e d i a t e l y f o l l o w i n g a p p l i c a t i o n. (NOTE: The active ingredient of Command 6EC Herbicide is 2-(2-Chlorophenyl) methyl-4, 4-dimethyl-3-isoxazolidinone, 64.3 percent.) (NOTE: The method of application must be limited to ground equipment.)
PM.20.3.IA. Commercial applicators must not apply pesticides labeled as toxic to bees to blooming crops located within one mile of a registered apiary (IAC 21-45.31(2)) [Added February 2010].	Verify that between 8 a.m. and 6 p.m., a commercial applicator does not apply pesticides labeled as toxic to bees to blooming crops located within one mile of a registered apiary. Verify that a commercial applicator maintains the one-mile distance from apiaries that are registered and listed on the sensitive crop registry on the first day of each month.

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PESTICIDE APPLICATION PM.25. Aerial PM.25.1.IA. If the spray component of an aircraft is being drained or repaired during aircraft maintenance, secondary containment is required (IAC 21-44.12) [Added February 2009]. PM.25.2.IA. Licensed aerial applicators must operate in consultation with an aerial applicator consultant (IAC 21-45.22(17)(a), (b)(8), and (b)(10)) [Added February 2010]. PM.25.3.IA. An aerial applicator consultant must meet specific requirements (IAC 21-45.22(17)(b) and (d)) [Added February 2010].	Verify that, if the spray component of an aircraft is being drained or repaired during aircraft maintenance, secondary containment with permanent devices or portable devices suitable for use with pesticides is required. Verify that the licensed aerial applicator applying pesticides to agricultural land operate in consultation with an aerial applicator consultant. Verify that the aerial applicator notifies the pesticide bureau when the aerial applicator begins working with a new aerial applicator consultant. Verify that, while in the air, all pilots have an electronic communication device capable of communicating with the consultant. Verify that requirements for a category # 11 aerial applicator certification and either a commercial pesticide applicator license or pesticide dealer license are met. Verify that the aerial applicator consultant registers with the pesticide bureau . Verify that the aerial applicator consultant meets with each aerial applicator prior to application of pesticides. Verify that the aerial applicator consultant using a checklist provided by the pesticide bureau, verifies compliance with: - Iowa's pesticide rules - the requirements of the Federal Aviation Administration - the requirements of the Iowa Department of transportation. Verify that a copy of the completed checklist is maintained on file for 3 years with the aerial applicator consultant. Verify that the aerial applicator consultant provides detailed aerial maps for the intended application location which clearly depict field boundaries, roads, dwellings, adjacent fields, water bodies, and other pertinent information, as well

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PESTICIDE APPLICATION PM.35. Other PM.35.1.IA. Applicators of rodenticides must comply with specific requirements (IAC 21-45.20). PM.35.2.IA. Aquatic pesticide applicators must comply with specific requirements (IAC 567-66.1).	Verify that before an applicator uses the rodenticides sodium fluoracetate (1080), thallium sulfate, or phosphorous pastes, the applicator notifies the Department of the following: - the location or site where the rodenticide is to be used - date the application is to be made - the amount of hazardous rodenticide to be used. Verify that only applicators holding a Category 5 permit (i.e. aquatic pest control certification permit) apply aquatic pesticides to any water designated as Class A, Class C, high quality, or high quality resource.

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PESTICIDE APPLICATION PM.40. Documentation PM.40.1.IA. All commercial applicators must comply with record keeping requirements (IAC 21-45.26(3)) [Revised February 2009; Revised February 2010].	Verify that commercial applicators maintain pesticide application records for a period of 3 yr from the date of application which include the following: - the name and license number of the licensee - the name and address of the landowner or customer - address of the place of application of restricted use pesticide - date of pesticide application - trade name of pesticide product used - the quantity of pesticide product used and the concentration or rate of application - if applicable, the temperature and the direction and estimated velocity of wind at time of application to any outdoor area - use of 'restricted use' pesticide - time pesticide application begins and ends.

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PM.45. STORAGE/ MIXING/ HANDLING PM.45.1.IA. Storage and mixing sites must provide containment (IAC 21-44.2 and 44.10(6)) [Revised February 2009]. PM.45.2.IA. Storage and mixing of liquid fertilizers and liquid soil conditioners must comply with specific requirements (IAC 21-44.54, 44.55, and 44.57(1)).	Verify that all non-bulk pesticide storage containers are located within a watertight secondary containment facility. Verify that all mixing, repackaging and transfer of pesticides from one container to another performed at a permanent pesticide storage and mixing site is done within a containment area. Verify that the designated site is paved with asphalt or concrete and elevated above the surrounding area or curbed so as not to receive runoff from surrounding areas. Verify that the designated site slopes to a discharge point that allows materials to flow to a watertight containment structure. (NOTE: Field mixing and transferring of pesticides, including field rinsing of equipment, is exempted from the on-site containment. Rinsates are field applied at rates compatible with pesticide product labeling.) Verify that there is no mixing and transferring of pesticides and rinsing of equipment conducted on public highways, roads and streets. Verify that any loading, unloading, and mixing of liquid fertilizer or liquid soil conditioners, unless performed in the field of application, is done within a containment area. Verify that the containment area is paved with asphalt, concrete, or other impervious material, and large enough to prevent spillage onto unprotected areas. Verify that the containment area slopes to a recovery system that allows collected materials to move to a secondary containment structure. Verify that the containment area uses curbs or other means to prevent spilled materials from running out of the containment area. Verify that all liquid fertilizer and soil conditioner storage facilities are located within a secondary containment structure. Verify that the secondary containment structure is constructed in accordance with state requirements. Verify that upon completion of construction, the facility certifies that the

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PM.45.3.IA. Storage and mixing of nonliquid fertilizers or nonliquid soil conditioners must comply with specific requirements (IAC 21-44.54, 44.56, 44.57 (2), (3), (4), and (6)).	construction was completed consistent with the plans submitted for approval. Verify that any loading or mixing of nonliquid fertilizers or nonliquid soil conditioners at permanent storage sites is done in an area paved with asphalt, concrete, or other impervious materials. Verify that the containment area is constructed, using curbs or other means, to prevent run-on or runoff of storm water generated by a 4-in. rain, and that it contains a recessed catch basin so that contaminated water can be moved to storage tanks or a secondary containment area. Verify that all nonliquid fertilizer and soil conditioner materials are stored within an area that drains into a secondary containment structure. Verify that the secondary containment structure is constructed in accordance with state requirements. Verify that upon completion of construction, the facility certifies that the construction was completed consistent with the plans submitted for approval. Verify that contaminated water or other materials is field applied at normal fertilizer rates or used in a liquid mixing operation. Verify that fertilizers and soil conditioners are handled in a manner that minimizes dust and vapors from movement off of the site. (NOTE: A spill containment structure is not required if loading, unloading, or mixing of a nonliquid fertilizer or nonliquid soil conditioners are done entirely within an enclosed building and no washing operations are conducted within the enclosed area.) (NOTE: Loading/unloading nonliquid fertilizer or nonliquid soil conditioners are exempt from the containment area provisions provided any materials spilled during the loading/unloading operations are promptly cleaned up and fed back into the loading/unloading system.)
PM.45.4.IA. Pesticide containers used for storage and handling must comply with specific requirements (IAC 21-44.8) [Added February 2009].	Verify that containers used for pesticide storage and handling are constructed of materials compatible with the pesticide stored and the conditions of storage, and maintained in a manner so as to minimize the possibility of a spill. Verify that containers, pipes and valves are protected against reasonably foreseeable risks of damage by trucks and other moving vehicles.
PM.45.5.IA. Facilities used for storage, mixing, and	Verify that design plans for the construction of any pesticide facilities are

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PM.50. TRANSPORTATION PM.50.1.IA. Pesticides shipped or delivered for experimental use must comply with specific requirements (IAC 21-45.18).	Verify that a pesticide shipped to a facility for experimental use is delivered under the supervision of a Federal or state agency authorized by law to conduct research.

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PM.55. DISPOSAL PM.55.1.IA. Persons who discard pesticides or pesticide containers must comply with specific requirements (ICA V: 206.11 and, IAC 21-44.10(4)) [Citation Revised February 2008]. PM.55.2.IA. Waste pesticides may be land applied under specific conditions (IAC 567 - 121.4(2)) [Added April 2002; Revised April 2003 ; Revised February 2007].	Verify that anyone who discards a pesticide or a pesticide container does so in a manner so as not to cause injury to humans, vegetation, crops, livestock, wildlife, pollinating insects, or to pollute any water supply or water way. Verify that a ny r insates a nd minor s pillages which have a ccumulated i n th e secondary c ontainment s tructure a re di sposed of a s pr ovided by t he pr oduct's original labeling. (NOTE: PM.55.2. is repeated in SO.200.15.IA.) (NOTE: Waste pesticides may be land applied: - if a d etermination is made by the Department of Natural Resources that the disposal method is the best available disposal methodology - if the applicant submits an accepted permit plan.) Verify that land application sites that apply waste pesticides meet the following requirements: - maintain records detailing the waste and the proposed and actual application rates (along with any other i nformation r equired by t he Department) for a period (and s ubmitted t o t he D epartment o n a s chedule) s pecified b y t he Department - inform t he Department i mmediately o f any d ivergence from t he p lan, the details of that divergence and the impacts to be expected - meet t he o ther r equirements o f t he D epartment as s pecified i n special provisions of the permit.

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PM.60. BULK PESTICIDES PM.60.1.IA. Storage, mixing, handling, or repackaging of bulk pesticides must be accomplished within a containment area (IAC 21-44.2 44.4, and 44.7(3)). PM.60.2.IA. Facilities that handle pesticides storage containers must comply with specific requirements (IAC 21-44.2, 44.8(1), 44.9(1), and 44.10 (3)) [Citation Revised April 2002; Revised February 2009].	Verify that any mixing, repackaging, or transfer of pesticides from one container to another performed at a permanent pesticide storage and mixing site is done within a containment area. Verify that the designated site is paved with asphalt or concrete, that it is elevated above the surrounding area or curbed so as not to receive runoff that would overload the recovery system, and that it slopes to a discharge point that allows materials to flow to a watertight containment structure. Verify that precipitation is not allowed to accumulate in the secondary containment facility. (NOTE: Construction of containment areas must be done in accordance with approved plans and be certified after completion of construction.) Verify that containers used for pesticide storage and handling are constructed of materials compatible with the pesticide stored and the conditions of storage and maintained in a manner so as to minimize the possibility of a spill. Verify that all nonmobile bulk pesticide storage containers are located within a watertight secondary containment facility. Verify that mobile bulk pesticide containers are secured to prevent significant movement during transportation. Verify that bulk pesticide storage containers bear a registered product label affixed in a prominent location on the container and designed to remain intact and legible through active use of the container. Verify that the bulk pesticide storage containers have locking devices and that all valves are closed and locked when the facility is left unattended. Verify that containers, pipes, and valves are protected against reasonably foreseeable risks of damage by trucks and other moving vehicles. Verify that prior to refilling, bulk pesticide containers are thoroughly cleaned, except when a sealed or dedicated recyclable bulk pesticide container is refilled with the same labeled pesticide product as the preceding product.
PM.60.3.IA. Secondary	Verify that base and walls of secondary containment facilities are constructed of

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containment for nonmobile bulk pesticide storage and mixing must comply with specific containment requirements (IAC 21-44.7(1) through (3)) [Added February 2009].	concrete, steel or other impervious materials which are compatible with the pesticides being stored and will maintain their integrity under fire conditions. Verify that storage containers are anchored, as necessary, to prevent flotation or instability in the event of discharge into the secondary containment facility. Verify that routine inspections ensure against cracks or other conditions that may reduce the effectiveness of the containment facility. Verify that cracks that occur in a secondary containment structure are repaired with an acceptable sealant, and other repairs made as needed to maintain the effectiveness of the containment facility. Verify that the diked area does not have a relief outlet and valve. Verify that the base slopes to a collecting spot where precipitation water may be pumped out, provided the liquid is not contaminated with pesticides. Verify that, if contaminated with a pesticide, the liquid is disposed of in accordance with applicable hazardous or solid waste requirements or field applied according to the pesticide label instructions. Verify that storage in other than an enclosed structure meets the following requirements: - the secondary containment for nonmobile bulk liquid pesticide storage is constructed with a volume sufficient to contain a minimum of 110 percent of the capacity of the largest single container, plus the space occupied by other tanks located within the secondary containment structure - the secondary containment for nonmobile bulk dry pesticide storage is constructed to contain any releases of dry pesticide and has, as a minimum, a 6-inch high curb separated horizontally from the storage vessel a minimum of three feet. Verify that storage in an enclosed structure meets the following requirements: - the secondary containment for nonmobile bulk liquid pesticide storage is constructed with a volume sufficient to contain a minimum of 100 percent of the capacity of the largest single container, plus the space occupied by other tanks located within the secondary containment structure - the secondary containment for nonmobile bulk dry pesticide storage is constructed to contain any releases of dry pesticide and has, as a minimum, a 6-inch high curb separated horizontally from the storage vessel a minimum of three feet on an open side - nonmobile bulk dry pesticide storage tanks constructed within 3 feet of a permanent wall provided the wall is lined with an impervious surface which contains and directs any spilled material into a containment structure, according to the engineer's design plans. Verify that precipitation does not accumulate in the secondary containment

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PM.60.4.IA. Pesticides must be handled in a manner that minimizes the movement of pesticide dusts, aerosols and vapors from the pesticide storage and mixing site (IAC 21-44.7 (5)) [Added February 2009].	facility. Verify that pesticides are handled in a manner that minimizes the movement of pesticide dusts, aerosols and vapors from the pesticide storage and mixing site. Verify that primary vents on all bulk dry pesticide storage tanks are equipped with a dust filter capable of handling 500 cubic feet per minute air flow. Verify that filters on all bulk dry pesticide storage tanks retain all particles greater than ten microns in size and retain greater than 90 percent of particles between three and ten microns in size. Verify that pressure relief valves on bulk dry pesticide storage tanks are enclosed in a filter arrangement capable of retaining 100 percent of ten micron particles. Verify that filters are maintained on a regular basis and replaced when necessary to maintain the proper filtering capacity. Verify that all bulk dry pesticide storage tanks and loading areas and all plant site transfer systems are equipped with fittings which facilitate closed system handling.
PM.60.5.IA. Discharges from secondary containment of non mobile bulk pesticide storage and mixing facilities must meet specific requirement (IAC 21-44.7 (6)) [Added February 2009].	Verify that discharges into a secondary containment facility are promptly recovered to the maximum extent possible. Verify that the Iowa Department of Natural Resources, the county sheriff or local police is contacted as soon as possible, but not later than 6 hours of onset or discovery of spill.

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PM.65. SPECIFIC REQUIREMENTS FOR COUNTIES AND LOCAL AREAS PM.65.1.IA. Pesticide applicators using any pesticide containing the active ingredient atrazine must comply with specific requirements (IAC 21-45.51).	Verify that the application of atrazine is limited to no more than 1.5 lb of the actual active ingredient atrazine per acre per calendar year in the following designated areas: - Allamakee, Clayton, Dubuque, Floyd, Humboldt, Jackson, and Winneshiek counties - all areas within the townships of the counties listed in Appendix 7-1.

Appendix 7-1

Atrazine Management Areas

(Source: IAC 21-45.51)

Counties	Townships
Black Hawk	Poyner
Bremer	Douglas, Fredericka, Jackson, Jefferson, Lafayette, Polk, and Washington
Butler	Bennezette, Butler, Coldwater, Dayton, Fremont, and Pittsford
Cerro Gordo	Owen and Portland
Chickasaw	Bradford, Chickasaw, and Deerfield
Clinton	Elk River, and Hampshire
Delaware	Bremen, C olony, D elhi, E lk, M ilo, N orth F ork, O neida, S outh F ork, a nd Union
Fayette	Auburn, C lermont, D over, E den, F airfield, I llyria, P leasant V alley, U nion, Westfield, and Windsor
Howard	Albion, Chester, Forest City, New Oregon, and Vernon Springs
Jones	Castle G rove, Clay, H ale, L owell, O xford, R ichland, W ashington, a nd Wyoming
Kossuth	Sherman
Linn	Marion
Mitchell	Burr O ak, C edar, L iberty, M itchell, N ewberg, O sage, O tranto, R ock, Saint Ansgar, Union, and West Lincoln
Pocahontas	Garfield
Worth	Barton and Kensett
Wright	Grant, Lincoln, and Wall Lake

SECTION 8

PETROLEUM, OIL, AND LUBRICANT (POL) MANAGEMENT

Iowa Supplement, February 2010

This section covers the state requirements for POL Management and is intended to supplement the U.S. TEAM Guide. Refer to the U.S. TEAM Guide and the DOD Component Supplements for Federal, DOD, and service-specific requirements.

Definitions

- *B-Blend* - biodiesel blended fuel as defined in Iowa Code section 214A.1 with the blend including no more than 20 percent biodiesel (IAC 661-221.4(2)) [Added February 2010].
- *Contaminated* - used oil mixed with hazardous waste as defined by the *Resource Conservation and Recovery Act* or with incompatible waste including, but not limited to: antifreeze, solvents, paints, pesticides, or household hazardous materials. Minimal amounts of vehicle fuel are not considered an incompatible waste (Iowa Administrative Code (IAC) 567-119.2) [Revised February 2009].
- *Customer* - any individual who purchases oil or oil filters or generates used oil or used oil filters for personal or family purposes, including a farmer or farm household (IAC 567-119.2) [Revised February 2009].
- *Department* - the Department of Natural Resources (IAC 567-119.2 and 567-131.1) [Citation Revised February 2009].
- *E-Blend* - a blend of petroleum and ethanol including more than 15 percent ethanol intended for use as a motor vehicle fuel (IAC 661-221.4(2)) [Added February 2008; Citation Revised February 2010].
- *Hazardous Condition* - any situation involving the actual, imminent or probable spillage, leakage, or release of a hazardous substance onto the land, into a water of the state or into the atmosphere which, because of the quantity, strength and toxicity of the hazardous substance, its mobility in the environment and its persistence, creates an immediate or potential danger to the public health or safety or to the environment (IAC 567-131.1) [Added February 2007].
- *Hazardous Substance* - any substance or mixture of substances that presents a danger to the public health or safety and includes, but is not limited to, a substance that is toxic, corrosive, or flammable, or that is an irritant or that, in confinement, generates pressure through decomposition, heat, or other means. The following are examples of substances which, in sufficient quantity, may be hazardous: acids; alkalis; explosives; fertilizers; heavy metals such as chromium, arsenic, mercury, lead and cadmium; industrial chemicals; paint thinners; paints; pesticides; petroleum products; poisons; radioactive materials; sludges; and organic solvents. "Hazardous substances" may include any hazardous waste identified or listed by the administrator of the United States Environmental Protection Agency under the Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act of 1976, or any toxic pollutant listed under section 307 of the federal Water Pollution Control Act as amended to January 1, 1977, or any hazardous substance designated under section 311 of the federal Water Pollution Control Act as amended to January 1, 1977, or any hazardous material designated by the secretary of transportation under the Hazardous Materials Transportation Act (49 C.F.R. § 172.101) (IAC 567-131.1) [Added February 2007].
- *High Water Table* - the position of the water table that occurs in the spring in years of normal or above-normal precipitation (IAC 567-120.3) [Added April 2005].

- *Incorporation* - to mix into the soil by tilling, disking, or other suitable means, thereby creating a loose and divided soil texture (IAC 567-120.3) [Added April 2005].
- *Landfarm* - a surface-level soil remediation technology for petroleum contaminated soils that reduces concentrations of petroleum constituents through biodegradation to a level safe for human health and the environment. This technology usually involves spreading excavated contaminated soils in a thin layer on the ground surface and stimulating aerobic microbial activity within the soils through aeration. The enhanced microbial activity results in degradation of adsorbed petroleum product constituents through microbial respiration. Some petroleum product constituent's volatilize during the landfarming process. There are two types of landfarm permits issued by the department: a multiuse landfarm permit and a single-use landfarm applicator permit (IAC 567-120.3) [Added April 2005].
- *Landfarm Plot* - the specific operating area of a landfarm upon which a particular source and type of PCS is applied. A landfarm plot is a subset of the operating area (IAC 567-120.3) [Added April 2005].
- *Landfarm Season* - the time period beginning April 1 and ending October 31 of each year (IAC 567-120.3) [Added April 2005].
- *Multiuse Landfarm* - a landfarm used for more than one application of PCS. Each application of a particular source and type of PCS is landfarmed in separate landfarm plots. After the PCS is remediated, the landfarming process may be repeated. A multiuse landfarm is not located at a sanitary landfill (IAC 567-120.3) [Added April 2005].
- *Nonstandard PCS* - soil contaminated with a petroleum product other than gasoline, diesel fuel, kerosene, jet fuel, motor oil, hydraulic fluid, or some combination thereof (IAC 567-120.3) [Added April 2005].
- *Operating Area* - the total aggregate area of the landfarm where PCS is applied. The operating area of a multiuse landfarm may include multiple landfarm plots (IAC 567-120.3) [Added April 2005].
- *Petroleum Contaminated Soil or PCS* - soil contaminated with petroleum products including, but not limited to, gasoline, diesel fuel, kerosene, jet fuel, motor oil, hydraulic fluid, or some combination thereof (IAC 567-120.3) [Added April 2005].
- *Retailer* - a person offering for sale or selling a petroleum-based or synthetic oil or oil filter to the ultimate consumer or user of the product, as an over-the-counter product or whereby the consumer is charged separately for the oil or oil filter when coupled with a service (IAC 567-119.2) [Revised February 2009].
- *Single-use Landfarm* - the area of land used to landfarm a single application of a particular source and type of PCS. Single-use landfarms are created when a single-use landfarm applicator, or the landfarm's supervised agent, land applies PCS. No other PCS may be applied within 15 feet of the area of land used as a single-use landfarm until the single-use landfarm is closed pursuant to rule 567-120.12(455B) (IAC 567-120.3) [Added April 2005].
- *Single-use Landfarm Applicator* - an entity permitted by the department to land apply PCS to create one or more single-use landfarms (IAC 567-120.3) [Added April 2005].
- *Source of PCS* - the contaminated area from which the PCS originated. Examples of a source include, but are not limited to, a specific gas station or spill location (IAC 567-120.3) [Added April 2005].
- *Standard PCS* - soil contaminated with gasoline, diesel fuel, kerosene, jet fuel, motor oil, hydraulic fluid, or some combination thereof (IAC 567-120.3) [Added April 2005].
- *Tank* - a closable stationary or mobile device designed to contain an accumulation of used oil and constructed of nonearthen materials (e.g., concrete, steel, plastic) that provide structural support (IAC 567-119.2) [Added February 2009].

- *Tar Ball* - a ball or conglomeration of tarlike petroleum constituents. Tar balls may form when PCS that contains a high concentration of long-chain or high molecular weight hydrocarbons is landfarmed (IAC 567-120.3) [Added April 2005].
- *Type of PCS* - the specific petroleum product or combination thereof that contaminated the soil. Examples of type include, but are not limited to, gasoline, diesel fuel, kerosene, jet fuel, motor oil, hydraulic fluid, or some combination thereof (IAC 567-120.3) [Added April 2005].
- *Used Oil Filter* - a filter that removes impurities from the oil used to lubricate an internal combustion engine and has been used for its intended purpose (IAC 567-119.2) [Added February 2009].
- *Used Oil Filter Recycling* - the preparation of used oil filters for steel recovery (IAC 567-119.2) [Added February 2009].
- *Used Oil* - any petroleum-based or synthetic oil which through its use, storage, or handling has become unsuitable for its original purpose due to the presence of chemical or physical impurities. Used oil, includes, but is not limited to, the following:
 1. spent lubricating fluids which have been removed from an engine crankcase, transmission, gearbox, or differential or an automobile, bus, truck, vessel, plane, heavy equipment, or machinery powered by an internal combustion engine
 2. spent industrial oils, including compressor, turbine, bearing, hydraulic, metalworking, and electrical oils.
 Used oil does not include oil which has been contaminated or contains polychlorinated biphenyl of 5 ppm or greater (IAC 567-119.2) [Revised February 2009].
- *Used Oil Collection Site* - any commercial, municipal, or nonprofit establishment or operation which has a used oil collection tank on the premises, and accepts used oil for temporary storage prior to the recycling of that which is collected (IAC 567-119.2) [Revised February 2009].
- *Used Oil Collector* - any sanitary landfill operator, sanitary disposal project operator, oil retailer, or other individual who operates a used oil collection site (IAC 567-119.2) [Revised February 2009].
- *Used Oil Recycling* - the preparation of used oil for reuse as a petroleum product by rerefining, reprocessing, reclaiming, or other means or to use used oil as a substitute for a petroleum product made from new oil, provided that the preparation or use is operationally safe, environmentally sound, and complies with all Federal and state laws (IAC 567-119.2) [Revised February 2009].
- *Water Table* - the water surface below the ground at which the unsaturated zone ends and the saturated zone begins (IAC 567-120.3) [Added April 2005].

PETROLEUM, OIL, AND LUBRICANT (POL) MANAGEMENT GUIDANCE FOR IOWA CHECKLIST USERS	
REFER TO CHECKLIST ITEMS:	
Missing Checklist Items	PO.2.1.IA.
Discharges/Spills	PO.15.1.IA. and PO.15.2.IA.
Service Stations/Vehicle Maintenance	PO.45.1.IA. through PO.45.4.IA.
Used Oil	[Deleted]
Used Oil Marketing	[Deleted]
Dust Suppression With Used Oil	[Deleted]
State Specific Used Oil Requirements	PO.95.1.IA. through PO.95.6.IA.
State Specific POL Requirements	[Deleted]
(NOTE: Iowa requires that consumers be provided with information about hazardous household products; several of these hazardous household materials are POL products, including motor oils and motor oil additives, motor oil filters, diesel fuel additives, degreasers, solvents, paints, lacquers, thinners, spot and stain removers with petroleum base, and petroleum based fertilizers (see HM.5.IA).)	
POL Contaminated Soils	PO.105.1.IA. through PO.105.18.IA.

PETROLEUM, OIL, AND LUBRICANT (POL) MANAGEMENT GUIDANCE FOR IOWA APPENDIX USERS	
REFER TO APPENDIX NUMBERS:	REFER TO APPENDIX ITEMS:
8-1	Requirements for PCS Contaminated with Benzene

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REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
PO.2. MISSING CHECKLIST ITEMS PO.2.1.IA. Federal facilities are required to comply with all applicable state regulatory requirements not contained in the checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of findings).	Determine whether any new regulations have been issued since the finalization of the manual. Determine whether the Federal facility has activities or facilities that are regulated but not addressed in the checklists. Verify that the Federal facility is in compliance with all applicable and newly issued regulations.

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REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
PO.15. DISCHARGES/ SPILLS PO.15.1.IA. [Deleted February 2008]. PO.15.2.IA. Facilities that manufacture, store, handle, transport, or dispose of a hazardous substance (petroleum products) where there is a no occurrence of a hazardous condition (see definitions) must comply with notification requirements (IAC 567-131.2) [Revised February 2007 ; Revised February 2008].	(NOTE: Management Practice deleted.) Verify that facilities which manufacture, store, handle, transport, or dispose of a hazardous substance (see definitions) notify the Department of Natural Resources at (515) 281-8694 and the local police department or the office of the sheriff of the affected county of the occurrence of a hazardous condition as soon as possible but not later than 6 h after the onset of the hazardous condition or discovery of the hazardous condition. Verify that a written report of the hazardous condition is submitted to the Department of Natural Resources within 30 days and contains the following information: - the exact location of the hazardous condition - the time and date of onset or discovery of the hazardous condition - the name of the material, the manufacturer's name, and the volume of each material involved in the hazardous condition in addition to contaminants within the material if they by themselves could cause a hazardous condition - the medium (i.e., land, water, or air) in which the hazardous condition occurred or exists - the name, address, and telephone number of the party responsible for the hazardous condition - the time and date of the verbal report to the Department of the hazardous condition - the weather conditions at the time of the hazardous condition onset or discovery - the name, mailing address, and telephone number of the person reporting the hazardous condition - the name and telephone number of the person closest to the scene of the hazardous condition who can be contacted for further information and action - any other information, such as the circumstances leading to the hazardous condition, visible effects, and containment measures taken that may assist in proper evaluation by the Department. Verify that all subsequent findings and laboratory results are reported and submitted in writing to the Department as soon as they are available. (NOTE: Repeated in HM.20.2.IA.)

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REGULATORY REQUIREMENTS:	REGULATORY REQUIREMENTS:
PO.45 SERVICE STATIONS/VEHICLE MAINTENANCE PO.45.1.IA. Tanks and dispensing systems for motor vehicle fuel dispensing must meet specific location standards (IAC 661-221.4(1)) [Added April 2006 ; Revised February 2007 ; Revised February 2008]. PO.45.2.IA. Motor vehicle fuel dispensing facilities and repair garages must meet specific requirements to dispense E-blend or B-Blend fuel (IAC 661-221.4(2)) [Added February 2008 ; Revised February 2010]. PO.45.3.IA. Under dispenser containment must be installed when installing or replacing a motor fuel dispenser at a dispensing facility or a repair	Verify that each tank having a capacity of not more than 6,000 gallons for motor vehicle fuel dispensing systems and storing a Class I liquid, or with a capacity of not more than 12,000 gallons and storing a Class II or Class III liquid, that is located at a commercial, industrial, governmental, or manufacturing establishment, and that is intended for fueling vehicles used in connection with the establishment, is required to be located at least: - 40 feet from the nearest important building on the same property - 40 feet away from any property that is or may be built upon, including the opposite side of a public way - 100 feet away from any residence or place of assembly. (NOTE: Tanks may be located closer than 40 feet to a building of noncombustible construction. No minimum separation shall be required for any tank that complies with NFPA 30A, section 4.3.2.6.) Verify that only a dispenser listed by an independent testing laboratory as compatible with ethanol blended gasoline is used to dispense E-blend or B-blend fuel. Verify that the dispenser and the dispenser sump are visually inspected daily for leaks and equipment failure. Verify that records of the visual inspection are kept for at least one year after the inspection and located on the premises of the retail dealer. Verify that, if a leak is detected, the department of natural resources is notified. Verify that the retail dealer installs an under-dispenser containment system with electronic monitoring. (NOTE: This checklist item is repeated in PO.55.1.IA.) Verify that under dispenser containment (UDC) is installed whenever any of the following occurs: - the UDC is required by a rule adopted by the environmental protection commission

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REGULATORY REQUIREMENTS:	REGULATORY REQUIREMENTS:
garage (IAC 661-221.4(3)) [Added February 2008]. PO.45.4.IA. Temporary AST storage used in disaster emergencies for storing flammable and combustible liquids at motor fuel dispensing facilities must meet specific requirements (IAC 661-221.4(4)) [Added February 2010].	- a motor fuel dispenser is installed at a location where there previously was no dispenser - an existing motor fuel dispenser is removed and replaced with a nother dispenser. (NOTE: An UDC is not required when only the emergency shutoff, shear valves, or check valves are replaced. An UDC is not required for a dispenser which sits directly upon a solid concrete apron.) Verify that the UDC is intact and liquid tight on its sides and bottom and at any penetrations. Verify that the UDC is compatible with the substance conveyed by the piping. Verify that the UDC allows for visual inspection and monitoring and access to the components in the containment system. Verify that the facility is in an area covered by a disaster emergency proclamation issued by the Governor or the fire marshal has approved the facility for storage of flammable and combustible liquids. Verify that the facility has suffered damage which has rendered the storage tanks normally used by the facility for flammable and combustible liquids inoperable. Verify that storage of flammable and combustible liquids continues only for as long as the normal storage tanks are inoperable and in no event for more than 90 days. (NOTE: In extraordinary circumstances, storage of flammable and combustible liquids may continue for more than 90 days if the facility has sought and received specific written approval from the fire marshal.) Verify that the aboveground petroleum storage tank is rated or listed by an independent testing laboratory for aboveground storage of flammable and combustible liquids. Verify that the aboveground petroleum storage tank has no more than 1,000 gallons capacity. (NOTE: A storage tank larger than 1,000 gallons capacity may be used if the facility has received specific written approval from the fire marshal for its use.) Verify that all electrical service proximate to the storage area complies with applicable provisions of NFPA 70, National Electrical Code, 2005 edition. Verify that an emergency shutoff control or electrical disconnect is installed no less than 20 feet nor more than 100 feet from any fuel-dispensing device at the

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REGULATORY REQUIREMENTS:	REGULATORY REQUIREMENTS:
	facility and the control is clearly marked "Emergency Shutoff." Verify that a 20-pound fire extinguisher with a minimum B:C rating of 40 is located no more than 50 feet from the location of any storage tank being used Verify that precautions are taken to prevent the ignition of flammable or combustible liquids, including the conspicuous posting of warning signs saying "NO SMOKING" and "NO OPEN FLAME." Verify that aboveground petroleum storage tanks are plumbed into existing dispensers, if practical. (NOTE: If this is impractical, all fueling at the facility shall be by attendant only; no self-service dispensing shall be allowed at the facility.) Verify that aboveground petroleum storage tanks are located so as to be protected from prospective damage from vehicle collisions.

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REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
PO.60. USED OIL PO.60.1.IA. [Deleted February 2007].	(NOTE: 661-5.100 TO 661-5.299 reserved.)

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REGULATORY REQUIREMENTS:		REVIEWER CHECKS: February 2010
PO.85. USED OIL MARKETING		
PO.85.1.IA. February 2007].	[Deleted	(NOTE: IAC 567-143 rescinded.)
PO.85.2.IA. February 2007].	[Deleted	(NOTE: IAC 567-143 rescinded.)
PO.85.3.IA. February 2007].	[Deleted	(NOTE: IAC 567-143 rescinded.)
PO.85.4.IA. February 2007].	[Deleted	(NOTE: IAC 567-143 rescinded.)

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REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010	
PO.90. DUST SUPPRESSION WITH USED OIL		
PO.90.1.IA. [Deleted February 2007].	[Deleted	(NOTE: IAC 567-143 rescinded.)
PO.90.2.IA. [Deleted February 2007].	[Deleted	(NOTE: IAC 567-143 rescinded.)
PO.90.3.IA. [Deleted February 2007].	[Deleted	(NOTE: IAC 567-143 rescinded.)
PO.90.4.IA. [Deleted February 2007].	[Deleted	(NOTE: IAC 567-143 rescinded.)

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REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
PO.95. STATE-SPECIFIC USED OIL REQUIREMENTS PO.95.1.IA. Used oil and used oil filters may not be accepted for final disposal at any sanitary landfill (IAC 567-119.1(3) and 567-119.3) [Revised February 2009]. PO.95.2.IA. The acceptance of used oil from customers must meet specific collection requirements (IAC 567-119.4) [Revised February 2009 ; Revised February 2010].	(NOTE: IAC 567-119 applies to oil retailers, oil filter retailers, sanitary disposal project permittees, persons involved in the collection of used oil, and persons involved in the generation or collection of used oil filters.) Verify that used oil is not accepted for final disposal at any sanitary landfills in the state. (NOTE: Sanitary landfills or sanitary disposal projects may accept used oil for temporary storage or collection if the ultimate disposition of the oil is for recycling or reuse, and if they have obtained all of the necessary permits or permit conditions.) Verify that a business that generates used oil filters or accepts used oil filters does not dispose of the used oil filters in a sanitary landfill. Verify that a business that generates used oil filters or accepts used oil filters source separates and recycles the used oil filters. (NOTE: See PO.95.1.IA. for applicability.) Verify that used oil is accepted in a closed, unbreakable, preferably reusable, container. Verify that used oil collectors provide supervision of the collection process to minimize the risk of spills and to prevent customers from depositing contaminated used oil into the collection tank. Verify that designated unsupervised drop-off sites for used oil meet the following conditions: - only sealed containers of 5 gallons or less are accepted - the designated drop-off site is protected from the elements - customers drop off their used oil in containers only at the designated site and are not permitted to deposit their used oil into a collection tank - the designated site is located on an impervious surface engineered to contain potential spills. Verify that, during noncollection hours, the tank is secured to prevent the contamination of the collected used oil. Verify that a sign is placed on or near the used oil collection tank which includes

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PO.95.3.IA. Oil retailers must comply with additional used oil collection requirements (IAC 567-119.6) [Revised February 2009].	the statement: This tank is for used oil collection only The depositing of other materials is prohibited. Verify that the ultimate disposition of used oil collected is for recycling and reuse. Verify that used oil found to be contaminated is managed as a hazardous waste. Verify that absorbent material is available at the site for use by the operator to control spillage or discharge of used oil. (NOTE: Used oil retailers must comply with P O.95.2.IA. in addition to these requirements.) Verify that a durable, legible sign at least 8 1/2" by 11" in size is placed near the point of sale containing the following: - language informing the customer that it is unlawful to dispose of used oil at a sanitary landfill, and that the customer should return used oil to used oil collection sites for recycling and reuse - "RECYCLE USED OIL" in bold lettering - a list of the benefits from recycling used oil including, but not limited to, "conserves energy, reuses limited resources, and protects Iowa's drinking water" - the language "used oil is a household hazardous material" and the household hazardous materials program symbol - the warning that the disposal of used oil in a landfill or its deposit or discharge into any state waterway is unlawful - the name, address and location of at least one used oil collection site located within the county in which the retailer is located. (NOTE: Retailers may obtain the required signs upon request from the department. Retailers choosing to develop and post their own signs must obtain a variance from the departmental rules.) (NOTE: Retailers are not required to collect used oil generated by commercial or municipal establishments.) Verify that used oil is accepted during normal business hours.
PO.95.4.IA. The acceptance of used oil filters from customers must meet specific requirements (IAC 567-119.5 and ICA 455B.386) [Added	Verify that the used oil filters are collected, stored and transported in a container designed and maintained to prevent the spillage or discharge of used oil from the filters. Verify that the collection container is located on an impervious surface engineered

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February 2009]. PO.95.5.IA. Oil filter retailers must comply with additional collection requirements for used oil filters (IAC 567-119.7) [Added February 2009]. PO.95.6.IA. Aboveground used oil storage tanks must meet additional requirements (IAC 567-119.8(1)) [Added February 2009].	to contain spills. Verify that the collection container is protected from inclement weather. Verify that the collection container is clearly labeled "used oil filters." Verify that, when actual or imminent oil spills pose a threat to the public health or the environment, the department and the local police department or the office of the sheriff of the affected county are notified of the occurrence as soon as possible but not later than 6 hours after the onset of the hazardous condition or discovery of the hazardous condition. Verify that absorbent material is available at the site for use by the operator to control spillage or discharge of used oil from the used oil filters. (NOTE: Used oil filter retailers must comply with P O.95.4.IA. in addition to these requirements.) Verify that a durable, legible sign at least 8 1/2" by 11" in size is placed near the point of sale containing the following: - "RECYCLE USED OIL FILTERS" in bold lettering - a list of the benefits from recycling used oil including, but not limited to, "conserves energy, reuses limited resources, and protects Iowa's drinking water" - the language "used oil filters are a household hazardous material" and the household hazardous materials program symbol - the name, address and location of at least one used oil filter collection site located within the county in which the retailer is located. (NOTE: Retailers are not required to collect used oil generated by commercial or municipal establishments.) Verify that used oil filters are accepted during normal business hours. (NOTE: These requirements are additional to those imposed by the office of the state fire marshal.) Verify that the tank is of sufficient size to handle the projected quantities of used oil to be returned to this specific collection site. Verify that the tank is designed and maintained to prevent the spillage or discharge of used oil. Verify that tanks are set upon an impermeable surface engineered to contain

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	potential spills. Verify that absorbent material is available at the tank site for use by the operator to control used oil spillage or discharge. Verify that the tank has a level gauge or some other adequate means for checking the oil level within the tank. Verify that the tank is constructed in accordance with American Petroleum Institute specifications and standards.

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REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
PO.100.	
STATE SPECIFIC POL REQUIREMENTS	
PO.100.1.IA. [Deleted A pril 2005].	(NOTE: IAC 567-121.3(2) revised.)
PO.100.2.IA. [Deleted A pril 2005].	(NOTE: IAC 567-121.3(2) revised.)

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REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
PO.105. POL CONTAMINATED SOILS PO.105.1.IA. Landfarming of petroleum contaminated soils (PCS) must be permitted and meet permit conditions (IAC 567-120.4 and 120.6(3)) [Added April 2005]. PO.105.2.IA. Petroleum contaminated soils (PCS) originating from Department-supervised emergency cleanups must meet specific requirements (IAC 567-120.6 (1)) [Added April 2005].	Verify that PCS is not landfarmed without a multiuse or a single-use landfarm permit from the Department. (NOTE: A multiuse landfarm permit is issued for a landfarm designed to be used for more than one application of PCS. This permit requires that each application of a particular source and type of PCS be landfarmed in separate landfarm plots. If a facility has a multiuse landfarm permit, then the landfarming process may be repeated after the PCS has been remediated. A multiuse landfarm permit is not for a facility located at a sanitary landfill.) (NOTE: A single-use landfarm applicator permit is issued to an entity that is then permitted by the department to land apply PCS to create one or more single-use landfarms. This permit requires that the single-use landfarms be used for only one application of a particular source and type of PCS. This permit requires that no other PCS be applied within 15 feet of the area of land used as a single-use landfarm until the single-use landfarm is closed.) Verify that all landfarms are constructed and operated according to IAC 567-120, any plans and specifications approved by the department, and the conditions of the permit. (NOTE: Any approved plans and specifications will constitute a condition of the permit. Landfarm permits are issued and may be renewed for a three-year term. Requests for permit modifications must be submitted in writing to the department with supporting documentation and materials.) Verify that PCS that has the potential to produce tar balls is not landfarmed at a single-use or multiuse landfarm and is disposed of in a sanitary landfill. Verify that PCS originating from the cleanup of a spill or expedited over excavation at a tank closure or upgrade under Department jurisdiction is characterized and tested before being landfarmed. Verify that the name and address of the contaminated site from which the PCS originated and the spill or underground storage tank (UST) registration number is recorded. Verify that the PCS is classified by type according to the petroleum product's trade name (e.g., gasoline, diesel fuel) or according to the trade names if there is a mixture of petroleum products.

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PO.105.3.IA. Petroleum contaminated soils (PCS) not originating from Department-supervised emergency cleanups must be tested and characterized (IAC 567-120.6 (2)) [Added April 2005].	Verify that a sample of the PCS is obtained from the emergency cleanup site and tested (see PO.105.3.IA.). (NOTE; PCS may be landfarmed prior to chemical testing, pursuant to the application rate and reporting requirements, if permission is obtained from Department emergency response personnel or the department field office with jurisdiction over the landfarm site.) Verify that the name and address of the contaminated site from which the PCS originated, the UST registration number, and the leaking underground storage tank (LUST) number is recorded, if applicable. Verify that the PCS is classified by type according to the petroleum product's trade name (e.g., gasoline, diesel fuel) or according to the trade names if there is a mixture of petroleum products. Verify that samples are acquired, stored, handled, tested, and reported in accordance with the required methodology and accepted scientific procedures. Verify that the following analyses are performed: - BTEX testing, utilizing the most recent version of Method OA-1 (GCMS), "Method for Determination of Volatile Petroleum Hydrocarbons (Gasoline)," University of Iowa Hygienic Laboratory - TEH-diesel testing, utilizing the most recent version of Method OA-2, "Extractable Petroleum Products (and Relatively Low Volatility Organic Compounds)," University of Iowa Hygienic Laboratory. - MTBE testing - total metals testing, if the history of the petroleum contaminated site is known to have included solvents, batteries, leaded fuel, waste oil, or a gas station in operation prior to 1985. Verify that laboratories are certified for UST petroleum analyses pursuant to 567-Chapter 83.
PO.105.4.IA. All petroleum contaminated soil (PCS) landfarms must meet design requirements (IAC 567-120.8 (1)) [Added April 2005].	Verify that storage areas for PCS are constructed in compliance with the following requirements: - over an impervious surface (e.g., tarp, concrete pad, plastic sheeting) - under a roof or tarp to minimize the infiltration of precipitation - in an area with minimal potential for stormwater run-on. Verify that landfarm plot(s) upon which PCS is land applied are flagged.

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PO.105.5.IA. Petroleum contaminated soil (PCS) multiuse landfarms must meet additional de sign requirements (IA C 5 67-120.8 (2)) [Added April 2005].	Verify that signs meet the following requirements: - a sign is posted at the primary entrance specifying the name and permit number of the facility, and the telephone number of an emergency contact person - one "No Trespassing" is posted sign every 200 feet on the site's perimeter but not fewer than one sign per side of the property - signs clearly designate and uniquely label each separate landfarm plot - designations and labels for each separate landfarm plot are not changed. Verify that, if the Department requires, the landfarm is fenced and locked to prevent unauthorized access. Verify that a groundwater monitoring plan is maintained that demonstrates that groundwater quality can be accurately monitored at the site. Verify that groundwater monitoring wells sufficient to monitor the groundwater are installed, at a minimum, one up-gradient and 2 down-gradient monitoring wells. Verify that groundwater monitoring wells are no farther than 50 feet from the edge of the operating area. Verify that plot separation strips are planted around each landfarm plot. Verify that landfarm plot separation strips are at least 15 feet wide and are planted with stiff-stemmed, dense, upright vegetation suitable for growing under native conditions. Verify that mowing of the vegetation is minimized with the vegetation maintained at a minimum height of 1 foot. Verify that multiuse landfarms that have slopes of 3 percent to 5 percent implement a Natural Resource Conservation Service (NRCS) designed and approved conservation plan.
PO.105.6.IA. The management of saturated, slurry, or flammable petroleum contaminated soil (PCS) must meet specific requirements (IA C 5 67-120.9(2)) [Added April 2005].	Verify that PCS in a saturated, slurry, or flammable condition is not land applied or stored at a landfarm. Verify that saturated, slurry, or flammable PCS is bulked with other biodegradable materials (e.g., compost, mulch) until it is no longer saturated, in a slurry, or flammable before it is land applied or stored at a landfarm.
PO.105.7.IA. Petroleum contaminated soil (PCS)	Verify that PCS delivered during non-landfarm season is stored until the application weather and landfarm season conditions are satisfied or within the first

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storage must meet specific requirements (IAC 567-120.9(3)) [Added April 2005]. PO.105.8.IA. Petroleum contaminated soil (PCS) landfills must meet application weather and landfarm season requirements (IAC 567-120.9(4)) [Added April 2005]. PO.105.9.IA. Petroleum contaminated soil (PCS) applications to landfarm plots must meet specific requirements (IAC 567-120.9(5)) [Added April 2005]. PO.105.10.IA. Petroleum contaminated soil (PCS) application rates must meet specific requirements (IAC 567-120.9(6)) [Added April	7 days of landfarm season, whichever is shorter. Verify that PCS stored up to 7 days meets the following requirements: - stored over an impervious surface (e.g., tarp, concrete pad, plastic sheeting) - stored under a roof or tarp to minimize the infiltration of precipitation - stored in an area with minimal potential for stormwater run-on. Verify that PCS is not stored longer than 7 days during landfarm season without written permission from the Department field office that has jurisdiction over the landfarm. Verify that PCS is only land applied during non-landfarm season if the PCS are land applied as part of an emergency cleanup supervised by the Department or all of the following conditions exist: - the operating area is free of snow - the slope of the operating area is less than 3 percent. - the PCS is incorporated into the soil as soon as site conditions allow. Verify that PCS is not land applied during precipitation. Verify that only one application of a particular source and type of PCS is applied to a landfarm plot. Verify that a subsequent application of a particular source and type of PCS is applied to a previously utilized landfarm plot in a multiuse landfarm after the following requirements have been met: - the plot has been tested and the results demonstrate that petroleum constituent concentrations are less than 0.54 mg/kg for benzene, 42 mg/kg for toluene, 15 mg/kg for ethylbenzene, 3800 mg/kg for TEH-diesel, and 0.02 mg/kg for MTBE - the PCS turning requirement has been completed (see PO.105.12.IA.). Verify that a subsequent application of a particular source and type of PCS is not applied within 15 feet of an area used as a single-use landfarm until the single-use landfarm is closed. Verify that PCS is land applied at a rate that is as uniform as practical over an area sufficient to satisfy the greater of the following area requirements. Verify that PCS from an emergency cleanup supervised by the Department is land applied at a rate of 162 ft² of landfarm area per cubic yard (yd³) of PCS, that is as

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2005]. PO.105.11.IA. Petroleum contaminated soil (PCS) landfarming plots must meet management requirements (IAC 5 67-120.9(7) and (8)) [Added April 2005]. PO.105.12.IA. Petroleum contaminated soil (PCS) landfarming plots must meet incorporation and turning requirements (IAC 5 67-120.9(9) and (10)) [Added April 2005].	uniform as practical, and in which no layer of unincorporated PCS is thicker than 2 inches. Verify that PCS contaminated with benzene is land applied in accordance with Appendix 8-1 and the application is as uniform as practical over the area required Verify that the average concentration of benzene is calculated from all soil boring test results that are within the PCS excavation area. Verify that PCS that is not contaminated with benzene or MTBE, but is contaminated with toluene, ethylbenzene, xylene, T EH-diesel, or some combination thereof, is land applied at a rate of 81 ft² of landfarm area per cubic yard (yd³) of PCS. Verify that the application is as uniform as practical, with no layer of unincorporated PCS thicker than 4 inches. Verify that PCS that has been tested for heavy metals is applied at a rate that is as uniform as practical, that results in no layer of PCS thicker than 4 inches, and that upon incorporation produces a landfarm soil that satisfies the following requirements: - total heavy metals are less than 2,500 milligrams per kilogram (mg/kg) - any particular concentration of a heavy metal is less than the appropriate statewide standard for soil developed pursuant to 567-Chapter 137. Verify that the landfarm plot(s) upon which PCS is land applied is flagged for one year after land application or until the landfarm is closed, whichever is shorter. Verify that all solid waste that is not PCS (e.g., pipe) is removed and properly disposed of. Verify that all rubble, stones, and debris larger than 4 inches in diameter, or that interfere with incorporating and turning the PCS, is removed and properly disposed of. Verify that PCS is incorporated into the soil by tilling, disking, or other suitable means within 48 hours of being land applied or before the next precipitation event, whichever is sooner. Verify that PCS is not incorporated deeper than 12 inches. Verify that, after incorporation, the PCS is turned by tilling, disking, or other suitable means at least once per month for the first 3 months during landfarm season.

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PO.105.13.IA. Petroleum contaminated soil (PCS) landfarming plots must meet crop production restrictions (IAC 5 67-120.9(11)) [Added April 2005].	Verify that multiuse landfarms do not grow crops for human or livestock consumption within 15 feet of the operating area until the landfarm is closed. Verify that single-use landfarms do not grow crops within 15 feet of a landfarm plot that is flagged. Verify that crops for human and livestock consumption are grown at a single-use landfarm after the landfarm plot is no longer required to be flagged.
PO.105.14.IA. Multiuse petroleum contaminated soil (PCS) landfarms must meet water quality requirements (IAC 5 67-120.9(12)) [Added April 2005].	Verify that multiuse landfarms do not accept additional PCS if evidence of surface water or groundwater contamination exists. (NOTE: Such evidence includes, but is not limited to, a visible sheen on immediately downgradient surface waters or downgradient monitoring well test results greater than 2 standard deviations of mean analyte concentrations in corresponding upgradient monitoring wells.) Verify that responsible parties notify the Department within 6 hours of discovery of contamination of a water of the state by calling (515)281-8694. Verify that the acceptance of PCS is suspended until written verification has been received from the Department that the site is not or is no longer contaminating surface water or groundwater.
PO.105.15.IA. The removal of petroleum contaminated soil (PCS) from landfarms must meet specific requirements (IAC 5 67-120.9(13)) [Added April 2005].	Verify that PCS is not removed from a landfarm until the landfarm is closed or the following conditions are met. Verify that one sample from each 2,500 ft² (e.g., 50-foot x 50-foot area) of landfarm plot is analyzed using a minimum of one sample per landfarm plot. Verify that all samples are obtained from between the top 2 to 6 inches of soil. Verify that the results of the tests demonstrate that petroleum constituent concentrations for benzene, toluene, ethylbenzene, T EH-diesel, and MTBE are below the detection limits required by 567-Chapter 135. Verify that records of the lab results, amount of PCS removed, and the exact final location of the PCS is maintained by the landfarm.
PO.105.16.IA. Emergency Response and Remedial Action Plans (ERRAP) must	Verify that ERRAP documents are readily available. Verify that multiuse landfarms maintain a copy of the ERRAP on site (e.g., the

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be developed and maintained for petroleum contaminated soils (PCS) landfarms (IAC 567-120.10) [Added April 2005].	back of permit sign, fence post, or mailbox). Verify that single-use landfarm applicators have employees carry a copy of the ERRAP document to each site where operations are taking place. (NOTE: An updated ERRAP will be included with any request for permit modification to incorporate a facility or operational change that requires modification of the currently approved ERRAP.) Verify that, at a minimum, all employees receive an annual training sufficient to understand and utilize ERRAP documents. Verify that contents of ERRAP documents are concise and readily usable as a reference manual by facility managers and operators during emergency conditions. Verify that the rationale for exclusion of any issue areas that are not applicable is provided either in the body of the plan or as a supplement. Verify that additional ERRAP requirements unique to the facility are addressed as applicable. (NOTE: The ERRAP document contents shall address at least the following primary issues in detail, unless project conditions render the specific issue as not applicable: - Facility information: - Permitted agency - DNR permit number - Responsible official and contact information - Project location - Facility description - Site and environs map - Weather-related events: - Intense rainstorms and erosion - Intense rainstorms or flooding impacting site access and usability - Fire and explosions: - Flammable PCS - buildings on site - Equipment - Waste gases from PCS - Off-site fires or explosions at cleanup site or during transport - Spills and releases: - Saturated or slurry PCS - Free liquids from stored PCS - Spill of PCS during transport - Hazardous materials: - Hazardous waste delivery - Hazardous gases - Emergency, spill and release notification and reporting: - Emergency response agencies

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PO.105.17.IA. Petroleum contaminated soil (PCS) landfarms must meet reporting requirements (IA C 567-120.11(1)) [Added April 2005].	- Federal agencies - State agencies - County and city agencies - Special populations near site - Reporting requirements and forms - News media - Primary emergency equipment inventory: - Major equipment - Fire hydrants and water sources - Off-site equipment resources - ERRAP training requirements: - Training providers - Employee orientation - Annual training updates - Training completion and record keeping.) (NOTE: The required information shall be submitted to the Department on a form provided by the Department. All reporting submissions shall include the name, address, and telephone number of the landfarm and permit holder, as well as the permit number.) Verify that multiuse and single-use landfarms submit the following information to the Department and Department field office with jurisdiction over the landfarm before receipt of the PCS for storage (at least 30 days' notification is encouraged): - the date the PCS is expected to be delivered for storage at the landfarm - where the PCS will be stored at the landfarm - the spill number, UST registration number, and LUST number, as applicable. Verify that PCS storage and application information from an emergency cleanup supervised by the Department is reported within 7 days of the emergency cleanup. Verify that multiuse and single-use landfarms submit the following information to the Department and Department field office with jurisdiction over the landfarm before land application (at least 30 days' notification is encouraged): - the date the PCS is expected to be land applied - application rate calculations - spill number, UST registration number, and LUST number, as applicable. Verify that single-use landfarms submit an address, topographic map, soil map with key, and a map of the 100-year flood plain illustrating and labeling where the PCS is to be applied. Verify that multiuse landfarms report the landfarm plot(s) to which the PCS is to be applied. Verify that information on the analysis and characterization of the PCS is submitted to the Department before receipt of the PCS for storage or land

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PO.105.18.IA. Petroleum contaminated soil (PCS) landfarms must meet record keeping requirements (IA C 567-120.11(2)) [Added April 2005].	application (at least 30 days' notification is encouraged). Verify that PCS analysis and characterization information from an emergency cleanup supervised by the Department is reported within 60 days of the emergency cleanup. Verify that multiuse landfarms annually test all groundwater monitoring wells and submit the test results as to the department by the first workday in January of each year. (NOTE: The groundwater monitoring wells shall be tested for benzene, toluene, ethylbenzene, and xylene (BTEX). The BTEX analysis shall utilize the most recent version of Method OA-1 (GCMS), "Method for Determination of Volatile Petroleum Hydrocarbons (Gasoline)," University of Iowa Hygienic Laboratory.) (NOTE: The groundwater monitoring wells shall be tested for total extractable hydrocarbons (TEH-diesel and waste oil). The TEH-diesel and waste oil analyses shall utilize the most recent version of Method OA-2, "Extractable Petroleum Products (and Relatively Low Volatility Organic Compounds)," University of Iowa Hygienic Laboratory.) (NOTE: The groundwater monitoring wells shall be tested for MTBE unless prior analysis of PCS accepted for landfarming, pursuant to rule 567-135.15(455B), has shown that MTBE was not present in soil or groundwater of the source.) Verify that all landfarms maintain records of all information related to compliance with 567-120 and the permit throughout the life of the landfarm and for 3 years after landfarm closure. Verify that this information is available to the Department upon request. (NOTE: Applicable information includes, but is not limited to, the following material: - Permit application information pursuant to rule 567- 120.5(455B) - PCS analysis and characterization pursuant to rule 567-120.6(455B) - Site suitability information pursuant to rule 567- 120.7(455B) - Specific design requirements pursuant to rule 567- 120.8(455B) - Operations information pursuant to rule 567 -120.9(455B); in particular, application rate calculations pursuant to 120.9(6) - ERRAP documents pursuant to rule 567- 120.10(455B) - Reports submitted pursuant to subrule 120.11(1) - Closure information pursuant to rule 567- 120.12(455B).)

Appendix 8-1

Requirements for PCS Contaminated with Benzene

(Source: IAC 567-120.9(6) Table 1) [Added April 2005]

Average concentration of benzene (mg/kg)	Ft ² of land farm area per yd ³ of PCS applied	Maximum thickness of unincorporated PCS	Yd ³ of PCS per acre of landfarm
0 < mg/kg =10	81 ft ²	4 inches	537 yd ³
10 < mg/kg =20	162 ft ²	2 inches	268 yd ³
20 < mg/kg	324 ft ²	1 inch	134 yd ³

SECTION 9
SOLID WASTE MANAGEMENT
Iowa Supplement, February 2010

This section covers the state requirements for Solid Waste Management and is intended to supplement the U.S. TEAM Guide. Refer to the U.S. TEAM Guide and the DOD Component Supplements for Federal, DOD, and service-specific requirements.

Definitions

- *Active Life* - the period of operation beginning with the initial receipt of solid waste and ending at completion of closure activities in accordance with rule 113.12(455B) (IAC 567-113.3) [Added February 2010].
- *Active portion* - that part of a facility or unit that has received or is receiving wastes and that has not been closed in accordance with rule 113.12(455B) (IAC 567-113.3) [Added February 2010].
- *Agricultural Waste* - organic materials normally discarded during the production of plants and animals from agronomic, horticultural or silvicultural operations. "Agricultural waste" includes but is not limited to manure, crop residuals, bedding, and other vegetative by-products produced during farm processing. Dead animals are not included (IAC 567-105.1) [Added April 2003].
- *Alternative Cover Material* - a substitute material or mix of materials that can be utilized in lieu of soil as cover material at a sanitary landfill (IAC 567-108.3) [Added April 2004].
- *Appliances* - devices such as refrigerators, freezers, kitchen ranges, air-conditioning units, dehumidifiers, gas water heaters, furnaces, thermostats, clothes washers, clothes dryers, dishwashers, microwave ovens and commercial coolers with components containing mercury, refrigerants, or PCB-containing capacitors that are discarded from all sources (IAC 567-118.3) [Added April 2002; Revised April 2005].
- *Bagel Cut* - to cut a tire in half along its circumference (IAC 567-117.2) [Added April 2003].
- *Baled Tire* - a method of volume reduction of waste tires, whereby whole or cut tires are compacted into a bundle and then banded together to form a tire bale. Baled tires shall not be considered processed tires and shall be defined as solid waste, unless they are incorporated into an approved beneficial use project (IAC 567-117.2) [Added April 2003].
- *Beneficial Use* - the use or application of waste tires or processed tires in a manner that provides a benefit to an end user and that does not pose a threat to the environment or to public health and safety. Use of waste tires or processed tires primarily as a means for land disposal shall not be considered a beneficial use (IAC 567-117.2) [Added April 2003].
- *Beneficial Use* - a specific utilization of a solid by-product as a resource, that constitutes reuse rather than disposal, does not adversely affect human health or the environment, and is approved by the department (IAC 567-108.3) [Added April 2004].
- *Beneficial Use Determination* - a written formal decision or rule issued by the department as approval for a solid by-product to be utilized in a specific manner as a beneficial use (IAC 567-108.3) [Added April 2004].
- *Best Management Practices* - the practices described in the most recent version of the Compost Facility Operating Guide published by the United States Composting Council or other best management practices as approved by the department (IAC 567-105.1) [Added April 2003].

- *Broken CRT* - a CRT that has had the glass broken or the vacuum released. Broken CRT does not include a CRT that is intact but not functional (IAC 567-122.3) [Added April 2005].
- *Bulking Agent* - a material that contributes structure and porosity, usually a dry, rigid material such as shredded wood or tire chips (IAC 567-105.1) [Added April 2003].
- *Capacitor* - a device for accumulating and holding a charge of electricity that consists of conducting surfaces separated by a dielectric fluid (IAC 567-118.3) [Added April 2002; Revised April 2003].
- *Cathode Ray Tube and its abbreviation CRT* - a vacuum tube composed primarily of leaded glass and used to convert an electrical signal into a visual image (IAC 567-122.3) [Added April 2005].
- *Citizen Convenience Center* - a permanent, fixed-location facility that has the primary purpose of receiving solid waste from citizens and small businesses that do not utilize solid waste collection vehicles or satellite solid waste collection vehicles. A citizen convenience center is a sanitary disposal project and may hold solid waste for a short period of time before collection. A citizen convenience center is not a transfer station or final disposal facility (IAC 567-106.2) [Added April 2003].
- *Civil Engineering Application* - a form of reusing waste tires, either whole or processed, in place of naturally occurring materials in construction, so long as the waste tires provide a defined engineering benefit (IAC 567-117.2) [Added April 2003].
- *Coal Combustion By-Product* - any solid by-product produced by the burning of coal, by itself or in conjunction with natural gas or other fossil fuel, which is suitable for disposal as solid waste in a sanitary landfill. Examples include boiler slag, bottom ash, fly ash, and flue gas desulfurization by-products from pollution control equipment. Coal combustion by-products are also referred to as coal combustion residue (IAC 567-108.3) [Added April 2004].
- *Coal Combustion Residue* - any solid waste produced by the burning of coal, either by itself or in conjunction with natural gas or other carbon-based fuels. It includes, but is not limited to, bottom ash, fly ash, slag and flue gas desulfurization system material generated by coal combustion and associated air pollution control equipment (IAC 567-103.1) [Added April 1999; Citation Revised February 2008].
- *Commission* - the environmental protection commission (IAC 567-100.2).
- *Compost* - organic material resulting from biological decomposition of waste which can be used as a soil conditioner or soil amendment (IAC 567-100.2).
- *Compostable* - an organic material that undergoes degradation by biological processes during composting to yield carbon dioxide, water, inorganic compounds and biomass (IAC 567-105.1) [Added April 2003].
- *Compostable Plastics* - a plastic that undergoes degradation by biological processes at a rate consistent with other known compostable materials and leaves no visually distinguishable or toxic residue. Testing according to ASTM D6400-00 criteria should be used to designate compostable plastics (IAC 567-105.1) [Added April 2003].
- *Composting* - the controlled, biological decomposition of selected solid organic waste materials under aerobic conditions resulting in an innocuous final product (IAC 567-100.2).
- *Composting* - the accelerated biological decomposition of organic matter under managed aerobic conditions resulting in a stable, innocuous final product (IAC 567-105.1) [Added April 2003].
- *Composting Facility* - all related receiving, processing, production, curing, and storage areas and necessary roads, buildings, equipment, litter control devices, pollution control devices, fire control devices, landscaping,

gates, personnel and maintenance facilities, sewer and water lines, and process water (IAC 567-105.1) [Added April 2003].

- *Compost Leachate* - a liquid that has percolated through or drained from compost (IAC 567-105.1) [Added April 2003].
- *Compost Maturity* - according to Test Methods for the Examination of Composting and Compost (TMECC), means an organo-chemical state of compost that indicates the presence or lack of organic phytotoxic chemicals in stable compost. Measurements for maturity are based on the amount of volatile fatty acids present. Mature compost will have fatty acids of no more than 2 mg/g dry weight solids or as specified in the most recent version of TMECC (IAC 567-105.1) [Added April 2003].
- *Compost Stability* - according to TMECC, means a stage in the composting process when microbial activity is diminished with the corresponding decrease of available organic carbon and other energy sources. Stability is measured through respiration. Stable compost will have oxygen uptake rates in the range of 0-3.5 mg O₂/g BVS/hr. or as specified in the most recent version of TMECC (IAC 567-105.1) [Added April 2003].
- *Comprehensive Plan* - a course of action developed and established cooperatively between cities, counties and municipal solid waste sanitary disposal projects regarding their chosen integrated solid waste management system, its participants, waste reduction strategies, and disposal methods (IAC 567-101.2) [Added February 2010].
- *Construction and Demolition Waste* - waste building materials including wood, metals, and rubble which result from construction or demolition of structures. Such waste also includes trees (IAC 567-100.2).
- *Construction and Demolition Waste Disposal Site* - a sanitary landfill which accepts only construction and demolition wastes (IAC 567-100.2).
- *Contaminated Animal Carcasses* - waste including carcasses, body parts, and bedding of animals that were exposed to infectious agents during research, production of biologicals, or testing of pharmaceuticals (IAC 567-100.2).
- *Contaminated Sharps* - all discarded sharp items derived from patient care in medical, research, or industrial facilities including glass vials containing materials defined as infectious, suture needles, hypodermic needles, scalpel blades, and Pasteur pipettes (IAC 567-100.2).
- *Cover Material* - soil placed as daily, intermediate, or final cover at a sanitary landfill (IAC 567-108.3) [Added April 2004].
- *CRT Collection* - any activity by a CRT recycling facility or CRT collection facility involving the collection of discarded CRTs (IAC 567-122.3) [Added April 2005].
- *CRT Collection Facility* - a site where ongoing CRT collection is the only CRT recycling activity performed (IAC 567-122.3) [Added April 2005].
- *CRT Demanufacturing* - any activity involving the disassembly of discarded CRTs (IAC 567-122.3) [Added April 2005].
- *CRT Device* - any device that contains a CRT. Examples of a CRT device include, but are not limited to, computer monitors, televisions, some cash registers, and oscilloscopes (IAC 567-122.3) [Added April 2005].
- *CRT Glass* - any glass generated from CRTs (IAC 567-122.3) [Added April 2005].
- *CRT Processing* - any activity that processes discarded CRTs into raw materials (IAC 567-122.3) [Added April 2005].

- *CRT Recycling* - any process by which discarded CRTs or electronic materials that would otherwise become waste are collected, processed, and returned to use in the form of raw materials or products. CRT recycling includes, but is not limited to, CRT demanufacturing, CRT processing, and CRT refurbishing (IAC 567-122.3) [Added April 2005].
- *CRT Recycling Facility* - a site where CRT recycling takes place (IAC 567-122.3) [Added April 2005].
- *CRT Refurbishing* - any activity that repairs and rebuilds discarded CRTs, so that they may be used for their original intended purpose (IAC 567-122.3) [Added April 2005].
- *CRT Reuse* - any activity involving the donation or sale of discarded CRTs for their original intended purpose provided that the CRT devices are in good working order and do not require refurbishment (IAC 567-122.3) [Added April 2005].
- *CRT Reuse Facility* - a facility where CRT reuse occurs and the only CRTs accepted are those in good working order, and the CRTs are sold or donated without being refurbished (IAC 567-122.3) [Added April 2005].
- *Crumb Rubber* - a material derived by reducing waste tires or other rubber into uniform granules of 3/8 inch or less, with the inherent reinforcing materials such as steel and fiber removed along with other contaminants (IAC 567-117.2) [Added April 2003].
- *Cultures and Stocks of Infectious Agents* - specimen cultures collected from medical and pathological laboratories, cultures and stocks of infectious agents from research and industrial laboratories, wastes from research and industrial laboratories, wastes from the production of biological agents, discarded live and attenuated vaccines, and culture dishes and devices used to transfer, inoculate, or mix cultures (IAC 567-100.2).
- *Cured Compost* - compost that is both stable and mature according to the definitions found in this chapter (IAC 567-105.1) [Added April 2003].
- *Curing* - a process in which compost is further monitored to control pathogen regrowth while increasing stability and maturity (IAC 567-105.1) [Added April 2003].
- *Cut Tire* - a waste tire from which the tire face, tread, or sidewall has been cut or removed for beneficial use. A cut tire shall consist of pieces greater than 18 inches on any one side (IAC 567-117.2) [Added April 2003].
- *Demanufacturing* - the removal of components from discarded appliances including, but not limited to, PCB-containing capacitors, ballasts, mercury-containing components, fluorescent tubes, and refrigerants (IAC 567-118.3) [Added April 2002].
- *Department* - the Iowa Department of Natural Resources (IAC 567-100.2).
- *Discarded* - no longer to be used for the original intended purpose and means the letting go or throwing away of materials that have become useless or superfluous though often not intrinsically valueless. CRTs that are returned to the original owner are not discarded (IAC 567-122.3) [Added April 2005].
- *Discarded CRT* - a cathode ray tube or CRT device that has been discarded (IAC 567-122.3) [Added April 2005].
- *Downgradient* - direction of decreasing hydraulic head (IAC 567-100.2).
- *Downgradient Well* - well which has been installed downgradient of the site and is capable of detecting the migration of contaminants from the site (IAC 567-100.2).

- *End User* - an industry, utility, business, entity, or individual that receives whole waste tires or processed tires and uses them for a raw material in a manufactured product, for energy recovery, or other beneficial use. A tire processor shall not be considered an end user (IAC 567-117.2) [Added April 2003].
- *Energy Recovery* - the extraction of the fuel or heat value from whole or processed tires through their controlled combustion at a permitted utility or industry (IAC 567-117.2) [Added April 2003].
- *Facility* - all contiguous land and structures, other appurtenances, and improvements on the land used for the disposal of solid waste. The facility is formally defined in the permit issued by the department. Buffer lands around a facility are not required to be included in the permitted boundary of a facility (IAC 567-113.3) [Added February 2010].
- *Facility* - any landfill, transfer station, material recovery facility, salvage business, appliance service or repair shop, a appliance de manufacturer, s hredder ope ration o r o ther p arty which may a ccept ap pliances for demanufacturing. A d emanufacturing facility may o ccupy a p ortion of a m aterial r ecovery f acility, s alvage business, landfill, transfer station or other site (IAC 567-118.3) [Added April 2002; Revised April 2003].
- *Fill Material* - material that is used to raise the elevation of, take up space in, or build up the level of the land. For the purposes of this chapter, fill material is not considered subbase for hard-surface road construction (IAC 567-108.3) [Added April 2004].
- *Finished Compost* - cured and, if necessary, screened or refined (IAC 567-105.1) [Added April 2003].
- *Firewood Processing Facilities* - facilities which process or allow the public to process trees into firewood (IAC 567-100.2).
- *Fluff* - the residual waste from the shredding operation after metals recovery (IAC 567-118.3) [Added April 2002].
- *Foundry Sand* - a solid by-product from the foundry industry that is derived from molding, core-making, and casting cleaning processes that primarily contain sand, olivine, or clay and that is suitable for disposal as solid waste in a sanitary landfill (IAC 567-108.3) [Added April 2004].
- *Garbage* - all s olid a nd s emisolid, p utrescible a nimal, and v egetable wastes r esulting f rom t he handling, preparing, cooking, storing, serving and consuming of food or of material intended for use as food, and all offal, excluding u seful industrial byproducts, a nd i ncludes a ll s uch substances f rom a ll p ublic a nd p rivate establishments and from all residencies (IAC 567-100.2).
- *General Special Waste* - special wastes that are commonly accepted by landfills and have specific handling requirements for disposal. G eneral special wastes a re r equired to be i ncluded i n t he landfill's special waste acceptance criteria (SWAC), but do not require a special waste authorization (SWA). The following wastes are approved as general special wastes: asbestos-containing material; petroleum-contaminated soil; and stabilized grit, bar screenings and grease skimmings (SWAC) (IAC 567-109.3) [Added April 2003; Revised April 2004].
- *Groundwater Flow Path* - the route of water (and contaminant) travel within the groundwater system (IAC 567-100.2).
- *Hazardous Condition* - any s ituation involving t he act ual, i mminent o r p robable r elease o f a h azardous substance onto the land, into a water of the state, or into the atmosphere which, because of the quantity, strength or toxicity of the hazardous substance, its mobility in the environment and its persistence in the environment, creates an immediate or potential danger to the public health or safety, or to the environment (IAC 567-122.3) [Added April 2005].
- *High Water Table* - the position of the water table which occurs in the spring in years of normal or above normal precipitation (IAC 567-100.2).

- *Hot Load* - solid waste that is smoking, smoldering, emitting flames or hot gases or otherwise indicating that the solid waste is in the process of combustion or close to igniting (IAC 567-106.2) [Added April 2003].
- *Household Organic Waste* - general household compostable items such as food residuals and paper produced on premises (IAC 567-105.1) [Added April 2003].
- *Household Waste* - any solid waste (including garbage, trash, and sanitary waste in septic tanks) derived from households (including single and multiple residences, hotels and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use recreation areas) (IAC 567-113.3) [Added February 2010].
- *Human Blood and Blood Products* - human serum, plasma, other blood components, but blood, or containerized blood in quantities greater than 20 mL (IAC 567-100.2).
- *Hydraulic Head* - the energy contained at a point in the groundwater system. Hydraulic head is measured as the elevation to which water rises in a piezometer (IAC 567-100.2).
- *Incidental Solid Waste Transfer* - the truck-to-truck transfer of solid waste from a satellite solid waste collection vehicle to a solid waste collection vehicle, if that solid waste could be collected only by a satellite solid waste collection vehicle due to vehicle access restrictions (IAC 567-106.2) [Added April 2003].
- *Incineration* - the processing and burning of waste for the purpose of volume and weight reduction in facilities designed for such use (IAC 567-100.2).
- *Industrial Process Waste* - waste that is generated as a result of manufacturing activities, product processing or commercial activities. It does not include office waste, cafeteria waste, or other types of waste that are not the direct result of production processes (IAC 567-109.3) [Added April 2003].
- *Industrial Sludge* - any sludge produced by industrial activity (IAC 567-120.2) [Added April 2003].
- *Infectious* - containing pathogens with sufficient virulence and quantity so that exposure to an infectious agent by a susceptible host could result in an infectious disease when the infectious agent is improperly treated, stored, transplanted, or disposed of (IAC 567-100.2).
- *Infectious Waste* - waste that is infectious, including but not limited to contaminated sharps, cultures and stocks of infectious agents, blood and blood products, pathological waste, and contaminated animal carcasses from hospitals or research laboratories (IAC 567-100.2 and 105.1) [Revised April 2003].
- *Land Application* - a method through which sludge is applied to the ground surface. Land application may include subsurface injection (IAC 567-100.2 and 120.2) [Revised April 2003].
- *Land Pollution* - the presence in or on the land of any solid waste in such quantity, of such nature and for such duration and under such condition as would affect injuriously any waters of the state, cause air pollution, or create a nuisance (IAC 567-100.2).
- *Landfill Property* - the entire area of the landfill including the disposal site and any other contiguous property proposed for actual landfill use (IAC 567-100.2).
- *Leachate* - a liquid that has percolated through or drained from a solid waste landfill (IAC 567-100.2).
- *Local Governments* - those counties or municipalities using the sanitary disposal project (IAC 567-100.2).
- *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 (IAC 567-100.2).

- *Mercury-Containing Components* - devices containing mercury. Examples include, but are not limited to, thermostats, thermocouples, mercury switches and fluorescent tubes (IAC 567-118.3) [Added April 2002].
- *Mobile Operation* - a permitted appliance manufacturer having equipment capable of operating in an area away from a fixed permitted location (IAC 567-118.3) [Added April 2002].
- *Monitoring Well* - any well installed solely for the sampling of groundwater quality at a given location and depth and constructed in a manner approved by the Department (IAC 567-100.2).
- *Municipal Solid Waste Landfill (MSWLF)* - a discrete area of land or an excavation that receives household waste, and that is not a land application site, surface impoundment, injection well, or waste pile, as those terms are defined under Title 40, Code of Federal Regulations, Part 257.2. An MSWLF also may receive other types of *Resource Conservation and Recovery Act*, Subtitle D wastes, such as commercial solid waste, nonhazardous dry sludge, and industrial solid waste. An MSWLF may be publicly or privately owned. An MSWLF may be a new MSWLF site, and existing MSWLF site, or a lateral expansion (IAC 567-100.2 and 109.3) [Revised April 2003].
- *Municipal Solid Waste Sanitary Disposal Project* - all facilities and appurtenances, including all real and personal property connected with such facilities, which are acquired, purchased, constructed, reconstructed, equipped, improved, extended, maintained, or operated to facilitate the final disposition of household waste without creating a significant hazard to the public health or safety, and which are approved by the executive director. A municipal solid waste sanitary disposal project also may receive other types of RCRA Subtitle D wastes, such as construction and demolition debris and commercial and industrial solid waste (IAC 567-101.2) [Added February 2010].
- *Nuisance* - whatever is injurious to health, indecent, or unreasonably offensive to the senses, or an obstruction to the free use of property, so as essentially to unreasonably interfere with the comfortable enjoyment of life or property, and a civil action by ordinary proceedings may be brought to enjoin and abate the same and to recover damages sustained on account thereof (IAC 567-105.1) [Added April 2003].
- *Open Burning* - any burning of combustible materials where the products of combustion are emitted into the open air without passing through a chimney or stack (IAC 567-100.2).
- *Open Dump* - any exposed accumulation of solid waste at a site other than a sanitary disposal project operating under a permit from the Department (IAC 567-100.2).
- *Open Dumping* - the depositing of solid wastes on the surface of the ground or into a body or stream of water (IAC 567-100.2).
- *Operating Area* - the immediate portion of a sanitary disposal project used for unloading and handling of solid waste to prepare it for processing or final disposal (IAC 567-100.2).
- *Operator* - an employee of the sanitary disposal project who is employed and assigned to operate the equipment used on the site (IAC 567-100.2).
- *Operator* - the individual, corporation, or party that manages the daily work activities related to the collection, storage, and processing of waste tires and processed tire materials at a waste tire stockpile site or processing facility (IAC 567-117.2) [Added April 2003].
- *Owner* - the individual, corporation, or party that is the legal owner of the real estate where a waste tire stockpile site or processing facility exists (IAC 567-117.2) [Added April 2003].
- *Organic Materials* - any material of animal or plant origin (IAC 567-105.1) [Added April 2003].

- *Passenger Tire Equivalent* - a conversion measurement that is used to estimate waste tire weights and volume amounts and in which one passenger car tire with a rim diameter of 17 inches or less is equal to 20 pounds. One cubic yard of volume shall contain 15 passenger tire equivalents. Tires larger than a passenger car tire shall be evaluated for volume using this conversion measurement (IAC 567-116.2 and 117.2) [Added April 2003; Citation Revised April 2004].
- *Pathological Waste* - human tissues and body parts that are removed during surgery or a autopsy (IAC 567-100.2).
- *Permit* - a permit issued by the department to establish, construct, modify, own, or operate a waste tire storage or processing site (IAC 567-117.2) [Added April 2003].
- *Planning Area* - the localities and facilities involved in any aspect of the sanitary disposal project(s) management of waste, including out-of-state localities and facilities, if applicable. A planning area may include one or more sanitary disposal projects (IAC 567-100.2).
- *Point of Compliance (POC)* - the point at which the MSWLF owner or operator demonstrates compliance with the liner performance standard, if applicable, and with the groundwater protection standard. The point of compliance is a vertical surface located hydraulically downgradient of the waste management area that extends down into the uppermost aquifer underlying the regulated MSWLF unit(s) and where groundwater monitoring shall be conducted(IAC 567-113.3).
- *Point of Demanufacturing* – the actual location of demanufacturing for fixed facilities and mobile operations (IAC 567-118.3).
- *Pollution Control Waste* - any solid waste residue extracted by, or resulting from, the operation of pollution control processes (IAC 567-109.3) [Added April 2003].
- *Premises* - a geographically contiguous property owned by a generator or noncontiguous property owned by a generator and that is connected by a controlled right-of-way to which the public does not have access. Two or more pieces of property that are geographically contiguous and divided by public or private right-of-way are a single premises (IAC 567-105.1) [Added April 2003].
- *Private Agency* - an individual and any form of business organization authorized under the laws of this or any other state (IAC 567-100.2 and Iowa Code, Chapter 28E, Section 2) [Added February 2009].
- *Processed Tire* - a tire that has been processed through grinding, shredding, or other means, thereby producing a material that is readily suitable for marketing into product manufacturing, energy recovery, or other beneficial reuse markets. Waste tires that have been compacted, baled, cut, or shredded without a suitable market shall not be considered processed tires and shall be regulated as solid waste (IAC 567-117.2) [Added April 2003].
- *Processing* - producing or manufacturing usable materials from waste tires (IAC 567-117.2) [Added April 2003].
- *Processing Facility* - the site and equipment for the preliminary and in complete disposal of solid waste, including but not limited to transfer, open burning, incomplete land disposal, incineration, composting, reduction, shredding and compression (IAC 567-100.2).
- *Processing Site* - a site which is used for the processing of waste tires and which is owned or operated by a tire processor who has a permit for the site (IAC 567-117.2) [Added April 2003].
- *Public Agency* - any political subdivision of this state; any agency of the state government or of the United States; and any political subdivision of another state (IAC 567-100.2 and Iowa Code, Chapter 28E, Section 2) [Added February 2009].)

- *Recycling* - any process by which waste or materials which otherwise become waste are collected, separated, or processed and reused, or returned to use in the form of raw materials or products. Recycling includes, but is not limited to, the composting of yard waste which has been previously separated from other waste and collected by the sanitary facility, but does not include any form of energy recovery (IAC 567-100.2).
- *Refuse* - putrescible and nonputrescible wastes including but not limited to garbage, rubbish, ashes, and incinerator ash, incinerator residues, street cleanings, market and industrial solid wastes, and sewage treatment wastes in dry or semisolid form (IAC 567-100.2).
- *Refuse Collection Service* - a publicly or privately operated agency, business, or service engaged in the collecting and transporting of solid waste for disposal purposes (IAC 567-100.2).
- *Resource* - a solid by-product that can provide greater benefit to the environment or human welfare in its beneficial use as a safe and effective substitute for a raw material, fuel or energy source, or natural resource, rather than being disposed of as a solid waste in a sanitary landfill (IAC 567-108.3) [Added April 2004].
- *Rubbish* - nonputrescible solid waste consisting of combustible and noncombustible wastes, such as ashes, paper, cardboard, tin cans, yard clippings, wood, glass, bedding, crockery, or litter of any kind (IAC 567-100.2).
- *Rubble* - stone, brick, or similar inorganic material (IAC 567-100.2).
- *Runoff* - any rainwater, leachate, or other liquid that drains over land from any part of a facility (IAC 567-113.3) [Added February 2010].
- *Run-on* - any rainwater, leachate, or other liquid that drains over land onto any part of a facility (IAC 567-113.3) [Added February 2010].
- *Salvageable Material* - discarded material no longer of value for its original purpose but which has value if reclaimed (IAC 567-100.2).
- *Salvaging* - the systematic removal of salvageable material in a formal and orderly manner as a part of the normal operating procedure of sanitary disposal project (IAC 567-100.2).
- *Sanitary Disposal* - a method of treating solid waste so that it does not produce a hazard to the public health or safety or create a nuisance (IAC 567-100.2).
- *Sanitary Disposal Project* - defined in Iowa Code section 455B.301) - all facilities and appurtenances including all real and personal property connected with such facilities, which are acquired, purchased, constructed, reconstructed, equipped, improved, extended, maintained, or operated to facilitate the final disposition of solid waste without creating a significant hazard to the public health or safety, and which are approved by the executive director (IAC 567-100.2) [Revised April 2003].
- *Sanitary Landfill* - a method of disposing of solid waste on land by utilizing the principles of engineering to confine the solid waste to the smallest practical volume and to cover it with a layer of earth so that no nuisance or hazard to the public health is created (IAC 567-100.2).
- *Sanitary Landfill Operator* - an individual having active, daily, on-site responsibility for day-to-day operation of a Department-permitted sanitary landfill. This individual must also have the authority to turn waste away at the gate when the waste is considered unacceptable (IAC 567-100.2).
- *Satellite Solid Waste Collection Vehicle* - a small, specialized solid waste collection vehicle that has been specifically designed to service locations that have vehicle access restrictions that would otherwise render solid waste collection technically prohibitive (IAC 567-106.2) [Added April 2003].

- *Scavenging* - the uncontrolled removal of materials from the unloading or working area of a sanitary disposal project (IAC 567-100.2).
- *Sewage Sludge* - defined in IAC 567-67 (IAC 567-100.2).
- *Short-term CRT Collection* - any temporary activity involving the collection of discarded CRTs, which is not on the premises of a CRT recycling facility or CRT collection facility, and in which all discarded CRTs that have been collected are transported to a properly permitted CRT recycler or CRT reuse facility (IAC 567-122.3) [Added April 2005].
- *Site* - includes all contiguous parcels of land under the ownership, management, or financial interest of an owner or operator receiving a permit through this chapter. Public rights-of-way and their easements shall not affect the continuity of a site for the purposes of this chapter (IAC 567-117.2) [Added April 2003].
- *Site* - any location, place, tract, or land used for collection, storage, conversion, utilization, incineration, or landfilling of solid waste, to include the landfill area, onfill work areas, borrow areas plus a 100-ft wide perimeter surrounding the working areas or the property line if it is closer than 100 ft to the working areas (IAC 567-100.2).
- *Site of End Use* - a site where processed waste tires are recycled or reused in a beneficial manner authorized by the department (IAC 567-117.2) [Added April 2003].
- *Sludge* - any solid, semisolid, or liquid waste generated from a commercial or industrial wastewater treatment plant, water supply treatment plant, air pollution control facility, or any other such waste having similar characteristics and effects (IAC 567-100.2 and 120.2) [Revised April 2003].
- *Small Compost Facilities* - facilities meeting the requirements set forth in rule 105.5(455B,455D) (IAC 567-105.1) [Added April 2003].
- *Solid By-Product* - a secondary material or residual, produced or created by an industrial, commercial or institutional process or activity, that has been source separated by the generating entity and that would otherwise be disposed of as solid waste. Solid by-products are composed of materials suitable for disposal as solid waste in a sanitary landfill. (IAC 567-108.3) [Added April 2004].
- *Solid Waste* - garbage, refuse, rubbish, and other similar discarded solid or semisolid materials, including but not limited to such materials resulting from industrial, commercial, agricultural, and domestic activities. Solid waste may include vehicles, as defined by section 321.1, subsection 90. However, this division does not prohibit the use of dirt, stone, brick, or similar inorganic material for fill, landscaping, excavation or grading at places other than a sanitary disposal project. Solid waste does not include hazardous waste as defined in section 455B.411 or source, special nuclear, or by-product material as defined in the Atomic Energy Act of 1954, as amended to January 1, 1979, or petroleum contaminated soil which has been remediated to acceptable state or federal standards (IAC 567-100.2) [Revised April 2003].
- *Solid Waste* - garbage, refuse, rubbish, and other similar discarded solid or semi-solid materials, including but not limited to such materials resulting from industrial, commercial, agricultural, and domestic activities. Solid waste may include vehicles, as defined by Iowa Code section 321.1, subsection 1. Nothing herein shall be construed as prohibiting the use of dirt, stone, brick, or similar inorganic material for fill, landscaping, excavation, or grading at places other than a sanitary disposal (IAC 567-120.2) [Added April 2003].
- *Solid Waste Collection* - the gathering of solid waste from public and private places (IAC 567-100.2).
- *Solid Waste Collection Vehicle* - a vehicle that has the primary purpose of collecting solid waste from a variety of locations, including at curbside and from dumpsters, compactors, and roll-off boxes (IAC 567-106.2) [Added April 2003].

- *Solid Waste Composting* - the composting of any organic material with or without yard waste. For the purposes of this chapter, facilities exempt under 105.2(455B,455D) are not considered solid waste composting facilities. In addition, facilities in compliance with 105.4(455B,455D), 105.5(455B,455D) or 105.6(455B,455D) are not considered solid waste composting facilities. Only facilities that are required to obtain or have a permit are considered solid waste composting facilities (IAC 567-105.1) [Added April 2003].
- *Solid Waste Incinerator Operator* - an individual with a active, daily, on-site responsibility for day-to-day operation of a Department-permitted solid waste incinerator. This individual must also have the authority to turn waste away when it has been determined to be unacceptable (IAC 567-100.2).
- *Solid Waste Storage* - the holding of solid waste pending intermediate or final disposal (IAC 567-100.2).
- *Solid Waste Transport Vehicle* - a vehicle that serves the purpose of transporting solid waste received by a transfer station (IAC 567-106.2) [Added April 2003].
- *Solid Waste Transportation* - the conveying of solid waste from one place to another by means of vehicle, rail, car, water vessel, conveyor or other means (IAC 567-100.2).
- *Special Handling* - a specific procedure required for handling certain waste to protect the health and safety of employees, the public and the environment (IAC 567-109.3) [Added April 2003].
- *Special Waste* - any industrial process waste, pollution control waste, or toxic waste which presents a threat to human health or the environment or a waste with inherent properties which make the disposal of the waste in a sanitary landfill difficult to manage. Special waste does not include domestic, office, commercial, medical, or industrial waste that does not require special handling or limitations on its disposal. Special waste does not include hazardous wastes which are regulated under the federal Resource Conservation and Recovery Act (RCRA), hazardous waste as defined in Iowa Code section 455B.411, subsection 3, or hazardous wastes included in the list compiled in accordance with Iowa Code section 455B.464 (IAC 567-109.3) [Added April 2003].
- *Stabilized Sludge* - sludge that has been processed to a point where it has the ability to resist further change, produces minimal odor, and has achieved a substantial reduction in the pathogenic organism content. (The department recognizes principles of stabilization other than the conventional biological processes. Whether these processes produce a stabilized sludge will be evaluated on an individual basis.) (IAC 567-120.2) [Added April 2003].
- *Structural Components* - liners, leachate collection systems, final covers, run-on/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 (IAC 567-100.2).
- *Surge Pit* - a pit inside a transfer station building that receives solid waste from the tipping floor or directly from solid waste collection vehicles. Surge pits provide more space for temporary storage during peak operating hours and allow for additional compaction of the solid waste before it is loaded into solid waste transport vehicles (IAC 567-106.2) [Added April 2003].
- *Tire* - for the purpose of these rules, every tire in which compressed air is designed to support the load, and every tire of rubber or other resilient material which does not depend upon compressed air for the support of the load (IAC 567-117.2).
- *Tire Casing* - a used and worn tire that is suitable for the process of recapping. A tire casing stored for more than one year without being recapped shall be considered a waste tire (IAC 567-117.2) [Added April 2003].
- *Tire Collector* - a permitted person or business that owns or operates a site used for the storage, collection, or deposit of more than 500 waste tires or an authorized vehicle recycler who is licensed by the department of

transportation pursuant to Iowa Code section 321 H.4 and who owns or operates a site used for the storage, collection, or deposit of more than 3,500 waste tires (IAC 567-117.2) [Added April 2003].

- *Tire Processor* - a permitted individual or business that processes tires through grinding, shredding, or other means, thereby producing a material that is readily suitable for marketing into product manufacturing, energy recovery, or other beneficial reuse markets. "Tire processor" does not mean a person who retreads tire casings or who collects and stores tires (IAC 567-117.2) [Added April 2003].
- *Toxic and Hazardous Wastes* - waste materials, including but not limited to poisons, pesticides, herbicides, acids, caustics, pathological wastes, flammable or explosive materials, and similar harmful wastes which require special handling and which must be disposed of in such a manner as to conserve the environment and protect the public health and safety (IAC 567-100.2).
- *Toxic Waste* - material containing poisons, biocides, acids, caustics, pathological wastes, and similar harmful wastes which may require special handling and disposal procedures to protect the environment and the persons involved in the storage, transport, and disposal of the waste (IAC 567-109.3) [Added April 2003].
- *Transfer Station* - a fixed or mobile intermediate solid waste disposal facility for transferring loads of solid waste, with or without reduction of volume, to another transportation unit (IAC 567-100.2).
- *Transfer Station* - a permanent, fixed-location, enclosed transportation terminal that has the primary purpose of receiving solid waste from solid waste collection vehicles and loading that solid waste into solid waste transport vehicles. Truck-to-truck transfer of solid waste that is not incidental solid waste transfer is not allowed outside a transfer station building. A transfer station is a sanitary disposal project and may hold or store solid waste before transport for a short period of time. A transfer station is not a final disposal facility (IAC 567-106.2) [Added April 2003].
- *Tree Chipping Facilities* - facilities which chip trees and brush for the purpose of mulch production (IAC 567-100.2).
- *Trees* - trunks, limbs, stumps, or branches from trees or shrubs, and untreated, uncoated, chemically unchanged wood wastes. This does not include wood products which are part of an otherwise defined waste or have been contaminated by coatings, treatments, or metals (IAC 567-100.2).
- *Truck-to-truck Transfer* - the direct transfer of solid waste from one vehicle to a second vehicle with no intermediary handling. Truck-to-truck transfer of solid waste that is not incidental solid waste transfer is not allowed outside a transfer station building (IAC 567-106.2) [Added April 2003].
- *Vector* - a carrier organism that is capable of transmitting a pathogen from one organism to another. Vectors include, but are not limited to, birds, rats and other rodents, and insects (IAC 567-105.1) [Added April 2003].
- *Upgradient* - direction of increasing hydraulic head (IAC 567-100.2).
- *Upgradient Well* - a well which is capable of yielding groundwater samples that are representative of regional conditions and are not affected by the landfill site. Such a well is typically placed upgradient of the site, if possible, and if not, is placed in an upgradient direction and as near the site as feasible (IAC 567-100.2).
- *Unstabilized Sewage Sludge* - sludge from wastewater treatment facilities which is not treated to remove pathogens (IAC 567-120.2) [Revised April 2003].
- *Used Tire* - a tire that previously has been on a vehicle but that retains suitable tread depth and is free of damage or defects so that it may be safely returned to its original purpose (IAC 567-117.2) [Added April 2003].
- *Vector* - a carrier organism that is capable of transmitting a pathogen from one organism to another. Vectors include, but are not limited to, birds, rats and other rodents, and insects (IAC 567-106.2) [Added April 2003].

- *Washwater* - a water-based liquid that has either originated from solid waste unloaded inside the enclosed portion of a transfer station or that has come into contact with enclosed transfer station areas that have come into contact with solid waste (IAC 567-106.2) [Added April 2003].
- *Waste Reduction* - practices which reduce, avoid, or eliminate both the generation of solid waste and the use of toxic materials so as to reduce risks to health and the environment and to avoid, reduce or eliminate the generation of wastes or environmental pollution at the source and not merely achieved by shifting a waste output or waste stream from one environmental medium to another environmental medium. Waste reduction includes, but is not limited to, home yard waste composting, which prevents yard waste from entering the waste stream (IAC 567-100.2).
- *Waste Tire* - (as defined in Iowa Code section 455D.11) a tire that is no longer suitable for its originally intended purpose due to wear, damage, or defect. This definition shall include a tire mounted on a rim, but not on a vehicle. "Waste tire" does not include a nonpneumatic tire (IAC 567-117.2) [Revised April 2003].
- *Waste Tire Hauler* - an individual or business providing waste tire hauling and disposal services, in accordance with Iowa Code section 9B.1 (IAC 567-117.2) [Added April 2003].
- *Waste Tire Stockpile* - a site that is used for the storage, collection, or deposit of waste tires or tire bales, including indoor, outdoor, and underground storage (IAC 567-117.2) [Added April 2003].
- *Water Table* - the water surface below the ground at which the unsaturated zone ends and the saturated zone begins (IAC 567-100.2).
- *Yard Waste* - debris such as grass clippings, leaves, garden waste, brush, and trees. Yard waste does not include tree stumps (IAC 567-100.2).
- *Wetlands* - those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas (IAC 567-113.6(2)) [Added February 2010].
- *Yard Waste* - vegetative matter such as grass clippings, leaves, garden waste, brush and trees, and any clean wood waste which is necessary as bulking agent and which is free of coatings and preservatives (IAC 567-105.1) [Added April 2003].

**SOLID WASTE MANAGEMENT
GUIDANCE FOR IOWA CHECKLIST USERS**

REFER TO CHECKLIST ITEMS:

Missing Checklist Items	SO.2.1.IA.
State-Specific Requirements	
General	SO.5.1.IA. through SO.5.4.IA.
Permits/Notifications/Exemptions	SO.6.1.IA. through SO.6.4.IA.
Operations	SO.8.1.IA. through SO.8.21.IA.
Specific Wastes	SO.9.1.IA. through SO.9.6.IA.
Storage/Collection of Solid Waste	[Moved]
Transfer Facilities	SO.15.1.IA. through SO.15.10.IA.
Transportation	SO.20.1.IA. and SO.20.2.IA.
Recycling	SO.25.1.IA. through SO.25.26.IA.
Municipal Solid Waste Landfills	
Permits	SO.50.1.IA. and SO.50.2.IA.
Design Criteria	SO.60.1.IA.
Operational Criteria	SO.65.1.IA. through SO.65.11.IA.
Groundwater Monitoring Criteria	SO.70.1.IA. through SO.70.3.IA.
Documentation	SO.85.1.IA. through SO.85.3.IA.
Medical Waste	
Generators	SO.105.1.IA.
Transportation	SO.115.1.IA.
Treatment/Disposal	SO.120.1.IA. and SO.120.2.IA.
Landfills	SO.135.1.IA. through SO.135.44.IA.
Inert Waste Landfills	SO.140.1.IA. through SO.140.6.IA.
Industrial Waste Units	SO.150.1.IA. through SO.150.6.IA.
Waste Tire Management	SO.160.1.IA. through SO.160.14.IA.
Yard Waste Composting	SO.165.1.IA. through SO.165.34.IA.
Other Treatment/Processing Units	SO.175.1.IA. through SO.175.60.IA.
Closure of Solid Waste Facilities	SO.180.1.IA. through SO.180.7.IA.
Land Application of Solid Waste	SO.200.1.IA. through SO.200.15.IA.

**SOLID WASTE MANAGEMENT
GUIDANCE FOR IOWA APPENDIX USERS**

REFER TO APPENDIX NUMBER:	REFER TO APPENDIX ITEMS:
9-1	[Deleted]
9-2	Maximum Concentration Levels for All Metals
9-3	Permit Exemptions for Solid Waste Land Application
9-4	Contents of Emergency Response and Remedial Action Plans
9-5	Universally Approved Beneficial Use Determinations
9-6	Prohibited wastes for Municipal Solid Waste Landfills

COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
SO.2. MISSING CHECKLIST ITEMS SO.2.1.IA. Federal facilities are required to comply with all applicable state regulatory requirements not contained in the checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of findings).	Determine whether any new regulations have been issued since the finalization of the manual. Determine whether the Federal facility has activities or facilities that are regulated but not addressed in the checklists. Verify that the Federal facility is in compliance with all applicable and newly issued regulations.

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STATE-SPECIFIC REQUIREMENTS SO.5. General SO.5.1.IA. Public or private agencies may not dump or deposit or permit the dumping or depositing of any solid waste at any place other than a sanitary disposal project (IAC 567-100.4) [Revised April 2002].	Verify that private and public agencies do not dump or deposit or permit the dumping or depositing of any solid waste at any place other than a sanitary disposal project approved by the Department. (NOTE: A private agency may dispose of farm waste and farm buildings without first having obtained a sanitary disposal project permit provided that: - the farm waste was owned by the private agency and was used on the premises where disposal occurs - prior to disposal of vehicles, machinery, and equipment, all fluids are drained, including motor oils, motor fuels, lubricating fluids, coolants and solvents, and agricultural chemicals; and all batteries and rubber tires are removed - prior to disposal of storage or feeding equipment, the equipment is emptied of all contents not otherwise authorized for burial - farm buildings have been emptied of contents not otherwise authorized for burial pursuant to these rules and have been buried on the premises where they were located - all materials drained or removed from farm waste or farm buildings prior to disposal are recycled, reused or disposed of in accordance with this checklist item - the farm waste and farm buildings are buried in soils listed in tables contained in the county soil surveys and soil interpretation records (published by the U.S. Soil Conservation Service) as being moderately well drained, well drained, somewhat excessively drained, or excessively drained soils. Other soils may be used if artificial drainage is installed to obtain water-level depth more than 2 feet below the burial depth of the waste - the lowest elevation of the burial pit is six feet less below the surface - the farm waste and farm buildings are immediately covered with a minimum of 6 inches of soil and finally covered with a total minimum of 24 inches of soil.) (NOTE: A private agency may dispose of dead farm animals without first having obtained a sanitary disposal project permit, provided that the disposal is in accordance with the distance requirements of SO.5.3.IA., and: - the dead farm animals result from operations located on the premises where disposal occurs - a maximum loading rate of 7 cattle, 44 swine, 73 sheep or lambs or 400 poultry carcasses on any given acre per year. All other species will be limited to 2 carcasses per acre. Animals that die within 2 months of birth may be buried without regard to number - the dead animals are buried in soils listed in tables contained in the county soil surveys and soil interpretation records (published by the U .S. Soil

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SO.5.2.IA. The excavation, disruption, or removal of disposed material from any active or discontinued sanitary landfill or closed dump must meet specific requirements (IAC 567-100.5) [Citation Revised April 2002; Revised April 2003].	Conservation Service) as being moderately well drained, well drained, somewhat excessively drained, or excessively drained soils. Other soils may be used if artificial drainage is installed to obtain water-level depth more than 2 feet below the burial depth of the waste - the lowest elevation of the burial pit is six feet or less below the surface - the dead farm animals are immediately covered with a minimum of 6 inches of soil and finally covered with a total minimum of 30 inches of soil.) Verify that no deposited material is excavated, disrupted, or removed from any active or discontinued sanitary landfill or closed dump without first notifying the Department in writing. Verify that the notification includes an operational plan stating the area involved, lines and grades defining limits of excavation, estimated number of cubic yards of material to be excavated, sanitary disposal project where excavated material is to be disposed, and estimated time required for excavation procedures. Verify that an excavation is confined to an area consistent with the number of pieces of digging equipment and trucks used for haulage. Verify that adequate measures are taken during excavation to control dust, odors, fires, rodents, insects, and blowing litter. Verify that disposal of all solid waste resulting from excavation is in conformity with applicable requirements.
SO.5.3.IA. Farm waste, farm buildings, and dead farm animals must meet disposal requirements (IAC 567-100.4(2)(c)) [Added April 2002].	Verify that farm waste, farm buildings, and dead farm animals are disposed of in accordance with the following separate distances: - at least 100 ft from any private and 200 ft from any public well which is being used or would be used without major renovation for domestic purposes - at least 50 ft from adjacent property line - at least 500 ft from an existing neighboring residence - more than 100 ft from any body of surface water such as a stream, lake, pond, or intermittent stream - outside the boundaries of a flood plain, wetland, or shoreline area. (NOTE: Trees, brush and grubbed stumps generated as a result of clearing, snagging, maintenance or repair of drainage ditches or outlets may be buried within 100 ft of a surface water, and within a flood plain or shoreline area.)
SO.5.4.IA. All public agencies that contract with a hauler must include, as terms of that contract, a requirement that all solid waste collected	Verify that all public agencies that contract with a solid waste hauler include, as terms of that contract, a requirement that all solid waste collected by the hauler for the agency is disposed of or deposited at a municipal solid waste sanitary disposal project designated within said agencies comprehensive plan.

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by the hauler for that a agency is disposed of or deposited at a municipal solid waste sanitary disposal project designated within the agencies comprehensive plan (IAC 5 67-101.5(2)) [Added February 2010].	

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SO.6.4.IA. City, county, or private agencies operating or planning to operate a sanitary disposal project must file comprehensive planning documents (IAC 567-101.12) [Added February 2007; Revised February 2008 ; Revised February 2010].	the manner and volume specified by sanitary landfill rules: - asphalt shingles certified, consistent with federal regulations - coal combustion by-products may be mixed with soil in a 50/50 volume - one hundred percent cured or finished compost, and compost rejects - diatomaceous earth may be mixed with soil in a 50/50 volume - foundry sand may be mixed with soil in a 50/50 volume - glass that has been ground to an average size of 1/2 inch or less in any dimension may be mixed with soil in a 10 percent glass and 90 percent soil by volume mixture - gypsum and gypsum wallboard that have been ground to an average size of 3 inches or less in any dimension may be mixed with soil in a 50/50 volume - uncontaminated, dewatered paper mill sludge may be mixed with soil in a 50/50 volume - sandblasting abrasive and residuals may be mixed with soil in a 50/50 volume - petroleum-contaminated soils that have been decontaminated - tire chips that are an average size of 3 inches or less in any dimension may be mixed with soil in a 50/50 volume.) (NOTE: Alternative cover material placed at no more than the thickness required by sanitary landfill rules is exempt from landfill tonnage measurements used for state goal progress and waste diversion calculations.) Verify that a city, county, or private agency operating or planning to operate a municipal solid waste sanitary disposal project file a comprehensive plan detailing the method by which the city, county, or private agency will comply with solid waste comprehensive planning requirements. Verify that the comprehensive plan is filed with the Director. (NOTE: IAC 567-101.13 details the types (initial, updates and amendments) of comprehensive plan submittals.)

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STATE-SPECIFIC REQUIREMENTS SO.8. Operations SO.8.1.IA. Sanitary landfill operators and solid waste incinerator operators must be certified (IAC 567-112.29(1), (2), (3), and (12), 113.8(6), 114.29(1), (2), (3), and (12) and 115.29(1), (2), (3), and (12)) [Added April 2003 ; Citation Revised February 2008]. SO.8.2.IA. A permitted sanitary disposal project must meet emergency response and remedial action plan (ERRAP) requirements (IAC 567-102.14) [Added April 2003].	(NOTE: Sanitary Landfills include Biosolids monofills (Chapter 112, see SO.135), Municipal Solid Waste Landfills (Chapter 113, see SO.50 and SO.65), Construction and Demolition Landfills (Chapter 114, see SO.140), and Industrial Monofills (Chapter 115, see SO.150).) Verify that sanitary landfill operators and solid waste incinerator operators are on duty during all hours of operation of the landfill or incinerator, consistent with the respective certification. (NOTE: To become a certified operator, an individual must complete a basic operator training course that has been approved by the department or a n alternative, equivalent training approved by the department and shall pass a departmental examination as specified by this rule. A n operator certified by another state may have reciprocity subject to approval by the Department. The solid waste incinerator operator certification is valid until June 30 of the following even-numbered year.) Verify that, if a temporary certification is necessary, the Department approves it. (NOTE: A temporary operator designation will not be approved for greater than a six-month period except for extenuating circumstances. In any event, not more than one six-month extension to the temporary operator designation may be granted.) (NOTE: The requirements of this rule apply to the owners or operators of all sanitary disposal projects that are permitted under 567-102.2(455B). Permitted project types include: municipal and industrial waste landfills; construction and demolition waste landfills; coal combustion residue landfills; waste storage facilities; waste processing facilities; recycling and material recovery facilities; transfer stations; composting facilities; incinerator facilities; regional collection centers; land application facilities; and any facility deemed necessary to have a project permit under sanitary disposal project definition. Centralized regional collection center ERRAP documents must specifically address the ERRAP requirements for each of the regional collection center's satellite facilities. This rule is not applicable to waste tire management facilities. These projects are all under 567, Title VIII, Chapters 100 through 121.) Verify that an updated ERRAP is submitted at the time of each permit renewal or permit reissuance application that is due after December 31, 2001.

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SO.8.3.IA. A permitted sanitary disposal project must meet specific operating requirements (IAC 567-102.13 (1) through (8)) [Added April 2003].	Verify that an updated ERRAP is included with any request for permit modification to incorporate a facility expansion or significant changes in facility operation that require modification of the currently approved ERRAP. (NOTE: Facilities that submitted an ERRAP meeting the requirements by May 1, 2001, including regional collection centers that, prior to this date, have met the contingency plan submittal requirement described in 567-Chapter 211, and were approved by the Department prior to October 24, 2001, are not required to submit an updated ERRAP until the next permit renewal application due date after December 31, 2001.) Verify that the content of ERRAP documents is concise and readily usable as a reference manual by facility managers and operators during emergency conditions. Verify that the ERRAP document contents address at least the primary issues (see Appendix 9-4) in detail, unless project conditions render the specific issue not applicable. Verify that the rationale for exclusion of any issue areas that are determined not to be applicable are provided in either the body of the plan or as a supplement to facilitate Department review. Verify that additional emergency response and remedial action plan requirements unique to the facility are addressed, as applicable.
	(NOTE: Every application for any solid waste disposal project permit issued by the Department must detail the means by which the following operating requirements are complied with. All sanitary disposal projects must be operated in conformance with these requirements.) Verify that all open burning is prohibited except when permitted (see AE.130.1.IA.). Verify that any burning to be conducted at the site is at a location that is separate and distinct from the operating area. Verify that litter is confined to the property on which the sanitary disposal project is located. Verify that at the conclusion of each day of operation, any litter strewn beyond the confines of the operating area is collected and stored in covered leakproof containers or properly disposed. Verify that scavenging is prohibited. Verify that any salvaging to be conducted is described in the permit application and all salvaged materials are stored and removed from the sanitary disposal

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	project site in conformance with the permit conditions. Verify that effective means are taken to control flies, other insects, rodents and other vermin. Verify that equipment designated in the plans and specifications or equivalent equipment is used to operate the site at all times. Verify that the major internal roads are of all weather construction and maintained in good condition. Verify that dust is controlled on internal roads. Verify that sites open to the public have a permanent sign posted at the site entrance specifying: - name of the operation - site permit number - hours and days the site is open to the public - categories of waste that will be accepted for disposal or, as an alternative, identifies the categories of waste that are prohibited. - telephone number of official responsible for the operation. Verify that free liquids or waste containing free liquids are disposed in a sanitary landfill.
SO.8.4.IA. Sanitary landfills must meet general operating requirements (IAC 567-112.26(2)(a) and (b), 114.26(2)(a) and (b), and 115.26(2)(a) and (b)) [Added April 2003 ; Citation Revised February 2008].	(NOTE: Sanitary Landfills include Biosolids monofills (Chapter 112, see SO.135), Municipal Solid Waste Landfills (Chapter 113, see SO.50 and SO.65), Construction and Demolition Landfills (Chapter 114, see SO.140), and Industrial Monofills (Chapter 115, see SO.150).) Verify that solid waste is unloaded at the operating area only when an operator is on duty at that area. Verify that solid waste is deposited in storage containers inside the site under the supervision of an attendant or operator. Verify that access to the solid waste landfill is restricted and a gate is provided at the entrance to the site and is locked when an attendant or operator is not on duty.
SO.8.5.IA. A copy of the permit, engineering plans and reports must be kept at the sanitary landfill site at all times (IAC 567-112.26(2)(c), 114.26(2)(c), and	(NOTE: Sanitary Landfills include Biosolids monofills (Chapter 112, see SO.135), Municipal Solid Waste Landfills (Chapter 113, see SO.50 and SO.65), Construction and Demolition Landfills (Chapter 114, see SO.140), and Industrial Monofills (Chapter 115, see SO.150).) Verify that a copy of the permit, engineering plans, and reports are kept at the site

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115.26(2)(c)) [Added April 2003; Citation Revised February 2008]. SO.8.6.IA. Sanitary landfill sites not open to the public must post signs containing specific information (IAC 567-112.26(2)(d), 114.26(2)(d), and 115.26(2)(d)) [Added April 2003; Citation Revised February 2008]. SO.8.7.IA. Solid waste may not be deposited in sanitary landfills in a manner that causes pollution of the ground or surface waters (IAC 567-112.26(2)(e), 113.10(1) 114.26(2)(e), and 115.26(2)(e)) [Added April 2003; Citation Revised February 2008]. SO.8.8.IA. Sanitary landfills must have an all weather fill area and cover material must be available for winter and wet weather (IAC 567-112.26(2)(f) and (g), 114.26(2)(f) and (g), and 115.26(2)(f) and (g)) [Added April 2003 ; Citation Revised February 2008]. SO.8.9.IA. Sanitary landfill sites must be graded and	at all times unless the Department determines that this is unnecessary. Verify that the solid waste landfill operation is in compliance with the permit and engineering plans. (NOTE: Sanitary Landfills include Biosolids monofills (Chapter 112, see SO.135), Municipal Solid Waste Landfills (Chapter 113, see SO.50 and SO.65), Construction and Demolition Landfills (Chapter 114, see SO.140), and Industrial Monofills (Chapter 115, see SO.150).) Verify that sites not open to the public have permanent signs posted at the entrance specifying: - name of operation - site permit number - that the site is not open to the public - the name and telephone number of the responsible official. (NOTE: Sanitary Landfills include Biosolids monofills (Chapter 112, see SO.135), Municipal Solid Waste Landfills (Chapter 113, see SO.50 and SO.65), Construction and Demolition Landfills (Chapter 114, see SO.140), and Industrial Monofills (Chapter 115, see SO.150).) Verify that solid waste is not deposited in such a manner that material or leaching from it causes pollution of ground or surface waters. (NOTE: Sanitary Landfills include Biosolids monofills (Chapter 112, see SO.135), Municipal Solid Waste Landfills (Chapter 113, see SO.50 and SO.65), Construction and Demolition Landfills (Chapter 114, see SO.140), and Industrial Monofills (Chapter 115, see SO.150).) Verify that an all-weather fill area is accessible for solid waste disposal during all weather conditions under which solid waste is received and disposed of at the site. Verify that cover material is available at the solid waste landfill for winter and wet weather operations. (NOTE: Sanitary Landfills include Biosolids monofills (Chapter 112, see SO.135), Municipal Solid Waste Landfills (Chapter 113, see SO.50 and SO.65),

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provided with drainage facilities (IAC 567-112.26(2)(h), 114. 26(2)(h), and 115. 26(2)(h)) [Added April 2003 ; C itation R evised February 2008]. SO.8.10.IA. The finished surface of a sanitary landfill site must be repaired covered with soil and seeded upon completion (IAC 567 - 112.26(2)(i), 114.26(2)(i), and 115.26(2)(i)) [Added April 2003; C itation R evised February 2008]. SO.8.11.IA. Municipal solid waste landfills must be inspected annually by a professional engineer (IAC 567-112.26(2)(j), 114.26(2)(j), and 115.26(2)(j)) [Added April 2003; C itation R evised February 2008]. SO.8.12.IA. The Department must be promptly notified of any pockets, seams or layers of sand or other highly permeable material are encountered at the sanitary landfill (IAC 567-112.26(2)(k), 114. 26(2)(k), and 115. 26(2)(k)) [Added April 2003 ; C itation R evised February 2008].	Construction and Demolition Landfills (Chapter 114, see SO.140), and Industrial Monofills (Chapter 115, see SO.150).) Verify that each solid waste landfill site is graded and provided with drainage facilities which minimize flow of surface water onto and into the portion of the site being filled, prevent soil erosion, and prevent ponding of water. (NOTE: Sanitary Landfills include Biosolids monofills (Chapter 112, see SO.135), Municipal Solid Waste Landfills (Chapter 113, see SO.50 and SO.65), Construction and Demolition Landfills (Chapter 114, see SO.140), and Industrial Monofills (Chapter 115, see SO.150).) Verify that the finished surface of the site is repaired as required, covered with soil, and seeded with native grasses or other suitable vegetation immediately upon completion or promptly in the spring on a reas terminated during winter conditions, and, if necessary, seeded slopes are covered with straw or similar material to prevent erosion. (NOTE: Sanitary Landfills include Biosolids monofills (Chapter 112, see SO.135), Municipal Solid Waste Landfills (Chapter 113, see SO.50 and SO.65), Construction and Demolition Landfills (Chapter 114, see SO.140), and Industrial Monofills (Chapter 115, see SO.150).) Verify that solid waste landfills are staked as necessary and inspected annually or as otherwise specified in the permit, by a professional engineer registered in Iowa. Verify that a brief report prepared by the engineer indicating areas of conformance or nonconformance with the approved plans and specifications is submitted to the Department by the permit holder within 30 days of the inspections. (NOTE: Sanitary Landfills include Biosolids monofills (Chapter 112, see SO.135), Municipal Solid Waste Landfills (Chapter 113, see SO.50 and SO.65), Construction and Demolition Landfills (Chapter 114, see SO.140), and Industrial Monofills (Chapter 115, see SO.150).) Verify that the Department is promptly notified by the permit holder if any pockets, seams or layers of sand, or other highly permeable material are encountered at the sanitary landfill. Verify that a professional engineer registered in Iowa certifies that all sands encountered are totally excavated or sealed off properly or otherwise handled as explicitly provided for in the permit before solid waste is disposed of in that area of the site.

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SO.8.13.IA. The total volume of leachate collected at the sanitary landfill each month must be recorded (IAC 567-112.26(2)(l), 114.26(2)(l), and 115.26(2)(l)) [Added April 2003; Citation Revised February 2008].	(NOTE: Sanitary Landfills include Biosolids monofills (Chapter 112, see SO.135), Municipal Solid Waste Landfills (Chapter 113, see SO.50 and SO.65), Construction and Demolition Landfills (Chapter 114, see SO.140), and Industrial Monofills (Chapter 115, see SO.150).) Verify that the total volume of leachate collected at the solid waste landfill each month is recorded. Verify that the elevation of leachate in the landfill is provided to the Department in accordance with the schedule specified in the permit.
SO.8.14.IA. Sanitary landfills must control methane gas (IAC 567-112.26(15), 113.9(2), 114.26(15), and 115.26(15)) [Added April 2003; Citation Revised February 2008].	(NOTE: Sanitary Landfills include Biosolids monofills (Chapter 112, see SO.135), Municipal Solid Waste Landfills (Chapter 113, see SO.50 and SO.65), Construction and Demolition Landfills (Chapter 114, see SO.140), and Industrial Monofills (Chapter 115, see SO.150).) Verify that the concentration of methane gas generated by a solid waste landfill does not exceed 25 percent of the lower explosive limit for methane in facility structures (excluding gas control or recovery system components). Verify that the concentration of methane gas does not exceed the lower explosive limit for methane at the facility property boundary. Verify that solid waste landfills monitor quarterly for compliance with the above statements and that an annual report is submitted by 30 November summarizing the methane gas monitoring results and any action taken resulting from gas levels exceeding the limits during the previous year. Verify that if methane gas levels exceed the specified limits, the following actions are taken: - immediately takes all necessary steps to ensure protection of human health and notifies the director - within 7 days after detection submits to the director a report stating the methane gas levels detected and a description of the steps taken to protect human health - within 60 days of detection, implements a plan for remediation of the methane gas releases and sends a copy of the remediation plan to the director, and the plan describes the nature and extent of the problem and the proposed remedy.
SO.8.15.IA. Sanitary landfills must maintain and operate hydrologic monitoring systems (IAC 567-112.26(3),	(NOTE: Sanitary Landfills include Biosolids monofills (Chapter 112, see SO.135), Municipal Solid Waste Landfills (Chapter 113, see SO.50 and SO.65), Construction and Demolition Landfills (Chapter 114, see SO.140), and Industrial

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114.26(3), and 115. 26(3)) [Added April 2003 ; Citation Revised February 2008]. SO.8.16.IA. Sanitary landfill hydrologic monitoring systems must meet specific operating requirements (IA C 567-112.26(4), 114.26(4), and 115.26(4)) [Added April 2003; Citation Revised February 2008].	Monofills (Chapter 115, see SO.150).) Verify that solid waste disposal facilities operate and maintain an approved hydrologic monitoring systems which include a sufficient number of groundwater monitoring wells and surface water monitoring points which determine the impact, if any, that the sanitary landfill is having on the adjacent water. Verify that the hydrologic monitoring systems enable early detection of the escape of pollutants from a solid waste landfill. (NOTE: Sanitary Landfills include Biosolids monofills (Chapter 112, see SO.135), Municipal Solid Waste Landfills (Chapter 113, see SO.50 and SO.65), Construction and Demolition Landfills (Chapter 114, see SO.140), and Industrial Monofills (Chapter 115, see SO.150).) Verify that all sampling is conducted in accordance with an approved sampling protocol. Verify that the elevation of water in each monitoring well is measured monthly and recorded to the nearest 0.01 ft, and that level measurements are made before a well is evacuated for sample collection. Verify that the water level or flow rate of each surface water body sampled is measured and recorded at the time of sample collection. Verify that during the first year of operation of the hydrologic monitoring system, samples are collected quarterly from each groundwater monitoring well and surface water monitoring point. Verify that samples taken during the first year of operation are analyzed for the following parameters, plus any additional parameter deemed necessary by the Department: - arsenic, dissolved - barium, dissolved - cadmium, dissolved - chromium, total dissolved - lead, dissolved - mercury, dissolved - magnesium, dissolved - zinc, dissolved - copper, dissolved - benzene - carbon tetrachloride - 1,2-dichloroethane - trichloroethylene - 1,1,1-trichloroethane - 1,1-dichloroethylene

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SO.8.17.IA. Groundwater and surface water samples from the sanitary landfill must be analyzed in certified laboratories (IAC 567 - 112.26(5), (6), and (7), 114.26(5), (6), and (7), and 115.26(5), (6), and (7)) [Added April 2003 ; Citation Revised February 2008].	- paradichlorobenzene. Verify that, during the first year samples are analyzed for the following parameters, and that, after the first year each monitoring point is sampled semiannually as specified in the facility's operation permit and analyzed for the following parameters: - chloride - specific conductance (field measurement) - pH (field measurement) - ammonia nitrogen - iron, dissolved - chemical oxygen demand - temperature (field measurement) - any additional parameters deemed necessary by the Department. Verify that one sample per year from each monitoring point collected in a quarter specified in the facility's operation permit is analyzed for the following parameters: - total organic halogen - phenols - any additional parameters deemed necessary by the Department. (NOTE: Sanitary Landfills include Biosolids monofills (Chapter 112, see SO.135), Municipal Solid Waste Landfills (Chapter 113, see SO.50 and SO.65), Construction and Demolition Landfills (Chapter 114, see SO.140), and Industrial Monofills (Chapter 115, see SO.150).) Verify that groundwater and surface water samples are analyzed only by laboratories that are certified by the State of Iowa. Verify that all analyses of parameters not covered in the <i>Safe Drinking Water Act</i> are performed according to methods specified in Solid Waste-846 or approved by the USEPA and that any analyticity method used on non-<i>Safe Drinking Water Act</i> parameters deviating from those specified in Solid Waste-846 or approved by USEPA are approved by the Department. Verify that all analyses are recorded on forms that, in addition to the analytical results, show the precision of the data set, bias, and limit of detection. Verify that for each parameter analyzed during the first year of operation of the hydrologic monitoring system, the mean and standard deviation for each upgrading monitoring well are determined using first-year data. Verify that for routine semiannual monitoring parameters, the mean and standard deviation are recalculated annually using all available analytical data.

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SO.8.18.IA. Sanitary landfill hydrologic monitoring systems must meet specific record keeping and recording requirements (IAC 567-112.26(8), 114.26(8), and 115.26(8)) [Added April 2003; Citation Revised February 2008].	Verify that if the analytical results for a downgradient or an upgradient monitoring point are not within the control limits of 2 standard deviations above the mean parameter(s) level in a corresponding upgradient monitoring point, that this information is submitted to the Department within 30 days of receipt of the analytical results. (NOTE: The Department may require additional sampling.) (NOTE: Sanitary Landfills include Biosolids monofills (Chapter 112, see SO.135), Municipal Solid Waste Landfills (Chapter 113, see SO.50 and SO.65), Construction and Demolition Landfills (Chapter 114, see SO.140), and Industrial Monofills (Chapter 115, see SO.150).) Verify that records are sufficient to document whether the procedures and requirements specified in the sampling protocol are followed. Verify that persons conducting the sampling record the names of persons conducting the sampling, that time and date each monitoring point is sampled, the required field measurement or test result, and that copies of these field records are sent the Department if requested. Verify that records are kept of analyses and the associated groundwater surface elevations for the active life and postclosure period of the facility and that these records are kept at the site or in the administrative files of the owner or operator and are available for review by the Department upon request in the county in which the landfill is operated. Verify that the Department is provided with copies of the quarterly monitoring analytical results by the dates specified in the facility's operation permit. Verify that an annual report summarizing the effect the facility is having on groundwater and surface water quality is submitted to the Department by 30 November of each year and that the summary is prepared by an engineer registered in the State of Iowa and incorporated in the November semiannual engineer inspection report. Verify that the summary includes the following items: - amounts and kinds of wastes accepted under Special Waste Authorizations - a narrative describing the effects of the facility on surrounding surface water and groundwater quality and any changes made or maintenance needed in the monitoring network - graphs showing concentrations versus time for all monitoring parameters for each well for as long as records exist for that parameter (Control limits, -two standard deviations from the initial background value, must be shown in each graph) - results of activities and tests required by the well maintenance and performance reevaluation plan.

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SO.8.19.IA. Sanitary landfills must have a leachate control system in place prior to accepting waste (IAC 567-112.26(11), 113.7(5)(b), 114.26(11), and 115.26(11)) [Added April 2003 ; Citation Revised February 2008].	(NOTE: Sanitary Landfills include Biosolids monofills (Chapter 112, see SO.135), Municipal Solid Waste Landfills (Chapter 113, see SO.50 and SO.65), Construction and Demolition Landfills (Chapter 114, see SO.140), and Industrial Monofills (Chapter 115, see SO.150).) Verify that all landfills have a leachate collection, storage, and treatment disposal system in place prior to accepting waste and that this system is operated in conformance with the approved design during the active life of the site and during the postclosure period. Verify that the leachate collection system is designed to allow no more than 1 ft of head above the top of the landfill liner and that the system includes a method for measuring the leachate head in the landfill at the lowest area(s) of the collection system. Verify that the leachate collection system is equipped with valves that enable the flow of leachate from the facility to be shut off during periods of maintenance. Verify that the leachate collection system is cleaned out once every 3 yr, or more frequently if leachate head or the volume of leachate collected indicates that cleanout is necessary. Verify that a report of the methods and results of the cleanout are submitted at the time of permit renewal.
SO.8.20.IA. Sanitary landfill leachate storage systems must meet specific requirements (IAC 567-112.26(11)(b), 113.7(5)(b), 114.26(11)(b), and 115.26(11)(b)) [Added April 2003 ; Citation Revised February 2008].	(NOTE: Sanitary Landfills include Biosolids monofills (Chapter 112, see SO.135), Municipal Solid Waste Landfills (Chapter 113, see SO.50 and SO.65), Construction and Demolition Landfills (Chapter 114, see SO.140), and Industrial Monofills (Chapter 115, see SO.150).) Verify that the leachate storage system is capable of storing at least 7 days' accumulation of leachate based on mathematical simulated volume using average precipitation. Verify that the leachate storage system is constructed of materials that are compatible with the expected leachate. Verify that the leachate storage system is accessible at all times of the year and under all weather conditions.
SO.8.21.IA. Sanitary landfill leachate treatment and disposal systems must meet specific requirements (IAC	(NOTE: Sanitary Landfills include Biosolids monofills (Chapter 112, see SO.135), Municipal Solid Waste Landfills (Chapter 113, see SO.50 and SO.65), Construction and Demolition Landfills (Chapter 114, see SO.140), and Industrial

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567-112.26(11)(c)) [Revised April 2003 ; C itation R evised February 2008].	Monofills (Chapter 115, see SO.150).) Verify that leachate is treated by the physical, chemical, or biological processes necessary to meet the pretreatment limits, if any, imposed by a treatment agreement between the landfill and a publicly owned treatment works, or by the effluent discharge limitation established by a National Pollutant Discharge Elimination System permit issued to the landfill. Verify that leachate recirculation systems minimize detrimental effects to vegetative cover, minimize erosion and damage to the soil cover, and promote rapid stabilization of the waste. Verify that the Department is notified when the initial construction of the leachate collection, storage, and treatment and discharge systems is completed, in order that an inspection is made to determine that the leachate control system is constructed as designed. (NOTE: The construction certification reports from the project engineer discussing quality assurance and quality control testing done to ensure that all materials and equipment for the leachate control system, in accordance with the approved engineering plans, must be submitted prior to the inspection.) Verify that the results of all testing, along with documentation of any failed tests, a description of the procedures used to correct the failures, and results of any retesting performed are included in the construction certification report.

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STATE-SPECIFIC REQUIREMENTS SO.9. Specific Wastes SO.9.1.IA. Generators of special waste must consider other alternatives to landfilling (IAC 567-109.8 (1)) [Added April 2003; Revised April 2004 ; Citation Revised February 2007]. SO.9.2.IA. Generators of special waste must have a special waste authorization (SWA) (I AC 567-109.5 and 109.6) [Added April 2003 ; Citation Revised February 2007].	Verify that, prior to submission of a Special Waste Authorization (SWA) application, the generator considers alternatives including: volume reduction at the source; recycling and reuse, including composting and land application; and other approved techniques of solid waste management including, but not limited to , combustion with energy recovery and combustion for waste disposal. Verify that the generator includes, as part of the SWA application, a description of the review of the alternatives to landfilling for each waste for which an SWA is requested. Verify that the description details to what extent the waste could be recycled, reduced or reused so that landfilling is not necessary. (NOTE: One of the copies of the application form will be forwarded to the disposal site after the Department review process is completed.) (NOTE: The application will include the following information when applicable: - appropriate chemical analysis of the waste - physical form of the waste - weight or volume of the waste - material safety data sheet (MSDS) for the waste or for the materials from which the waste is generated, if applicable - toxicity characteristic leaching procedure (TCLP) test results when appropriate, which show that none of the federal limits in 40 CFR Part 261 are exceeded - any other information requested by the Department.) Verify that the application is approved by the Department. Verify that the waste does not contain free liquids (the point of compliance is the working face). Verify that the waste is not a listed hazardous waste or meet the criteria for characteristic hazardous waste pursuant to the federal Resource Conservation and Recovery Act (RCRA). Verify that the wastes do not have PCB concentrations equal to or greater than 50 ppm. Verify that polynuclear aromatic hydrocarbon (PAH) (SW 84.6 Method 82.70)

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	contaminated soil is not disposal at a landfill if the total PAH level exceeds 1600 ppm for the following compounds: acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, and pyrene or if the total carcinogenic PAH level exceeds 200 ppm for the following compounds: benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene or if the cyanide level exceeds 1,000 ppm. (NOTE: Special waste authorizations may be issued for a period not to exceed 3 years. The Department may revoke an SWA for cause at any time. Such cause may include, but is not limited to, evidence that indicates that the characteristics of the authorized quality of the waste vary from the authorized values, evidence that the continued disposal of the waste as authorized may pose a threat to the public health or the environment, or failure to comply with any condition in the SWA or the landfill's SWAC.) Verify that the holder of an SWA applies for a renewal at least 30 days prior to the expiration of the SWA. (NOTE: The issuance of an SWA does not obligate any waste disposal facility to accept the waste nor does it preclude the facility from imposing conditions or restrictions other than those listed in the SWA.)
SO.9.3.IA. Generators of special waste must meet management requirements (IAC 567-109.8(3) through (8)) [Added April 2003; Citation Revised February 2007].	Verify that, after receiving an SWA, the generator contacts the designated landfill for instructions on delivering the waste and instructions for adhering to the landfill's SWAC. Verify that the generator ensures that special waste coming into the landfill arrives as a separate load and not be commingled with any other waste. Verify that the generator submits analytical results supporting an SWA at a frequency determined by the landfill. Verify that the generator notifies the Department and landfill, prior to disposal, of any change in the characteristics of the special wastes being disposed. Verify that generators notify the landfill in writing when a one-time disposal under an SWA has been completed.
SO.9.4.IA. Other special wastes must meet management requirements (IAC 567-109.10) [Added April 2003; Citation Revised	Verify that radioactive materials are not disposed of by a sanitary disposal project. (NOTE: Luminous timepieces are exempt.) Verify that sewage sludge, including unstabilized septic tank pumpings, are not

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February 2007]. SO.9.5.IA. Disposal of asbestos-containing special wastes must meet management requirements (IAC 567-109.11(1)) [Added April 2004 ; Citation Revised February 2007]. SO.9.6.IA. Disposal of petroleum-contaminated soil as a special waste must meet	disposed of in a sanitary landfill, if it meets the criteria for Class I or II sewage sludge in 567-Chapter 67 (see the Wastewater Management Section), except for use in daily, interim, or final cover according to the approved plan for the landfill. (NOTE: Class I II sewage sludge may be disposed of at a sanitary landfill as provided in 567-Chapter 112 (see Biosolid Landfills). Sewage sludge may be handled at processing facilities as provided in 567-Chapter 104 (See SO.175.IA.) or utilized for land application in accordance with 675-Chapter 67 (See WA.105.IA) Verify that land disposal of waste tires is prohibited, unless each tire is processed by, at a minimum, shredding, cutting or chopping each tire into pieces that are no longer than 18 inches on any side. (NOTE: Asbestos-containing material (ACM) wastes with 1 percent or less asbestos are not regulated and can be disposed of at the working face, the same as any other waste.) Verify that any federal NESHAP-regulated ACM waste shipments that show evidence of visible dust emissions or that are not properly containerized, wrapped, wetted, and covered are rejected upon arrival at the landfill. Verify that ACM wastes with greater than 1 percent asbestos content, as determined by laboratory tests, which are confirmed as friable when received at the landfill are disposed of in an area separate from the regular working face and covered carefully with a minimum of six inches of soil cover and compacted by no later than the end of the operating day. Verify that covered ACM waste areas are protected from erosion at all times. Verify that extreme care is taken at all times when transporting, depositing, and covering federal NESHAP regulated ACM waste to control the evolution of dust and airborne asbestos fibers and to not allow the rupture of asbestos containers and wraps. Verify that daily records of the acceptance and disposal of all ACM wastes are maintained. Verify that all records, except for waste shipment records, are maintained through site closure. Verify that waste shipment records are retained for at least 2 years. Verify that the sanitary landfill operator, the generator and the hauler comply with the following conditions and requirements whenever petroleum-contaminated soil

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management requirements (IAC 567-109.11(2)) [Added April 2004 ; Citation Revised February 2007].	is disposed of in a sanitary landfill: - the waste cannot be a hazardous waste - the waste cannot contain free liquids as determined by the paint filter liquids test - upon arrival at the landfill, the hauler identifies the waste to the landfill attendant - the landfill operator directs the hauler to the evaporation area - the contaminated soil is spread up to a depth of 4 inches - the contaminated soil aerates for at least 14 days and until the hydrocarbon level is less than 100 ppm - the soil is turned or disked at least 3 times per week. (NOTE: Alternative procedures other than the defined procedures may be used if it can be demonstrated that soil treatment can be consistently achieved and if approved under permit amendment.) Verify that after the contaminant has evaporated and the total hydrocarbon content is less than 100 ppm the soil is not used for capping or lining, although the soil can be used as daily cover material or incorporated into the working face. Verify that once every 3 months, petroleum-contaminated soil that has been treated at the evaporation area is sampled and analyzed for total hydrocarbon content. (NOTE: See PO.110.1.IA. and PO.110.2.IA. for other POL requirements.)

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SO.10. STORAGE/ COLLECTION OF SOLID WASTE SO.10.1.IA. [Moved April 2003]. SO.10.2.IA. [Moved April 2003]. SO.10.3.IA. [Moved April 2003].	 (NOTE: Moved to SO.175.3.IA. IAC 567 -104.9(1)(a) applies to solid waste disposal projects with processing facilities.) (NOTE: Moved to SO.175.4.IA. IAC 567 -104.9(1)(a) applies to solid waste disposal projects with processing facilities.) (NOTE: Moved to SO.175.3.IA. IAC 567-104.9(2) applies to solid waste disposal projects with processing facilities.)

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SO.15. TRANSFER FACILITIES SO.15.1.IA. A solid waste transfer facility must operate under a permit (IAC 567 - 106.3) [Added April 2003]. SO.15.2.IA. A solid waste transfer facility must meet siting and location requirements (IAC 567-106.9) [Added April 2003]. SO.15.3.IA. A solid waste transfer facility must meet design requirements (IAC 567-106.10(1)) [Added April 2003].	(NOTE: A transfer station is a sanitary disposal project and must not be constructed or operated without a permit from the Department. In order to be issued a permit, a transfer station must satisfy the comprehensive planning requirements set forth in 567-Chapter 101.) Verify that the transfer facility has a construction and operating permit. Verify that, if a citizen convenience center is located at a permitted recycling or composting facility or sanitary disposal project, it is amended in to the host facility's permit. Verify that a transfer station is constructed and operated according to the plans and specifications approved by the Department and the conditions of the permit. Verify that a transfer station is not located within a 100-year floodplain unless the design includes structures to prevent floodwater inundation from a 100-year flood of any area that comes into contact with solid waste or washwater. Verify that a transfer station is not located within 500 feet of an educational or health care facility or permanent residence unless screening is utilized to minimize noise and visibility of operations. Verify that screening utilizes natural components to the maximum extent possible. (NOTE: This requirement does not apply if construction of the educational or health care facility or permanent residence began after the transfer station permit application was received by the Department.) Verify that all surfaces in the transfer station building that come into contact with solid waste are enclosed by walls and a roof satisfactory to: - minimize dust and litter exiting the building - keep precipitation out of the building - prevent the attraction or harboring of vectors. Verify that all surfaces in the transfer station building that come in contact with solid waste or washwater are impervious to liquids. Verify that the transfer station building has a drainage system that maintains a

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SO.15.4.IA. A solid waste transfer facility must meet security and safety requirements (IA C 5 67-106.10(2)) [Added April 2003].	separation between stormwater and washwater. Verify that the transfer station building has a washwater collection system that directs washwater to a storage tank for later disposal, a sanitary sewer system, or equivalent as approved by the Department. Verify that washwater storage tanks have high-level indicators or gauges. Verify that each area where unloaded solid waste is stored during nonoperating hours is clearly marked and include a fire detection system. Verify that, if solid waste is to be managed or stored in a surge pit, then effective odor control mechanisms such as, but not limited to, mist systems and air filters are used. Verify that, if solid waste is to be managed or stored in a surge pit, a sprinkler system is installed over that area. Verify that each area where salvaged materials are stored is clearly marked. Verify that the transfer station building has adequate indoor and outdoor lighting that minimizes the difference in lighting when entering or exiting the building. Verify that the transfer station building has doors at each entrance and exit. Verify that a secure perimeter fence, with lockable gate(s) is provided. Verify that a scale certified by the Iowa Department of Agriculture and Land Stewardship is used. Verify that a adequate queuing distance for vehicles entering and exiting the property is provided so that lines of vehicles will not extend onto public streets during peak hours, unless approved by the appropriate local government authority. Verify that signs or pavement markings indicating safe and proper on-site traffic patterns are provided. Verify that a sign is posted at the primary entrance to the facility specifying: - name and permit number of facility - operating hours - materials that are accepted or the statement "All materials must have prior approval." - telephone number of emergency contact person(s).
SO.15.5.IA. A solid waste transfer facility must meet	(NOTE: Also see SO.20.1.IA. and SO.20.2.IA.)

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operating requirements (IA C 567-106.11(1) through (7)) [Added April 2003].	Verify that site access is controlled and limited to a time when a transfer station operator who has met the following training requirements is on duty: - has read, understands, and is able to implement the plan of operations - has read, understands, and is able to implement the emergency response and remedial action plan - is able to visually recognize universal symbols and markings, and indications of unacceptable materials - is certified by a training program approved by the department such as, but not limited to, the Solid Waste Association of North America's Managing Transfer Station Systems Training and Certification Course, if the facility is permitted for 20,000 tons or more per year of solid waste. Verify that solid waste is accepted only from generators within the designated service area. Verify that all unloading, handling, processing, screening, open storage, loading, and similar activities or processes involving solid waste are performed inside the transfer station building. Verify that truck-to-transfer of solid waste that is not incidental solid waste transfer is not allowed outside a transfer station building. (NOTE: A rear-loading solid waste transport vehicle that does not have any other open access and securely abuts the transfer station building so that minimal amounts of solid waste escape during loading shall qualify as being inside the building.) Verify that salvaged materials that do not attract or harbor vectors are stored outside the building in clearly marked designated areas. Verify that all solid waste accepted by the transfer station is, at a minimum, visually inspected by personnel capable of identifying hot loads and hazardous, infectious, radioactive, and other wastes not acceptable for disposal in a sanitary landfill. Verify that transfer station operators segregate and manage unacceptable wastes and hot loads in accordance with applicable laws, and in a manner as safe and responsible as practical. (NOTE: Transfer station operators are allowed to salvage materials.) Verify that scavenging is not allowed. Verify that the operation of the facility is carried out in a manner that attempts to minimize litter, dust, odor, noise, vibration, and the attraction or harborage of vectors.

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SO.15.6.IA. A solid waste transfer facility must meet maintenance requirements (IAC 567-106.11(8) through (13)) [Added April 2003].	Verify that the transfer station building is maintained at a level of cleanliness necessary to prevent a nuisance or public health hazard. Verify that on-site litter is maintained at a level of cleanliness necessary to prevent a nuisance or public health hazard. Verify that off-site litter is collected daily. Verify that the exterior of all buildings is maintained in a reasonable aesthetic condition that prevents the attraction or harborage of vectors, so as not to create a nuisance or public health hazard. Verify that washwater management systems are not allowed to overflow and are inspected monthly and maintained in proper operating condition. Verify that any breach of a surface that prevents washwater from entering the ground and groundwater is repaired within 24 hours to make that surface impervious to liquids. Verify that, if repairs to the breached area cannot be made within 24 hours, the facility does not allow solid waste or washwater to come in to contact with the breached area until repairs are complete. (NOTE: If the facility cannot prevent solid waste or washwater from coming into contact with the breached area, the department may require the facility to shut down until repairs are completed.) Verify that adequate provisions are made for the routine operational maintenance of the facility.
SO.15.7.IA. A solid waste transfer facility must meet requirements for the temporary storage of solid waste (IAC 567-106.12) [Added April 2003].	Verify that solid waste is stored at the transfer station in the following manner: - inside a transfer station building in a clearly marked designated area - inside a transfer station building in a surge pit - inside a secure solid waste transport vehicle, protected from precipitation and vectors. Verify that solid waste is stored no longer than the following periods of time, unless shorter storage times are required by the Department or local government authority to prevent a nuisance or public health hazard: - inside a transfer station building without a surge pit or similar operational structure for not more than 48 hours, excluding Sundays and national holidays - inside a transfer station building in a surge pit for not more than 7 days, including Sundays and national holidays - inside a solid waste transport vehicle designated to travel only via roadway for not more than 48 hours, excluding Sundays and national holidays

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SO.15.8.IA. A solid waste transfer facility must meet recordkeeping requirements (IAC 567-106.13) [Added April 2003].	- inside a solid waste transport vehicle designated to travel via rail or navigable waterway, including intermodal container systems, for not more than 7 days, including Sundays and national holidays. Verify that the transfer station maintains a copy of the following document on sites: - current permit(s) - plan of operation - emergency response and remedial action plan. Verify that the transfer station maintains records of the following information for a period of 3 calendar years: - tons of all solid waste disposed of quarterly - destination of all outgoing solid waste - wastewater management system inspection log - hot loads and hazardous, infectious, radioactive, or other unacceptable wastes found - training received by transfer station operators.
SO.15.9.IA. A solid waste transfer facility must meet inspection and reporting requirements (IAC 567-106.14) [Added April 2003].	Verify that the transfer station reports the following information, on a form provided by the Department, to the Department and local solid waste authority on a quarterly basis: - tons of solid waste disposed of - comprehensive planning areas from which the solid waste originated, and the tons of solid waste disposed from each county and comprehensive planning area - destinations of all outgoing solid waste. Verify that the transfer station is inspected annually by an Iowa-licensed professional engineer (P.E.). (NOTE: The inspection must, at a minimum, cover the design standards pursuant to rule 106.10.) Verify that the inspection report reflects the facility's compliance with respect to the Department-approved design and construction. Verify that the annual inspection report is submitted to the Department and Department field office with jurisdiction over the facility by the first workday in November each year.
SO.15.10.IA. A solid waste transfer facility must have an	Verify that the transfer station develops, submits to the department for approval, and maintains on site a detailed emergency response and remedial action plan

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Emergency Response and Remedial Action Plan (IAC 567-106.19) [Added April 2003].	(ERRAP) (see Appendix 9-4 for details of the ERRAP.) Verify that an updated ERRAP is submitted at the time of each permit renewal or reissuance application. (NOTE: The content of ERRAP documents must be concise and readily usable as a reference manual by facility managers and operators during emergency conditions. To facilitate Department review, the rationale for exclusion of any issues that are not determined to be applicable must be provided either in the body of the plan or as a supplement. Additional ERRAP requirements unique to the facility must be addressed, as applicable.)

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SO.20. TRANSPORTATION SO.20.1.IA. Solid waste transport vehicles must meet specific construction and maintenance requirements (IAC 567-106.15) [Added April 2003]. SO.20.2.IA. Solid waste transport vehicles must meet specific operation requirements (IAC 567-106.16) [Added April 2003].	Verify that the portion of a solid waste transport vehicle that contains solid waste is designed to prevent the accidental discharge of its contents, the attraction or harborage of vectors, and infiltration of precipitation. Verify that the vehicle design includes a suitable cover that is not easily torn, shredded, broken, or otherwise breached under normal use. Verify that any solid waste transport vehicle that fails to meet the applicable requirements is repaired before it is utilized in the transport or storage of solid waste. Verify that all solid waste transport vehicles are cleaned at intervals frequent enough to prevent a nuisance or vector attraction. Verify that wastewater generated from the cleaning of the areas of the solid waste transport vehicles that hold solid waste are considered washwater and are managed accordingly (see SO.15.6.IA. for washwater requirements at transfer facilities). Verify that the solid waste transport vehicle's openings are securely closed before transport and during solid waste storage so as to prevent the loss of solid waste. Verify that the solid waste transport vehicle is loaded with solid waste inside a transfer station building and in a manner that minimizes the spilling of materials. Verify that truck-to-truck transfer of solid waste that is not incidental solid waste transfer is not allowed outside a transfer station building. (NOTE: A rear-loading solid waste transport vehicle that does not have any other open access and securely abuts the transfer station building so that minimal amounts of solid waste escape during loading will qualify as being inside the building.) Verify that waste spilled from a solid waste transport vehicle during loading at a transfer facility is collected as often as necessary to minimize litter, dust, or other fugitive debris. Verify that, if solid waste is spilled from a solid waste transport vehicle during transport that is not on transfer station property, the spilled solid waste is collected as soon as possible. Verify that the transfer station immediately reports the spill to the Department and

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	the Department field office with jurisdiction over the transfer station and spill location.

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SO.25. RECYCLING SO.25.1.IA. [Moved April 2003] SO.25.2.IA. All recycling operations at solid waste disposal projects must follow specific operating requirements (IAC 567-104.22 and 104.23) [Revised April 2003]. SO.25.3.IA. All recycling operations at solid waste disposal projects that handle only paper, cans, and bottles must follow specific operating requirements (IAC 567-104.23) [Revised April 2003].	(NOTE: Moved to SO.175.22.IA. Requirements apply to recycling facilities at solid waste disposal project processing facilities.) Verify that the following operating requirements are met in recycling operations at solid waste disposal projects: - material that cannot be recycled or removed during processing is handled in a manner which does not create pollution or a nuisance and is disposed of by another method - solid waste is unloaded at the operating areas only when an operator is on duty at that area and solid waste is deposited in storage containers inside the site under the supervision of an attendant or operator - the operating area for solid waste is as small as practicable and is surrounded with appropriate barriers to prevent litter from blowing beyond the operating area - the site is fenced to control access and a gate is provided at the entrance to the site and is kept locked when an attendant or operator is not on duty - a copy of the permit, engineering plans, and reports are kept at the site at all times - sites not open to the public have a permanent sign posted at the site entrance specifying the name of the operation, the site permit number, that the site is not open to the public, and the name and telephone number of the responsible official. (NOTE: Recycling operations that handle only paper, cans, and bottles are from exempt permits and processing facility requirements, if the operation has no mechanical processing facilities or if the operation receives on average less than 2 tons of paper, cans, and bottles per day.) Verify that recycling operations that handle only paper, cans, and bottles (see Note above) submit the following information to the Department for distribution to the public: - address or legal description of site - organization operating the facility - name and phone number of the responsible official of the facility - type of waste to be handled - operating days and hours.

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SO.25.4.IA. Solid by-products must meet specific requirements for beneficial use (IAC 567-108.2) [Added April 2004].	(NOTE: This checklist item applies to the following: - industrial, commercial, and institutional generators of solid by-products - users or proposed users of solid by-products - sanitary landfills utilizing or desiring to utilize alternative cover material - solid by-products that before receiving a beneficial use determination by the department were being disposed of as solid waste This checklist item does not apply to the following: - solid by-products that have already been disposed of as solid waste by the generator - land application of solid waste - solid waste processing operations - solid waste composting.) Verify that solid by-products are used in the manner specified in Appendix 9-5 or have been approved by the department.
SO.25.5.IA. Solid by-products beneficially used as a fill material must meet specific requirements (IAC 567-108.6(1)) [Added April 2004].	(NOTE: Rubble and soil are exempt from this checklist item.) Verify that leachate characteristics of the solid by-product is measured by the synthetic precipitation leaching procedure (SPLP, EPA Method 1312) and is less than or equal to 10 times the maximum contaminant levels (MCL) for drinking water. Verify that the total metals testing results, including thallium, are consistent with the department's statewide standards for soil Verify that the solid by-product produce a fill that has a pH: - greater than or equal to 5 and less than or equal to 8 if the fill may be used as growing media either now or in the future - greater than or equal to 5 and less than 12 if the fill is specifically intended not to be used as growing media either now or in the future - materials with a pH equal to or greater than 10 but less than 12 are used only in areas where direct physical contact by humans for long periods of time is not expected to occur - for deep fills where only the surface may serve as growing media either now or in the future, then at a minimum the top 3 feet have a pH greater than or equal to 5 and less than or equal to 8. - for fill material below the top 3 feet, a pH greater than or equal to 5 and less than or equal to 12. Verify that the by-product is not placed in a waterway or wetland or any waters of the state or extend below or within 5 feet of the high water table. Verify that the by-product is not placed within the 100-year flood plain. Verify that the by-product is not placed closer than 200 feet to a sinkhole or to a well that is being used or could be used for human or livestock water

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SO.25.6.IA. Beneficial use projects of solid by-products (other than alternative cover material) must meet recordkeeping and reporting requirements (IAC 567-108.7) [Added April 2004].	consumption. Verify that the by-product is not putrescible. (NOTE: This checklist item applies to any entity that engages in the beneficial use of a solid by-product, other than for alternative cover material, and satisfies at least one of the following criteria: - the entity has been granted a beneficial use determination - the solid by-product is not rubble or soil and is being beneficially used as fill material - the solid by-product is a coal combustion by-product or foundry sand.) Verify the generators maintain all records related to the solid by-product management plan for a minimum duration of 5 years. Verify that reports are filed with the department's central office and the field office with jurisdiction over the generator as follows: - a copy of the solid by-product management plan whenever that plan is revised or within 60 days of the end of the calendar year, whichever is earlier, unless otherwise directed by the department - for solid by-products beneficially used as fill material, the following information submitted to the department within 60 days of the end of the calendar year for each beneficial use project or activity: - the location of the project - the tons of solid by-product utilized for the project. SO.25.7.IA. CRT recycling or collection facilities must be permitted (IAC 567-122.2 and 122.6) [Added April 2004 ; Revised February 2008]. (NOTE: This checklist item applies to facilities that perform CRT recycling functions, including but not limited to the collection, refurbishing, demanufacturing, and processing of discarded CRTs. It does not apply to facilities solely engaged in CRT reuse activities. It does not apply to businesses solely engaged in CRT service and repair. It does not apply to batteries, circuit boards, CRTs, mercury-containing components, or PCB capacitors removed during the maintenance or service of equipment containing such items.) Verify that CRT recycling facilities and CRT collection facilities in operation before September 22, 2004, comply with these rules or close within one year of September 22, 2004. Verify that a CRT recycling facility or CRT collection facility is not constructed or operated without a permit from the Department. (NOTE: If a CRT recycling facility or CRT collection facility is located at a permitted recycling or composting facility or sanitary disposal project, it will not require its own permit; instead, the CRT recycling activities will be amended into

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SO.25.8.IA. CRT collection facilities must meet operational requirements (IAC 567-122.8) [Added April 2004; Revised February 2008].	the host facility's permit.) Verify that the CRT recycling facilities and CRT collection facilities are constructed and operated according to the plans and specifications approved by the Department and the conditions of the permit. Verify that the Department is notified when the construction of a new facility has been completed. (NOTE: A permit is issued and may be renewed for a period of 3 years, unless otherwise authorized by the Department.) Verify that requests for permit modification are submitted in writing to the Department with supporting documentation and materials. (NOTE: The issuance of a permit by the department in no way relieves the applicant of the responsibility of complying with all other local, state, or federal statutes, ordinances, and rules or other requirements applicable to the construction and operation of a CRT recycling facility.) (NOTE: See applicability note in So.25.7.IA.) Verify that CRT storage at a permitted collection site is limited to 48 Gaylord boxes or the equivalent containing no more than 2,000 CRTs. (NOTE: A permitted CRT collection site may store additional CRTs) subject to the permit holder's obtaining and maintaining financial assurance for these additional CRTs.) Verify that collection activities for discarded CRTs occur in an area and through a process that minimizes the risk of hazardous conditions. Verify that any hazardous condition is immediately contained and remedied with proper equipment and procedures. Verify that discarded CRTs are collected and contained in a manner that is structurally adequate to prevent leakage and spillage under normal operating conditions, and that is compatible with the contents. Verify that CRT glass and CRTs that show evidence of leakage, leakage, or damage that could cause the release of lead or other hazardous constituents into the environment are collected in enclosed and separate containers from other discarded CRTs and that these containers are protected from precipitation. Verify that a CRT recycling facility that stores discarded CRTs and materials derived from discarded CRTs outdoors meets the following conditions: - the facility has a stormwater permit, if applicable

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SO.25.9.IA. Short-term CRT collection must meet specific requirements (IAC 567-122.3, 122.4, and 122.5) [Added April 2004 ; Citation Revised February 2008].	- the material is not harboring or attracting vectors - litter is contained within the storage area or unit - the discarded CRTs and materials derived from discarded CRTs are not broken CRTs or CRT glass. Verify that discarded CRTs and materials derived from discarded CRTs are not speculatively accumulated at a permitted CRT recycling facility without the permit holder's obtaining and maintaining financial assurance for the additional CRTs. (NOTE: Speculative accumulation occurs when a facility cannot demonstrate that the amount of discarded CRTs leaving the facility within a 12-month time period is greater than 60 percent, by weight or volume, of the discarded CRTs and materials derived from discarded CRTs received by the facility within a 12-month time period.) Verify that containers or packages are labeled and transported in compliance with state and federal Department of Transportation (DOT) regulations.
	(NOTE: Short-term CRT collection means any temporary activity involving the collection of discarded CRTs, which is not on the premises of a CRT recycling facility or CRT collection facility, and in which all discarded CRTs that have been collected are transported to a properly permitted CRT recycler or CRT reuse facility.) (NOTE: An entity conducting a short-term CRT collection event is encouraged to notify the local solid waste agency, the Department field office with jurisdiction over the collection area, and the Department at least 30 days prior to the event.) Verify that event organizers work with and transport all discarded CRTs to a properly permitted CRT recycler or CRT reuse facility. Verify that CRT glass and CRTs that show evidence of breakage, leakage, or damage that could cause the release of lead or other hazardous constituents into the environment are collected in enclosed and separate containers from other discarded CRTs. Verify that containers used to collect broken, damaged, or leaking CRTs are protected from precipitation. Verify that litter is contained.
SO.25.10.IA. CRT collection facilities must meet reporting requirements (IAC 567-122.9)	Verify that a CRT collection facility maintains copies of all invoices received from CRT recycling facilities to which discarded CRTs have been transported for each calendar year and reports this information to the department within 30 days

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[Added February 2008]. SO.25.11.IA. CRT collection facilities must meet specific record-keeping requirements (IAC 5 67-122.10) [Added February 2008]. SO.25.12.IA. CRT recycling facilities must meet specific location and operational requirements (IAC 5 67-122.12) [Added February 2008]. SO.25.13.IA. CRT recycling facilities must meet specific operational requirements for discarded CRT s (IAC 5 67-	of the end of that calendar year. Verify that all CRT collection facilities maintain the following records, on a calendar-year basis, for three years: - the name and address of the facility receiving a shipment that left the CRT collection facility, and contact information for that facility - the type of service the receiving facility will provide to the CRT collection facility - a description of the shipment contents - all bills of lading - all hazardous waste manifests. Verify that a CRT recycling facility is not located within a 100-year flood plain. Verify that CRT recycling facilities are enclosed by walls, a roof, and a floor satisfactory to: - prevent litter from exiting the building - keep precipitation out of the building. Verify that a CRT recycling facility maintains a separation between stormwater and liquids generated inside the building. Verify that discarded CRTs are demanufactured and processed in an area where hazardous materials can be contained. Verify that a 8.5 by 11 inch sign is posted at the primary entrance to the facility that states the name and permit number of facility and telephone number of emergency contact person(s). Verify that, if a CRT recycling facility stores discarded CRTs and materials derived from discarded CRTs outdoors, the following conditions are met: - the facility has a stormwater permit, if applicable - the material is not harboring or attracting vectors - litter is contained within the storage area or unit - the discarded CRTs and materials derived from discarded CRTs are not broken CRTs or CRT glass. Verify that collection activities for discarded CRTs occur in an area and through a process that minimizes the risk of hazardous conditions. Verify that discarded CRT s are collected and contained in a manner that is

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122.14) [Added February 2008].	structurally adequate to prevent breakage and spillage under normal operating conditions, and that is compatible with the contents. Verify that CRT glass and CRTs that show evidence of breakage, leakage, or damage that could cause the release of lead or other hazardous constituents into the environment are collected in enclosed and separate containers from other discarded CRTs. Verify that all discarded CRTs leaving the CRT recycling facility are transported in a manner that complies with the following requirements: - discarded CRTs are transported in a contained manner that is structurally adequate to prevent breakage and spillage under normal operating conditions, and that is compatible with the contents - containers or packages are labeled with the contents (e.g., CRTs, no intact CRTs), point of origin, destination, and shipment date - CRT glass and CRTs that show evidence of breakage, leakage, or damage that could cause the release of lead or other hazardous constituents into the environment are transported in enclosed and separate containers from other discarded CRTs - discarded CRTs are transported in compliance with state and federal Department of Transportation (DOT) regulations. Verify that CRT refurbishing, CRT de-manufacturing, and CRT processing are done in a specifically designated location within a facility.
SO.25.14.IA. CRT recycling facilities must meet specific operational requirements for managing batteries (IAC 567-122.15) [Added February 2008].	Verify that CRT recycling facilities manage waste batteries derived from discarded CRTs in a manner that prevents release of any hazardous material into the environment. Verify that any battery that shows evidence of leakage, spillage, or damage that could cause a release of hazardous material into the environment is contained in a container that is compatible with the contents of the battery. Verify that all batteries are managed in accordance with all state and federal regulations.
SO.25.15.IA. CRT recycling facilities must meet specific operational requirements for circuit board management (IAC 567-122.16) [Added February 2008].	Verify that spent circuit boards are managed as scrap metal when recycled and stored in containers sufficient to prevent a release into the environment. Verify that circuit boards contain only minor battery or mercury switching components. (NOTE: If minor batteries and mercury switching components are removed, the minor batteries or mercury switching components may be universal waste under

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SO.25.16.IA. CRT recycling facilities must meet contain and clean-up broken glass (IAC 567-122.17(1)) [Added February 2008]. SO.25.17.IA. CRT recycling facilities must meet specific requirement for removal and disposal of mercury containing components (IAC 567-122.18) [Added February 2008]. SO.25.18.IA. CRT recycling facilities must meet specific requirements for removal and disposal of PCB capacitors (IAC 567-122.19) [Added February 2008].	40 CFR Part 273 or a hazardous waste under 40 CFR Parts 261, 262, and 263.) Verify that a CRT recycling facility immediately cleans up and contains any CRTs, CRT devices, and CRT glass that are unintentionally broken. (NOTE: A CRT recycling facility may disassemble or crush CRTs provided the handler crushes CRTs in a controlled manner.) (NOTE: CRT manufacturers and CRT processors that manage mercury-containing components may be considered hazardous waste generators.) Verify that precautions are taken to prevent the release of mercury. Verify that all removed mercury-containing components are stored in a DOT-approved container and labeled with a label stating "hazardous waste-mercury" or "mercury components" in both English and the predominant language of any non-English-reading workers. Verify that the date when the first mercury-containing component was placed in the container is affixed on the container. Verify that all mercury containers are sealed prior to shipment. Verify that all mercury-containing components are managed at an EPA-approved mercury recycling or recovery facility. Verify that mercury-containing components are managed in accordance with all state and federal regulations. Verify that CRT manufacturers and CRT processors remove all capacitors not marked as non-PCB unless the manufacturer certifies in writing that no PCBs were used in the manufacture of the discarded CRT or capacitor. (NOTE: All capacitors are assumed to contain PCBs unless proven otherwise by an approved laboratory, unless the words "No PCBs" have been imprinted on the body of the capacitor by the manufacturer, or unless the manufacturer certifies in writing that no PCBs were used in the manufacture of the discarded CRT or capacitor.) (NOTE: Capacitors that are proven not to contain PCBs may be recycled or disposed of as nonhazardous waste.) Verify that PCB capacitors are stored and transported in compliance with the Toxic Substances Control Act (TSCA; 40 CFR Part 761) and disposed of at a

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SO.25.19.IA. CRT recycling facilities must meet specific requirements for spills and releases (IAC 567-122.20) [Added February 2008].	TSCA-permitted disposal facility Verify that facilities used for the storage of PCB items designated for disposal meet the following requirements: - PCB items are stored in a manner that provides adequate protection from the elements and adequate secondary containment - storage is over an impervious material - all capacitors containing or suspected of containing PCBs are placed in a DOT-approved container that shows no signs of damage - the bottom of the container is filled to a depth of two inches with an absorbent material (e.g., oil-dry, kitty litter) - all DOT-approved containers are affixed with an EPA-approved 6-inch by 6-inch yellow label stating "PCBs" in both English and the predominant language of any non-English-reading workers - the date when the first capacitor was placed in the container is affixed on the container - all containers are sealed prior to shipment - capacitors are stored for no more than 270 days. Verify that the demanufacturer has one year from the first date entered on the container to have the contents buried at a TSCA landfill or incinerated at a TSCA disposal facility (Reference: 40 CFR Part 761.65). Verify that the burial or incineration is documented and the records are kept by the demanufacturer for three years from the date the PCB waste was accepted by the initial transporter. Verify that any spills from leaking or cracked capacitors is handled by placing the capacitor or component containing the capacitor and any contaminated rags, clothing, absorbents, and soil in a DOT-approved container for PCBs for shipment to an EPA-approved PCB waste disposal facility. Verify that spills of PCBs that occur outside a DOT-approved container are cleaned up pursuant to 40 CFR Part 761.125 and detailed records of the cleanups and sampling are maintained pursuant to 40 CFR Part 761.180. Verify that mercury spill kits, with a mercury absorbent in the kits, are readily available and immediately utilized in the event of a mercury spill. Verify that any waste from the cleanup of a mercury spill is managed in accordance with state and federal rules. Verify that any hazardous condition is immediately contained and remedied with proper equipment and procedures and the emergency response and remedial action plan (ERRAP). Verify that within 6 hours of the release, the department field office with

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SO.25.20.IA. CRT recycling facilities that shredded CRTs must meet specific requirements (IAC 567-122.21) [Added February 2008].	jurisdiction over the spill or release location is notified. Verify that CRT fluff from the shredding of discarded CRTs is sampled quarterly, at a minimum, and analyzed for the presence of PCBs, according to Test Methods for Evaluation of Solid Waste, Physical-Chemical Methods SW 846, U.S. EPA, Third Edition 1986, or other method approved by the department. Verify that CRT fluff from the shredding of discarded CRTs is sampled quarterly at a minimum and analyzed for metals according to the toxicity characteristic leaching procedure (TCLP, EPA Method 1311). Verify that the fluff is sampled once per day for 7 consecutive working days to make a composite sample. (NOTE: If the total PCB amount is less than 50 parts per million (ppm) and if the TCLP results demonstrate the CRT fluff is not hazardous, then the CRT fluff may be disposed of in a municipal solid waste (MSW) sanitary landfill in Iowa.)
SO.25.21.IA. CRT recycling facilities must meet specific storage requirements for discarded CRTs (IAC 567-122.22) [Added February 2008].	Verify that discarded CRTs and materials derived from discarded CRTs are stored in a manner that minimizes the risk of a release into the environment. Verify that discarded CRTs and materials derived from discarded CRTs are not speculatively accumulated. (NOTE: Speculative accumulation occurs when a facility cannot demonstrate that the amount of discarded CRTs and materials derived from discarded CRTs leaving the facility within a 12-month time period is greater than 75 percent, by weight or volume, of the discarded CRTs and materials derived from discarded CRTs received by the facility within a 12-month time period.)
SO.25.22.IA. CRT recycling facilities must submit an emergency response and remedial action plan to the department (IAC 567-122.23) [Added February 2008].	Verify that a CRT recycling facility submits to the department for approval, and maintains on site a detailed emergency response and remedial action plan (ERRAP). Verify that the content of ERRAP documents is concise and readily usable as a reference manual by facility managers and operators during emergency conditions.
SO.25.23.IA. CRT recycling facilities must meet training requirements (IAC 567-122.24) [Added February 2008].	Verify that all employees of a CRT recycling facility involved in activities relevant to CRT recycling are trained standard operating procedures utilized by the CRT recycling facility, including:

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2008].	- the proper method of loading and unloading discarded CRTs and materials derived from discarded CRTs - the proper collection, storage, and transportation requirements for discarded CRTs and materials derived from discarded CRTs - the proper disposal of discarded CRTs and materials derived from discarded CRTs - the proper management of batteries - the proper management of CRTs - the proper management of circuit boards - the proper management of mercury-containing components - the proper management of PCBs - spill and release response procedures - worker health and safety - use of the department-approved ERRAP. Verify that CRT recycling facilities ensure that at least one employee directly involved in operations has completed a DNR-approved training course. Verify that at least one employee who has completed a DNR-approved course is on site when CRTs are being intentionally broken.
SO.25.24.IA. CRT recycling facilities must meet specific reporting requirements (IAC 567-122.25) [Added February 2008].	Verify that a CRT recycling facility maintains the following records for each calendar year and reports this information to the department within 30 days of the end of that calendar year: - the total weight or number of materials received from nonpermitted sources, listed by product category (monitors, televisions, and all other discarded electronics collected) - the total aggregate weight or number of materials received from nonpermitted sources - the percentage of materials received from businesses and institutions - the percentage of materials covered received from households - the total aggregate weight of shipments leaving the CRT recycling facility on a monthly basis.
SO.25.25.IA. CRT recycling facilities must meet specific record-keeping requirements (IAC 567-122.26) [Added February 2008].	Verify that all CRT recycling facilities maintain the following records, on a calendar-year basis, for 3 years: - the total aggregate weight and receipt date of each shipment of discarded CRTs received from businesses, institutions, CRT collection facilities, short-term CRT collection events, and other permitted CRT recycling facilities - the name, address and contact information for shipments - the total aggregate weight and date of each shipment leaving the CRT recycling facility - the name and address of the facility receiving a shipment that left the CRT recycling facility, contact information for the receiving facility and a

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SO.25.26.IA. CRT recycling facilities must meet closure requirements (IAC 567-122.27) [Added February 2008].	description of the shipment contents including all applicable bills of lading - the type of service the receiving facility will provide to the CRT recycling facility - all hazardous waste manifests - information related to the management of spills and releases - information related to the management of CRT fluff - information related to training requirements and a list of individuals who have received DNR-approved training. Verify that a CRT recycling facility submits to the department and department field office with jurisdiction over the facility written notice of intent to permanently close at least 60 days before closure. (NOTE: Closure is not official until the department field office with jurisdiction over the facility has given written certification of the proper disposal of all solid waste, discarded CRTs, and materials derived from discarded CRTs at the site.)

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MUNICIPAL SOLID WASTE LANDFILLS SO.50. Permits SO.50.1.IA. Municipal solid waste landfills must comply with permit requirements (IAC 567-113.2(1) through (5), 113.4(1), (6), and (10), and 113.7(2)) [Added April 2003' Revised February 2008; Citation Revised February 2009]. SO.50.2.IA. Municipal solid waste landfills must special waste authorization before accepting special wastes (IAC	(NOTE: See SO.8. for additional requirements.) (NOTE: All sanitary landfills accepting municipal solid waste must comply with this checklist item. This checklist item does not apply to the following: - beneficial use of by-products as alternative cover material - the management and disposal of special wastes - MSWLF units that did not receive waste after October 9, 1994 - MSWLF units that stop receiving waste before October 1, 2007, and are not contiguous with MSWLF units that will continue to accept waste after October 1, 2007.) Verify that an MSWLF unit is not constructed or operated without a permit from the department. (NOTE: The department may issue an RD&D permit that overrides the applicable portions of this chapter without issuing a variance. A permit amendment from the department for leachate recirculation only does not require an RD&D permit.) Verify that all municipal solid waste landfill are constructed and operated according to the plans and specifications as approved by the Department and the terms of the permit. (NOTE: The approved plans and specifications constitute the terms of the permit.) (NOTE: Municipal solid waste landfills designed and constructed in accordance with rules in effect at the time of construction will not be required to be redesigned or reconstructed due to subsequent rule changes unless the Department finds that such facilities are causing pollution.) Verify that the Department is notified when the initial construction of a municipal solid waste landfill has been completed in order that an inspection may be made to determine that the project is constructed as designed. Verify that no solid waste is accepted by a municipal solid waste landfill until that project has been inspected and approved by the Department. Verify that no special wastes are delivered to or accepted by a municipal solid waste landfill unless the disposal is authorized by a special waste authorization (SWA) issued by the department.

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567-109.2) [Added April 2004].	Verify that wastes for which an SWA has been issued are disposed of in accordance with the instructions, conditions, and limitations contained in the SWA.

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MUNICIPAL SOLID WASTE LANDFILLS SO.60. Design Criteria SO.60.1.IA. Municipal solid waste landfills must meet general site design and construction requirements (IAC 5 67-113.7(3)) [Added February 2008].	(NOTE: All sanitary landfills accepting municipal solid waste must comply with this checklist item. This checklist item does not apply to the following: - MSWLF units that did not receive waste after October 9, 1994 - MSWLF units that stop receiving waste before October 1, 2007, and are not contiguous with MSWLF units that will continue to accept waste after October 1, 2007 - beneficial use of by-products as alternative cover material - the management and disposal of special wastes.) Verify that an MSWLF have the following: - all-weather access roads to the facility - a perimeter fence with a lockable gate(s) to help prevent unauthorized access - a sign at the entrance to the facility d. All-weather access roads within the facility - signs or pavement markings clearly indicating safe and proper on-site traffic patterns - adequate queuing distance for vehicles entering and exiting the property - a scale certified by the Iowa department of agriculture and land stewardship.

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SO.65.5.IA. Municipal solid waste landfills must meet requirements for wells (IAC 567-113.10(2)(c) and (d)(1)) [Revised April 2003; Revised February 2008].	(NOTE: See SO.8. for additional requirements.) (NOTE: See SO.65.1.IA for applicability.) Verify that the owner or operator notifies the department that the design, installation, development, and decommission of any monitoring wells, piezometers and other measurement, sampling, and analytical devices documentation has been placed in the operating record. Verify that the monitoring wells, piezometers, and other measurement, sampling, and analytical devices are operated and maintained so that they perform to design specifications throughout the life of the monitoring program. Verify that each groundwater monitoring point has a unique and permanent number, and that number is never changed or used again at the MSWLF. Verify that monitoring well construction is performed by a certified well contractor. Verify that groundwater monitoring points that are no longer functional are sealed Verify that the following information is placed in the operating record and a copy sent to the department: - the unique, permanent monitoring point number - the reasons for abandoning the monitoring point - the date and time the monitoring point was sealed - the method utilized to remove monitoring point materials - the method utilized to seal the monitoring point - Department Form 542-1226 for Water Well Abandonment Plugging Record. Verify that the document is retained at the landfill with a copy sent to the Department.
SO.65.6.IA. Municipal solid waste landfills must meet management requirements for special waste (IAC 567-109.7) [Added April 2003].	(NOTE: See SO.8. for additional requirements.) Verify that any public or private municipal solid waste landfill that refuses any particular solid waste type for management or disposal identifies another waste management facility for that waste within the planning area. (NOTE: In the case of special waste, if no other waste management facility for that waste type exists within the planning area, the city or county, in cooperation with the waste generator, must establish or arrange access to one.) Verify that the municipal solid waste landfill submits special waste acceptance criteria (SWAC) to the Department listing the different kinds of special waste that each landfill will accept and the instructions for disposal for each of those wastes.

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SO.65.7.IA. Municipal solid waste landfills must screen for prohibited materials (IAC 567-113.8(1)(a)) [Added February 2008].	Verify that the municipal solid waste landfill ensures that special wastes delivered to the facility conform to the SWAC on file with the Department. Verify that the municipal solid waste landfill provides to the Department, on a quarterly basis, a report of SWA activity including each SWA number and the quantities of waste disposed of during the reporting period. (NOTE: See SO.65.1.IA for applicability.) Verify that all MSWLF units implement a program at the facility for detecting and preventing the disposal of prohibited wastes (See Appendix 9-6 for listing). Verify that the waste screening program includes, at a minimum: - random inspections of incoming loads unless the owner or operator takes other steps to ensure that incoming loads do not contain regulated hazardous wastes, PCB wastes or other prohibited wastes - records of any inspections - training of facility personnel to recognize regulated hazardous wastes, PCB wastes and other prohibited wastes - notification of the EPA regional administrator if regulated hazardous wastes or PCB wastes are discovered at the facility.
SO.65.8.IA. Municipal solid waste landfills must not allow specific prohibited activities (IAC 567-113.8(1)(c) through (e)) [Added February 2008].	(NOTE: See SO.65.1.IA for applicability.) Verify that no open burning of any type is allowed within the permitted boundary of an MSWLF facility. Verify that the fueling of vehicles and equipment, and any other activity that may produce sparks or flame, is conducted at least 50 feet away from the working face. Verify that scavenging is not allowed at the MSWLF facility. (NOTE: Salvaging by MSWLF operators may be allowed.) Verify that feeding animals is not allowed at an MSWLF facility. (NOTE: The grazing of domestic animals on fully vegetated areas of the MSWLF facility not used for disposal, including closed MSWLF units, may be allowed by the department so long as the animals do not cause damage or interfere with operations, inspections, environmental monitoring and other required activities.) Verify that large, hoofed animals (including but not limited to buffalo, cattle, llamas, pigs, and horses) are not allowed on closed MSWLF units

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SO.65.9.IA. Municipal solid waste landfills must operational requirements at the working face (IAC 5 67-113.8(2)(c) and (e)) [Added February 2008 ; Citation Revised February 2009].	(NOTE: See SO.65.1.IA for applicability.) Verify that the fill sequencing is planned and conducted in a manner and at a rate that do not cause a slope failure, lead to extreme differential settlement, or damage the liner and leachate collection system. Verify that the working face is no larger than necessary to accommodate the rate of disposal in a safe and efficient manner. Verify that litter control devices of sufficient size to help prevent blowing litter are utilized at the working face. Verify that the operation of the working face prevents the harborage of vectors and attempts to minimize the attraction of vectors. Verify that employees at the working face are trained to visually recognize universal symbols, markings and indications of prohibited wastes Verify that to help prevent leachate seeps by aiding the downward flow of leachate, cover material or alternative cover material, which prevents the downward flow of leachate and is at least 5 feet from the outer edge of the MSWLF unit, is scarified prior to use of that area as a working face. (NOTE: Cover material or alternative cover material that does not impede the downward flow of leachate, as approved by the department, does not require scarification. Scarification may be as simple as the spearing or breaking up of a small area of the cover.)
SO.65.10.IA. Municipal solid waste landfills must not contaminate waters of the state (IAC 5 67-118.2(2)(g) through (i)) [Added February 2008].	(NOTE: See SO.65.1.IA for applicability.) Verify that leachate seeps are contained and plugged upon being identified. Verify that soils outside of the MSWLF unit that are contaminated by a leachate seep are excavated and then disposed of within the MSWLF unit. Verify that the department approves an MSWLF unit for leachate recirculation Verify that leachate recirculation is limited to MSWLF units constructed with a composite liner. Verify that areas of differential settlement sufficient to interfere with runoff and run-on are brought back up to the contours of the surrounding active portion Verify that differential settlement is not allowed to cause ponding of water on the active portion.

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SO.65.11.IA. Municipal solid waste landfills must meet litter, access, vector, and leachate requirements (IAC 567-113.8(3)) [Added February 2008].	(NOTE: See SO.65.11.IA for applicability.) Verify that all MSWLF units control public access and prevent unauthorized vehicular traffic and illegal dumping of wastes by using artificial barriers, natural barriers, or both, as appropriate to protect human health and the environment. Verify that a disposal area is accessible during all weather conditions. Verify that salvaged and processed materials (e.g., scrap metal, compost, mulch, aggregate, tire chips) are managed and stored in an orderly manner that does not create a nuisance or encourage the attraction or harborage of vectors. Verify that owners or operators prevent or control the on-site populations of vectors using techniques appropriate for the protection of human health and the environment. Verify that steps are taken to: - minimize the production of litter and the release of windblown litter off site of the facility - minimize the production of dust so that unsafe or nuisance conditions are prevented - minimize the tracking of mud by vehicles exiting the facility so that slick or unsafe conditions are prevented. Verify that all windblown litter off site of the facility is collected daily unless prevented by unsafe working conditions. Verify that on-site litter is collected daily unless prevented by working conditions. Verify that a dated record of unsafe conditions that prevented litter collection activities is maintained by the facility. Verify that leachate is not used for dust control purposes. Verify that leachate collection pipes are cleaned and inspected as necessary, but not less than once every 3 years.

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MUNICIPAL SOLID WASTE LANDFILLS SO.70. Groundwater Monitoring Criteria SO.70.1.IA. Municipal solid waste landfills must meet monitoring well requirements (IAC 567-113.2(1) through (5) and 113.10(2)(a)) [Added February 2008]. SO.70.2.IA. Monitoring well heads must be protected at municipal solid waste landfills (IAC 567-113.10(2)(c)(9)) [Added February 2008].	(NOTE: All sanitary landfills accepting municipal solid waste must comply with this checklist item. This checklist item does not apply to the following: - beneficial use of by-products as alternative cover material - the management and disposal of special wastes. - MSWLF units that did not receive waste after October 9, 1994 - MSWLF units that stop receiving waste before October 1, 2007, and are not contiguous with MSWLF units that will continue to accept waste after October 1, 2007.) Verify that a groundwater monitoring system is installed that meets the following objectives: - yields groundwater samples from the uppermost aquifer that represent the quality of background groundwater that has not been affected by leakage from a unit - yields groundwater samples from the uppermost aquifer that represent the quality of groundwater passing the relevant point of compliance specified by the department - provides a high level of certainty that releases of contaminants from the site can be promptly detected. (NOTE: For those facilities which are long-term, multiphase operations, the department may establish temporary waste boundaries in order to define locations for monitoring wells.) Verify that monitoring wells are constructed and cased by a well contractor certified in a manner that maintains the integrity of the monitoring well borehole. Verify that the owner or operator ensure that, at a minimum, the well design and construction log information is maintained in the facility's permanent record using DNR Form 542-1277 and that a copy is sent to the department. (NOTE: See SO.70.1.IA for applicability.) Verify that monitoring wells have a protective metal casing installed around the upper portion of the monitoring well casing as follows: - the inside diameter of the protective metal casing is at least 2 inches larger than the outer diameter of the monitoring well casing

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SO.70.3.IA. Groundwater sampling and analysis must meet specific requirements at municipal solid waste landfills (IAC 567-113.10(4)) [Added February 2008].	- the protective metal casing extends from a minimum of 1 foot below the frostline to slightly above the well casing top - the protective casing is sealed and immobilized with a concrete plug around the outside - the inside of the protective casing is sealed with bentonite grout from the frostline to the ground surface - a vented cap is placed on the monitoring well casing - a vented, locking cap is placed on the protective metal casing and is kept locked when the well is not being sampled. Verify that all monitoring wells have a ring of brightly colored protective posts or other protective barriers to help prevent accidental damage. Verify that all monitoring wells have a sign or permanent marking clearly identifying the permanent monitoring well number. Verify that run-on is directed away from all monitoring wells. Verify that a monitoring well maintenance and performance reevaluation plan is included as part of the hydrologic monitoring system plan. (NOTE: See SO.70.1.IA for applicability.) Verify that the groundwater monitoring program includes consistent sampling and analysis procedures that are designed to ensure monitoring results that provide an accurate representation of groundwater quality at the background and downgradient wells installed Verify that the groundwater monitoring program utilizes a laboratory certified by the department. Verify that the department is notified that the sampling and analysis program documentation has been placed in the operating record, and that the program includes procedures and techniques for: - sample collection - sample preservation and shipment - analytical procedures - chain of custody control - quality assurance and quality control. Verify that groundwater samples are not field-filtered prior to laboratory analysis.

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MUNICIPAL SOLID WASTE LANDFILLS SO.85. Documentation SO.85.1.IA. Municipal solid waste landfills must maintain development and operations plans (IAC 567-113.2(1) through (5) and 113.8(4)) [Added February 2008]. SO.85.2.IA. Municipal solid waste landfills must submit annual water quality reports (IAC 567-113.10(10)) [Added February 2008]. SO.85.3.IA. Municipal solid waste landfills must meet record-keeping and reporting requirements (IAC 567-113.11) [Added February 2008].	(NOTE: All sanitary landfills accepting municipal solid waste must comply with this checklist item. This checklist item does not apply to the following: - MSWLF units that did not receive waste after October 9, 1994 - MSWLF units that stop receiving waste before October 1, 2007, and are not contiguous with MSWLF units that will continue to accept waste after October 1, 2007 - beneficial use of by-products as alternative cover material - the management and disposal of special wastes.) Verify that a MSWLF unit maintains a development and operations plan (DOPs). Verify that, at a minimum, the DOPs details how the facility will operate and how compliance with the requirements will be maintained. (NOTE: See SO.85.1.IA for applicability.) Verify that the owner or operator submits an annual report to the department detailing the water quality monitoring sampling locations and results, assessments, selection of remedies, implementation of corrective action, and the results of corrective action remedies to address SSIs, if any, during the previous year. Verify that the report includes a site map that delineates all monitoring points where water quality samples were taken, and plumes of contamination, if any. Verify that the report contains a narrative explaining and interpreting all of the data collected during the previous year. Verify that the report is due each year on a date set by the department in the facility's permit. (NOTE: See SO.85.1.IA for applicability.) Verify that an MSWLF unit records and retains near the facility in an operating record or in an alternative location approved by the department the following information as it becomes available: - permit application, permit renewal and permit modification application

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REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010 - materials - the site exploration and characterization reports - design and construction plans and specifications, and related analyses and documents - inspection records, training procedures, and notification procedures - any MSWLF unit design documentation for placement of leachate or gas condensate in an MSWLF unit - gas monitoring results from monitoring and any remediation plans - any demonstration, certification, finding, monitoring, testing, or analytical data - closure and postclosure care plans and any monitoring, testing, or analytical data. Verify that the owner or operator notifies the department when the documents have been placed in the operating record.

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MEDICAL WASTE SO.105. Generators SO.105.1.IA. Infectious waste generators may dispose of infectious waste with municipal solid waste under specific conditions (IAC 567-109.9) [Added April 2003].	Verify that, if infectious waste is generated and treated at a medical clinic, doctor's office, nursing care facility, health care facility, dentist's office or other similar facility and placed with municipal solid waste, it meets the following conditions: - it is rendered nonpathological - it does not contain free liquids - sharps are shredded, baled, granulated, incinerated, or mechanically destroyed. Verify that the generator of the infectious waste notifies the waste hauler and the sanitary landfill that infectious waste is being placed with the regular municipal solid waste and, with the notice, certifies that the infectious waste is properly treated.

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MEDICAL WASTE SO.115. Transportation SO.115.1.IA. Infectious waste transporters must have a permit (Iowa Code Annotated 455B.503).	Verify that infectious waste collection and transportation facilities are permitted prior to initial operation. Verify that the permit addresses, at a minimum, the following areas: - operator safety - recordkeeping and tracking procedures - best available appropriate technologies - emergency response and remedial action procedures - waste minimization procedures - long-term liability.

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MEDICAL WASTE SO.120. Treatment/ Disposal SO.120.1.IA. Infectious waste treatment and disposal facilities must have a permit (Iowa Code Annotated 455B.502 and 455B.504). SO.120.2.IA. Infectious waste treatment and disposal facilities must meet specific conditions (Iowa Code Annotated 455 B.503) [Citation Revised February 2008].	Verify that infectious waste treatment and disposal facilities are permitted before their initial operation. Verify that infectious waste treatment and/or disposal facilities meet the permit requirements that address (at a minimum) the following areas: - operator safety - recordkeeping and tracking procedures - best available appropriate technologies - emergency response and remedial action procedures - waste minimization procedures - long-term liability. Verify that infectious waste treatment and disposal facilities are not constructed or operated unless the following conditions are met: - the facility is designed to accept only medical waste generated in the state and communities within 75 mi of the state borders - the facility is subject to monitoring and stack testing at least every 3 yr - the facility incorporates the best available control technology to ensure that the emissions from the facility approach the goal of zero emissions - the facility requires large generators for which the facility provides treatment or disposal to certify that the generator submitted a comprehensive plan to the Department providing for reduction or recycling of infectious waste at the source - the facility requires small quantity generators, or a representative of the small quantity generators, for which the facility provides treatment or disposal, to participate in the development of the comprehensive plan submitted by the city, county, or public agency - the facility has an established means of treating or disposing of any residue or ash that remain following treatment of waste.

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SO.135. LANDFILLS	
SO.135.1.IA. [Deleted April 2003].	(NOTE: Requirements moved to SO.8. Requirements now apply to Biosolid Landfills, Municipal Solid Waste Landfills, Construction and Demolition Monofills, and Industrial Monofills.)
SO.135.2.IA. [Deleted April 2003].	(NOTE: Requirements moved to SO.8. Requirements now apply to Biosolid Landfills, Municipal Solid Waste Landfills, Construction and Demolition Monofills, and Industrial Monofills.)
SO.135.3.IA. [Deleted April 2003].	(NOTE: Requirements moved to SO.8. Requirements now apply to Biosolid Landfills, Municipal Solid Waste Landfills, Construction and Demolition Monofills, and Industrial Monofills.)
SO.135.4.IA. [Deleted April 2003].	(NOTE: Requirements moved to SO.8. Requirements now apply to Biosolid Landfills, Municipal Solid Waste Landfills, Construction and Demolition Monofills, and Industrial Monofills.)
SO.135.5.IA. [Deleted April 2003].	(NOTE: Requirements moved to SO.8. Requirements now apply to Biosolid Landfills, Municipal Solid Waste Landfills, Construction and Demolition Monofills, and Industrial Monofills.)
SO.135.6.IA. [Deleted April 2003].	(NOTE: Requirements moved to SO.8. Requirements now apply to Biosolid Landfills, Municipal Solid Waste Landfills, Construction and Demolition Monofills, and Industrial Monofills.)
SO.135.7.IA. [Deleted April 2003].	(NOTE: Requirements moved to SO.8. Requirements now apply to Biosolid Landfills, Municipal Solid Waste Landfills, Construction and Demolition Monofills, and Industrial Monofills.)
SO.135.8.IA. [Deleted April	(NOTE: Requirements moved to SO.8. Requirements now apply to Biosolid Landfills, Municipal Solid Waste Landfills, Construction and Demolition

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REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
2003].	Monofills, and Industrial Monofills.)
SO.135.9.IA. [Deleted April 2003].	(NOTE: Requirements moved to S O.8. Requirements now apply to Biosolid Landfills, Municipal Solid Waste Landfills, Construction and Demolition Monofills, and Industrial Monofills.)
SO.135.10.IA. [Deleted April 2003].	(NOTE: Requirements moved to S O.8. Requirements now apply to Biosolid Landfills, Municipal Solid Waste Landfills, Construction and Demolition Monofills, and Industrial Monofills.)
SO.135.11.IA. [Deleted April 2003].	(NOTE: Requirements moved to S O.8. Requirements now apply to Biosolid Landfills, Municipal Solid Waste Landfills, Construction and Demolition Monofills, and Industrial Monofills.)
SO.135.12.IA. [Deleted April 2003].	(NOTE: Requirements moved to S O.8. Requirements now apply to Biosolid Landfills, Municipal Solid Waste Landfills, Construction and Demolition Monofills, and Industrial Monofills.)
SO.135.13.IA. [Deleted April 2003].	(NOTE: Requirements moved to S O.8. Requirements now apply to Biosolid Landfills, Municipal Solid Waste Landfills, Construction and Demolition Monofills, and Industrial Monofills.)
SO.135.14.IA. [Deleted April 2003].	(NOTE: Requirements moved to S O.8. Requirements now apply to Biosolid Landfills, Municipal Solid Waste Landfills, Construction and Demolition Monofills, and Industrial Monofills.)
SO.135.15.IA. [Deleted April 2003].	(NOTE: Requirements moved to S O.8. Requirements now apply to Biosolid Landfills, Municipal Solid Waste Landfills, Construction and Demolition Monofills, and Industrial Monofills.)
SO.135.16.IA. [Deleted April 2003].	(NOTE: Requirements moved to S O.8. Requirements now apply to Biosolid Landfills, Municipal Solid Waste Landfills, Construction and Demolition Monofills, and Industrial Monofills.)

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REGULATORY REQUIREMENTS:		REVIEWER CHECKS: February 2010
SO.135.17.IA.	[Deleted April 2003].	(NOTE: Requirements moved to SO.8. Requirements now apply to Biosolid Landfills, Municipal Solid Waste Landfills, Construction and Demolition Monofills, and Industrial Monofills.)
SO.135.18.IA.	[Deleted April 2003].	(NOTE: Requirements moved to SO.8. Requirements now apply to Biosolid Landfills, Municipal Solid Waste Landfills, Construction and Demolition Monofills, and Industrial Monofills.)
SO.135.19.IA.	[Deleted April 2003].	(NOTE: Requirements moved to SO.8. Requirements now apply to Biosolid Landfills, Municipal Solid Waste Landfills, Construction and Demolition Monofills, and Industrial Monofills.)
SO.135.20.IA.	[Deleted April 2003].	(NOTE: Requirements moved to SO.8. Requirements now apply to Biosolid Landfills, Municipal Solid Waste Landfills, Construction and Demolition Monofills, and Industrial Monofills.)
SO.135.21.IA.	[Deleted April 2003].	(NOTE: Requirements moved to SO.8. Requirements now apply to Biosolid Landfills, Municipal Solid Waste Landfills, Construction and Demolition Monofills, and Industrial Monofills.)
SO.135.22.IA.	[Deleted April 2003].	(NOTE: Requirements moved to SO.8. Requirements now apply to Biosolid Landfills, Municipal Solid Waste Landfills, Construction and Demolition Monofills, and Industrial Monofills.)
SO.135.23.IA.	[Deleted April 2003].	(NOTE: Requirement moved to SO.180.)
SO.135.24.IA.	[Deleted April 2003].	(NOTE: Requirement moved to SO.180.)
SO.135.25.IA.	[Deleted April 2003].	(NOTE: Requirement moved to SO.180.)

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REGULATORY REQUIREMENTS:		REVIEWER CHECKS: February 2010
April 2003].		
SO.135.26.IA. April 2003].	[Deleted	(NOTE: Requirement moved to SO.180.)
SO.135.27.IA. April 2003].	[Deleted	(NOTE: Requirement moved to SO.180.)
SO.135.28.IA. April 2003].	[Deleted	(NOTE: Requirement moved to SO.180.)
SO.135.29.IA. April 2003].	[Deleted	(NOTE: Regulation revised.)
SO.135.30.IA. April 2003].	[Deleted	(NOTE: Regulation revised.)
SO.135.31.IA. April 2003].	[Deleted	(NOTE: Regulation revised.)
SO.135.32.IA. April 2003].	[Deleted	(NOTE: Regulation revised.)
SO.135.33.IA. April 2003].	[Deleted	(NOTE: Regulation revised.)
SO.135.34.IA. Coal combustion residue landfills must have a valid permit (IAC 567-103.1(2) and 103.1(6)) [Added April 1999; Citation		Verify that coal combustion landfills have a valid permit. (NOTE: The term for original permits and renewals is 10 yr.)

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Revised April 2003]. SO.135.35.IA. Coal combustion residue landfills must meet site requirements (IAC 567-103.1(1)) [Added April 1999; Citation Revised April 2003]. SO.135.36.IA. Coal combustion residue landfills must meet design requirements (IAC 567-103.1(3)) [Added April 1999; Revised April 2003]. SO.135.37.IA. Coal combustion residue landfills must meet operating requirements (IAC 567-103.1(2)(f) and (4)) [Added April 1999; Revised April 2003].	Verify that the site of a coal combustion residue landfill is not a wetland, within a 100 yr flood plain, and does not have any sinkholes or similar karst features. Verify that coal combustion residue is not deposited within 300 ft of an inhabitable residence or a commercial enterprise, unless there is a written agreement with the property owner allowing a lesser distance. Verify that coal combustion residue is not deposited within 50 ft of the property boundary. Verify that coal combustion residue is at least 5 ft above the high groundwater table. Verify that coal combustion residue landfills have a method for ensuring protection of the groundwater and surface water. Verify that coal combustion residue landfills have a method of ash transportation that prevents blowing ash and air emissions when the ash is unloaded. Verify that surface runoff is diverted from all active or closed areas, both during the active life of the landfill and during the postclosure period. Verify that the landfill site is secured with a fence and gates to prevent unauthorized entry when the site is unattended. Verify that the landfill site has all-weather access roads adequate to accommodate delivery vehicles and operating equipment. Verify that coal combustion residue solid waste landfills submit an operation plan to the appropriate Department field office prior to initiating operations. Verify that the operation plan includes the following: - identification of the area to be filled during the period for which a permit is being requested - the method that will be used to prevent illicit municipal or putrescible solid wastes from being deposited as a result of mixing with authorized waste brought to the site - the frequency, extent, and method of spreading and compacting the waste; the optimum layer thickness; and the size and slope of the operating face - a description of the operating procedures that will be followed when wastes are brought to the site

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SO.135.38.IA. Coal combustion residue landfills must meet closure and postclosure requirements (IAC 567-103.1(5)) [Added April 1999; Revised April 2003; Citation Revised April 2006].	- plans to remove waste for beneficial use (if applicable). Verify that deposited waste is treated as necessary (or as required by the Department) to control fugitive dust and erosion. Verify that at least one down gradient monitoring well is installed within 1 yr of initiating operations. Verify that, within one year of initiating operations, monitoring wells are sampled quarterly for the purpose of establishing the average baseline concentrations for each well. NOTE: The following are the analytical parameters that are required to characterize groundwater quality and establish a baseline for those parameters: arsenic, barium, beryllium, cobalt, copper, iron, lead, magnesium, manganese, selenium, zinc, chlorides, and sulfate. The analysis must be for dissolved metals with filtering in the field.) Verify that, within one year of completing the quarterly baseline monitoring, all monitoring wells are sampled annually. Verify that any additional monitoring required by the Department is accomplished. Verify that a report of the groundwater monitoring results is submitted to the Department by the end of the first year's operation and annually thereafter. Verify that the owner/operator submits a postclosure plan to the Department 180 days prior to closure. Verify that the plan lists the date of closure, actions that will be taken to close the site, final site contours, final cover design, and parties responsible for postclosure maintenance. Verify that final cover consists of not less than 2 ft of compacted soil and 1 ft of uncompacted soil capable of sustaining a growth of common grasses. Verify that the slope of the landfill area after final closure is not less than 3 percent nor more than 25 percent. Verify that a growth of common grasses is established on the final cover by the end of the first full growing season. Verify that a minimum of one sample from each monitoring well is collected annually during the postclosure period and the results included in the annual report. Verify that, after closure, an annual inspection of the site is conducted and any

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SO.135.39.IA. Biosolid monofills must comply with permit requirements (IA C 567-112.2, 112. 6, 112. 7, and 112.12) [Added April 2003].	differential settling, surface cracks, holes, erosion channels, or any interference with surface drainage are corrected by restoration to the original condition. Verify that a report on the findings of the annual inspection and corrective actions taken is included in the annual report. (NOTE: Postclosure actions are required for a minimum 10 yr following closure. The Department may extend the monitoring and reporting period.) Verify that no public or private agency constructs or operates a biosolid monofill without first obtaining a permit from the Director. Verify that all biosolid monofills are constructed and operated according to the plans and specifications as approved by the Department and the terms of the permit. (NOTE: The approved plans and specifications constitute the terms of the permit.) (NOTE: Biosolid monofill designed and constructed in accordance with rules in effect at the time of construction will not be required to be redesigned or reconstructed due to subsequent rule changes unless the Department finds that such facilities are causing pollution. Such facilities will be brought into compliance with rules in effect at the time of reconstructing, enlarging, or otherwise modifying the sanitary disposal project, or at the time of permit renewal.) Verify that, if any new rule conflicts with an operating procedure prescribed in the engineering plans or the permit of a sanitary disposal project, the operation conforms with the new rule. Verify that the Department is notified when the initial construction of a biosolid monofill has been completed in order that an inspection may be made to determine that the project is constructed as designed. Verify that no solid waste is accepted by a biosolid monofill until that project has been inspected and approved by the Department.
SO.135.40.IA. Biosolid monofills must meet requirements for Emergency Release and Response Action Plan (ERRAP) (IA C 567-112.28 [Revised April 2003].	Verify that the biosolid monofill meets the requirements found in SO.8.2.IA. for ERRAP.

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SO.135.41.IA. Biosolid monofills must have a certified operator (IAC 567 - 112.29) [Revised April 2003].	Verify that the biosolid monofills has a certified operator (see SO.8.1.IA.).
SO.135.42.IA. Biosolid monofills must meet operational requirements (IAC 567-112.26 and 112.27) [Revised April 2003].	Verify that the biosolid monofills meet the general operating requirements found in SO.8.3.IA. Verify that the biosolid monofills meet the specific operating requirements for landfills found in SO.8.4.IA. through SO.8.21.IA.
SO.135.43.IA. Biosolid monofills must meet specific requirements for sludge management (IAC 567-112.28) [Revised April 2003].	(NOTE: The plans submitted for the permit application must specify how the following requirements will be met.) Verify that the monofill has detailed analysis of the sludge, a description of the process(es) that produce the sludge and a description of the sources and characteristics of the treatment plant influent. (NOTE: The collection and preservation of samples must be done by the highest grade operator at the plant producing the sludge, or the operator's designee. The collection and preservation of samples must be done in a manner and frequency approved by the director and intended to ensure that the sampling results are representative of the sludge being disposed. Analyses shall be performed at a laboratory approved by the state hygienic laboratory. All analyses shall be performed in accordance with the methods described in "Methods for Chemical Analysis of Water and Wastes," 1974 (U.S. EPA) or "Standard Methods for the Examination of Water and Waste Water," 14th Edition, 1976. Alternate methods may be substituted only if acceptable to the state hygienic laboratory and approved by the Department.) Verify that the analyses of the sludge is performed and submitted to the Department on a stipulated schedule including tests as required to confirm the constituents of the sludge. Verify that the monofill is in compliance with the surface disposal provision of federal regulations at 40 C FR Part 503, Subpart C, as adopted on February 19, 1993. Verify that sludge at the site is covered after each day of operation with a layer of at least 1 foot of earth. Verify that in no event is sludge exposed for more than 24 hours. Verify that, at least 2 feet of intermediate cover of earth is applied to any area of the site that will not be utilized for further disposal of sludge for more than one

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SO.135.44.IA. Biosolid monofills must meet requirements for wells (IAC 567-112.24) [Revised April 2003; Citation Revised February 2008].	week. Verify that the intermediate cover is graded to allow surface water runoff without creating erosion or pollution problems. Verify that the final cover is consistent with the proposed land use, but in no event is less than 2 feet. Verify that boreholes, piezometers and observation wells not used for groundwater monitoring are sealed. Verify that the location of the abandoned well or borehole are documented in writing with reference to the landfill's coordinate system and method of sealing. Verify that the document is retained at the landfill with a copy sent to the Department.

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February 2008]. SO.140.4.IA. Sanitary landfills that only accept construction and demolition waste must meet operating requirements (IA C 567-114.26 and 114.27) [Added April 2003]. SO.140.5.IA. Sanitary landfills that only accept construction and demolition waste must meet specific operating requirements (IA C 567-114.28) [Added April 2003]. SO.140.6.IA. Sanitary landfills that only accept construction and demolition waste must meet requirements for wells (IA C 567-114.24) [Added April 2003].	Verify that the municipal solid waste landfill meet the general operating requirements found in SO.8.3.IA. Verify that the municipal solid waste landfill meet the specific operating requirements for landfills found in SO.8.4.IA. through SO.8.21.IA. Verify that all plan conditions specified in the permit are met. Verify that immediately after solid waste is deposited, it is uniformly distributed and compacted as densely as practical. Verify that the waste is covered with a minimum of 1 foot of earth at least once every 7 days of operation. (NOTE: The day during which cover will be applied shall be specified in the plan.) Verify that at least a 2-foot cover of compacted earth is applied to any area of the sanitary landfill that will not be utilized for further disposal of solid waste for more than 2 months. Verify that the temporary cover is graded to allow surface water runoff. Verify that the final cover is consistent with the proposed land use but in no event is less than 2 feet. Verify that boreholes, piezometers and observation wells not used for groundwater monitoring are sealed. Verify that the location of the abandoned well or borehole are documented in writing with reference to the landfill's coordinate system and method of sealing. Verify that the document is retained at the landfill with a copy sent to the Department.

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SO.150. INDUSTRIAL WASTE UNITS SO.150.1.IA. Sanitary landfills that only accept a specific type of industrial waste must comply with permit requirements (IA C 567-115.2, 115.6, 115.7, and 115.12) [Added April 2003]. SO.150.2.IA. Sanitary landfills that only accept a specific type of industrial waste must meet requirements for Emergency Release and Response Action Plan (ERRAP) (IA C 567-115.28) [Revised April 2003]. SO.150.3.IA. Sanitary landfills that only accept a	Verify that no public or private agency constructs or operates a sanitary disposal project without first obtaining a permit from the Director. Verify that all sanitary disposal projects are constructed and operated according to the plans and specifications as approved by the Department and the terms of the permit. (NOTE: The approved plans and specifications constitute the terms of the permit.) (NOTE: Sanitary disposal projects designed and constructed in accordance with rules in effect at the time of construction will not be required to be redesigned or reconstructed due to subsequent rule changes unless the Department finds that such facilities are causing pollution. Such facilities will be brought into compliance with rules in effect at the time of reconstructing, enlarging, or otherwise modifying the sanitary disposal project, or at the time of permit renewal.) Verify that, if any new rule conflicts with an operating procedure prescribed in the engineering plans or the permit of a sanitary disposal project, the operation conforms with the new rule. Verify that the Department is notified when the initial construction of a sanitary disposal project has been completed in order that an inspection may be made to determine that the project is constructed as designed. Verify that no solid waste is accepted by a sanitary disposal project until that project has been inspected and approved by the Department. Verify that a sanitary landfill that only accept a specific type of industrial waste meets the requirements found in SO.8.2.IA. for ERRAP. Verify that sanitary landfills that only accept a specific type of industrial waste

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specific type of industrial waste must have a certified operator (IAC 567 -115.29) [Revised April 2003]. SO.150.4.IA. Sanitary landfills that only accept a specific type of industrial waste must meet operating requirements (IA C 5 67-115.26 and 115.27) [Added April 2003]. SO.150.5.IA. Sanitary landfills that only accept a specific type of industrial waste must meet specific requirements (IA C 5 67-115.28) [Added April 2003]. SO.150.6.IA. Sanitary landfills that only accept a specific type of industrial waste meet requirements for wells (IAC 5 67-115.24) [Added April 2003].	have a certified operator (see SO.8.1.IA.). Verify that the municipal solid waste landfill meet the general operating requirements found in SO.8.3.IA. Verify that the municipal solid waste landfill meet the specific operating requirements for landfills found in SO.8.4.IA. through SOSS88 Verify that all plan conditions specified in the permit are met. Verify that the plans detail the following: - the source of the solid waste and a description of the process that produces it - a detailed analysis of the solid waste to be deposited at the site, including such tests as may be required by the Department to evaluate the potential impact of disposal of the solid waste on the environment if it is disposed of in the manner described in the plans - engineering detailing how the site will be designed, constructed, and operated to protect groundwater and surface water resources - if the information submitted indicates that no danger of contamination of groundwater or surface waters exists, the director may waive any rule requiring analysis and definition of subsurface geology. Verify that boreholes, piezometers and observation wells not used for groundwater monitoring are sealed. Verify that the location of the abandoned well or borehole are documented in writing with reference to the landfill's coordinate system and method of sealing. Verify that the document is retained at the landfill with a copy sent to the Department.

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SO.160. WASTE TIRE MANAGEMENT SO.160.1.IA. Land disposal of waste tires is prohibited (IAC 567-117.3) [Added April 2003]. SO.160.2.IA. The beneficial use of waste tires must meet specific requirements (IAC 567-117.8(4), (5), (10) and (11)) [Added April 2003]. SO.160.3.IA. Storage of waste tires must meet specific limitation as permitted under a waste tire stockpile	Verify that waste tires, in whole, cut, or shredded form, are not land disposed. (NOTE: Waste tires will be accepted at a permitted sanitary landfill for final disposal if the tires have first been cut into pieces that are not more than 18 inches on any one side.) Verify that the application of waste tires meets the requirements for beneficial use. Verify that, for application of between 250 to 500 whole tires, the Department is notified in writing no less than 30 days prior to the construction or placement. Verify that, for applications of more than 500 waste tires, Department approval is obtained prior to the application. Verify, that a minimum, whole tires are pierced or drilled to allow for water drainage if water retention and stagnation is likely to occur. Verify that whole, shredded, cut, or baled waste tires stored at the site of the beneficial use meet the following requirements: - tire materials are stored in piles or bales for no longer than 60 days prior to the date of application, except for whole waste tires for agricultural uses - all storage of waste tire materials is conducted in accordance with the uniform fire code and the requirements of 117.4(3) (see S O.160.5.IA, SO.160.6.IA., and SO.160.7.IA) as applicable - report semiannually to the Department the quantity of waste tires received from out of state during the reporting period. (NOTE: Any storage of waste tires associated with a proposed beneficial reuse project at a site of end use for longer than 60 days without implementation of completion of a beneficial reuse project is subject to the waste tire storage permitting requirements as contained in rule 117.4(455D); see SO.160.3.IA.) (NOTE: See IAC 567-117.8 for detailed descriptions of beneficial uses.) Verify that any tire collector, business or individual storing more than 500 passenger tire equivalents on any one site obtains a waste tire stockpile permit. Verify that businesses or individuals temporarily storing up to 1,500 passenger tire

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permit (IAC 567 -117.4(1), (2)(a) and (2)(b)) [Added April 2003].	equivalents without obtaining a waste tire stockpile permit, meet the following requirements: - the waste tires are stored only in a mobile container, truck, or trailer, provided or serviced by a registered waste tire hauler - the waste tires are removed by the waste tire hauler or delivered to a waste tire processor at least every 60 days - the waste tire generator has a written copy of a contract or service agreement for waste tire disposal services from a registered waste tire hauler. Verify that a permitted municipal landfill or solid waste transfer station allowed the storage of up to 1,500 passenger tire equivalents without a permit, remove the waste tires at least every 120 days and store the waste tires in a manner to minimize the collection of water. Verify that persons who use waste tires for an approved beneficial use have a waste tire stockpile permit. (NOTE: An authorized vehicle recycler, as licensed by the Iowa department of transportation, may store up to 3,500 passenger tire equivalents without a waste tire stockpile permit; any storage beyond this amount will require full compliance.)
SO.160.4.IA. Permitted waste tire stockpiles must operate under required plans (IAC 567-117.4(2)(d)) [Added April 2003].	Verify that the permitted waste tire stockpile operates, when applicable, under the conditions of the vector control plan, site closure plan, and emergency response and remedial action plan (ERRAP) (see Appendix 9-4 for details of the ERRAP.) Verify that the vector control plan prevents infestations of mosquitoes and rodents for aboveground storage in an open area. Verify that the plan is prepared by a firm that provides professional vector management services, or by the permittee, if properly trained and certified in vector control procedures. Verify that documentation is provided to show a adequate implementation and monitoring of the vector control plan.
SO.160.5.IA. Permitted waste tire stockpiles (aboveground storage, open area) must meet minimum operating conditions (IAC 567-117.4(3)(a)) [Added April 2003].	Verify that a permitted waste tire stockpile site (aboveground storage, open area) meets the following minimum permit conditions as set by the department: - a waste tire stockpile site does not contain more than 250,000 passenger tire equivalents - a single waste tire pile does not contain more than 50,000 cubic feet of waste tires - the vertical dimension of a waste tire pile does not exceed 10 feet - a single waste tire pile is not more than 100 feet in length

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SO.160.6.IA. Permitted waste tire stockpiles (aboveground storage, enclosed area) must meet minimum operating conditions (IAC 567 -117.4 (3)(b)) [Added April 2003].	- the surface area covered by a waste tire pile does not exceed 5,000 square feet - the pile is not constructed upon any waste tire materials or other flammable materials. - a 50-foot fire lane is maintained between any 2 tire piles - the tire bales are stored in piles no greater than 10 feet in height, 25 feet in width, or 50 feet in length, with a separation distance of 50 feet between piles of tire bales - all waste tire piles are located at least 50 feet from any building - trees and brush are cleared within 50 feet of any tire pile - combustible materials or volatile chemicals are not stored within 50 feet of any tire pile unless stored in approved fire-resistant containers or cabinets - a 20-pound Class ABC dry chemical fire extinguisher are available within 100 feet of any one portion of the tire storage areas - the site is graded to prevent any standing pools of water and to limit the runoff and runoff of precipitation. - the waste tire pile is at least 200 feet from any well, lake, pond, river, stream, sinkhole, or tile line surface intake unless appropriate grading, or the construction of a barrier, dike, or berm, is completed to intercept surface water flows that may impact such interceptors (this distance may then be reduced to 50 feet) - the stockpile site is secured by a fence or barrier of a minimum of 6 feet in height to impede unauthorized vehicle and personal access - all gates and entry points are secured and locked when site personnel are not present - no open burning of any type is allowed at the permitted stockpile site - all fueling of vehicles and equipment and any other work or activity that may release sparks or flame are conducted at least 50 feet from any tire storage area - signs are posted every 100 feet on site, placed for visibility of personnel on site, and state: "Open burning on-site prohibited." - the perimeter of the site is posted with signs every 100 feet, placed for visibility to those off site, that state: " Highly flammable materials on-site. Burning in area not recommended." - all waste tire piles are located at least 300 feet from any property line, street, or public right-of-way. Verify that a permitted waste tire stockpile site (aboveground storage, enclosed area) meets the following minimum permit conditions as set by the department: - a single waste tire pile does not contain more than 50,000 cubic feet of waste tires - the vertical dimension of a waste tire pile does not exceed 10 feet - a single waste tire pile is not more than 100 feet in length - the surface area covered by a waste tire pile does not exceed 5,000 square feet - the pile is not constructed upon any waste tire materials or other flammable materials - a 50-foot fire lane is maintained between any 2 tire piles

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SO.160.7.IA. Permitted underground waste tire storage sites must meet minimum operating conditions (IAC 567 - 117.4(3)(c)) [Added April 2003].	- the tire bales are stored in piles no greater than 10 feet in height, 25 feet in width, or 50 feet in length, with a separation distance of 50 feet between piles of tire bales. Verify that the area is enclosed in a structure with a permanent roof and lateral protection to prevent precipitation from accumulating within the tires. Verify that the enclosed storage structure does not contain more than 50,000 passenger tire equivalents. Verify that combustible materials or volatile chemicals are not stored in a structure permitted for tire storage unless stored in approved fire-resistant containers or cabinets. Verify that a 20-pound Class ABC dry chemical fire extinguisher is available within 50 feet of any one portion of the tire storage areas. Verify that the storage structure is secured from unauthorized access. Verify that no open burning of any type is allowed at the permitted stockpile site. Verify that all fueling of vehicles and equipment and any other work or activity that may release sparks or flame are conducted at least 50 feet from any tire storage area. Verify that the exterior of the enclosed storage area is posted with signs, placed every 100 feet, that state: "Highly flammable materials stored inside. Burning on-site prohibited."
	Verify that the site is a licensed grain warehouse. Verify that all underground storage areas are dry and not prone to the entry of surface water or groundwater. Verify that the underground storage areas are secured from unauthorized access by locking gates, doors, barriers, or other devices. Verify that the site does not store any volatile chemicals or other combustible materials within 150 feet of the tire storage area. Verify that, for tires placed for storage after July 1, 2002, all storage areas have access lanes, not less than 50 feet in width, arranged so that no portion of the storage area is more than 150 feet from an access lane. Verify that, for tires placed for storage after July 1, 2002, the tires are not buried by debris, rubble, or other cover within the underground storage site. Verify that the underground storage site is limited to a maximum storage capacity

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SO.160.8.IA. Permitted waste tire stockpiles must meet reporting requirements (IAC 567-117.4(4)) [Added April 2003].	of 4 million passenger tire equivalents. Verify that a semiannual report is made to the Department on a form as provided or approved by the Department. Verify that the report contains the following: - quantity of waste tires stored at the facility at the time of reporting, determined by count or weight and reported in passenger tire equivalents - quantity of waste tires received from in-state sources during the reporting period - quantity of waste tires received from out-of-state sources during the reporting period. (NOTE: For any waste tires removed from the permitted stockpile site during the reporting period, the quantity must be given by equivalent count or weight of such waste tires removed.) Verify that documentation is provided to denote how the reported quantity of tires were disposed of at a permitted facility, reused, or resold.
SO.160.9.IA. Waste tire processing facilities must operate under permits (IAC 567-117.6(1)(a) through (d)) [Added April 2003].	Verify that any business or individual operating a tire processing facility obtains a waste tire processing permit prior to commencing the operations. Verify that facilities that accept waste tires to cut, grind, or compact only for final disposal at a permitted sanitary disposal project obtain a waste tire processing permit. Verify that facilities that accept waste tires to cut, grind, or compact only for final disposal at a permitted sanitary disposal project do not store any cut or shredded waste tire materials for more than 30 days. Verify that businesses or individuals operating mobile waste tire processing equipment obtain a waste tire processing permit. Verify that mobile operations do not store any processed or whole waste tires at any facility or site owned or operated by the permittee unless specifically authorized within the permit. (NOTE: Businesses or individuals who cut, grind, or compact for disposal waste tires generated directly from operations at their own on-site manufacturing operation or service facility are not required to obtain a waste tire processing permit provided that all waste tire materials processed on site are disposed of at least every 30 days at a permitted facility and no more than 500 waste tires are processed monthly.)

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SO.160.10.IA. Permitted waste tire processing facilities must meet reporting requirements (IAC 567-117.6(5)) [Added April 2003].	Verify that a semiannual report is made to the department on a form as provided or approved by the department. Verify that the report includes the following: - quantity of waste tires received by the facility during the reporting period - quantity of waste tires received by the facility from in-state sources - quantity of waste tires received by the facility from out-of-state sources - quantity of unprocessed waste tires on hand at the facility at the time of reporting - quantity of waste tires processed and delivered to end users during the reporting period, by product type, with determinations of quantities of product delivered to identified in-state and out-of-state markets or sites - quantity of processed tire material currently stored at the facility, by product type.
SO.160.11.IA. Disposal of solid wastes from tire processing must meet specific requirements (IAC 567-117.6(6)) [Added April 2003].	Verify that all waste materials, residuals, and scraps derived from tire processing operations are regulated as solid waste. (NOTE: These materials include, but are not limited to, tire bead rings, metal wire, synthetic fibers, and cording.) Verify that all solid wastes are disposed of at least every 60 days at a permitted sanitary disposal project, scrap recycler, or location, as approved by the department. Verify that documentation of the disposal of these solid wastes is kept at the processing facility for a period of 3 years.
SO.160.12.IA. Waste tire haulers must meet specific requirements (IAC 567-116.2, 116.3, and 116.7) [Added April 2003; Revised April 2004].	(NOTE: "Waste tire hauler" means a person who transports for hire more than 40 waste tires in a single load. This includes persons and businesses that collect fees to provide hauling and pick-up services for the disposal or removal of tires from other persons or businesses.) Verify that waste tire haulers are registered annually with and obtains a certificate of registration from the Department. (NOTE: A waste tire hauler is not required to register under the following circumstances: - the waste tire hauler only travels through the state with waste tires as a part of interstate commerce and does not pick up, deposit, transfer, store, or dispose of any waste tires in Iowa - the waste tire hauler is a municipal, county, state, or other public agency, and the vehicles used for transport of the waste tires are owned and licensed by the public agency. The agency may only haul up to 10,000 waste tires within

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SO.160.13.IA. Waste tire haulers must meet storage and disposal requirements (IAC 567-116.8) [Added April 2003].	a 12-month period without obtaining a waste tire hauler's registration.) Verify that the following information is displayed on each side of the waste tire hauler's equipment, in letters and figures large enough to be read easily at a distance of 50 feet and in a color in contrast to the background. - the name of the registered waste tire hauler under whose authority equipment is being operated - the address of the registered waste tire hauler (city and state) - the registration number of the waste tire hauler, as assigned by the Department with "IA TH#" added preceding the assigned registration number. (NOTE: All tires collected by a waste tire hauler for which a fee has been collected or is to be charged shall be defined as a solid waste and shall be regulated as such.) Verify that the waste tires are transported directly to a tire collector, tire processor, or waste tire stockpile site, as permitted and approved by the Department or applicable local or state agencies. Verify that the waste tires are transported to a permitted site within 72 hours of initial pick up from the generator of the waste tires. Verify that the waste tire hauler does not establish or operate any intermediate storage, waste sorting, transfer, or processing activities regarding the waste tires collected, unless such activities occur at a facility or site for which a waste tire stockpile permit or processing permit has been issued.
SO.160.14.IA. Waste tire haulers must meet reporting and recordkeeping requirements (IAC 567-116.9) [Added April 2003].	Verify that registered waste tire hauler makes a semiannual report to the Department on a form provided or approved by the Department. Verify that, for waste tires collected during the six-month period beginning January 1 through June 30, the hauler submits a report by the following September 1. Verify that, for waste tires collected during the six-month period beginning July 1 through December 31, the hauler submits a report by March 1 of the following year. Verify that the semiannual report includes the following information: - quantity of waste tires collected by the waste tire hauler from within Iowa for the reporting period - quantity of waste tires that are brought to Iowa by the waste tire hauler from out-of-state sources

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	- final disposition of all the waste tires collected during the reporting period by listing each tire collector, tire processor, waste tire stockpile site, or other beneficial site of use, as approved by the Department, and the total quantities of waste tires that the hauler has delivered to each. (NOTE: All waste tire quantities determined by count or weight must be reported in passenger tire equivalents.) Verify that waste tire hauler keep appropriate records, including but not limited to receipts, invoices, or manifests, to document all quantities of waste tires hauled and disposed of by the waste tire hauler for the reporting period. Verify that records are kept by the waste tire hauler for a minimum of 3 years, and are available for audit or inspection at the request of the department.

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SO.165. YARD WASTE/ COMPOSTING SO.165.1.IA. Yard waste must not be disposed of by burial at a sanitary landfill (IAC 567-105.1(3) and 105.2) [Revised April 2003]. SO.165.2.IA. Yard and solid waste composting may be required to have a permit or operate under specific requirements (IAC 567-105.1 and 105.2) [Revised April 2003; Revised April 2004; Revised February 2007].	Verify that the burial of yard waste at a sanitary landfill is prohibited. (NOTE: Yard waste that is separated at its source from other solid waste may be accepted by a sanitary landfill for the purposes of soil conditioning or composting. Yard waste accepted by a sanitary landfill for the purposes of soil conditioning shall be used only on finished areas of the landfill that have received the final earthen cover, developed areas with intermediate cover, and restoration of soil borrow areas. The incineration of yard waste at a sanitary landfill is prohibited.) (NOTE: Chapter 105 applies to composting of solid and yard wastes. Composting facilities may include vermicomposting, turned windrows, aerated static piles, aerated in-vessel systems, or other methods approved by the Department.) Verify that composting facilities existing as of June 19, 2002, comply with the requirements of this chapter within 2 years or by the permit renewal date, whichever is later. (NOTE: The following are exempt from regulation: - yard waste or household or organic waste composted and used on the same premises where it originated - composting facilities involving agricultural waste, excluding dead animals, and clean wood waste which is necessary as bulking agent and which is free of coatings and preservatives. Use of any other materials as bulking agent will require prior approval by the Department. If agricultural waste is mixed with other wastes including dead animals for the purpose of composting, then this chapter shall apply unless the other wastes have been preapproved by the Department as necessary as bulking agent - yard waste, household organic waste, and agricultural waste generated, composted together in any combination and used on the same premises where they originated.) Verify that yard waste composting facilities (exempt from permitting) are operated in conformance with Chapter 105.3 (see SO.165.3.IA.) and Chapter 105.6 (see SO.165.5.IA.). Verify that composting of dead farm animals generated on the same premises as the composting facility (exempt from permitting) is operated in conformance with Chapter 105.3 (see SO.165.3.IA.) and Chapter 105.6 (see SO.165.7.IA.). Verify that small quantity solid waste compost operations (exempt from permitting) are operated in conformance with Chapter 105.3 (see SO.165.3.IA.)

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SO.165.3.IA. General operating requirements apply to all composting facilities (IAC 567-105.3) [Revised April 2003; Revised April 2004; Revised February 2007].	and Chapter 105.5 (see SO.165.6.IA.). Verify that, unless exempt, solid waste composting facilities obtain a permit from the Department. (NOTE: Solid waste composting facilities involving municipal sewage sludge shall also operate in conformance with IAC 567-67 (see WA.105.IA, WA.120.IA, and WA.125.IA).) Verify that land application of yard waste is done in conformance with IAC 567-121 (see SO.175.36.IA.). (NOTE: Facilities exempt from permitting that do not operate in accordance with these requirements may as a result be required to obtain a solid waste composting permit. Composting facilities must also operate in accordance with all applicable city and county ordinance and permitting requirements.) Verify that the composting facility is 500 feet from any existing inhabited residence, not including the residence of the person owning/operating the compost facility. Verify that composting is done outside of wetlands, at least 200 feet from public wells, 100 feet from private wells, 50 feet from property lines, and 100 feet from flowing or intermittent streams, lakes, or ponds. (NOTE: Composting done inside the 100-year flood plain shall be in accordance with all local and department regulations including 567-71.5 (see NR.10.7.IA.). Sediment ponds, engineered wetlands or other constructed waterways for the purpose of pollution control are excluded from this requirement.) Verify that composting is performed in a manner that minimizes the formation of compost leachate by the facility. Verify that measures are taken to prevent water from running onto the facility from adjacent land and to prevent compost leachate and runoff from leaving the composting facility. Verify that runoff from the composting facility is managed properly. Verify that facilities are designed, constructed, and maintained so as to minimize ponding of water or liquids. Verify that any ponding that does occur is corrected through routine facility maintenance within 48 hours after the termination of the event causing the ponding. Verify that composting is done on a non-weather surface of compacted soil, compacted granular aggregates, asphalt, concrete or similar relatively

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	impermeable material that will permit accessibility during periods of inclement weather and prevent contamination of surface water and groundwater. Verify that solid waste that cannot be composted or that is removed during processing is properly disposed of. Verify that infectious waste is not accepted for composting at any composting facility unless approved by the Department in writing. Verify that solid waste materials are managed through the entire process in accordance with best management practices to minimize conditions such as odors, dust, noise, litter and vectors which may create nuisance conditions or a public health hazard. Verify that storage of cured or finished compost is limited to 18 months. (NOTE: The 18-month period may be extended with prior written approval from the Department.) Verify that, if compost is offered for sale as a soil conditioner or fertilizer, the compost is registered by the Department of Agriculture and Land Stewardship, Fertilizers and Soil Conditioners. Verify that compost is not applied to land, sold or given away unless the concentration of human-made inert materials such as glass, metal, and plastic is less than 1.5 percent by dry weight. Verify that compost is not applied to land, sold or given away unless the size of any human-made inert materials is less than 13 mm (0.512 inches).
SO.165.4.IA. [Deleted April 2003].	(NOTE: Regulation revised.)
SO.165.5.IA. Yard waste composting must meet specific requirements (IAC 567-105.4) [Citation Revised April 2002; Revised April 2003].	(NOTE: Yard waste composting facility operators are encouraged to be trained, tested, and certified by a Department approved certification program.) Verify that, before the composting facility commences operation, the Department and the field office of the department serving the composting facility's location are notified in writing of the following: - the location of the composting facility - legal description of the facility - landowner's name, telephone number, and mailing address - responsible party's name, telephone number, and mailing address - annual capacity of the facility - method of composting to be employed

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SO.165.6.IA. Small composting facilities receiving off-premises materials must meet specific requirements (IAC 567-105.5) [Revised April 2003; Revised February 2007].	- source of the yard waste and any necessary bulking agent. Verify that the facility has a permanent sign posted at the entrance specifying: - name of operation - operating hours - materials that are accepted or the statement "All materials must have prior approval" - telephone number of 24-hour emergency contact person. Verify that yard waste is taken out of containers before composting, unless the containers are compostable. Verify that aerobic conditions are maintained in accordance with best management practices. Verify that an annual report for the previous fiscal year beginning July 1 and ending June 30 is submitted to the Department by July 31 of each year. (NOTE: The report will be submitted using Form 542-3276C, provided by the department, and all applicable sections of the form must be completed.) Verify that records are maintained by the facility for a period of 3 years for inspection and evaluation by the Department. (NOTE: Small composting facilities are exempt from obtaining a solid waste composting permit provided the facility complies with 105.3 (see SO.165.3.IA.) and 105.5. Facilities composting over 2 tons of food residuals and yard waste per week in any combination from off premises must obtain a permit and adhere to the solid waste composting requirements stipulated in 105.7 through 105.14. If only agricultural wastes are collected and composted, a permit is not required. If only yard wastes are collected and composted, a permit is not required.) Verify that a total of 2 tons or less per week of yard waste and food residuals (either singly, in combination, or with agricultural waste) are received from off premises for composting Verify that only clean wood waste free of coating and preservatives is used as a bulking agent. (NOTE: The 2 tons per week combined weight limit does not apply to bulking agent. However, the amount of bulking agent received must be appropriate for the amount of compostable materials received.) Verify that, before the composting facility commences operation, the Department and the field office of the Department serving the composting facility's location is notified in writing of the following:

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SO.165.7.IA. Composting dead farm animals must meet specific requirements (IAC 567-105.6) [Revised April 2002; Revised April 2003 ; Revised February 2007].	- the location of the composting facility - legal description of the facility - landowner's name, telephone number, and mailing address - responsible party's name, telephone number, and mailing address - annual capacity of the facility - method of composting to be employed - source of the feedstock and any necessary bulking agent. Verify that the facility has a permanent sign posted at the entrance specifying: - name of operation - operating hours - materials which are accepted or the statement "All materials must have prior approval." - telephone number of 24-hour emergency contact person. Verify that an annual report for the previous fiscal year beginning July 1 and ending June 30 is submitted to the department by July 31 of each year. (NOTE: The report will be submitted using Form 542-3276C, provided by the Department, and all applicable sections of the form must be completed.) Verify that records are maintained by the facility for a period of 3 years for evaluation by the Department. (NOTE: Dead farm animal composting facility operators are encouraged to be trained, tested, and certified by a Department approved certification program. Composting of dead farm animals generated on the same premises as the composting facility is exempt from having a permit if the following operating requirements are met and the facility is in compliance with 105.3 (see SO.165.3.IA.) (NOTE: Before commencing operation, the operator is encouraged to notify the Department. The Department will provide general assistance, such as including locating bulking agent and providing advice in regard to considerations such as pad location, sizing, and design, to facilities notifying the Department and requesting assistance.) Verify that farm animals known or suspected to have died from an infectious disease that can be spread by scavengers or insects or that died from a reportable disease are disposed of in accordance with the requirements of the Iowa Department of Agriculture and Land Stewardship and the Department. Verify that transportation vehicles are constructed to prevent the release of mortality contaminated materials under normal operating conditions. Verify that the most direct haul route that avoids biosecurity risks is utilized.

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SO.165.8.IA. Permitted solid waste composting facilities must meet specific management requirements (IAC 5 67-105.7 and 105.10) [Revised April 2002; Revised April 2003].	Verify that the composting facility is designed to accommodate at least the average annual death loss for all sites using the composting facility. (NOTE: Facility designs shall also take into account space requirements for managing raw materials (e.g., additional bedding and bulking agents needed for mortality composting) and finished compost.) Verify that animal mortalities from a catastrophic event, such as a fire or electrical outage, are not composted until the Department field office is contacted and arrangements are approved for the appropriate treatment or disposal of the animals. Verify that the facility contacts the Department field office with jurisdiction over the facility as soon as possible after such a catastrophic event occurs to receive approval of the disposal option. Verify that dead farm animals are incorporated into the composting process within 24 hours of death. Verify that an adequate base layer (from 12 to 24 inches thick, depending on the size and number of dead farm animals) with 6 to 12 inches of bulking agent between carcasses and an additional 12 inches of cover material is maintained around carcasses at all times to control mortality leachate and odors and to prevent access by scavenging domestic and wild animals. Verify that dead farm animals are not removed from composting until all soft tissue is fully decomposed. Verify that compost (including bones that have not fully decomposed) is applied to cropland in a manner that minimizes the runoff into a water of the state. Verify that application of the compost to lands other than cropland has the prior approval of the Department. Verify that all solid waste composting facilities are constructed and operated according to the plans and specifications as approved by the Department and the conditions of the permit. Verify that the Department is notified 30 days prior to scheduled completion of a solid waste composting facility and when the construction has been completed. Verify that no solid waste is accepted by the facility until it has been inspected and approved by the Department. Verify that the person responsible for daily operation of the facility is certified by a Department-approved program.

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SO.165.9.IA. Permitted solid waste composting facilities must meet specific operating requirements (IAC 567-105.9) [Revised April 2002; Revised April 2003].	(NOTE: In addition to the following, all permitted solid waste composting facilities shall comply with 105.3 (see SO.165.3.IA.)). Verify that access to the facility meets the following requirements: - is restricted with a lockable gate at the entrance to the facility - is allowed only when an employee, agent or representative of the facility is on duty - fire lanes are maintained to provide access for firefighting equipment as required by the local fire department. Verify that the facility has a permanent sign posted at the entrance specifying: - name of operation - operating hours - materials that are accepted or the statement "All materials must have prior approval" - telephone number of 24-hour emergency contact person. Verify that all materials received are incorporated into the composting process within 24 hours of receipt unless storage of these materials is specified in the plan and approved by the Department. Verify that sample collection, preservation, and analysis are done in a manner that ensures valid and representative results. (NOTE: Facilities should follow the most recent version of the Test Methods for the Examination of Composting and Compost guidelines or other testing procedures as approved by the Department. Verify that compost is held at a temperature above 55 degrees Celsius (131 degrees Fahrenheit) for an appropriate amount of time, in accordance with best management practices, in order to achieve pathogen reduction. Verify that, unless otherwise proposed in the operating plan and authorized in the permit, the permit holder tests at a minimum: - twice weekly temperature readings of compost piles, batches, and windrows - weekly moisture levels of compost piles, batches, and windrows - testing of the finished product. Verify that compost is not applied to land, sold or given away for household use unless the following requirements are met. - the density of fecal coliform is less than 1000 most probable number (MPN) per gram of total solids (dry weight basis) or the density of Salmonella sp. bacteria in compost is less than 3 MPN per 4 grams of total solids (dry weight basis)

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SO.165.10.IA. Permitted composting facilities must meet recordkeeping requirements (IAC 567-105.11) [Citation Revised April 2002; Revised April 2003].	- the concentration of human-made inert materials such as glass, metal, and plastic is less than 1.5 percent by dry weight. - the size of any human-made inert materials is less than 13 mm (0.512 inches) - the concentrations of all metals are less than the amounts in Appendix 9-2. (NOTE: If the above requirements are not met, compost must be applied according to IAC 567-121.) Verify that the following records are maintained by the facility for a period of 3 years and at the facility at all times and are submitted to the Department upon request: - analytical results on a Department approved reporting form - types and weight of compostable materials and bulking agents, in tons, accepted at the facility annually - weight of compost, in tons, removed from the facility annually - a copy of the plan, the permit, annual reports, and the current storm water pollution prevention plan.
SO.165.11.IA. Permitted composting facilities must meet reporting requirements (IAC 567-105.12) [Revised April 2002; Revised April 2003].	Verify that an annual report for the previous fiscal year beginning July 1 and ending June 30 is submitted to the Department by July 31 of each year by all permitted solid waste composting facilities. (NOTE: The report will be submitted using Form 542-3276C, provided by the Department, and all applicable sections of the form must be completed.)
SO.165.12.IA. Permitted composting facilities must meet closure requirements (IAC 567-105.13) [Revised April 2002].	Verify that each composting facility submitted a closure plan to the Department containing a description of the steps necessary to close the facility. (NOTE: A permit will not be issued unless the closure plan is approved.) Verify that an updated closure plan, including a schedule for closure, is submitted to the Department at least 60 calendar days prior to the proposed termination date for the facility. Verify that, unless an alternative schedule is approved by the Department, within 6 months of the facility's ceasing operation, all waste and unfinished and finished compost is removed from the premises. Verify that facilities beneficially reusing material in order to comply with the removal of all waste and compost submit in written form all agreements for this reuse. (NOTE: Beneficial reuse notice must include names of parties involved, amount

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		of material utilized, and cost per ton. The closure plan will not be approved until these agreements are submitted to and approved by the Department. The Department must also be notified of any changes in the agreements.) Verify that, upon closure, all permitted solid waste composting facilities perform the following activities: - properly dispose of all organic material, solid waste and litter at the premises - lock all doors, gates, entrances, and exits - report the completion of these activities to the local political jurisdiction, the Department, and the department field office serving the composting facility.
SO.165.13.IA. April 2003].	[Deleted]	(NOTE: Regulation revised.)
SO.165.14.IA. April 2003].	[Deleted]	(NOTE: Regulation revised.)
SO.165.15.IA. April 2002].	[Deleted]	(NOTE: Regulations revised.)
SO.165.16.IA. April 2003].	[Deleted]	(NOTE: Regulations revised.)
SO.165.17.IA. April 2003].	[Deleted]	(NOTE: Regulations revised.)
SO.165.18.IA. April 2003].	[Deleted]	(NOTE: Regulations revised.)
SO.165.19.IA. April 2003].	[Deleted]	(NOTE: Regulations revised.)

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SO.165.20.IA.	[Deleted	(NOTE: Regulations revised.)
April 2003].		
SO.165.21.IA.	[Deleted	(NOTE: Regulations revised.)
April 2003].		
SO.165.22.IA.	[Deleted	(NOTE: Regulations revised.)
April 2002].		
SO.165.23.IA.	[Deleted	(NOTE: Regulations revised.)
April 2002].		
SO.165.24.IA.	[Deleted	(NOTE: Regulations revised.)
April 2002].		
SO.165.25.IA.	[Deleted	(NOTE: Regulations revised.)
April 2002].		
SO.165.26.IA.	[Deleted	(NOTE: Regulations revised.)
April 2002].		
SO.165.27.IA.	[Deleted	(NOTE: Regulations revised.)
April 2003].		
SO.165.28.IA.	[Deleted	(NOTE: Regulations revised.)
April 2002].		
SO.165.29.IA.	[Deleted	(NOTE: Regulation revised; see SO.165.34.IA below.)
April 2002].		

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SO.165.30.IA. [Deleted April 2003].		(NOTE: Regulations revised.)
SO.165.31.IA. [Deleted April 2003].		(NOTE: Regulations revised.)
SO.165.32.IA. [Deleted April 2003].		(NOTE: Regulations revised.)
SO.165.33.IA. [Deleted A pril 2003].		(NOTE: Regulations revised.)
SO.165.34.IA. [Deleted April 2003].		(NOTE: Regulations revised.)

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SO.175. OTHER TREATMENT/ PROCESSING UNITS SO.175.1.IA. Solid waste disposal projects with processing facilities must meet design specifications (IAC 567-104.1(2)) [Revised April 2003]. SO.175.2.IA. Dumping, holding floors, or pits at solid waste disposal projects with processing facilities must meet specific requirements (IAC 567-104.2(1), 104.2(2), and 104.2(3)) [Revised April 2003]. SO.175.3.IA. Containers used at solid waste disposal projects with processing facilities must meet specific requirements (IAC 567-104.9(1)(a) and 104.9(2)) [Revised April 2003]. SO.175.4.IA. Solid waste disposal project processing facilities for the storage of solid wastes must be constructed in a specific manner (IAC 567 -	Verify that all equipment that can be cleaned by washing is installed on reasonably smooth impermeable floors which are easily cleaned and which have drainage to a sanitary sewer unless other acceptable provisions are made to control process or wash water. Verify that all equipment is designed to prevent spillage of waste and to facilitate easy cleaning and is adequately enclosed to prevent blowing dust or litter or wetting of the waste from precipitation or runoff. Verify that all unloading area surfaces are constructed of impervious, reasonably smooth material that is easily cleaned, and has drainage to a sanitary sewer. Verify that all unloading areas have a storage capacity of at least one day's processing capacity. Verify that all unloading areas are adequately enclosed and roofed to prevent blowing of dust or litter and to prevent precipitation or drainage onto any accumulated waste. (NOTE: Moved from SO.10.1.IA. and SO.10.3.IA. and combined) Verify that containers used for the storage of solid wastes (except salvaged materials) including refuse derived fuels are covered, leakproof, durable, and of easily cleanable construction. Verify that containers and facilities used for the storage of salvaged materials are designed and constructed to prevent odor, litter, leaching, and vector problems. Verify that the acceptability of any container is based on the materials being stored, duration of storage, and conditions of storage. (NOTE: Moved from SO.10.2.IA.) Verify that facilities used for the storage of all solid wastes (except municipal sewage sludge and salvaged materials) including refuse derived fuels, meet the following requirements:

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104.9(1)(b)). SO.175.5.IA. Compactors at solid waste disposal project processing facilities must be placed in specific locations (IAC 567-104.3). SO.175.6.IA. Hammermills at solid waste disposal project processing facilities must be equipped with dust suppression equipment (IAC 567-104.4(1)). SO.175.7.IA. Hammermills at solid waste disposal project processing facilities must be provided with fire and explosion control or suppression devices (IAC 567-104.4(2)). SO.175.8.IA. Solid waste that cannot be processed by the hammermill at solid waste disposal project processing facilities must be stored in a specific manner (IAC 567-104.4(3)). SO.175.9.IA. When solid waste cannot be processed by hydropulping or slurring equipment as planned, it must be stored in a specific manner	- have a smooth, impervious, easily cleaned base - provide leachate collection - prevent runoff entering the facility from adjacent areas - are enclosed to prevent blowing litter and roofed to prevent precipitation into any solid waste. Verify that all compactors are located on reasonably smooth impermeable aprons designed to control wash water and area runoff, are easily cleaned, and avoid creation of fly or rodent habitats. Verify that all hammermills are equipped with adjustable water spray or other dust suppression equipment. Verify that all hammermills are provided with fire and explosion control or suppression devices or equipment. Verify that solid waste that cannot be processed by the hammermill or is rejected by it is stored in enclosed leakproof containers. Verify that solid waste that cannot be processed by or is rejected by hydropulping or slurring equipment is stored in enclosed leakproof containers.

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at solid waste disposal project processing facilities (IAC 567-104.5) [Revised April 2003].	
SO.175.10.IA. Air classifiers at solid waste disposal project processing facilities must be equipped with dust suppression equipment (IAC 567-104.6).	Verify that air classifiers are equipped with dust suppression equipment unless the air is recirculated.
SO.175.11.IA. Metals separation equipment at solid waste disposal project processing facilities must be installed at a specific point of the process (IAC 567-104.7(1)).	Verify that metals separation equipment is installed at the point in the process that minimizes possible organic contamination of the metal.
SO.175.12.IA. Provisions must be made for storage of separated metals at solid waste disposal project processing facilities (IAC 567-104.7(2)).	Verify that provisions are made for storage of separated materials in enclosed leakproof containers.
SO.175.13.IA. Sludges at solid waste disposal project processing facilities must be meet specific management requirements (IAC 567 - 104.8(1) and (2) [Revised April 2003].	Verify that, if sludges are introduced to solid waste, sludges are introduced after any resource recovery operation. Verify that sludge addition equipment and storage facilities are sanitary and odor free.
SO.175.14.IA. [Deleted April 2003].	(NOTE: Requirement combined in SO.175.13.IA.)

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SO.175.15.IA. Processing equipment at solid waste disposal project processing facilities must be cleaned daily (IAC 567 -104.10(1)) [Revised April 2003].	Verify that all processing equipment is cleaned daily unless the Department approves less frequent cleaning on a specific schedule stipulating component part, cleaning method, and schedule.
SO.175.16.IA. The disposal and storage of solid waste at the solid waste disposal processing facility must meet specific requirements (IAC 567-104.10(3), (5), and (7)) [Revised April 2003].	Verify that all processed or rejected solid waste is disposed of in conformance with appropriate disposal requirements. Verify that solid waste, except for composted materials, but including refuse derived fuels is not stored on the site for more than 72 h. Verify that the operating area for solid waste is as small as practicable and is surrounded with appropriate barriers to prevent litter from blowing beyond the operating area.
SO.175.17.IA. Emergency access must be provided to material in solid waste at solid waste disposal project processing facilities (IAC 567-104.10(4)).	Verify that emergency access is provided to the material in storage facilities.
SO.175.18.IA. An operator must be on duty when solid waste is unloaded or stored at the processing facility (IAC 567-104.10(6)) [Revised April 2003].	Verify that solid waste is unloaded at the operating areas only when an operator is on duty at the area. Verify that solid waste is deposited in storage containers inside the site under the supervision of an attendant or operator.
SO.175.19.IA. The processing site must be fenced with a gate to provide access to the facility (IAC 567-104.10(8)) [Revised April 2003].	Verify that the site is fenced to control access and a gate is provided at the entrance to the site and is kept locked when an attendant or operator is not on duty.
SO.175.20.IA. A copy of the permit, engineering plans and	Verify that a copy of the permit, engineering plans, and reports are kept at the site

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reports must be kept on the processing site (IAC 567 - 104.10(9)) [Revised April 2003]. SO.175.21.IA. Processing sites not opened to the public must have a sign posted with specific information (IAC 567-104.10(10)) [Revised April 2003]. SO.175.22.IA. Recycling at solid waste processing projects must meet specific plan requirements (IAC 567 - 104.21 and 104. 24) [Revised April 2003]. SO.175.23.IA. [Deleted April 2003]. SO.175.24.IA. Sanitary disposal projects with processing facilities must close in conformance with	at all times. Verify that sites not open to the public have a permanent sign posted at the site entrance specifying: - name of operation - the site permit number - that the site is not open to the public - the name and telephone number of the responsible official. (NOTE: Moved from SO.25.1.IA. and SO.25.3.IA.) Verify that recycling operation plans include the following: - a complete description of initial and permanent roads - buildings and equipment to be installed - unloading and holding areas - fences and gates - landscaping and screening devices - personnel and maintenance facilities - sewer and water lines - method of processing reclaimed salvageable materials and the disposition of salvageable materials - transfer points to which salvageable materials will be moved, the capacities of the transfer points, and frequency of interchange. Verify that the recycling operation meets the design criteria specified in the operation plan. Verify that all recycling operations are closed in conformance with their approved closure plan. Verify that all sanitary disposal projects with processing facilities close in conformance with their approved closure plan and the following rules: - all equipment, storage facilities, holding areas, and drainage collection

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their approved closure plan (IAC 567-104.11) [Revised April 2003]. SO.175.25.IA. Demanufacturing of appliances must meet permit and training requirements (IAC 567-118.2 and 118.8) [Added April 2002; Revised April 2003; Revised February 2008]. SO.175.26.IA. Demanufacturing activities must meet collection and storage requirements (IAC 567-118.4) [Added April 2002; Revised April 2003].	systems are cleaned and decontaminated - all processed waste, stored waste, and waste from cleaning and decontaminating the facility is removed and disposed of in a permitted disposal facility. (NOTE: Disposal projects with processing facilities may be required to obtain a closure permit, dependent upon the potential of the closed facility for environmental impact.) Verify that a Non-Appliance Demanufacturing Permit (ADP) is obtained from the Department of Natural Resources (DNR) prior to beginning the demanufacturing of appliances. (NOTE: This checklist item does not apply to the removal of capacitors, refrigerants or components containing mercury during the maintenance or service of equipment containing such items.) Verify that at least one owner or full-time employee of an appliance demanufacturing facility has completed a department-approved training course covering, at a minimum, the following topics: - state and federal regulations for the removal, storage, transportation and disposal of refrigerant, PCB-containing articles, mercury-containing components and asbestos from appliances - record-keeping requirements - safety precautions for handling appliances and hazardous materials - spill prevention and appliance cleanup procedures appropriate for appliance demanufacturing - the proper methods of loading and unloading discarded appliances - general demanufacturing procedures. Verify that a trained person is on site at all times when discarded appliances are being demanufactured. Verify that all persons collecting and storing discarded appliances store them so as to prevent electrical capacitors, refrigerant lines and compressors, and components containing mercury from being damaged and allowing a release into the environment. Verify that no method of handling discarded appliances is used which in any way damages, cuts or breaks refrigerant lines or crushes compressors, capacitors, or mercury-containing components that may cause a release of refrigerant, PCBs or mercury into the environment. Verify that no more than 1000 discarded appliances are stored at a location prior to demanufacturing.

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SO.175.27.IA. Demanufacturing facilities must meet removal and disposal operational requirements (IAC 567-118.7) [Added April 2002; Revised April 2003; Revised April 2005; Revised February 2008].	Verify that no discarded appliances are stored for more than 270 days without demanufacturing. (NOTE: The following removal and disposal requirements must be met by both fixed facilities and mobile operations.) Verify that the demanufacturing of appliances takes place on an impervious floor (including but not limited to concrete, ceramic tile, or metal, but not wood). Verify that all spills are contained and picked up with proper equipment and procedures and properly disposed of. Verify that the point of demanufacturing is located 50 ft or more from a well and any water of the state. Verify that the facility is located above the 100-year floodwater elevation. (NOTE: A permanent facility must meet local zoning requirements.) Verify that the applicant establishes a unique marking system (submitted with the permit application for DNR approval) signifying that all refrigerants, PCBs, and mercury-containing components have been removed. Verify that the unique marking system is a minimum of nine inches by 9 inches and is applied to the appliances after demanufacturing.
SO.175.28.IA. Appliance demanufacturing must meet refrigerant removal requirements (IAC 567-118.9(1) through (4)) [Added April 2002; Revised February 2008].	Verify that all owners of refrigerant recovery and recycling equipment provide certification to EPA that they have acquired and are using EPA-approved equipment. Verify that all refrigerants in appliances are recovered to EPA standards using equipment meeting EPA requirements 40 CFR Part 82.162. (NOTE: Refrigerant may be removed prior to delivering to the appliance demanufacturer if it is removed by an appliance service or repair facility employee certified for the removal of refrigerant.) Verify that the removal of refrigerants from refrigeration appliances takes place in an area where the temperature of the surrounding air and of the appliance being demanufactured is 45 degrees Fahrenheit or greater. Verify that all facilities that are not EPA-certified refrigerant reclaimers ship recovered refrigerant to an EPA-certified reclamation facility or properly dispose of the refrigerant at an EPA-permitted facility. Verify that the reclamation only takes place on site if the appliance

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SO.175.29.IA. Appliance demanufacturing must meet compressor oil requirements (IAC 5 67-118.9(5)) [Added April 2002]. SO.175.30.IA. Ammonia gas operated refrigerators and air conditioners must meet specific disposal requirements (IAC 5 67-118.9(6)) [Added April 2002].	demanufacturing facility is certified as a reclaimer by the EPA. Verify that any refrigerants that cannot be reclaimed or recycled are properly disposed of by incineration or other acceptable means. Verify that, if compressor oil from refrigeration unit compressors is removed during the demanufacturing process, it is stored in tanks that meet the requirements of the <i>Storage Tanks Management</i> chapter, as appropriate. (NOTE: Compressor oils are not hazardous.) Verify that compressor oils are burned in used-oil-fired space heaters that have a capacity of 0.5 BTUs (British thermal units) per hour or more. (NOTE: Compressor oils may be sold to a marketer of used oil.) Verify that ammonia gas is vented into water. Verify that sodium chromate is removed from all refrigeration equipment. Verify that sodium chromate liquid is disposed of at an EPA-permitted facility. Verify that the removal of sodium chromate liquid takes place on an impervious surface. Verify that in case of a spill, the spilled liquid and the material used as absorbent is handled as a hazardous waste and disposed of as a hazardous waste. Verify that all sodium chromate is stored in a DOT-approved container that shows no sign of damage. Verify that the container is labeled with a proper EPA-approved chromium label stating "chromium" or "hazardous waste" in both English and the predominant language of any non-English-reading workers. Verify that prior to shipment, sodium chromate is packaged to prevent leakage, and all containers are sealed. Verify that persons generating sodium chromate waste maintain records to determine if they are small- or large-quantity hazardous waste generators based on a yearly accumulation. Verify that asbestos insulation found on refrigerant lines is removed. Verify that asbestos are moistened and double bagged prior to disposal at the approved landfill for the person's area.

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SO.175.31.IA. Mercury containing appliances must meet removal and disposal requirements (IA C 5 67-118.10) [Added April 2002; Revised April 2005 ; Revised February 2008].	(NOTE: A person who needs to dispose of asbestos must contact the landfill and make arrangements for the disposal and further packaging and handling procedures.) Verify that all components containing mercury are removed from the appliances. Verify that precautions are taken to prevent the breakage of the mercury-containing components and the release of mercury. Verify that all mercury-containing component storage containers are labeled with the proper EPA-approved mercury labeling " Universal Waste-Mercury Containing Equipment," "Waste Mercury-Containing Equipment" or " Used Mercury-Containing Equipment" in both English and the predominant language of any non-English-reading workers. Verify that the date the first mercury-containing component was placed in the container is affixed on the container. Verify that mercury-containing components are stored for no longer than one year and mercury-containing components accumulation do not exceed 5, 000 kg (11,025 lbs) at any time. Verify that all mercury containers are sealed prior to shipment. Verify that all components containing mercury are disposed of at an EPA-approved mercury recycling/recovery facility. Verify that fluorescent tubes, lamps, bulbs, and similar items are placed in a container and packaged to prevent breakage for shipment to an EPA-approved recycler or processed in a manner in compliance with state and federal regulations.
SO.175.32.IA. Capacitors must meet specific disposal requirements (IA C 5 67-118.11(1) through (4)) [Added April 2002; Revised April 2003; Revised February 2008].	Verify that all capacitors are removed from discarded appliances unless the appliance manufacturer certifies in writing that no PCBs were used in the manufacture of the appliance. Verify that capacitors disposed of or recycled as solid waste meet the following requirements: - the capacitor is proven to be free of PCBs by an approved laboratory - the capacitor is imprinted by the manufacturer with the words "No PCBs" on the body of the capacitor - the capacitor is certified in writing by the manufacturer of the capacitor not to contain PCBs - the capacitor does not contain dielectric fluid. Verify that PCB capacitors are stored and transported according to the Toxic

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SO.175.33.IA. Appliance demanufacturing facilities must meet spill requirements (IAC 567-118.12) [Added April 2002; Revised February 2008].	Substances Control Act (TSCA) and disposed of at a TSCA-permitted disposal facility. Verify that facilities used for the storage of PCB items designated for disposal meet the following storage requirements: - facilities register with the US EPA and receive an EPA identification number - PCB items are stored in a manner that provides adequate protection from the elements and adequate secondary containment - the storage takes place on an impervious material - the point of demanufacturing is located above the 100 -year flood water elevation - all capacitors containing or suspected of containing PCBs are placed in a DOT-approved container that shows no signs of damage and the bottom of the container is filled to a depth of 2 inches with absorbent material such as sand, oil-dry, or kitty litter - all DOT-approved containers are affixed with the large PCB mark (M^L) as described in 40 CFR 761.45 - the date when the first capacitor was placed in the container must also be placed on the container. (NOTE: Nonleaking small PCB capacitors may be stored for up to 30 days from the date of removal in an area that does not comply with the preceding storage requirements, provided a notation is placed on the PCB item indicating the date the item was removed from the appliance.) Verify that all containers are sealed prior to shipment. Verify that capacitors are stored for no more than 270 days. Verify that the storage area is labeled with the PCB ML mark and is inspected every 30 days with the inspection being documented. Verify that, if a demanufacturer stores more than 45 kg (99.4 lbs) at any one time, the demanufacturer maintains annual written records and the annual document log as required by 40 CFR 761.180. Verify that any spills from leaking or cracked capacitors are handled by placing the capacitor and any contaminated rags, clothing, and soil into a container for shipment to an EPA-approved waste disposal facility. Verify that spills of liquid PCBs which occur outside a DOT-approved container are cleaned and the cleanup verified by sampling as described at 40 CFR 761.130. Verify that detailed records of such cleanups and sampling are maintained as described at 40 CFR 761.180. Verify that mercury spill kits (with a mercury absorbent in the kits) are on hand

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SO.175.34.IA. Appliance demanufacturing facilities must adhere to recordkeeping and reporting requirements (IAC 567-118.13) [Added April 2002; Revised April 2005].	and used in the event of a mercury spill. Verify that any waste from the cleanup of a mercury spill is disposed of as a hazardous waste. Verify that in the event a spill results in a hazardous condition, the facility notifies the Department of Natural Resources at (515)281-8694 and the local police department or the sheriff's office of the affected county of the occurrence of a hazardous condition as soon as possible, but no later than six hours after the onset or discovery of a spill. Verify that the annual reports meet the following requirements: - sent to the solid waste section in the DNR central office in Des Moines, and a copy to the appropriate field office - sent by January 31 each year for the activities of the previous calendar year - submitted on forms provided by the Department, which may be submitted electronically when the electronic format is completed - retained by the permit holder for at least 3 years. Verify that the annual reports contain the following information for the previous calendar year. - number of appliances demanufactured in each of the following categories: - refrigerators and freezers - commercial coolers - air-conditioning units - dehumidifiers - gas water heaters - furnaces - clothes washers and clothes dryers - dishwashers - microwave ovens - other items containing mercury, refrigerant or PCB-containing articles - number of mercury switches removed from appliances - number of mercury thermocouples removed from appliances - date the first item was placed in the mercury storage drum that is in use on December 31 - number of fluorescent tubes removed from appliances - number of sodium chromate-containing appliances shipped to another demanufacturer - amount of refrigerant removed - number of PCB capacitors removed - number of PCB ballasts removed - date the first PCB-containing item was placed in the storage drum that is in use on December 31. Verify that a permitted appliance demanufacturing facility retains the following

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	records on site for a minimum of three years. - all hazardous waste manifests and bills of lading for shipments of refrigerant, mercury switches, PCB-containing materials and any hazardous waste - receipts for any sodium chromate-containing units that were sent to another facility for processing - documentation of destruction or receipt from a regional collection center for all PCB materials shipped - documentation of inspections of the PCB storage area - annual written records and annual document log if required - copy of the annual report.	
SO.175.35.IA. Appliance demanufacturing facilities must adhere to shredding requirements (IA C 5 67-118.15) [Added April 2002; Revised April 2003 ; Revised February 2008].	Verify that fluff from the shredding of demanufactured appliances is sampled quarterly, at a minimum, and analyzed for the presence of PCBs, and, according to the toxicity characteristic leaching procedure (TCLP), for heavy metals. Verify that the waste is sampled once a day for 7 consecutive working days to make a composite sample. (NOTE: If the concentrations of heavy metals do not exceed concentrations listed in 40 CFR 261.24, the fluff may be landfilled in Iowa.) Verify that results are retained on site for a minimum of 3 years and submitted to the department within 30 days of the end of each quarter. Verify that no person or facility engaged in demanufacturing shreds, crushes, or bales any appliances that have not been demanufactured. (NOTE: A person or facility located in Iowa that does not engage in demanufacturing but accepts appliances from demanufacturers for recycling or disposal may only shred, crush, or bale appliances that have been demanufactured in accordance with the federal regulations and the laws of the state from which the appliances are received.)	
SO.175.36.IA. [Moved February 2007].	(NOTE: Moved to SO.200.1.IA. February 2007.)	
SO.175.37.IA. [Moved February 2007].	(NOTE: Moved to SO.200.2.IA. February 2007.)	
SO.175.38.IA. [Moved	(NOTE: Moved to SO.200.3.IA. February 2007.)	

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February 2007].		
SO.175.39.IA. February 2007].	[Moved	(NOTE: Moved to SO.200.4.IA. February 2007.)
SO.175.40.IA. February 2007].	[Moved	(NOTE: Moved to SO.200.5.IA. February 2007.)
SO.175.41.IA. April 2003].	[Deleted	(NOTE: Regulation revised.)
SO.175.42.IA. April 2003].	[Deleted	(NOTE: Regulation revised.)
SO.175.43.IA. April 2003].	[Deleted	(NOTE: Regulation revised.)
SO.175.44.IA. April 2003].	[Deleted	(NOTE: Regulation revised.)
SO.175.45.IA. February 2007].	[Moved	(NOTE: Moved to SO.200.6.IA. February 2007.)
SO.175.46.IA. February 2007].	[Moved	(NOTE: Moved to SO.200.7.IA. February 2007.)
SO.175.47.IA. February 2007].	[Moved	(NOTE: Moved to SO.200.8.IA. February 2007.)
SO.175.48.IA.	[Moved	(NOTE: Moved to SO.200.9.IA. February 2007.)

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February 2007].		
SO.175.49.IA. [Moved February 2007].	(NOTE: Moved to SO.200.10.IA. February 2007.)	
SO.175.50.IA. [Moved February 2007].	(NOTE: Moved to SO.200.11.IA. February 2007.)	
SO.175.51.IA. [Moved February 2007].	(NOTE: Moved to SO.200.12.IA. February 2007.)	
SO.175.52.IA. [Moved February 2007].	(NOTE: Moved to SO.200.13.IA. February 2007.)	
SO.175.53.IA. [Moved February 2007].	(NOTE: Moved to SO.200.14.IA. February 2007.)	
SO.175.54.IA. [Moved February 2007].	(NOTE: Moved to SO.200.14.IA. February 2007.)	
SO.175.55.IA. A ci tizen convenience ce nter must operate u nder a p ermit (IAC 567-106.3) [Added A pril 2003].	(NOTE: A citizen convenience center is a sanitary disposal project and must not be constructed or operated without a permit from the Department. In order to be issued a p ermit, a ci tizen c onvenience cen ter must s atisfy t he co mprehensive planning requirements set forth in 567-Chapter 101.) Verify that the citizen convenience center has a construction and operating permit. Verify that, if a ci tizen convenience center is located at a p ermitted recycling or composting f acility o r s anitary d isposal p roject, it i s a mended i nto t he h ost facility's permit. Verify that a ci tizen convenience center is constructed and operated according to the plans and specifications approved by the Department and the conditions of the permit.	

COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
SO.175.56.IA. A citizen convenience center must meet specific operating requirements (IAC 567-106.5) [Added April 2003].	Verify that solid waste is accepted only from citizens and small businesses residing in the designated service area and not accepted from solid waste collection vehicles. Verify that all solid waste received is loaded into dumpsters, compactors, or roll-off boxes and collected by solid waste collection vehicles. Verify that dumpsters, compactors, and roll-off boxes are not allowed to overflow, and solid waste is collected as often as necessary to prevent the attraction or harborage of vectors and to prevent a nuisance or public health hazard. Verify that litter is collected as often as necessary to prevent a nuisance or public health hazard.
SO.175.57.IA. A citizen convenience center must meet reporting requirements if waste is disposed outside Iowa (IAC 567-106.6) [Added April 2003].	Verify that a citizen convenience center that directly disposes of solid waste outside Iowa reports the following information, on a form provided by the department, to the Department and local solid waste authority on a quarterly basis: - tons of solid waste disposed of - comprehensive planning areas from which the solid waste originated, and the tons of solid waste disposed from each county and comprehensive planning area - destinations of all outgoing solid waste.
SO.175.58.IA. A citizen convenience center must meet reporting requirements if waste is disposed outside Iowa (IAC 567-106.6) [Added April 2003].	Verify that a written notice of intent to permanently close the facility is submitted to the local political jurisdiction, the Department, and department field office with jurisdiction over the citizen convenience center at least 180 days before closure. Verify that closure is in conformance with the closure plan and the following activities: - proper disposal of all solid waste and litter at the site - removal of all dumpsters, compactors, roll-off boxes, and other solid waste receptacles - reporting of the completion of these activities to the local political jurisdiction, the department, and the department field office with jurisdiction over the citizen convenience center. Verify that the Department field office has given written certification of the completion of the closure plan.

COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
SO.175.59.IA. A citizen convenience center must have an Emergency Response and Remedial Action Plan (ERRAP) (IAC 567-106.19) [Added April 2003].	(NOTE: See Appendix 9-4 for detailed requirements for the ERRAP.) Verify that a citizen convenience center develops, submits to the Department for approval, and maintains on site a detailed emergency response and remedial action plan (ERRAP). Verify that an updated ERRAP that is submitted at the time of each permit renewal or reissuance application that is due after December 31, 2001. (NOTE: The content of ERRAP documents must be concise and readily usable as a reference manual by facility managers and operators during emergency conditions. To facilitate Department review, the rationale for exclusion of any issues that are not determined to be applicable must be provided either in the body of the plan or as a supplement. Additional ERRAP requirements unique to the facility must be addressed, as applicable.)
SO.175.60.IA. Appliance demanufacturing facility must meet closure requirements (IAC 567-118.14) [Added February 2008].	Verify that an appliance demanufacturing facility submits to the department central office and department field office with jurisdiction over the appliance demanufacturing facility written notice of intent to permanently close the facility at least 90 days before closure. (NOTE: Closure is not official until the department field office has provided written certification of the completion of the following activities: - removal of all appliances that have not been demanufactured. - proper disposal of all refrigerant, PCBs, mercury and all hazardous materials. - Submission of an annual report covering January through the last disposal of hazardous materials, PCBs and refrigerant.)

COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
SO.180. CLOSURE OF SOLID WASTE FACILITIES SO.180.1.IA. A p ermitted sanitary disposal project must meet c losure n otification requirements (IA C 5 67-102.13(9)) [Added A pril 2003]. SO.180.2.IA. Permanent surveying m onuments m ust be in stalled i n a c losing sanitary la ndfill (IAC 567 - 112.26(13)(a), 113. 8(2)(a), 114.26(13)(a), a nd 115.26(13)(a)) [Added A pril 2003; C itation R evised	(NOTE: Every application for any solid waste disposal project permit issued by the D epartment must d etail th e means b y which th e f ollowing o perating requirements are complied with. All sanitary disposal projects must be operated in conformance with these requirements. These projects are all under 567, Title VIII, Chapters 100 through 121.) Verify that the owner or operator notifies the Department in writing at least 180 days prior to closure of the facility or suspension of operations. Verify th at n otice o f c losure is p osted a t lea st 1 80 d ays p rior to c losure a t th e facility i ndicating th e d ate o f c l osure a n d a l t ernative s olid w aste m anagement facilities. Verify that notice of closure is published at least 180 days prior to closure in a newspaper of local circulation. Verify that closure notice includes the date of closure and alternative solid waste management facilities. Verify that implementation of the closure/postclosure plan is completed within 90 days of the closure of the facility. Verify t hat t he o wner a nd a n e ngineer r egistered i n I owa c er tifies t hat t he closure/postclosure plan has been implemented in compliance with the rules, the closure/postclosure plan and the permit. Verify t hat, u pon c ompletion o f c losure a ctivities, a s-built p lans a re s ubmitted showing changes from the original design plans, test results indicating compliance with final co ver a s a p plicable, w aste r emoval, e quipment d econtamination, a nd other forms of documentation as required, to include a copy of the notation filed with the county recorder. Verify that a minimum of 2 permanent surveying monuments are installed by a registered land surveyor from which the location and elevation of wastes, containment structures, and monitoring facilities are d etermined t hroughout t he postclosure period.

COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
February 2008]. SO.180.3.IA. The final cover of sanitary landfills must meet specific requirements (IAC 567-112.26(13)(b), 114.26(13)(b), and 115.26(13)(b)) [Added April 2003; Citation Revised February 2008]. SO.180.4.IA. Sanitary landfills must be closed in a manner that minimizes the potential for postclosure release of pollutants (IAC 567-112.26(13)(d), (e), and (f), 114.26(13)(d), (e), and (f), and 115.26(13)(d), (e), and (f)) [Added April 2003 ;	Verify that the final cover meets the following criteria: - consists of not less than 2 ft of compacted soil with a permeability of 1×10^{-7} cm/sec or less as determined by appropriate laboratory analysis - the percent of standard or modified proctor density of moisture content is consistent with expected field conditions and corresponds to a measured coefficient of permeability equal to or less than 1×10^{-7} cm/sec determined in the laboratory - the soil is placed in lifts not exceeding 8 in. in thickness - the compacted soil is keyed into the bottom liner at the waste cell boundary. Verify that a minimum of one field density test is performed per lift per acre verifying the density determined by the laboratory analysis as correlated to permeability is achieved. Verify that the results of field density tests are submitted to the Department. Verify that the final cover meets the following conditions consistent with establishing vegetation: - is not less than 2 ft of uncompacted soil, containing sufficient organic matter to support vegetation - is at least the root depth of the planned vegetative cover to prevent root penetration into the underlying soil layers - is placed as soon as possible to prevent desiccation, cracking, and freezing of the compacted soil layer. (NOTE: A layer of compacted soil, incinerator ash, or similar material permitted by the Department may be used to prepare the site for placement of the compacted soil layer. The use of such material does not serve as a replacement for the compacted soil layer.) (NOTE: Alternate methods and materials may be permitted if shown to provide equal or superior performance. Landfills not closed in conformance with an approved closure plan may be required to apply additional cover.) (NOTE: Those portions of existing landfills demonstrating placement of final cover in conformance with previously approved plans and specifications or regulations in effect at the time of the approval will not be required to apply additional cover solely to achieve compliance with 115.26(13)"b" and "c".) Verify that the final cover has a minimum slope of 5 percent, and does not exceed a slope of 25 percent. Verify that the cover is seeded with native grasses or other suitable vegetation as

COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
Citation Revised February 2008].	soon as practical upon completion to prevent soil erosion. Verify that, if seeding is delayed due to summer or winter conditions, silt fences or other structures are used to minimize erosion of the final cover until the next season suitable for planting. (NOTE: The placement of cover must not be delayed due to season and must be placed as soon as the solid waste has reached its maximum design elevation within the cell.) Verify that vegetation type is based on density and root depth, nutrient availability, soil thickness, and soil type. (NOTE: Alternatives to vegetative cover may be considered to control erosion and promote runoff.)
SO.180.5.IA. Sanitary landfills must meet the requirements of a final closure plan and the permit (IAC 567-112.26(13)(g), (h), (i) and (k), 114.26(13)(g), (h), (i) and (k), and 115.26(13)(g), (h), (i) and (k)) [Added April 2003 ; Citation Revised February 2008].	Verify that an approved groundwater monitoring system as required by the closure permit is in place and operating. Verify that an approved leachate collection and treatment system as required by the closure permit is in place and operating. Verify that an approved landfill gas monitoring and collection or ventilation system as required by the closure permit and is in place or operating unless determined not necessary by the director. Verify that all requirements of the closure plan, the closure permit, and the rules are satisfied.
SO.180.6.IA. Sanitary landfills must follow specific postclosure requirements (IAC 567-112.26(10), 114.26(10), and 115.26(10)) [Added April 2003 ; Citation Revised February 2008].	Verify that at least 6 months prior to closing the site a plan is submitted to the Department for approval detailing a 30-yr postclosure monitoring program. Verify that the Department reviews the facility's postclosure monitoring records at 5-yr intervals to determine if changes in the monitoring frequencies are required. Verify that the conditions of the approved post closure plan are met. (NOTE: The Commission may adopt rules on a site-specific basis identifying additional monitoring requirements for sanitary landfills for that would extend the postclosure monitoring period.)
SO.180.7.IA. Sanitary landfills must follow postclosure requirements for 30 yr following the closure of	Verify that the following postclosure requirements are maintained for 30 yr following the closing of the solid waste landfill: - the diversion and drainage system is maintained to approved specifications

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the site (IAC 567-112.26(14), 114.26(14), 15.26(14) [Revised April 2003 ; Citation Revised February 2008].	preventing run-on and runoff from eroding or otherwise damaging the final cover - the integrity and effectiveness of the final cover is maintained by making repairs as necessary to correct the effects of settling, subsidence, erosion, or other events, and if damage to the compacted soil layer occurs, repairs are made to correct the damage and return it to its original specifications - the vegetative cover is reseeded as necessary to maintain good vegetative growth and any invading vegetation whose root system could damage the compacted soil layer is removed or destroyed immediately - the groundwater monitoring system is operated and maintained and complies with all applicable rules and closure permit requirements - the leachate collection, removal, and treatment systems are operated and maintained and comply with all applicable rules and closure permit requirements - the landfill gas monitoring and collection system are operated and maintained and comply with all applicable rules and closure permit requirements - semiannual reports are submitted to the Department containing information concerning the general conditions at the site, groundwater monitoring results, amount of leachate collected and treated, information concerning the landfill gas monitoring and collection system, and other information as required by the closure permit - locations and elevations of all permanent monuments are determined at least once every 3 yr or more frequently in the event of obvious disturbance of the monument and reports are due by 30 April and 31 October for the proceeding 6-mo period - the permanent surveying monuments are maintained.

COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
2005; Added February 2007]. SO.200.4.IA. Solid waste generators who land apply solid waste without a permit must meet management requirements (IA C 5 67-121.6(1)(j) and (k)) [Added April 2002; Revised April 2003; Revised April 2004; Citation Revised April 2005; Added February 2007].	the location of the disposal operation. Verify that the notice contain the legal description of the site, the landowner, the responsible official, the quantities and type of waste (including chemical analyses that the Department may require to adequately define the waste). (NOTE: Moved from SO.175.39.IA. February 2007.) Verify that the land application meets the criteria found in Appendix 9-3. Verify that the solid waste generator who intends to dispose of its waste by land application analyzes the waste to determine if any sources exist that may contribute significant quantities of potentially hazardous chemicals or other toxic substances. Verify that, if any significant quantities of potentially hazardous chemicals or other toxic substances are found, the generator informs the Department of their presence and analyzes the waste for chemicals or substances in accordance with guidelines provided by the department. Verify that all generators intending to land apply their waste routinely establish and maintain in writing a long-range program for land application of its waste. Verify that the program is developed for a minimum period of 5 years and is updated annually. Verify that a copy of the program is available at the facility for inspection by the Department. Verify that the long range program contains the following information in detail for the next calendar year and in general terms for the following 4 years: - outline of the waste sampling schedule and procedures that will be followed to assure that the waste being applied to land continues to meet the criteria in Appendix 9-3 - determination of the amount of land required to allow compliant disposal - identification of the land and waste application methods that will be used to dispose of the waste - names of the owners and operators of all land to be used for waste disposal, and identification of any legal arrangements made relative to use of these areas - overall schedule for the disposal of the waste indicating the areas being used, the time of year that disposal on each area will be conducted, and the proposed application rates for each area - determination of the types and capacities of the equipment required to dispose of the waste in accordance with the developed disposal schedule. - identification of how the required disposal equipment will be made available and who will be responsible for conducting land disposal operations

COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
SO.200.5.IA. The land application of solid waste without a permit must meet specific application and notification requirements (IAC 567-121.6(1)(I)) [Added April 2002; Revised April 2003; Citation Revised April 2005; Added February 2007].	- determination of the volumes and types of storage and handling facilities required to allow waste disposal to be conducted in accordance with the waste disposal schedule - identification of any required additional waste storage or handling facilities will be provided. - a plan to construct or obtain any additional waste storage, handling or disposal facilities or equipment that are required by the waste disposal program. (NOTE: Moved from SO.175.40.IA. February 2007.) (NOTE: See Appendix 9-3 for Permit Exemption Criteria for Solid Waste Land Application.) Verify that, if the waste is being supplied to other persons for land application, the generating facility informs them of the applicable requirements of the waste disposal program. Verify that, if the generating facility determines that a person being supplied waste for land application is not complying with applicable requirements of the waste disposal program or the land application criteria, the generating facility attempts to work with them to obtain compliance with the requirements. Verify that, if compliance cannot be achieved, the generating facility does not supply additional waste to the person. Verify that the generating facility informs all persons involved in waste disposal operations of the potential health hazards associated with waste disposal, including informing them of the cautions and recommended practices that should be followed to minimize these hazards. Verify that the generating facility maintains records of sample analysis and waste disposal operations to document compliance with 567-121.3. Verify that, if waste is applied to land subject to use by the general public (e.g., golf courses, parks), public access to the waste application site is restricted for a period of one month after waste application. Verify that waste is not applied to areas where direct body contact with the soil is likely (e.g., school yards, playground areas, picnic areas). Verify that waste is not applied to land for the commercial production of human consumption food crops. Verify that, if sludge is applied to land where crops being grown will be grazed by or fed to livestock within 2 months of sludge application, or where cereal grains will be harvested within 2 months of sludge application, the sludge is injected or is applied to the surface and mechanically incorporated into the soil.

COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
SO.200.6.IA. Permitted land application of solid waste must operate under permit conditions (IAC 567 - 121.7(1)(a)) [Added April 2002; Revised April 2003; Revised April 2004 ; Added February 2007 ; Citation Revised February 2008].	(NOTE: Moved from SO.175.45.IA. February 2007.) (NOTE: See Notes in SO.200.2.IA. and Appendix 9 -3 for permit exemption criteria.) Verify that the land application operates under permit conditions. (NOTE: The land application of sludge other than from a publicly owned treatment works that does not comply with 121.3(455B) must submit detailed plans.)
SO.200.7.IA. Permitted solid waste land application sites must adhere to access prohibitions (IAC 567 - 121.7(1)(c)(1)) [Added April 2002; Revised April 2003 ; Added February 2007 ; Citation Revised February 2008].	(NOTE: Moved from SO.175.46.IA. February 2007.) (NOTE: See Notes in SO.200.2.IA. and Appendix 9 -3 for permit exemption criteria.) Verify that the general public and livestock are not given access to the disposal site during sludge disposal. Verify that the general public and livestock are not given access to the disposal site for a minimum of 2 months after sludge disposal operations have ceased, unless specific permit conditions specify otherwise.
SO.200.8.IA. Permitted solid waste land application sites must meet application requirements (IAC 567-121.7(1)(c)(2) through (4)) [Added April 2002; Revised April 2003 ; Added February 2007; Citation Revised February 2008].	(NOTE: Moved from SO.175.45.IA. February 2007.) (NOTE: See Notes in SO.200.2.IA. and Appendix 9 -3 for permit exemption criteria.) Verify that all land application sites have the pH of the surface horizon or plow layer adjusted to and maintained above 6.5, unless specific permit conditions specify otherwise. Verify that no land application sites are used for sludge disposal during or immediately preceding expected: - rains or other occasions when runoff may result (unless subsurface injection methods are utilized) - high groundwater conditions - flooding. Verify that, unless special precautions are taken to avoid runoff, no land application sites are used for sludge disposal when the site is frozen or snow-covered.

COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
SO.200.9.IA. Permitted solid waste land application sites must meet monitoring requirements (IAC 567-121.7(1)(c)(5)) [Added April 2002; Revised April 2003 ; Added February 2007 ; Citation Revised February 2008].	(NOTE: Moved from SO.175.48.IA. February 2007.) (NOTE: See Notes in SO.200.2.IA. and Appendix 9 -3 for permit exemption criteria.) Verify that groundwater monitoring wells and surface monitoring points are installed and a monitoring program is implemented. Verify that the samples are analyzed by a laboratory that is equipped and competent to perform the tests required by the director. Verify that the results are forwarded to the Department on a stipulated schedule.
SO.200.10.IA. Permitted solid waste land application sites must meet leachate-controlling requirements (IAC 567-121.7(1)(c)(6)) [Added April 2002; Revised April 2003; Added February 2007 ; Citation Revised February 2008].	(NOTE: Moved from SO.175.49.IA. February 2007.) (NOTE: See Notes in SO.200.2.IA. and Appendix 9 -3 for permit exemption criteria.) Verify that in the event significant leachate is detected, the Department is notified, and the permit holder submits a plan for controlling and treating the leachate. Verify that the plan is immediately implemented upon approval by the Department.
SO.200.11.IA. Permitted solid waste land application sites must meet sludge sampling and analysis requirements (IAC 567-121.7(1)(c)(7)) [Added April 2002; Revised April 2003 ; Added February 2007].	(NOTE: Moved from SO.175.50.IA. February 2007.) (NOTE: See Notes in SO.200.2.IA. and Appendix 9 -3 for permit exemption criteria.) Verify that sampling and analyses of the sludge is performed and submitted to the Department according to the schedule stipulated in the permit. (NOTE: Analyses includes tests as required to confirm the constituents of the sludge.)
SO.200.12.IA. Permitted solid waste land application sites must meet specific usage records requirements (IAC 567-121.7(1)(c)(8)) [Added April 2002; Revised April 2003; Added February 2007 ; Citation Revised February 2008].	(NOTE: Moved from SO.175.51.IA. February 2007.) (NOTE: See Notes in SO.200.2.IA. and Appendix 9 -3 for permit exemption criteria.) Verify that the records of the site usage are maintained.

COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
2008]. SO.200.13.IA. Permitted solid waste land application sites must meet closure requirements (IAC 567-121.7(1)(c)(9) and (10)) [Added April 2002; Revised April 2003; Added February 2007; Citation Revised February 2008]. SO.200.14.IA. Permitted solid waste land application sites must meet specific notification requirements (IAC 567-121.7(1)(c)(11)) [Added April 2002; Revised April 2003; Added February 2007; Citation Revised February 2008]. SO.200.15.IA. Permitted solid waste land application sites that apply waste pesticides must meet specific operating requirements (IAC	Verify that these records are submitted to the Department on a stipulated schedule. Verify that the records include: Date of use; application area; application rate; quantity of sludge applied; method and timeliness of incorporation; chemical analyses of sludge being applied; and loading rates of significant components of sludge as identified in the analyses. (NOTE: Moved from SO.175.52.IA. February 2007.) (NOTE: See Notes in SO.200.2.IA. and Appendix 9-3 for permit exemption criteria.) Verify that, prior to completion of a site, or suspension of operations at a site, the Department is notified in writing. Verify that, as required by the Department, engineering plans and reports are submitted detailing deviations, if any, from the permitted final site conditions. (NOTE: An inspection will be made by the Director before abandonment of the site.) Verify that, following closing of the site, any monitoring program in effect is continued until the integrity of the site is confirmed and any corrective measures that may be necessary are implemented. Verify that detailed annual reports are submitted to the Department for the duration of the monitoring program. (NOTE: Moved from SO.175.53.IA. February 2007.) (NOTE: See Notes in SO.200.2.IA. and Appendix 9-3 for permit exemption criteria.) Verify that a copy of the plans and reports, as amended or revised along with pertinent operations data, for any completed site is filed with the county recorder. Verify that the location of the filled area is recorded for abstract of title purposes. (NOTE: The recording may be made by affidavit.) (NOTE: Moved from SO.175.54.IA. February 2007.) (NOTE: See Notes in SO.200.2.IA. and Appendix 9-3 for permit exemption criteria.)

COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
567-121.7(2)) [Added April 2002; Revised April 2003; Citation Revised April 2005; Added February 2007].	(NOTE: SO.200.15.IA. is repeated in PM.55.2.IA.) (NOTE: Waste pesticides may be land applied: - if a determination is made by the Department that the disposal method is the best available disposal methodology - if the applicant submits an accepted permit plan.) Verify that land application sites that apply waste pesticides meet the following requirements: - maintain records detailing the waste and the proposed and actual application rates (along with any other information required by the Department) for a period (and submitted to the Department on a schedule) specified by the Department - inform the Department immediately of any divergence from the plan, the details of that divergence and the impacts to be expected - meet the other requirements of the Department as specified in special provisions of the permit.

Appendix 9-1

Cumulative Limits

Soil Cation Exchange Capacities

(Source: IAC 567-105.12) [Deleted April 2002]

Appendix 9-2

Maximum Concentration Levels for All Metals

(Source: IAC 567-105.9) [Added April 2002; Citation Revised April 2003; Citation Revised February 2008]

Metal	Concentration mg/kg dry weight
Arsenic (As)	41
Cadmium (Cd)	39
Copper (Cu)	1500
Lead (Pb)	300
Mercury (Hg)	17
Nickel (Ni)	420
Selenium (Se)	36
Zinc (Zn)	2800

Appendix 9-3

Permit Exemptions for Solid Waste Land Application

(Source: IAC 567-121.6(1)(a) through (i))

[Added April 2002; Revised April 2003; Citation Revised February 2008]

No permit is required for land application of the following solid wastes under the following circumstances. (Land applications that do not comply with these rules must have obtained a permit under rule 121.4(455B).

Solid Wastes. Solid wastes (other than petroleum contaminated soil) may be land applied without permit if the land application does not violate the following:

1. Land application of sludge and other solid wastes shall be conducted in accordance with the following criteria:
 - a. The maximum application rate shall not exceed two tons per acre per year, measured on a dry weight basis. The maximum application rate shall be reduced if soil tests indicate that a two ton per acre per year rate would provide nutrient levels significantly in excess of crop nutrient requirements or would provide heavy metals concentrations in the soil at levels which may be detrimental to crop production or hazardous to human health.
 - b. The sludge or solid waste shall be applied only to soils classified as acceptable throughout the top five feet of soil profile. The acceptability of a soil shall be determined using the following chart* based on USDA soil classifications.
 - c. Land application sites shall have soil pH maintained between 6.5 and 8.4 for sludges with cadmium levels up to 15 mg/kg. The soil pH may be maintained below 6.5 but not below 6.0 if the cadmium level is 8.0 mg/kg or the sludge has been stabilized to a pH of 10 - 12. If the soil pH is below these levels, it is acceptable to use agricultural lime to increase the pH to an acceptable level prior to land application of sludge.
 - d. The Department recommends that all sludge be injected on the contour or applied to the surface and mechanically incorporated into the soil as soon as possible but not later than 48 hours after application.
 - e. If the sludge is applied to land on which the soil loss exceeds the soil loss limits established by the county soil conservation district, the sludge shall be injected on the contour or must be applied to the surface and mechanically incorporated into soil within 48 hours of application. The sludge must not be applied to ground having greater than 9 percent slope.
 - f. If the sludge is applied to land subject to flooding more frequently than once in ten years, the sludge shall be injected or shall be applied to the surface and mechanically incorporated into the soil within 48 hours. Information on which land is subject to flooding more frequently than once in ten years is available from the Department.
 - g. Sludge application on frozen or snow-covered ground should be avoided. If application on frozen or snow-covered ground is necessary, it shall be limited to land areas of less than 5 percent slope.
 - h. If sludge is applied within 200 feet of a stream, lake, sinkhole or tile line surface intake located downgradient of the land application site, it shall be injected or applied to the surface and mechanically incorporated into the soil within 48 hours of application.
2. The waste shall not be land applied or made available for land application if the waste contains constituents in excess of the levels specified below.

Constituents	Levels	Cumulative Loading Rate	
Arsenic	41 mg/kg	41 kg/ha	36 lb/ac
Cadmium	39 mg/kg	39 kg/ha	34 lb/ac
Chromium	1200 mg/kg	3000 kg/ha	2670 lb/ac
Copper	1500 mg/kg	1500 kg/ha	1335 lb/ac
Lead	300 mg/kg	300 kg/ha	267 lb/ac
Mercury	17 mg/kg	17 kg/ha	15 lb/ac

Constituents	Levels	Cumulative Loading Rate	
Molybdenum	75 mg/kg	75 kg/ha	66 lb/ac
Nickel	420 mg/kg	420 kg/ha	373 lb/ac
Selenium	36 mg/kg	100 kg/ha	89 lb/ac
Zinc	2800 mg/kg	2800 kg/ha	2490 lb/ac

If the waste has other toxic constituents, the toxic constituents shall not be in excess of levels where there is a threat to human, animal, or plant life as determined by the Department.

3. Macronutrients.
 - a. The application of nitrogen available from the waste and any other sources does not exceed the nitrogen needs of the vegetation to be grown on the site over the next year, and
 - b. The total application of phosphorus and potassium does not exceed the acceptable agronomic application rates for the site and crops involved.
4. The waste does not have a sodium absorption ratio in excess of levels where there is a threat to plant life. If high sodium absorption ratios are suspected, analytical testing may be required.
5. Stabilized sludge. If land applying sludge or other wastes containing pathogens, the waste must be treated to reduce pathogen content by methods specified in 567 -- Chapter 67 prior to land application.
6. The waste does not contain a waste having direct process stream contact with the following listed organics: Petroleum products, organic solvents, pesticides, pharmaceuticals, polychlorinated biphenyls (PCBs). The waste does not originate from a process that may release the previously mentioned compounds.
7. Assimilation capabilities. The waste would not be readily present in a visual analysis of a random sample collected two years following application.
8. General public health aspects. The waste is not putrescible, or is incorporated (or otherwise managed) to prevent runoff and odor problems.
9. Separation distance. Waste shall not be applied within 200 feet of an occupied resident nor within 500 feet of a well.

Appendix 9-4

Contents of Emergency Response and Remedial Action Plans

(Source: IAC 567-102.14(4)) [Added April 2003].

The ERRAP document content shall address at least the following primary issues in detail, unless project conditions render the specific issue as not applicable. The rationale for exclusion of any issue areas that are determined not to be applicable must be provided in either the body of the plan or as a supplement to facilitate department review. Additional emergency response and remedial action plan requirements unique to the facility shall be addressed, as applicable.

- a. Facility information.
 - (1) Permitted agency.
 - (2) DNR permit number.
 - (3) Facility description.
 - (4) Responsible official and contact information.
 - (5) Project location.
 - (6) Site and environs map.
- b. Regulatory requirements.
 - (1) Iowa Code section 455B.306(6)"d" criteria citation.
 - (2) Reference to provisions of the permit.
- c. Emergency conditions-response activities-remedial action.
 - (1) Failure of utilities.
 - 1. Short-term (48 hours or less).
 - 2. Long-term (over 48 hours).
 - (2) Weather-related events.
 - 1. Tornado.
 - 2. Windstorms.
 - 3. Intense rainstorms and erosion.
 - 4. Lightning strikes.
 - 5. Flooding.
 - 6. Event and postevent conditions.
 - (3) Fire and explosions.
 - 1. Waste materials.
 - 2. Buildings and site.
 - 3. Equipment.
 - 4. Fuels.
 - 5. Utilities.
 - 6. Facilities.
 - 7. Working area.
 - 8. Hot loads.
 - 9. Waste gases.
 - 10. Evacuation.
 - (4) Regulated waste spills and releases.
 - 1. Waste materials.
 - 2. Leachate.
 - 3. Waste gases.
 - 4. Waste stockpiles and storage facilities.
 - 5. Waste transport systems.
 - 6. Litter and airborne particulates.
 - 7. Site drainage systems.
 - 8. Off-site releases.
 - (5) Hazardous material spills and releases.
 - 1. Load check control points.
 - 2. Mixed waste deliveries.

3. Fuels.
4. Waste gases.
5. Site drainage systems.
6. Off-site releases.
- (6) Mass movement of land and waste.
 1. Earthquakes.
 2. Slope failure.
 3. Waste shifts.
 4. Waste subsidence.
- (7) Emergency and release notifications and reporting.
 1. Federal agencies.
 2. State agencies.
 3. County and city agencies.
 4. News media.
 5. Public and private facilities with special populations within five miles.
 6. Emergency response agencies and contact information.
 7. Reporting requirements and forms.
- (8) Emergency waste management procedures.
 1. Communications.
 2. Temporary discontinuation of services-short- and long-term.
 3. Facilities access and rerouting.
 4. Waste acceptance.
 5. Wastes in process.
- (9) Primary emergency equipment inventory.
 1. Major equipment.
 2. Fire hydrants and water sources.
 3. Off-site equipment resources.
- (10) Emergency aid.
 1. Responder contacts.
 2. Medical services.
 3. Contracts and agreements.
- (11) ERRAP training requirements.
 1. Training providers.
 2. Employee orientation.
 3. Annual training updates.
 4. Training completion and record keeping.
- (12) Reference tables, figures and maps.

Appendix 9-5

Universally Approved Beneficial Use Determinations

(Source: IAC 567-108.4) [Added April 2004]

The following solid by-products may be utilized as resources in the specific manners listed provided that such utilization is in compliance with 567-108.6 (see S.O. 25.1A) and 567-108.7 (see S.O. 25.1A.) Unless a user is otherwise notified by the department such utilization does not require further approval from the department.

Alumina. Alumina may be used as a raw material in the manufacture of cement or concrete products. Alumina includes refractory brick for the purpose of this subrule.

Asphalt shingles. Asphalt shingles that are certified, consistent with federal regulations (Reference: Appendix E, Subpart E, 40 CFR Part 763, Section 1, Polarized Light Microscopy), as not containing more than 1 percent asbestos may be used as follows:

- a. Raw material in the manufacture of asphalt products.
- b. Subbase for hard-surface road construction.
- c. Road surfacing granular material.
- d. Alternative cover material at a sanitary landfill pursuant to 567-108.8(455B,455D).

Cement kiln dust. Cement kiln dust may be used as follows:

- a. Raw material in the manufacture of absorbents.
- b. Raw material in the manufacture of cement or concrete products.
- c. Subbase for hard-surface road construction.
- d. A soil amendment pursuant to 567-Chapter 121 and the rules of the Iowa department of agriculture and land stewardship or a compost amendment.
- e. A stabilizer for manure and waste sludge.
- f. A soil stabilizer for construction purposes.
- g. Fill material pursuant to 108.6(1).

Coal combustion fly ash and flue gas desulfurization by-products may be used as follows:

- (1) Raw material in manufactured gypsum, wallboard, plaster, or similar product.
- (2) Raw material in manufactured calcium chloride.
- (3) Raw material in the manufacture of absorbents.
- (4) Fill material pursuant to 108.6(1).
- (5) Alternative cover material at a sanitary landfill pursuant to 567-108.8(455B,455D).

Coal combustion fly ash or bottom ash or boiler slag may be used as follows:

- (1) Raw material in the manufacture of cement or concrete products.
- (2) Raw material to be used in mineral recovery.
- (3) Raw material in the manufacture of asphalt products.
- (4) Raw material in plastic products.
- (5) Subbase for hard-surface road construction.
- (6) Soil stabilization for construction purposes.
- (7) Fill material pursuant to 108.6(1).
- (8) Alternative cover material at a sanitary landfill pursuant to 567-108.8(455B,455D).

Coal combustion bottom ash may also be used as follows:

- (1) Traction agent for surfaces used by vehicles.
- (2) Sandblasting abrasive.

Cured or finished compost is not solid waste and may be used for any purpose recognized by the U.S. Composting Council or the department.

Foundry sand may be used as follows:

- a. Raw material in the manufacture of asphalt products.
- b. Raw material in the manufacture of cement or concrete products.
- c. Leachate control drainage material at a sanitary landfill.
- d. Subbase for hard-surface road construction.
- e. Fill material pursuant to 108.6(1).
- f. Emergency flood control use for sandbags.
- g. Alternative cover material at a sanitary landfill pursuant to 567-108.8(455B,455D).

Uncontaminated, unleaded glass may be used as follows:

- a. Raw material in the manufacture of asphalt products.
 - b. Fill material pursuant to 108.6(1).
 - c. Sandblasting or other abrasive.
 - d. Leachate control drainage material at a sanitary landfill.
 - e. Filter media.
 - f. Subbase for hard-surface road construction.
 - g. Alternative cover material at a sanitary landfill pursuant to 567-108.8(455B,455D).
- All gypsum and gypsum wallboard may be used as follows:
- (1) Raw material in the manufacture of absorbents.
 - (2) Raw material in the manufacture of other gypsum products, wallboard, plaster, or similar products.
 - (3) Alternative cover material at a sanitary landfill pursuant to 567-108.8(455B,455D).
- Gypsum and gypsum wallboard that have not been treated to be water-resistant or flame-retardant may be used as a calcium additive for agricultural use or soil amendment pursuant to 567-Chapter 121 or as a compost amendment.
- Lime produced as a by-product of public water supplies may be used as follows:
- a. A soil amendment pursuant to 567-Chapter 121 and the rules of the Iowa department of agriculture and land stewardship or a compost amendment.
 - b. Raw material in the manufacture of calcium carbonate or similar substance.
- Lime kiln dust. Lime kiln dust may be used as follows:
- a. Raw material in the manufacture of absorbents.
 - b. Raw material in the manufacture of cement or concrete products.
 - c. Subbase for hard-surface road construction.
 - d. A soil amendment pursuant to 567-Chapter 121 and the rules of the Iowa department of agriculture and land stewardship or a compost amendment.
 - e. A stabilizer for manure and waste sludge.
 - f. A soil stabilizer for construction purposes.
 - g. Fill material pursuant to 108.6(1).
- Uncontaminated, dewatered paper mill sludge may be used as follows:
- a. A fuel or energy source.
 - b. Bulking agent or carbon source for composting.
 - c. Animal bedding.
 - d. Raw material in the manufacture of absorbents.
 - e. Alternative cover material at a sanitary landfill pursuant to 567-108.8(455B,455D).
- Uncontaminated rubble such as concrete, brick, asphalt pavement, soil and rock may be used for fill, landscaping, excavation or grading or as a substitute for conventional aggregate. Asphalt, however, shall not be used for any of the aforementioned uses if the use will cause the asphalt to be placed in a waterway or wetland or any waters of the state or within the high water table.
- Sandblasting abrasives that do not contain lead-based paint may be used as follows:
- a. Raw material in the manufacture of cement or concrete products.
 - b. Raw material in the manufacture of asphalt products.
 - c. Subbase for hard-surface road construction.
 - d. Raw material in the manufacture of abrasive products.
 - e. Fill material pursuant to 108.6(1).
 - f. Alternative cover material at a sanitary landfill pursuant to 567-108.8(455B,455D).
- Soil, including petroleum-contaminated soil.
- a. Uncontaminated soil may be used for fill, landscaping, excavation or grading, or other suitable purpose.
 - b. Petroleum-contaminated soils that have been decontaminated to the satisfaction of the department may be used as follows:
 - (1) Fill material at the original excavation site
 - (2) Alternative cover material at a sanitary landfill.
- This chapter does not pertain to tires other than those used as alternative cover material
- Wastewater filter sand may be used as follows:
- a. Fill material pursuant to 108.6(1).
 - b. Subbase for hard-surface road construction.
- 108.4(17) Wood. Uncontaminated, untreated or raw wood may be used as follows:

- a. A fuel or energy source.
 - b. Bulking agent for composting.
 - c. Mulch.
 - d. Animal bedding.
 - e. Raw material in the manufacture of paper products, particle board, or similar materials.
- 108.4(18) Wood ash. Ash from the combustion of uncontaminated, untreated or raw wood may be used as follows:
- a. A soil amendment pursuant to 567-Chapter 121.
 - b. A carbon source for composting.
 - c. Raw material in the manufacture of cement or concrete products.
 - d. Fill material pursuant to 108.6(1).

Appendix 9-6

Prohibited wastes for Municipal Solid Waste Landfills

(Source: IAC 567-113.8(1)(b)) [Added February 2008]

The following wastes shall not be accepted for disposal by an MSWLF. Some wastes may be banned from disposal via the multiple categories listed below.

(1) Hazardous waste, whether it is a chemical compound specifically listed by EPA as a regulated hazardous waste or a characteristic hazardous waste

(2) Polychlorinated biphenyl (PCB) wastes with a concentration equal to or greater than 50 parts per million (ppm).

(3) Free liquids, liquid waste and containerized liquid. However, free liquids and containerized liquids may be placed in MSWLF units if:

1. The containerized liquid is household waste other than septic waste. The container must be a small container similar in size to that normally found in household waste;
2. The waste is leachate or gas condensate derived from the MSWLF unit, whether it is a new or existing MSWLF unit or lateral expansion, and is designed with a composite liner and leachate collection system as described in paragraph 113. 7(5)"a." The owner or operator must demonstrate compliance with this subparagraph and place the demonstration in the operating record; or
3. The MSWLF unit is a research, development and demonstration (RD and D) project in which the department has authorized the addition of liquids and meets the applicable requirements of subrule 113.4(10).

(4) Septage, which is the raw material, liquids and pumpings from a septic system, unless treated pursuant to 567-Chapter 68.

(5) Appliances as defined pursuant to 567-Chapter 118, unless there is documentation that the appliance has been demanufactured pursuant to 567-Chapter 118.

(6) Radioactive waste, excluding luminous timepieces and other items using very small amounts of tritium.

(7) Infectious waste, unless managed and disposed of pursuant to 567--Chapter 109.

(8) Hot loads, meaning solid waste that is smoking, smoldering, emitting flames or hot gases, or otherwise indicating that the solid waste is in the process of combustion or close to igniting. Ash that has not been fully quenched or cooled is considered a hot load.

(NOTE: Such wastes may be accepted at the gate, but shall be segregated and completely extinguished and cooled in a manner as safe and responsible as practical before disposal.

(9) Asbestos-containing material (ACM) waste with greater than 1 percent asbestos, unless managed and disposed of pursuant to 567-Chapter 109.

(10) Petroleum-contaminated soil, unless managed and remediated

(11) Grit and bar screenings, and grease skimmings

(12) Waste tires, unless each tire is processed into pieces no longer than 18 inches on any side.

(13) Yard waste.

(14) Lead-acid batteries.

(15) Waste oil and materials containing free-flowing waste oil.

(16) Baled solid waste, unless the waste is baled on site after the waste has been visually inspected for prohibited materials.

SECTION 10

STORAGE TANK MANAGEMENT

Iowa Supplement, February 2010

This section covers the state requirements for Storage Tank Management and is intended to supplement the U.S. TEAM Guide. Refer to the U.S. TEAM Guide and the DOD Component Supplements for Federal, DOD, and service-specific requirements.

Federal Regulations Adopted by Reference

See Appendix 10-1 for Federal Regulations and professional standards incorporated by reference.

Definitions

- *Aboveground Release* - any release to the surface of the land or to surface water. This includes, but is not limited to, releases from the aboveground portion of underground storage tank (UST) systems and aboveground releases associated with overfills and transfer operations as the regulated substance moves to or from a UST system (IAC 567-135.2).
- *Aboveground Petroleum Storage Tank* - one or a combination of tanks, including connecting pipes connected to the tanks which are used to contain an accumulation of petroleum and the volume of which, including the volume of the underground pipes, is more than 90 percent above the surface of the ground. Aboveground petroleum storage tank does not include any of the following: 661-224.2 [Added February 2008].
 1. Aboveground tanks of 1100 gallons or less capacity.
 2. Tanks used for storing heating oil for consumptive use on the premises where stored.
 3. Underground storage tanks as defined by Iowa Code section 455B.471.
 4. A flow-through process tank, or a tank containing a regulated substance, other than motor fuel used for transportation purposes, for use as part of a manufacturing process, system, or facility.
- *Ancillary Equipment* - any devices including, but not limited to, such devices as piping, fittings, flanges, valves, and pumps used to distribute, meter, or control the flow of regulated substances to and from a UST (IAC 567-135.2).
- *Below-Ground Release* - any reference to the subsurface of the land and to groundwater. This includes but is not limited to, releases from the below-ground portions of an UST system and below-ground releases associated with overfills and transfer operations as the regulated substances moves to or from a UST (IAC 567-135.2).
- *Beneath the Surface of the Ground* - beneath the ground surface or otherwise covered with earthen materials (IAC 567-135.2).
- *Best Available Technology* - those practices which most appropriately remove, treat, or isolate contaminants from groundwater, soil, or associated environment, as determined through professional judgment considering actual equipment or technologies currently in use, published technical articles, site hydrogeology and research results, engineering and groundwater professional reference materials, consultation with experts in the field, capital and operating costs, and guidelines or rules of other regulatory agencies (IAC 567-135.2).
- *Best Management Practices* - maintenance procedures, schedule of activities, prohibition of practices, and other management practices, or a combination thereof, after problem assessment is determined to be the most effective means of monitoring and preventing additional contamination of the groundwater and soil (IAC 567-135.2).

- *Building* - any structure used for or intended for supporting or sheltering any use or occupancy. Each portion of a building separated by one or more area separation walls with a fire-resistive rating of at least 2 h may be considered a separate building (IAC 661-5.2) [Added June 1997].
- *Cathodic Protection* - a technique to prevent corrosion of a metal surface by making that surface the cathode of an electrochemical cell. For example, a tank system can be cathodically protected through the application of either galvanic anodes or impressed current (IAC 567-135.2).
- *Cathodic Protection Tester* -
 1. a person who can demonstrate an understanding of the principles and measurements of all common types of cathodic protection systems as applied to buried or submerged metal piping and tank systems. At a minimum, such persons must have education and experience in soil resistivity, stray current, structure-to-soil potential, and component electrical isolation measurements of buried metal piping and tank systems (IAC 567-135.2)
 2. a licensed individual who provides installation, maintenance and testing services on underground storage tank corrosion protection systems (IAC 567-134.17) [Added February 2010].
- *Certified Groundwater Professional* - a person certified pursuant to 1995 Iowa Code section 455G.18 and 567 to provide subsurface soil contamination and groundwater consulting services, or to contract to perform or supervise remediation or corrective action services at leaking underground storage tank sites (IAC 567-134.2) [Added June 1997].
- *Change-in-Service* - changing the use of a tank system from a regulated to a nonregulated use (IAC 567-135.2) [Added June 1997].
- *Chemicals of Concern* - the compounds derived from petroleum-regulated substances which are subject to evaluation for purposes of applying risk-based corrective action decision making. These compounds are benzene, ethylbenzene, toluene, and xylenes (BTEX) and naphthalene, benzo(a)pyrene, benz(a)anthracene, and chrysene. (IAC 567-135.2) [Added June 1997].
- *Class A Operator* - a person responsible for managing resources and personnel to achieve and maintain compliance with regulatory requirements under this chapter. This includes ensuring appropriate individuals are trained in the proper operation and maintenance of the underground storage tank system, the maintenance of all required records, the procedures for response to emergencies caused by releases or spills, and assuring financial responsibility and documentation to the department or its representatives as required (IAC 567-135.2) [Added February 2010].
- *Class B Operator* - a person who implements applicable underground storage tank regulatory requirements and standards. This includes implementing the day-to-day aspects of operating, maintaining, and record keeping for underground storage tanks at one or more facilities. A Class B operator typically monitors, maintains and ensures that release detection methods, record-keeping, and reporting requirements are met; release prevention equipment, record-keeping, and reporting requirements are met; all relevant equipment complies with performance standards; and appropriate individuals are trained to properly respond to emergencies caused by releases and spills (IAC 567-135.2) [Added February 2010].
- *Class C Operator* - an on-site employee who typically controls or monitors the dispensing or sale of regulated substances and who is the first line of response to events indicating emergency conditions (IAC 567-135.2) [Added February 2010].
- *Compatible* - the ability of two or more substances to maintain their respective physical and chemical properties upon contact with one another for the design life of the tank system under conditions likely to be encountered in the UST (IAC 567-135.2).
- *Conduit* - underground structures which act as pathways and receptors for chemicals of concern, including but not limited to gravity drain lines and sanitary or storm sewers (IAC 567-135.2) [Added June 1997].

- *Connected Piping* - all underground piping including valves, elbows, joints, flanges, and flexible connectors attached to a tank system through which regulated substances flow. For the purpose of determining how much piping is connected to any individual UST system, the piping that joins two UST systems should be allocated equally between them (IAC 567-135.2).
- *Consumptive Use* - with respect to heating oil, means consumed on the premises (IAC 567-135.2).
- *Corrective Action* - an action taken to reduce, minimize, eliminate, cleanup, control, or monitor a release to protect the public health and safety or the environment. Corrective action includes, but is not limited to, excavation of an UST for the purpose of repairing a leak or removal of a tank, removal of contaminated soil, disposal or processing of contaminated soil, cleansing of groundwater or surface waters, natural biodegradation, institutional controls, technological controls, and site management practices. Corrective action does not include replacement of a UST. Corrective action specifically excludes third-party liability (IAC 567-135.2) [Revised June 1997].
- *Corrosion Expert* - a person who, by reason of thorough knowledge of the physical sciences and the principles of engineering and mathematics acquired by a professional education and related practical experience, is qualified to engage in the practice of corrosion control on buried or submerged metal piping systems and metal tanks. Such a person must be accredited or certified as being qualified by the National Association of Corrosion Engineers or be a registered professional engineer who has certification or licensing that includes education and experience in corrosion control of buried or submerged metal piping systems and tanks (IAC 567-135.2).
- *Department* - Iowa Department of Natural Resources (IAC 567-135.2).

Dielectric Materials - a material that does not conduct direct electrical current. Dielectric coatings are used to electrically isolate UST systems from the surrounding soils. Dielectric bushings are used to electrically isolate portions of the UST systems (e.g. tank from piping) (IAC 567-135.2).

- *Dispenser* - equipment that is used to transfer a regulated substance from underground piping through a rigid or flexible hose or piping located aboveground to a point of use outside the underground storage tank system, such as a motor vehicle (IAC 567-135.2) [Added February 2008].
- *Electrical Equipment* - underground equipment that contains dielectric fluid that is necessary for the operation of equipment such as transformers and buried electrical cable (IAC 567-135.2).
- *Excavation Zone* - the volume containing the tank system and backfill material bounded by the ground surface, walls, and floors of the pit and trenches into which the UST system is placed at the time of installation (IAC 567-135.2).
- *Existing Tank System* - a tank system used to contain an accumulation of regulated substances or for which installation has commenced on or before 14 January 1987. Installation is considered to have commenced if the owner or operator has obtained all Federal, state, and local approvals or permits necessary to begin physical construction of the site or installation of the tank system and if either:
 1. a continuous onsite physical construction or installation program has begun
 2. the owner or operator has entered into contractual obligations, which can not be canceled or modified without substantial loss, for physical construction at the site or installation of the tank system to be completed within reasonable time (IAC 567-135.2).
- *Farm Tank* - a tank located on a tract of land devoted to the production of crops or raising animals, including fish, and associated residences and improvements. A farm tank must be located on the farm property. The term includes fish hatcheries, rangeland, and nurseries with growing operations (IAC 567-135.2).
- *Fire* - includes explosions in which fire, combustion or rapid oxidation is an element but does not include explosions caused by nonflammable gases, liquids, or other materials (IAC 661-5.2) [Added June 1997].

- *Fire Marshal* - the fire marshal, the assistant fire marshal, fire prevention inspectors, special agents, fire prevention specialist, and designated subordinates (IAC 661-5.2) [Added June 1997].
- *Fire Marshal's Office* - the headquarters of the fire marshal (IAC 661-5.2) [Added June 1997].
- *Flow-Through Process Tank* - a tank that forms an integral part of a production process through which there is a steady, variable, reoccurring, or intermittent flow of materials during the operation of the process. Flow-through process tanks do not include tanks used for the storage of materials prior to their introduction into the production process or for the storage of finished products or by-products from the production process (IAC 567-135.2).
- *Free-Product* - a regulated substance that is present as a nonaqueous phase liquid (e.g., liquid not dissolved in water) (IAC 567-135.2).
- *Gathering Lines* - any pipeline, equipment, facility, or building used in the transportation of oil or gas during oil or gas production of gathering operations (IAC 567-135.2).
- *Hazardous Substance UST System* - a UST system that contains a hazardous substance defined in section 101(14) of the *Comprehensive Environmental Response, Compensation and Liability Act* of 1980 (but not including any substance regulated as a hazardous waste under subtitle C) or any mixture of such substances and petroleum, and which is not a petroleum UST system (IAC 567-135.2).
- *Heating Oil* - petroleum that is No. 1, No. 2, No. 4-light, No. 4-heavy, No. 5-light, No. 5-heavy, and No. 6 technical grades of fuel oil; other residual fuel oils (including Navy Special Fuel Oil and Bunker C); and other fuels when used as substitutes for one of these fuel oils. Heating oil is typically used in the operation of heating equipment, boilers, or furnaces. (IAC 567-135.2) [Revised June 1997].
- *Hydraulic Conductivity* - the rate of water movement through the soil measured in meters per day (m/d) as determined by the following methods. For a saturated soil, the Bouwer-Rice method or its equivalent shall be used. For unsaturated soil, use a Guelph permeameter or an equivalent in situ constant-head permeameter in a boring finished above the water table. If an in situ method cannot be used for unsaturated soil because of depth, or if the soil is homogeneous and lacks flow-conducting channels, fractures, cavities, etc., laboratory measurement of hydraulic conductivity is acceptable. If laboratory methods are used, collect undisturbed soil samples using a thin-walled tube sampler in accordance with ASTM Standard D1587. Samples shall be clearly marked, preserved, and transported to the laboratory. The laboratory shall measure hydraulic conductivity using a constant-head permeameter in accordance with ASTM Standard D2434 or a falling-head permeameter in accordance with accepted methodology (IAC 567-135.2).
- *Hydraulic Lift Tank* - a tank holding hydraulic fluid for a closed-loop mechanical system that used compressed air or hydraulic fluid to operate lifts, elevators, and other similar devices (IAC 567-135.2).
- *Install or Installation* - the physical construction of a UST system including, but not limited to, activities such as excavating, backfilling, testing, placement of the tank, underground piping, release detection devices, corrosion protection systems, spill and overfill devices and any associated administrative activities such as notifications, record keeping and record submissions (IAC 567-134.17) [Added February 2010].
- *Installation Inspector* - a licensed individual who is engaged in the inspection and approval of the installation of new or upgraded underground storage tank systems (IAC 567-134.17) [Added February 2010].
- *Installer* - a licensed individual or licensed company engaged in the installation of a new underground storage tank system or the upgrading of underground storage tank systems (IAC 567-134.17) [Added February 2010].
- *Institutional Controls* - the restriction on use or access (for example, fences, deed restrictions, restrictive zoning) to a site or facility to eliminate or minimize potential exposure to a chemical(s) of concern. Institutional controls include any of the following:

1. a law of the United States or the state
 2. a regulation issued pursuant to Federal or state laws
 3. an ordinance or regulation of a political subdivision in which real estate subject to the institutional control is located
 4. a restriction on the use of or activities occurring at real estate which are embodied in a covenant running with the land which:
 - a. contains a legal description of the real estate in a manner which satisfied Iowa Code section 558.1 et seq.
 - b. is properly executed, in a manner which satisfies Iowa Code section 558.1 et seq.
 - c. is recorded in the appropriate office of the county in which the real estate is located
 - d. adequately and accurately describes the institutional control; and
 - e. is in the form of a covenant as set out in Appendix C or in such a manner reasonably acceptable to the Department
 5. any other institutional control the owner or operator can reasonably demonstrate to the Department which will reduce the risk from a release throughout the period necessary to ensure that no applicable target risk is likely to be exceeded (IAC 567-135.2) [Added June 1997].
- *Liquid Trap* - sumps, well cellars, and other traps used in association with oil and gas production, gathering, and extraction operations (including gas production plants), for the purpose of collecting oil, water, and other liquid. These liquid traps may temporarily collect liquids for subsequent disposition or reinjection into a production or pipeline stream, or may collect and separate liquids from a gas stream (IAC 567-135.2).
 - *Liner* - a licensed company or an individual who provides services to install underground storage tank lining and to repair underground storage tanks (IAC 567-134.17) [Added February 2010].
 - *Maintenance* - the normal operational upkeep to prevent a UST system from releasing product (IAC 567-135.2).
 - *Modification* - to change a UST system currently in use by the installation of new UST system components. Modification includes, but is not limited to, the addition of corrosion protection to a previously lined tank, installation of new underground piping or replacement of existing underground piping, changing the primary release detection method to one of the methods listed in OAR 340-150-0450 through 340-150-0470, or adding secondary containment. Modification does not include those activities defined in this rule as repair or replacement (IAC 567-134.17) [Added February 2010]."
 - *Motor Fuel* - means petroleum or a petroleum-based substance that is motor gasoline, aviation gasoline, No. 1 or No. 2 diesel fuel, or any grade of gasohol, and is typically used in the operation of a motor engine (IAC 567-135.2).
 - *New Tank System* - a tank system that will be used to contain an accumulation of regulated substance and for which installation has commenced after 14 January 1987. (See also Existing Tank System) (IAC 567-135.2).
 - *Noncommercial Purposes* - with respect to motor fuel, not for resale (IAC 567-135.2).
 - *On the Premises Where Stored* - with respect to heating oil, UST systems located on the same property where the stored heating oil is used (IAC 567-135.2).
 - *Operational Life* - the period beginning when installation of the tank system has commenced until the time the tank system is properly closed under IAC 567-135.8(455B) (IAC 567-135.2).
 - *Operator* - any person in control of, or having responsibility for, the daily operation of the UST system (IAC 567-135.2).
 - *Overfill Release* - a release that occurs when a tank is filled beyond its capacity, resulting in a discharge of the regulated substance to the environment (IAC 567-135.2).

- *Owner* -
 1. for a UST system in use on 1 July 1985, or brought in to use after that date, any person who owns a UST system for storage, use, or dispensing of regulated substances
 2. for a UST system in use before 1 July 1985, but no longer in use on that date, any person who owned such UST immediately before the discontinuation of its use

Owner does not include a person, who, without participating in the management or operation of the UST or the tank site, holds indicia of ownership primarily to protect that person's security interest in the UST or the tank site property, prior to obtaining ownership or control through debt enforcement, debt settlement, or otherwise (IAC 567-135.2).
- *Pathway* - a transport mechanism by which chemicals of concern may reach a receptor(s) or the location(s) of a potential receptor (IAC 567-135.2) [Added June 1997].
- *Permanent Closure* - removing all regulated substances from the tank system, assessing the site for contamination, and permanently removing tank and piping from the ground or filling the tank in place with a solid inert material and plugging all piping. Permanent closure also includes partial closure of a tank system such as removal or replacement of tanks or piping only (IAC 567-135.2) [Added June 1997].
- *Person* - an individual, trust, firm, joint stock company, federal agency, corporation, state, municipality, commission, political subdivision of state, or any interstate body. The term person includes also a consortium, a joint venture, a commercial entity, and the United States government (IAC 567-135.2).
- *Petroleum* - crude oil or any fraction of crude oil which is liquid at standard conditions of temperature and pressure (60 ° F and 14.7 psia) (IAC 591-6.1) [Added June 1997].
- *Petroleum UST System* - a UST system that contains petroleum or a mixture of petroleum with *de minimus* quantities of other regulated substances. Such systems include those containing motor fuels, jet fuels, distillate fuel oils, residual fuel oils, lubricants, petroleum solvents, and used oils (IAC 567-135.2).
- *Pipe or Piping* - a hollow cylinder or tubular conduit that is constructed of nonferrous materials and that routinely contains and conveys regulated substances from the underground tank(s) to the dispenser(s) or other end-use equipment. Such piping includes any elbows, couplings, unions, valves, or other in-line fixtures that contain and convey regulated substances from the underground tank(s) to the dispenser(s). This definition does not include vent, vapor recovery, or fill lines (IAC 567-135.2) [Revised February 2008].
- *Pipeline Facilities (including Gathering Lines)* - new and existing pipe rights-of-way and any associated equipment, facilities, or buildings (IAC 567-135.2).
- *Potential Receptor* - a receptor not in existence at the time a Tier 1, Tier 2, or Tier 3 site assessment is prepared, but which could reasonably be expected to exist within 20 yr of preparation of the Tier 1, Tier 2, or Tier 3 site assessment or as otherwise specified in these rules (IAC 567-135.2) [Added June 1997].
- *Protected Groundwater Source* - a saturated bed, formation, or group of formations which has a hydraulic conductivity of at least 0.44 m/d and a total dissolved solids of less than 2500 mg/L or a bedrock aquifer with total dissolved solids of less than 2500 mg/L if bedrock is encountered before groundwater (IAC 567-135.2) [Revised June 1997].
- *Receptor* - enclosed spaces, conduits, protected groundwater sources, drinking and nondrinking water wells, surface water bodies, and public water systems which when impacted by chemicals of concern may result in exposure to humans and aquatic life, explosive conditions or other adverse effects on health, safety and the environment as specified in these rules (IAC 567-135.2) [Added June 1997].
- *Regulated Substance* - an element, compound, mixture, solution, or substance which, when released into the environment, may present substantial danger to the public health or welfare or the environment. Regulated substance includes:

1. substances designated in Table 302.4 of 40 CFR part 304
2. substances which exhibits the characteristic identified in 40 CFR 261.20 through 261.24 and which are not excluded from regulation as a hazardous waste under 40 CFR 261.4(b)
3. any substance defined in section 101(14) of the *Comprehensive Environmental Response, Compensation and Liability Act* of 1980 (but not including any substance regulated as a hazardous waste under subtitle C)
4. petroleum, including crude oil or any fraction thereof that is liquid at standard conditions of temperature and pressure (60 °F and 14.7 psia).

The term includes, but is not limited to, petroleum and petroleum-based substances comprised of a complex blend of hydrocarbons derived from crude oil through processes of separation, conversion, upgrading, and finishing, such as motor fuels, jet fuels, distillate fuel oils, residual fuel oils, lubricants, petroleum solvents, and used oils (IAC 567-135.2).

- *Release* - any spilling, leaking, emitting, discharging, escaping, leaching, or disposing of a regulated substance, including petroleum, from a UST into groundwater, surface water, or subsurface soils (IAC 567-135.2).
- *Release Detection* - determining whether a release of a regulated substance has occurred from the UST system into the environment or into the interstitial space between the UST system and its secondary barrier or secondary containment around it (IAC 567-135.2).
- *Removal* - the process of removing and disposing of an underground storage tank system no longer in service or the process of abandoning an underground storage tank system in place, in accordance with rule 567-135.9(455B) (IAC 567-134.17) [Added February 2010].
- *Remover* - a licensed individual who is engaged in permanent closure activities by removal or filling in place of underground storage tank systems in accordance with 567-135.15(455B) (IAC 567-134.17) [Added February 2010].
- *Repair* - to restore a tank or UST system component that has caused a release of product from the UST system (IAC 567-135.2).
- *Replace or Replacement* - the installation of a new underground tank system or component, including dispensers, in substantially the same location as a new existing tank system or component in lieu of that tank system or component (IAC 567-135.2) [Added February 2008].
- *Residential Tank* - a tank located on property used primarily for dwelling purposes (IAC 567-135.2).
- *Secondary Containment Tank or Secondary Containment Piping* - a tank or piping which is designed with an inner primary shell and a liquid-tight outer secondary shell or jacket which extends around the entire inner shell, and which is designed to contain any leak through the primary shell from any part of the tank or piping that routinely contains product, and which also allows for monitoring of the interstitial space between the shells and the detection of any leak (IAC 567-135.2) [Added February 2008].
- *Septic Tank* - a watertight covered receptacle designed to receive or process, through liquid separation or biological digestion, the sewage discharged from a building sewer. The effluent from such receptacle is distributed for disposal through the soil and settled solids and scum from the tank are pumped out periodically and hauled to a treatment facility (IAC 567-135.2).
- *Service Technician* - a nonlicensed individual who works for a licensed individual or a licensed company or who is certified by a manufacturer to conduct modification or replacement activities at UST facilities (IAC 567-134.17) [Added February 2010].
- *Site Assessment Investigation* - an investigation conducted by a registered groundwater professional to determine relevant site historical data, the types, amounts, and sources of petroleum contaminants present, hydrogeological characteristics of the site, full vertical and horizontal extent of the contamination in soils and groundwater, direction and rate of flow of the contamination, ranges of concentration of the contaminants by

analysis of soils and groundwater, the vertical and horizontal extent of the contamination exceeding Department standards, and the actual or potential threat to public health and safety and the environment (IAC 567-135.2).

- *Site Cleanup Report* - the report required to be submitted by these rules and in accordance with Department guidance which may include the results of Tier 2 or Tier 3 assessment and analysis (IAC 567-135.2) [Revised June 1997].
- *Stormwater or Wastewater Collection System* - piping, pumps, conduits, and any other equipment necessary to collect and transport the flow of surface water runoff resulting from precipitation, or domestic, commercial, or industrial wastewater to and from retention areas or any areas where treatment is designated to occur. The collection of stormwater and wastewater does not include treatment except where incidental to conveyance (IAC 567-135.2).
- *Surface Impoundment* - a natural topographic depression, constructed excavation, or diked area formed primarily of earthen materials (although it be lined with manufactured materials) that is not an injection well (IAC 567-135.2) [Revised June 1997].
- *Tank* - a stationary device designed to contain an accumulation of regulated substances and constructed of nonearthen materials (e.g., concrete, steel, plastic that provide structural support (IAC 567-135.2).
- *Target Level* - the allowable concentrations of chemicals of concern established to achieve an applicable target risk which must be met at the point(s) of compliance as specified in these rules (IAC 567-135.2) [Added June 1997].
- *Target Risk* - to an applicable carcinogenic and noncarcinogenic risk factor designated in these rules and used in determining target levels (for carcinogenic risk assessment, target risk is a separate factor, different from exposure factors, both of which are used in determining target levels) (IAC 567-135.2) [Added June 1997].
- *Technological Controls* - a physical action which does not involve source removal or reduction, but severs or reduces exposure to a receptor, such as caps, containment, carbon filters, point of use water treatment, etc. (IAC 567-135.2) [Added June 1997].
- *Tester* - a licensed company or individual who tests tanks, lines, leak detection systems, or monitoring systems as required by 567-Chapter 135 and this chapter. For the purposes of this definition, an owner, operator or an employee of an owner or operator performing leak detection or cathodic protection monitoring, as required by 567-Chapter 135, is not a tester (IAC 567-134.17) [Added February 2010].
- *Tier 1 Site Assessment* - the evaluation of limited site-specific data compared to the Tier 1 levels established in these rules for the purpose of determining which pathways do not require assessment and evaluation at Tier 2 and which sites warrant a no further action required classification without further assessment and evaluation (IAC 567-135.2) [Added June 1997].
- *Tier 2 Site Assessment* - the process of assessing risk to actual and potential receptors by using site-specific field data and designated Tier 2 exposure and fate and transport models to determine the applicable target level(s) (IAC 567-135.2) [Added June 1997].
- *Tier 3 Site Assessment* - a site-specific risk assessment utilizing more sophisticated data or analytic techniques than a Tier 2 site assessment (IAC 567-135.2) [Added June 1997].
- *Under-Dispenser Containment (UDC)* - containment underneath a dispenser that will prevent leaks from the dispenser from reaching soil or groundwater. Such containment must (IAC 567-135.2) [Added February 2008]:
 1. Be intact and liquid-tight on its sides and bottom and at any penetrations
 2. Be compatible with the substance conveyed by the piping
 3. Allow for visual inspection and monitoring and access to the components in the containment system.

- *Underground Area* - an underground room, such as a basement, cellar, shaft, or vault, providing enough space for physical inspection of the exterior of the tank situated on or above the surface of the floor (IAC 567-135.2).
- *Underground Release* - any below-ground release (IAC 567-135.2) [Added June 1997].
- *Underground Storage Tank (UST)* - any one or combinations of tanks (including underground pipes connected thereto) that is used to contain an accumulation of regulated substances, and the volume of which (including the volume of underground pipes connected thereto) is 10 percent or more beneath the surface of the ground. This term does not include:
 1. farm or residential tanks of 1100 gallons or less capacity used for storing motor fuel for noncommercial purposes. Iowa Code section 455B.471 requires those tanks existing prior to 1 July 1987, to be registered. Tanks installed on or after 1 July 1987, must comply with all 567.135
 2. tanks used for storing heating oil for consumptive use on the premises where stored
 3. septic tanks
 4. pipeline facilities (including gathering lines) regulated under
 - a. the *Natural Gas Pipeline Safety Act* of 1969
 - b. the *Hazardous Liquid Pipeline Safety Act* of 1979
 - c. intrastate pipeline facility regulated under state laws comparable to the provisions of the law referred to in either of these two above regulations
 5. surface impoundments, pits, ponds, or lagoons
 6. stormwater or wastewater collection systems
 7. flow-through process tanks
 8. liquid traps or associated gathering lines directly related to oil or gas production and gathering operations
 9. storage tanks situated in an underground area (such as a basement, cellar, mineworking, drift, shaft, or tunnel if the storage tank is situated on or above the surface of the floor
 10. any pipes connected to any such tank (IAC 567-135.2) [Revised June 1997].
- *Underground Storage Tank System* - tank or tanks and associated piping intended to contain and dispense petroleum products and for which proof of financial responsibility is, or on a date definite will be required to be maintained pursuant to the Federal Resource Conservation and Recovery Act, 40 CFR 280, and the regulations in effect on December 31, 1994, adopted pursuant to that Act or successor Acts or amendments (IAC 567-134.17) [Added February 2010].
- *Upgrade* - the addition or retrofit of some systems such as cathodic protection, lining, or spill and overflow controls to improve the ability of a UST system to prevent the release of product (IAC 567-135.2).
- *UST System or Tank System* - a UST, connected underground piping, underground ancillary equipment, and containment system, if any (IAC 567-135.2).
- *Wastewater Treatment Tank* - a tank that is designed to receive and treat and influent wastewater through physical, chemical, or biological methods (IAC 567-135.2).

**STORAGE TANK MANAGEMENT
GUIDANCE FOR IOWA CHECKLIST USERS**

REFER TO CHECKLIST ITEMS:

Missing Checklist Items	ST.2.1.IA.
Aboveground Storage Tanks	ST.5.1.IA. through ST.5.10.IA.
UST State Specific	ST.30.1.IA. through ST.30.11.IA.
New or Upgraded USTs	ST.35.1.IA. through ST.35.5.IA.
UST Filling	ST.45.1.IA.
UST Corrosion Protection	ST.50.1.IA.
UST Repairs	ST.55.1.IA.
Release Detection for USTs	
General	ST.60.1.IA. and ST.60.2.IA.
Petroleum USTs	ST.65.1.IA. and ST.65.2.IA.
Hazardous Substance USTs	ST.70.1.IA.
UST Releases	ST.80.1.IA. through ST.80.11.IA.
UST Documentation	ST.90.1.IA.
Changes in Service or Closure of USTs	ST.95.1.IA. through ST.95.5.IA.
Hazardous Waste Storage Tanks	
The State of Iowa has adopted the following Federal regulations: 40 CFR 262, ; 40 CFR 264,;and 40 CFR 265,.	
Flammable Combustible Liquid Storage Tanks	[Deleted]

GUIDANCE FOR APPENDIX USERS

REFER TO APPENDIX NUMBERS:

REFER TO APPENDIX TITLES:

10-1

Federal Regulations and Professional Standards Adopted by Reference

COMPLIANCE CATEGORY: STORAGE TANK MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
ST.2. MISSING CHECKLIST ITEMS ST.2.1.IA. Federal facilities are required to comply with all applicable state regulatory requirements not contained in the checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of findings).	Determine whether any new regulations have been issued since the finalization of the manual. Determine whether the Federal facility has activities or facilities that are regulated but not addressed in the checklists. Verify that the Federal facility is in compliance with all applicable and newly issued regulations.

COMPLIANCE CATEGORY: STORAGE TANK MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
ST.5. ABOVEGROUND STORAGE TANKS	
ST.5.1.IA. [Deleted February 2007].	(NOTE: 661-5.300 TO 661-5.499 Reserved.)
ST.5.2.IA. [Deleted February 2007].	(NOTE: 661-5.300 TO 661-5.499 Reserved.)
ST.5.3.IA. [Deleted February 2007].	(NOTE: 661-5.300 TO 661-5.499 Reserved.)
ST.5.4.IA. [Deleted June 1997].	(NOTE: Regulations Revised June 1997.)
ST.5.5.IA. Aboveground petroleum storage tanks must be registered annually (IAC 661-224.4) [Added February 2008].	(NOTE: This checklist item applies to aboveground tanks used to store petroleum including crude oil, heating oil offered for resale, motor fuels and oils such as gasoline, diesel fuels and motor oil. Tanks that are used, or planned for use, to store blended fuels which include either gasoline or diesel are also subject to this requirement.) Verify that all existing, new, replacement and out-of-service aboveground tanks of 1101 gallon capacity or greater are registered with the state fire marshal. Verify that each tank is registered annually by October 1 of each year. (NOTE: A tank may be registered for the first time on any date without penalty, provided that it has not previously been in use to store petroleum products.) Verify that a tank that is registered for the first time is not used to store petroleum products until the registration has been completed and the registration tag has been attached to the tank.
ST.5.6.IA. Leaks from aboveground petroleum storage tanks must be reported	Verify that any leak from, spill from, or damage to an aboveground petroleum storage tank is reported to the local fire department and, if required by law, to the

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REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
and repaired (IAC 661-224.7) [Added February 2008].	department of natural resources. Verify that, if a tank is leaking or has been damaged, it is placed out of service until the leak has been repaired. Verify that a sign is placed prominently on the tank stating that the tank is out of service and that no petroleum product is placed into the tank until required repairs are completed. (NOTE: See definition of aboveground petroleum storage tanks.)
ST.5.7.IA. Connections and piping for aboveground flammable or combustible storage tanks must meet specific requirements (IAC 661-221.3(1)(c)) [Added February 2008].	Verify that each connection to an aboveground tank through which liquid can normally flow is provided with an external control valve that is located as close as practical to the shell of the tank. Verify that, in addition to the control valve or any other normal tank valves, there is an emergency internal check valve at each pipe connection to any tank opening below normal liquid level. Verify that the emergency internal check valve is located inside the tank shell and is operable both manually and by an effective heat-activated device that, in case of fire, will automatically close the valve to prevent the flow of liquid from the tank even though the pipelines from the tank are broken. Verify that any new or replacement piping connected to an aboveground storage tank is double-walled unless it lies entirely within the area of secondary containment. (NOTE: The above requirements are added to the International Fire Code, 2006 edition, published by the ICC, Chapter 34 and references contained therein, and NFPA 30, Flammable and Combustible Liquids Code, 2003 edition.)
ST.5.8.IA. Class I or Class II flammable liquids are not dispensed less than 100 feet from any existing dwelling unit (IAC 661-221.3(1)(c)) [Added February 2008].	Verify that any device dispensing Class I or Class II flammable liquids is not constructed or installed less than 100 feet from any existing dwelling unit. (NOTE: The above requirements are added to the International Fire Code, 2006 edition, published by the ICC, Chapter 34 and references contained therein, and NFPA 30, Flammable and Combustible Liquids Code, 2003 edition.)
ST.5.9.IA. Means must be provided for recovery of flammable or combustible liquid from a vault (IAC 661-221.3(1)(d)) [Added February 2008].	Verify that liquid is recovered from the vault. Verify that, where a pump is used, the pump is not permanently installed in the vault.

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2008]. ST.5.10.IA. Construction plans must be approved by the fire marshal prior to construction, addition, or replacement of a aboveground flammable or combustible liquid storage tanks (IAC 661-221.3(3)) [Added February 2008].	(NOTE: Electric-powered portable pumps are suitable for use in Class I, Division 1 locations, as defined in NFPA 70, National Electrical Code, 2005 edition.) (NOTE: The above requirements are added to the International Fire Code, 2006 edition, published by the ICC, Chapter 34 and references contained therein, and NFPA 30, Flammable and Combustible Liquids Code, 2003 edition.) Verify that construction plans are submitted to the fire marshal division, prior to commencing initial construction of the facility or prior to commencing any construction at an existing facility that includes the addition or replacement of an aboveground flammable or combustible liquid storage tank. Verify that the plan is approved by the fire marshal. (NOTE: Submission of construction plans is not required if the total flammable and combustible liquid storage capacity on the premises is or will be 1,100 gallons or less. If an SPCC plan has been prepared, a copy of the SPCC plan may be submitted to the fire marshal in lieu of submission of separate construction plans, provided that the SPCC plan includes all of the elements required to be included in construction plans.) (NOTE: The above requirements are added to the International Fire Code, 2006 edition, published by the ICC, Chapter 34 and references contained therein, and NFPA 30, Flammable and Combustible Liquids Code, 2003 edition.)

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REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
ST.30. UST STATE-SPECIFIC ST.30.1.IA. Tanks must be registered with the Department (IAC 567-135.1(3), and 567-135.3(1), (5) and (7)) [Revised June 1997; Revised February 2008].	Verify that the tank is registered with the Department and has a registration tag affixed where it is readily available. (NOTE: Owners of tanks which are exempt through the 1989 Iowa Acts, House File 447, sections 42-58, may file for exemption with the Department.) (NOTE: Tanks of 110 gal or less capacity that have registered with the Department will be issued a permanent registration tag.) Verify that the registration tag is affixed to the fill pipe of the UST where it will be readily visible. Verify that regulated substances are not deposited into any tank that does not have a current registration tag affixed to the fill pipe or fill pipe cap. (NOTE: The following tanks are exempt from all of these UST requirements: - any UST holding hazardous wastes listed or identified under Subtitle C of the <i>Solid Waste Disposal Act</i>, or a mixture of such hazardous waste and other regulated substances - any wastewater treatment tank system that is part of a wastewater treatment facility regulated under Section 402 or 307(b) of the <i>Clean Water Act</i> - equipment or machinery containing regulated substances for operational purposes - UST systems with a capacity of 110 gal or less - any UST system containing <i>de minimus</i> concentration of regulated substances - any emergency spill or overflow containment UST system that is expeditiously emptied after use.) (NOTE: Unless otherwise specified, these UST regulations do not apply to the following deferred UST systems- wastewater treatment tank systems - any UST systems containing radioactive material regulated under the Federal <i>Atomic Energy Act</i> of 1954 (42 USC 2011 and following) - any UST system that is part of an emergency generator system at a nuclear power generation facilities regulated by the Nuclear Regulatory Commission under 10 CFR 50 Appendix A - airport hydrant fuel distribution systems - UST systems with field-constructed tanks.)
ST.30.2.IA. UST systems must meet compliance inspection requirements (IAC 567-135.20) [Revised	Verify that the initial site inspection is submitted to the Department no later than December 31, 2007. Verify that UST systems are inspected and an inspection report submitted to the

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February 2007 ; Revised February 2010].	Department on a biennial basis by an UST compliance inspector certified by the Department. Verify that compliance site inspections are separated by at least 6 months. Verify that the compliance site inspection is conducted by a certified compliance inspector who is not: - the owner or operator of the UST system being inspected - an employee of the owner or operator of the UST system being inspected - a person having daily on-site responsibility for the operation and maintenance of the UST system. Verify that the owner or operator ensures the Department receives 10 days prior notice by the compliance inspector of the date of a site inspection and the name of the inspector. Verify that the owner/operator takes all actions necessary to correct any compliance violations or deficiencies. Verify that corrective action is taken within the time frame established by rule or, if no time frames are established by rule, within 60 days of receipt of the inspectors report or another reasonable time period approved by the Department. Verify that, within 60 days of receipt of the inspectors report, the owner/operator provides documentation to the compliance inspector that the violation or deficiencies have been corrected. Verify that the owner/operator conducts a follow-up inspection in instances where there are serious problems or a history of repeated violations when required by the Department.
ST.30.3.IA. Groundwater professionals and UST compliance inspectors must be certified (IAC 567-134.1 and 134.2(1) and 567-134.7) [Revised February 2007].	Verify that the person retained by an owner or operator of an UST facility for the purpose of establishing compliance with the annual UST compliance inspection required by the Department holds a current UST compliance inspector certification issued by the Department. Verify that all groundwater professionals consulted or hired by the UST owner/operator are certified or working under the direct supervision of a certified groundwater professional. (NOTE: For the purposes of this section, a person who engages only in installation or removal of underground storage tanks and piping is not considered a groundwater professional.)
ST.30.4.IA. [Moved June	(NOTE: Moved to ST.30.7.IA June 1997.)

COMPLIANCE CATEGORY: STORAGE TANK MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
1997]. ST.30.5.IA. Deferred UST systems used to store regulated substances must meet specific criteria before installation (IAC 5 67-135.1(4)) [Added June 1997 ; Citation Revised February 2008]. ST.30.6.IA. UST systems must meet specific notification requirements (IAC 5 67-135.3(3)) [Revised June 1997; Revised April 2002; Citation Revised February 2008].	(NOTE: See ST.30.1.IA. for exemptions.) Verify that any deferred UST system in which regulated substances will be stored is not installed unless it meets the following criteria: - prevents releases due to corrosion or structural failure for the operational life of the UST system - is cathodically protected against corrosion, constructed of noncorrodible material, steel clad with a noncorrodible material, or designed in a manner to prevent the release or threatened release of any stored substance - is constructed or lined with material that is compatible with the stored substance. (NOTE: Notwithstanding this requirement, a UST system without corrosion protection may be installed at a site determined by a corrosion expert not to be corrosive enough to cause it to have a release due to corrosion during its operating life.) Verify that records demonstrating compliance with this requirement are maintained for the remaining life of the tank. (NOTE: The National Association of Corrosion Engineers Standard RP-02-85, "Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems," may be used as guidance for complying.) (NOTE: See ST.30.1.IA. for exemptions.) Verify that the Department was notified of: - the operating status of USTs existing on or before 1 July 1985 - USTs taken out of operation between 1 January 1974 and 1 July 1985, unless the owner knows the UST was removed from the ground, no later than 8 May 1986. Verify that the Department is notified within 30 days of the existence of a UST brought into use after 1 July 1985. Verify that the owner or operator does not allow the deposit of any regulated substance into the tank without prior approval of the department or until the tank has been issued a tank registration tag and is covered by an approved financial responsibility mechanism. Verify that, for new UST systems, the notification form certifies compliance with the following standards:

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	- tanks and piping installation - cathodic protection of steel tanks and piping - financial responsibility - release detection - methods of installation of UST system. (NOTE: USTs falling under Section 103, Subsection C of the <i>Comprehensive Environmental Response, Compensation and Liabilities Act</i> of 1980 are exempt from these requirements.)
ST.30.7.IA. Farm and residential USTs must comply with UST regulations (IAC 567-135.3(4)(c)) [Revised June 1997].	(NOTE: See ST.30.1.IA. for exemptions.) Verify that the Department was notified of all farm and residential tanks installed before 1 July 1987. Verify that farm and residential tanks installed on or after 1 July 1987 are in compliance with all the underground storage tank regulations.
ST.30.8.IA. Storage tank installers, inspectors, removers, testers and liners must be licensed (IAC 567-134.18) [Added February 2010].	Verify that all persons conducting underground storage tank installations and installation inspections are licensed. Verify that installers, installation inspectors, liners, testers, and removers are licensed by the department. (NOTE: Service technicians are exempt from licensure.) (NOTE: A separate license will be issued for: - UST installers and installation inspectors - UST removers - UST testers - cathodic protection testers - UST liners.)
ST.30.9.IA. Facilities must designate Class A, Class B, and Class C operators for each UST system (IAC 567-4(6) and (10)) [Added February 2010].	Verify that Class A, Class B, and Class C operators are designated for each underground storage tank system or facility that has underground storage tanks, except for unstaffed facilities, which may designate only Class A and Class B operators. (NOTE: A person may be designated for more than one class of operator.) (NOTE: Facilities may not operate after December 31, 2011, unless operators have been designated and trained, or unless otherwise agreed upon by the department.) Verify that trained operators are readily available to respond to suspected or

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ST.30.10.IA. Class A, Class B, and Class C operators must obtain training by December 31, 2011 (IAC 5 67-4 (10)) [Added February 2010].	confirmed releases, equipment shut-offs or failures, and other unusual operating conditions. Verify that a Class A or Class B operator is immediately available for telephone consultation with the Class C operator when a facility is in operation and able to be on site at the storage tank facility within 4 hours. Verify that for staffed facilities, a Class C operator is on site whenever the UST facility is in operation. Verify that, for unstaffed facilities, the following requirements are met: - a Class B operator is geographically located such that the person can be on site within 2 hours of being contacted by the public, the owner or operator of the facility, or the department. - emergency contact information and emergency procedures are prominently displayed at the site. - an emergency shutoff device and a sign posted in a conspicuous place that includes the name and telephone number of the facility owner, an emergency response telephone number to contact the Class B operator, and information on local emergency responders. Verify that Class A, Class B, and Class C operators are trained as soon as practicable after October 14, 2009, contingent upon availability of approved training providers, but not later than December 31, 2011. Verify that when a Class A or Class B operator is replaced, a new operator is trained prior to assuming duties for that class of operator. Verify that Class C operators are trained before assuming the duties of a Class C operator. Verify that a written basic operating instructions, emergency contact names and telephone numbers, and basic procedures specific to the facility are provided to all Class C operators and readily available on site. (NOTE: A Class C operator may be briefed on these procedures concurrent with annual safety training required under Occupational Safety and Health Administration regulations, 29 CFR, Part 1910.)
ST.30.11.IA. The training of Class A, Class B, and Class C operators must be documented (IAC 5 67-4(11)) [Added February 2010].	Verify that a list of designated operators is maintained representing the current Class A, Class B and Class C operators for the UST facility and includes: - the name of each operator and the operator's class(es); contact information for Class A and Class B operators - the date each operator successfully completed initial training and refresher

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	training, if any - the name of the company providing the training - the name of the trainer. - for all classes of operators, the site(s) for which an operator is responsible if more than one site. Verify that a copy of the certificates of training for Class A and Class B operators is on file and readily available for inspection. Verify that a copy of the certificates of training for Class B and Class C operators is available at each facility for which the operator is responsible. Verify that Class A and Class B operator contact information, including names and telephone numbers and any emergency information, are conspicuously posted at unstaffed facilities near the dispensers and the station building.

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ST.35. NEW OR UPGRADED USTS ST.35.1.IA. New US T systems must meet specific design, construction and installation standards (IAC 567-135.3(1)(a), (b), (d), and (e)) [Revised June 1997].	Verify that each tank and piping is properly designed and constructed, and that any portion underground routinely containing product is protected from corrosion in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory. Verify that the new tank is constructed of one of the following materials or combination of materials: - fiberglass-reinforced plastic - steel and is cathodically protected in the following manner: - coated with a suitable dielectric material - designed by a corrosion expert (field-installed cathodic protection systems) - impressed current systems allow determination of current operating status - operated and maintained according to these regulations - a steel-fiberglass-reinforced plastic composite - metal without additional corrosion protection measures provided: - it is installed at a site that a corrosion expert determines not be corrosive enough to cause a release due to corrosion during its operating life - owners and operators maintain records that demonstrate the opinion of the corrosion expert - one that the Department determines to be no less protective of human health and the environment than those listed above. Verify that piping routinely containing regulated substances and in contact with the ground is constructed of one of the following: - fiberglass-reinforced plastic - steel and is cathodically protected in the following manner: - coated with a suitable dielectric material - designed by a corrosion expert (field-installed cathodic protection systems) - impressed current systems allow determination of current operating status - operated and maintained according to these regulations or guidelines established by the Department - metal without additional corrosion protection measures, provided both of the following conditions are met: - it is installed at a site corrosion expert determines not to be corrosive enough to cause a release due to corrosion during its operating life - owners and operators maintain records that demonstrate the opinion of the corrosion expert - piping construction and corrosion protection are determined by the Department to be designed to prevent the release or threatened release of any stored regulated substance in a manner that is no less protective of human health and the environment than those listed above.

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ST.35.2.IA. UST owner/operators must follow general requirements for upgrading UST systems (IAC 567-135.3(2)) [Revised June 1997].	Verify that installation of all tanks and piping are in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory and in accordance with the manufacturer's instructions. Verify that one or more of the following certification, testing, or inspection methods is used to demonstrate compliance with installation requirements: - installer has been certified by the tank and piping manufacturers - installer has been certified or licensed by the Iowa Comprehensive Petroleum UST Fund Board - installation has been inspected and certified by a registered professional engineer with education and experience in UST system installation - installation has been inspected and certified by a registered professional engineer with education and experience in UST system installation - installation has been inspected and approved by an inspector certified or licensed by the Iowa Comprehensive Petroleum UST Fund Board - all work listed in the manufacturer's installation checklists has been completed - the owner or operator has complied with another method for ensuring compliance approved by the Department. Verify that all USTs are upgraded or properly closed by 22 December 1998. Verify that steel tanks are upgraded to meet one of the following requirements in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory: - interior lining, if: - it is installed according to Department requirements - it is inspected within 10 yr and every 5 yr thereafter - cathodic protection, if: - the tank is externally inspected and assessed to ensure structural stability and is free of corrosion holes prior to installing a cathodic protection system - the tank has been installed for less than 10 yr and is monitored monthly for releases - the tank has been installed for less than 10 yr and is assessed for corrosion holes by conducting 2 tightness tests, one before installing the cathodic protection system, and the other between 3 and 6 mo following the first operation of the cathodic protection system - the tank is assessed for corrosion holes by another method approved by the Department - internal lining combined with cathodic protection, if: - the lining is installed according to Department requirements - the cathodic protection system meets the requirements in ST.35.1 of these regulations.

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	Verify that metal piping that routinely contains regulated substances and is in contact with the ground is upgraded with cathodic protection in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory. Verify that the spill and overfill prevention equipment comply with the requirements for new USTs in ST.35.1 of these regulations. Verify that the replacement or upgrade of a tank system on a petroleum contaminated site classified as a high or low risk is a double wall tank or a tank equipped with a secondary containment system with monitoring of the space between the primary and secondary containment structures or other tank system or methodology approved by the Iowa Comprehensive Petroleum Underground Storage Tank Fund Board.
ST.35.3.IA. [Moved June 1997].	(NOTE: Moved to ST.30.6.IA June 1997.)
ST.35.4.IA. New UST systems must meet specific spill and overfill standards (IAC 5 67-135.3(1)(c)) [Added June 1997].	Verify that spill prevention equipment is in use to prevent the release of product to the environment when the transfer hose is detached from the fill pipe (e.g., a spill catchment basin). Verify that overfill prevention equipment is in use that does one of the following: - automatically shuts off the flow into the tank when the tank is no more than 95 percent full - alerts the transfer operator when the tank is no more than 90 percent full by restricting flow or triggering a high-level alarm - restricts flow 30 minutes prior to overfilling, alerts the operator with a high-level alarm 1 min before overfilling, or automatically shuts off the flow into the tank so that none of the fittings located on top of the tank are exposed to product due to overfilling. (NOTE: Owners and operators whose systems are filled by transfers of no more than 25 gal at a time, or have alternative equipment in place, approved by the Department, are not required to use these spill and overfill equipment.)
ST.35.5.IA. New UST and replacement UST systems for the storage and dispensing of petroleum products must meet secondary containment requirements (IAC 5 67-135.1(3)(d) and 135.3(9))	Verify that all new and replacement underground storage tank systems and appurtenances used for the storage and dispensing of petroleum products installed after November 28, 2007, have secondary containment including the installation of turbine sumps, transition or intermediate sumps and under-dispenser containment (UDC). (NOTE: New and replacement UST systems for emergency power generators

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[Added February 2008].	must meet the secondary containment, leak detection and delivery prohibition requirements.) (NOTE: The secondary containment may be manufactured as an integral part of the primary containment or constructed as a separate containment system.) Verify that installation of any new or replacement turbine pumps involving the direct connection to the tank have secondary containment. Verify that any replacement of 10 feet or more of piping have secondary containment. Verify that, at a minimum, the secondary containment meets the following requirements: - contain regulated substances released from the tank system until detected and removed - prevent the release of regulated substances into the environment at any time during the operational life of the underground storage tank system - checked for evidence of a release at least every 30 days. Verify that secondary containment with interstitial monitoring is the primary method of leak detection for all new and replacement tanks and piping installed after November 28, 2007. Verify that secondary containment systems and sensing devices are inspected and tested every 2 years. Verify that inspections for secondary containment sumps (spill catchment basins, turbine sumps, transition or intermediate sumps, and under-dispenser containment) consist of a visual inspection by an Iowa-licensed installer or Iowa-certified inspector every 2 years. Verify that sumps are maintained and kept free of debris, liquid and ice at all times. Verify that regulated substances spilled into any spill catchment basin, turbine sump, transition/intermediate sump or under-dispenser containment are immediately removed. (NOTE: A tank owner or operator may request an exception from the secondary containment standard if the location of the UST system is greater than 1,000 feet from a community water system or potable drinking water well.)

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ST.45. UST FILLING ST.45.1.IA. UST owner/operators must prevent spills or releases when filling a tank (IAC 567-135.4(1)) [Citation Revised February 2008].	Verify that, to prevent releases while filling a tank, there is a system in place that ensures that the volume available in the tank is greater than the volume of product to be transferred to it.

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ST.50. UST CORROSION PROTECTION ST.50.1.IA. Steel U ST systems must be operated and maintained to prevent releases due to corrosion (IAC 567-135.4(2)).	Verify that the corrosion protection system provides corrosion protection to metal components that routinely contain regulated substances and come in contact with the ground. Verify that the following inspection procedures for cathodic protection systems are met: - inspection is performed by a qualified cathodic protection tester - inspection is performed within 6 mo of installation and at least every 3 yr thereafter - inspection criteria are adequate and in accordance with a code of practice developed by a nationally recognized association. Verify that impressed current cathodic protection systems are inspected every 60 days. Verify that records of the operation of the cathodic protection are kept to demonstrate compliance with these requirements, including: - results of the last 3 inspections for U ST systems with impressed current cathodic protection systems - results of the last 2 inspections for U ST systems with cathodic protection systems.

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ST.55. UST REPAIRS ST.55.1.IA. Owners and operators must follow guidelines for UST system repairs (IAC 567-135.4(4)).	Verify that the owner and operator perform repairs that will prevent releases due to structural failure or corrosion. Verify that repairs are conducted in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory. Verify that repairs on fiberglass-reinforced plastic tanks are done according to the manufacturer's authorized representatives or in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory. Verify that pipe sections and fittings that have released product as a result of corrosion or other damage are replaced. Verify that repaired tanks and piping are tightness tested within 30 days following the date of the completion of repair, except when: - the repaired tank is internally inspected in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory - the repaired portion of the UST system is monitored monthly for releases - another test method, approved by the Department, is used. Verify that, within 6 months following the repair of a cathodically protected UST system, the system is tested according to the guidelines for cathodic protected UST systems laid out in ST.50.1. Verify that records are kept of the repair for the remaining operating life of the system.

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ST.60. RELEASE DETECTION FOR USTS ST.60.1.IA. Owners and operators of UST systems must have a method, or combination of methods, which detect releases from the system (IAC 5 67-135.5(1)(a) and (d)). ST.60.2.IA. [Deleted February 2007].	Verify that the owner and operators of the UST system have a method, or combination of methods, which: - detects releases from any portion of the tank and connected underground piping that routinely contains product - is installed, calibrated, operated, and maintained according to the manufacturer's instructions. Verify that, if a detection method cannot be applied to a UST system, the system is closed. (NOTE: This requirement does not apply to any UST system that stores fuel solely for use by emergency power generators.) (NOTE: 661-5.300 TO 661-5.499 reserved.)

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RELEASE DETECTION FOR USTs ST.65. Petroleum USTs ST.65.1.IA. Petroleum UST tanks must be monitored according to general guidelines (IAC 567-135.5(2)(a) and IAC 567-135.5(4)). ST.65.2.IA. Underground piping in a UST that regularly contains petroleum products must be monitored (IAC 567-135.5(2)(b) and 135.5(3)(d)) [Citation Revised February 2008].	Verify that tanks in a petroleum UST system are monitored for releases at least every 30 days by one of the following methods: - automatic tank gauging - vapor monitoring - groundwater monitoring - interstitial monitoring - other methods approved by the Department. (NOTE: Tanks which have been upgraded according to ST.35.2 of these regulations and use monthly inventory control or manual tank gauging, may use a tank tightness test, capable of detecting a 0.1 gal/h leak, at least every 5 yr until 22 December 1998, or until 10 yr after the tank is installed or updated whichever is later.) (NOTE: This requirement does not apply to any UST system that stores fuel solely for use by emergency power generators.) Verify that the pressurized underground piping of a petroleum UST is monitored by an automatic leak detector. Verify that underground suction piping of a petroleum UST is monitored by either a line tightness test every 3 yr or monthly monitoring. (NOTE: The following suction piping does not require release detection: - piping operating at less than atmospheric pressure - piping sloped back into the tank if suction is released - piping with only one check valve in the suction line - piping where the check valve is located below and as close as practical to the suction pump.) (NOTE: This requirement does not apply to any UST system that stores fuel solely for use by emergency power generators.)

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RELEASE DETECTION FOR USTs ST.70. Hazardous Substance USTs ST.70.1.IA. Owners and operators of hazardous substance UST systems must meet release detection requirements (IA C 5 67-135.5(3)) [Revised June 1997].	Verify that hazardous substance UST systems meet the release detection requirements for petroleum USTs. Verify that all existing hazardous substance UST systems meet the release detection requirements for new hazardous substance UST systems by 22 December 1998. Verify that new hazardous substance UST systems have secondary containment systems designed, constructed, and installed to both: - contain regulated substances released from the tank system until they are detected and removed - prevent the release of regulated substances to the environment at any time during the operational life of the UST system. Verify that the secondary containment system is checked for evidence of a release at least every 30 days. (NOTE: The provisions of 40 C FR 265. 193, Containment and Detection of Releases, as of September 13, 1988, may be used to comply with these requirements.) Verify that new doubled-walled tanks are designed, constructed, and installed to both contain a release from any portion of the inner tank within the outer wall and detect the failure of the inner wall. Verify that external liners (including vaults) on new USTs are designed, constructed, and installed to meet all of the following criteria: - contain 100 percent of the capacity of the largest tank within its boundary - prevent the interference of precipitation or groundwater intrusion with the ability to contain or detect a release of regulated substances - surround the tank completely (i.e., it is capable of preventing lateral as well as vertical migration of regulated substances). Verify that underground piping on a new UST is equipped with secondary containment that satisfies the requirements for secondary containment of tanks. Verify that underground piping, on new USTs, which conveys regulated substances under pressure is also equipped with an automatic line leak detector. (NOTE: Other methods of release detection may be used if owners and operators:

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	- demonstrate to the Department that an alternate method can detect a release of the stored substance as effectively as any of the methods allowed to detect a release of petroleum - provide information to the Department on effective corrective action technologies, health risks, and chemical and physical properties of the stored substance, and the characteristics of the UST site, and - obtain approval from the Department to use the alternate release detection method before the installation and operation of the new UST system.) (NOTE: These requirements do not apply to any UST system that stores fuel solely for use by emergency power generators.)

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ST.80. UST RELEASES ST.80.1.IA. The Department in the case of a release or apparent release (IAC 567-135.5(1)(b), 567-135.6(1), and 567-135.6(4)(b)).	Verify that the Department is notified within 24 h of any of the following: - a discovered release of regulated substances at the UST site or in the surrounding area (i.e., the presence of free product or vapors in soils, basements, sewer and utility lines, and nearby surface water) - unusual operating conditions, such as any of the following, unless the system equipment is found to be defective but not leaking and is immediately repaired or replaced - erratic behavior of product dispensing equipment - sudden loss of product from the UST system - unexplained presence of water in the tank - release detection monitoring results indicate a release may have occurred unless one of the following conditions occurs: - the monitoring device is found to be defective, and is immediately repaired, recalibrated, or replaced, and additional monitoring does not confirm the initial result - in the case of inventory control, a second month of data does not confirm the initial result. Verify that any release of a substance that causes a hazardous condition is reported within 6 h. Verify that all releases of a hazardous substance equal to or in excess of its reportable quantity are immediately reported to the National Response Center and to appropriate state and local authorities.
ST.80.2.IA. Initial steps must be taken in the event of a spill, overfill, or release (IAC 567-135.6(4) and 567-135.7(2)) [Revised June 1997].	Verify that, upon confirmation of a release, or after a release from the UST system is identified in any other manner, owners and operators perform the following initial response actions within 24 h of the release, or within an other reasonable period of time specified by the Department: - report to the Department and follow any alternate procedures - take immediate action to prevent further release of the regulated substance into the environment - identify and mitigate fire, explosion, and vapor hazards. Verify that the following are cleaned according to regulations: - any spill, overfill, or aboveground release of petroleum into the environment exceeding 25 gal, that causes a sheen on nearby surface water, impacts adjacent property, or contaminates groundwater - any spill, overfill, or aboveground release of a hazardous substance into the

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	environment equal to or exceeding its reportable quantity under <i>CERCLA</i>. (NOTE: Spills or overfills of lesser quantities need only be reported to the Department if they cannot be cleaned up within 24 h.)
ST.80.3.IA. [Deleted June 1997].	(NOTE: Regulations Revised June 1997.)
ST.80.4.IA. [Deleted June 1997].	(NOTE: Regulations Revised June 1997.)
ST.80.5.IA. All suspected releases from a UST must be investigated and confirmed (IAC 567-135.6(3) and 567-135.9(11)) [Added June 1997; Citation Revised February 2007; Revised February 2009].	Verify that all suspected releases of regulated substances are investigated and confirmed within 7 days. Verify that the following procedures are used for the investigation: - for a system test: - conduct tests (according to the requirements for tightness testing) that determine whether a leak exists in that portion of the tank routinely containing product, or the attached delivery piping or both, and then: - repair, replace, or upgrade the UST system and begin corrective action if the test results for the system, tank, or delivery piping indicate a leak exists - for a site check: - a site check is not required if the test results for the system, tank, and delivery piping do not indicate a leak exists and if environmental contamination is not the basis for suspecting a release - a certified groundwater professional conducts a site check in accordance with the tank closure in place procedures or conducts a Tier 1 assessment - if the test results of the site check indicate action levels have been exceeded, corrective action is begun - if the test results for the excavation zone or the UST site do not indicate a release has occurred, further investigation is not required. (NOTE: Other procedures for release investigation and confirmation steps must be approved by the Department.) Verify that a Tier 1 report is submitted to the Department within 90 calendar days of release confirmation. Verify that, if the owner or operator elects to prepare a Tier 2 site cleanup report instead of a Tier 1 assessment, the Department is notified in writing prior to the expiration of the Tier 1 submission deadline.

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ST.80.6.IA. Tier 2 assessments are submitted to the Department under specific conditions (IAC 567-135.10(1) and (1 1) and 567-135.11(1)) [Added June 1997; Citation Revised February 2007; Revised February 2009].	Verify that the Tier 2 site cleanup report is submitted to the Department in accordance with IAC 135.10 within 180 calendar days of release confirmation or another reasonable period of time determined by the Department. (NOTE: These requirements apply to the following deferred UST systems: - wastewater treatment tank systems - any UST systems containing radioactive material regulated under the Federal Atomic Energy Act of 1954 (42 USC 2011 and following) - any UST system that is part of an emergency generator system at nuclear power generation facilities regulated by the Nuclear Regulatory Commission under 10 CFR 50 Appendix A - airport hydrant fuel distribution systems - UST systems with field-constructed tanks.) Verify that a Tier 2 site assessment is conducted and a site cleanup report submitted for all sites which have not obtained a no action required site classification and for all pathways and chemicals of concern groups that have not obtained no further action clearance as provided by a Tier 1 assessment. Verify that, if in the course of conducting a Tier 2 assessment data indicates the conditions for pathway clearance under Tier 1 no longer exist, the pathway is further assessed. Verify that the Tier 2 assessment and report is completed whenever free product is discovered. Verify that, if the owner or operator elects to complete the Tier 2 site assessment without doing a Tier 1 assessment, all the Tier 1 requirements are met in addition to Tier 2 requirements. Verify that the Tier 2 site assessment is conducted in accordance with the Department's "Tier 2 Site Assessment Guidance." Verify that a Tier 2 site cleanup report is submitted within 180 days of the date the department approves or is deemed to approve a Tier 1 assessment report. Verify that, if the owner or operator elected to conduct a Tier 2 assessment instead of a Tier 1, or a Tier 2 assessment is required due to the presence of free product, the Tier 2 site cleanup report is submitted within 180 days of the date the release was confirmed. (NOTE: The department may establish an alternative schedule for submittal.) (NOTE: Unless specifically limited by rule or imminent hazard exists, an owner or operator may choose to prepare a Tier 3 site assessment as an alternative to completion of a Tier 2 assessment or as an alternative to completion of a corrective action design report.)

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ST.80.7.IA. Specific initial abatement measures must be taken in the event of a confirmed spill, overflow, or release (IAC 5 67-135.7(3)) [Added June 1997].	(NOTE: See ST.80.6.IA. for applicability.) Verify that as much of the regulated substance is removed from the UST system as is necessary to prevent further release to the environment. Verify that any aboveground releases or exposed below-ground releases are inspected and further migration of the released substance into the surrounding soils and groundwater is prevented. Verify that additional fire and safety hazards posed by vapors or free product that have migrated from the UST excavation zone and entered into subsurface structures (such as sewers or basements) continue to be monitored and mitigated. Verify that hazards posed by contaminated soils excavated or exposed as a result of release confirmation, site investigation, abatement, or corrective action activities are remedied. Verify that the possible presence of free product is investigated and free product removal is begun as soon as practicable. Verify that, within 20 days after release confirmation, or within another reasonable period of time determined by the Department, owners and operators submit a report to the Department summarizing the initial abatement steps taken and any resulting information or data.
ST.80.8.IA. Product recovery assessment and interim product recovery must be undertaken in the event of a confirmed spill, overflow, or release (IAC 5 67-135.7(5)(a) through (c)) [Added June 1997].	(NOTE: See ST.80.6.IA. for applicability.) Verify that, at sites where investigations indicate 0.01 ft or more of free product, a free product recovery assessment is initiated, a report is submitted, and interim free product removal is begun. Verify that free product removal is begun by bailing or by installation and maintenance of passive skimming equipment until an alternative removal method is required by or approved by the Department. Verify that a certified groundwater professional initially determines the frequency of bailing and proper installation and maintenance of the skimming equipment based on a determination of the recharge rate of the free product. (NOTE: The Department may approve implementation of this interim removal process by persons not certified as groundwater professionals. For approval a certified groundwater professional must submit sufficient documentation establishing that the bailing or skimming system has been adequately designed and tested with a written plan for regular maintenance, reporting, and supervision by a certified groundwater professional.)

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ST.80.9.IA. Specific product removal requirements must be met in the event of a confirmed spill, overflow, or release (IAC 567-135.7(5)(d) through (g)) [Added June 1997].	Verify that interim free product recovery reports are submitted to the Department on a monthly basis and on forms provided by the Department. Verify that the free product removal process properly treats, discharges, or disposes of recovery by-products in compliance with applicable local, state, and Federal regulations. Verify that, unless approved by the Department, free product assessment and recovery activities are conducted by a certified groundwater professional. Verify that the results of free product removal activities are reported on forms designated by the Department. Verify that any flammable products are handled in a safe and competent manner to prevent fires or explosions.
	(NOTE: See ST.80.6.IA. for applicability.) Verify that a free product recovery assessment report and a proposal for subsequent free product removal activities are prepared and submitted within 45 days after confirmation of a release. Verify that the assessment report and proposal contain at least the following information: - name of the person(s) responsible for implementing the free product removal measures - estimated quantity, type, and thickness of free product observed or measured in monitoring wells, boreholes, and excavations, the recharge rate in all affected monitoring wells, and a detailed description of the procedures used to determine the recharge rate - a detailed justification for the free product removal technology proposed for the site - a schematic and narrative description of the free product recovery system used - whether any discharge will take place onsite or offsite during the recovery operation and where this discharge will be located - a schematic and narrative description of the treatment system, and the effluent quality expected from any discharge - the steps that have been or are being taken to obtain necessary permits for any discharge - the disposition of the recovered free product - free product plume definition and map - estimated volume of free product present, how the volume was calculated, recoverable volume and estimated recovery time. Verify that, if the assessment proposal is approved, the installation of the

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	approved recovery system is implemented within 60 days. (NOTE: Owners and operators may propose to the Department to terminate free product recovery activities when significant amounts of hydrocarbons are not being recovered. When free product activities have been terminated, owners and operators must inspect the monitoring wells monthly for at least a year. The Department must be notified and free product recovery activities reinitiated if during the monthly well inspections it is determined the product thickness in a monitoring well exceeds 0.02 ft. The monthly well inspection records must be kept available for review by the Department.) Verify that a Tier 2 site cleanup report is prepared and submitted to the Department, within 180 days after release confirmation.
ST.80.10.IA. A corrective action design report is required following approval of a Tier 2 assessment report or when a Tier 3 assessment was conducted (IAC 567 - 135.12(9)) [Added June 1997].	Verify that a corrective action design report (CADR) is submitted for review within 60 days of the date the Department approves or is deemed to approve a Tier 2 assessment report or a Tier 3 assessment is to be conducted. (NOTE: The Department may establish an alternative schedule for submittal.) (NOTE: A certified groundwater professional must provide a certification of completeness in the CADR.)
ST.80.11.IA. MTBE analysis is required as part of investigation and remediation of UST contamination (IAC 567-135.19) [Added April 2001].	Verify that soil and water samples are analyzed for Methyl Tertiary-Butyl Ether (MTBE) when collected for risk-based corrective. Verify that the analytical data is submitted in the format prescribed by the Department. (NOTE: The minimum detection level for MTBE in soil is 15 microgram/kg. The minimum detection level for MTBE in water is 15 microgram/l.) (NOTE: These sampling requirements include but are not limited to: - risk-based corrective action (RBCA) evaluations required for Tier 1, Tier 2, and Tier 3 assessments and corrective action design reports - site monitoring - site remediation monitoring.) (NOTE: Soil and water samples for the following actions are not required to be analyzed for MTBE: - closure sampling under rule 135.15(455B) unless Tier 1 or Tier 2 sampling is being performed - cite checks under subrule 135.7(3) unless Tier 1 or Tier 2 sampling is being performed - if prior analysis at a site under 135.19(2) has not shown MTBE present in soil or groundwater

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	- if the department determines MTBE analysis is no longer needed at a site.) (NOTE: When having soil or water analyzed for MTBE from contamination caused by petroleum or hazardous substances, owners and operators of UST systems must use a laboratory certified for petroleum analyses. In addition, the owners and operators must ensure all soil and water samples are properly preserved and shipped within 72 hours of collection.)

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ST.90. UST DOCUMENTATION ST.90.1.IA. UST systems must maintain and submit specific documentation (IAC 567-135.4(5) and 567-135.5(6)) [Added June 1997].	Verify that the following records are submitted to the Department: - notification for all UST systems - reports of all releases - corrective actions planned or taken, including: - initial site characterization - free product removal - investigation of soil and groundwater cleanup - corrective action plan - notification before permanent closure or change in service. Verify that the following records are maintained: - corrosion expert's analysis of site corrosion potential if corrosion protection equipment is not used - documentation of operation of corrosion protection equipment - documentation of UST system repairs (maintain 1 yr, except for schedules of required calibration and maintenance provided by the release detection equipment manufacturer which are maintained for 5 yr) - recent compliance with release detection requirements (maintained 5 yr) - results of sampling, testing, or monitoring of release detection methods (maintain 1 yr except for tank tightness testing for which results are kept until the next test is performed) - result of the site investigation conducted at permanent closure. Verify that records capable of demonstrating compliance with closure requirements are maintained. Verify that the results of the excavation zone assessment are maintained for at least 3 yr after completion of permanent closure or change-in-service in one of the following ways: - by the owners and operators who took the UST system out of service - by the current owners and operators of the UST system site - by mailing these records to the Department if they cannot be maintained at the closed facility.

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ST.95. CHANGES IN SERVICE OR CLOSURE OF USTS ST.95.1.IA. Temporary closure of a UST system must be in accordance with specific requirements (IAC 567-135.15(1)) [Citation Revised June 1997]. ST.95.2.IA. Owners and operators must follow general guidelines for permanent closure or changes-in-service of a UST system (IAC 567-135.15(2)) [Citation Revised June 1997].	(NOTE: The requirements of this section apply to the following deferred UST systems: - wastewater treatment tank systems - any UST systems containing radioactive material regulated under the Federal Atomic Energy Act of 1954 (42 USC 2011 and following) - any UST system that is part of an emergency generator system at nuclear power generation facilities regulated by the Nuclear Regulatory Commission under 10 CFR 50 Appendix A - airport hydrant fuel distribution systems - UST systems with field-constructed tanks.) Verify that corrosion protection and release detection continue to be performed during temporary closure of a UST system (NOTE: The UST system is empty when all materials have been removed using commonly employed practices so that no more than 2.5 cm (1 in.) of residue, or 0.3 percent by weight of the total capacity of the UST system, remain in the system.) Verify that if the UST system is closed 3 months or more, the following additional tasks are performed: - the Department is notified in writing of the temporary closure - vent lines are open and functioning - other lines, pumps, manways, and ancillary equipment are capped and secured. Verify that, if the UST system is closed more than 12 months, tank tags are returned and the UST system is permanently closed if it does not meet performance standards for new UST systems or upgrading requirements (other than spill and overfill equipment). (NOTE: The Department can provide an extension of the 12 month temporary closure period. Owners and operators must complete a closure site assessment before applying for such an extension.) (NOTE: See ST.95.1.IA. for applicability.) Verify that, at least 30 days before beginning either permanent closure or a change-in-service, the Department is notified. Verify that the required assessment of the excavation zone is performed after

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June 1997] ST.95.3.IA. The UST system site must be assessed at the closure or when there is a change-in-service (IAC 567-135.15(3)(a) through (d) and (f)) [Added June 1997 ; Revised February 2010]	notifying the Department but before completion of the permanent closure or a change-in-service. Verify that, to permanently close a tank or piping, owners and operators empty and clean them by removing all liquids and accumulated sludge. Verify that all tanks taken out of service permanently are either removed from the ground or filled with an inert solid material. Verify that the piping is either removed from the ground or the ends plugged with an inert solid material. Verify that, when permanently closing a tank by filling with inert solid material, the tank is not filled until a closure report is approved by the Department and then is filled within 30 days after Department approval. Verify that the owner and operator notifies the Department within 15 days after filling the tank with inert solid material. Verify that, before a change-in-service, owners and operators empty and clean the tank by removing all liquid and accumulated sludge and conduct a site assessment. Verify that permanent closure procedures are followed in the replacement of tanks or piping. Verify that oral confirmation of the closure date is given to the Department of Natural Resources field office 24 h prior to the actual closure. Verify that the required assessment of the excavation zone is performed after notifying the Department, but before completion of the permanent closure or change-in-service. (NOTE: See ST.95.1.IA. for applicability.) Verify that, before permanent closure or a change-in-service is completed, owners or operators measure for the presence of a release where contamination is most likely to be present at the UST site. Verify that the soil and groundwater closure investigation is conducted or supervised by a certified groundwater professional unless the department grants an exemption and provides direct supervision of the closure investigation. (NOTE: In selecting sample types, sample locations, and measurement methods, owners and operators must consider the method of closure, the nature of the stored substance, the type of backfill, the depth to groundwater, and other factors appropriate for identifying the presence of a release.)

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	Verify that, at UST sites with a history of petroleum storage, soil and groundwater samples, in every case, are analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX) with each compound reported separately. Verify that, if there has been a history or suspected history of petroleum storage other than gasoline or gasoline blends (i.e., all grades of diesel fuel, fuel oil, kerosene, oil, and mineral spirits), or such storage history is unknown or uncertain, soil and groundwater samples are also analyzed for total extractable hydrocarbons. Verify that all samples are collected separately and shipped to a certified laboratory certified within 72 h of collection. Verify that samples are refrigerated and protected from freezing during shipment to the laboratory. Verify that, for all permanent tank and piping closures or changes-in-service, at least one water sample is taken from the first saturated groundwater zone via a monitoring well or borehole located downgradient from, and as close as possible to, the excavation but no farther away than 20 ft. Verify that, if the first saturated groundwater zone is not encountered within 10 ft below the lowest elevation of the tank excavation, groundwater sampling requirements are met, unless: - sands or highly permeable soils are encountered within 10 ft below the lowest level of the tank excavation which together with the underlying geology would, in the judgment of the Department, pose the reasonable possibility that contamination may have reached groundwaters deeper than 10 ft below the lowest level of the tank excavation - indications of potential groundwater contamination, including petroleum products in utility lines, petroleum products in private wells, petroleum product vapors in basements or other structures, occur in the area of the tank installation undergoing closure or change-in-service. Verify that, for permanent closure by tank removal, the Departmental guidance document entitled "Underground Storage Tank Closure Procedures for Tank and Piping Removal" is followed. (NOTE: If sands or other highly permeable soils are encountered, alternative sampling methods may be required.) Verify that, for closing a tank in place by filling with an inert solid material or for a change-in-service, the Departmental guidance document entitled "Underground Storage Tank Closure for Filling in Place" is followed. (NOTE: These site assessment requirements are satisfied if one of the external release detection methods is operating in accordance with the requirements in IAC 135.5(4) at the time of closure and indicates no release has occurred.)

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REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
ST.95.4.IA. Owners and operators must submit a closure report for the closure or change-in-service of UST systems (IAC 567-135.15(3)(e)) [Added June 1997].	(NOTE: See ST.95.1.IA. for applicability.) Verify that a closure report is submitted to the Department within 45 days of the tank removal or sampling for a closure in place. Verify that the report includes all of the following: - all laboratory analytical reports - soil boring and well or borehole construction details and stratigraphic logs - a dimensional drawing showing location and depth of all tanks, piping, sampling, and wells or boreholes, and contaminated soil encountered. Verify that the tank tags are returned with the closure report.
ST.95.5.IA. Specific steps must be taken if contaminated soils, contaminated groundwater, or free product is discovered (IAC 567-135.15(3)(g)) [Added June 1997].	(NOTE: See ST.95.1.IA. for applicability.) Verify that, if contaminated soils, contaminated groundwater, or free product as a liquid or vapor is discovered during the site assessment or by any other manner, the Department is immediately contacted and corrective action is taken. (NOTE: If contamination appears extensive or the groundwater is known to be contaminated, a full assessment of the contamination will be required. When a full assessment is required or anticipated, collection of the required closure samples is not required. If contamination appears limited to soils, overexcavation of the contaminated soils may be allowed at the time of closure.)

Appendix 10-1

Federal Regulations and Professional Standards Adopted by Reference

(Source: IAC 567-23.1) [Revised February 2007]

In Iowa Administrative Code (IAC) 567-23.1(1) and (2), the State of Iowa adopts by reference the Federal standards of performance for new stationary sources of 40 Code of Federal Regulations (CFR) 60 as amended and corrected through 22 April 1994, and 40 CFR 503 as adopted on 19 February 1993. (NOTE: 40 CFR 60.530 through 60.539b are not adopted.) The adopted regulations apply to the following sources:

1. petroleum storage vessels, unless exempted, for which construction, modification, or reconstruction commenced after 11 June 1973 and prior to 19 May 1978 with a capacity greater than 151,142 L (40,000 gal)
2. petroleum storage vessels, unless exempted, for which construction, modification, or reconstruction commenced after 18 May 1978 and prior to 23 July 1984 with a capacity greater than 151,142 L (40,000 gal)
3. bulk gasoline terminals, including the total of all loading racks delivering liquid product into gasoline tank trucks
4. volatile organic liquid storage vessels, unless exempted, the construction, modification, or reconstruction of which commenced after 23 July 1984.

In IAC 567-23.1(1) and (3), the State of Iowa adopts by reference the Federal standards of emissions of hazardous air pollutants of 40 CFR 61 as amended and corrected through 25 June 1993. (NOTE: 40 CFR 61.20 to 61.26, 61.90 to 61.97, 61.100 to 61.108, 61.120 to 61.127, 61.190 to 61.193, 61.200 to 61.205, 61.220 to 61.225, and 61.250 to 61.256 are not adopted.) The adopted regulations apply to the following sources/substances:

1. equipment leaks of benzene, including leaks occurring at any pumps, compressors, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, flanges, and other connectors, product accumulator vessels, and control devices or systems that handle benzene
2. equipment leaks of volatile hazardous air pollutants, including leaks occurring at any pumps, compressors, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, flanges, and other connectors, product accumulator vessels, and control devices or systems that handle benzene
3. benzene emissions from benzene storage vessels, unless exempted, including vessels storing benzene with a specific gravity within the range of gravities specified in American Society for Testing and Materials (ASTM) D 836-84 for Industrial Grade Benzene, ASTM D 835-85 for Refined Benzene-485, ASTM D 2359-85a for Refined Benzene-535, and ASTM D 4734-87 for Refined Benzene-545
4. benzene waste operations, unless exempted, including facilities at which waste management units are used to treat, store, or dispose of waste generated by any manufacturing facility.

SECTION 11

TOXIC SUBSTANCES MANAGEMENT

Iowa Supplement, February 2010

This section covers the state requirements for Toxic Substances Management and is intended to supplement the U.S. TEAM Guide. Refer to the U.S. TEAM Guide and the DOD Component Supplements for Federal, DOD, and service-specific requirements.

Definitions

- *Act* - the Iowa Radon Testing Act (Iowa Code 136B) (Iowa Administrative Code (IAC) 641-43.2).
- *Adequate Quality Control* - a plan or design which ensures the authenticity, integrity, and accuracy of samples, including dust, soil, and paint chip or paint film samples. Adequate quality control also includes provisions for representative sampling (IAC 641-70.2) [Added May 1998].
- *Building* - a structure enclosed with exterior walls or fire walls, built, erected, and framed of component structural parts, and designed for the housing, shelter, enclosure, and support of individuals (IAC 641-43.2).
- *Certificate of Mailing* - certified mail with return receipt or its equivalent (IAC 641-69.2) [Added April 1999].
- *Certified Elevated Blood Lead (EBL) Inspection Agency* - an agency that has met the requirements of 641-70.5(135) and that has been certified by the department (IAC 641-70.2) [Added May 1998].
- *Certified Elevated Blood Lead (EBL) Inspector* - a person who has met the requirements of 641-70.5(135) and who has been certified by the department (IAC 641-70.2) [Added May 1998].
- *Certified Lead Abatement Contractor* - a person who has met the requirements of 641-70.5(135) and who has been certified by the department (IAC 641-70.2) [Added May 1998].
- *Certified Lead Abatement Worker* - a person who has met the requirements of 641-70.5(135) and who has been certified by the department (IAC 641-70.2) [Added May 1998].
- *Certified Lead Inspector* - a person who has met the requirements of 641-70.5(135) and who has been certified by the department (IAC 641-70.2) [Added May 1998].
- *Certified Lead Professional* - a person who has been certified by the department as a lead inspector, elevated blood lead (EBL) inspector, lead abatement contractor, lead abatement worker, or sampling technician (IAC 641-70.2) [Added May 1998; Revised April 2002].
- *Certified Person* - a certified radon measurement specialist or certified radon measurement laboratory as defined by this chapter (IAC 641-43.2).
- *Certified Radon Measurement Laboratory (Certified Laboratory)* - a commercial laboratory which may analyze samples or test for radon decay products and meets the provisions for certification in this chapter (IAC 641-43.2).
- *Certified Radon Measurement Specialist (Certified Specialist)* - an individual who performs radon or radon progeny measurements in buildings and provides professional or expert advice on radon and radon progeny measurements, radon entry routes, and other radon related activities; is knowledgeable in the health risks

associated from exposure to radon; and who meets the provisions for certification in this chapter (IAC 641-43.2).

- *Certified Sampling Technician* - a person who has met the requirements of 641-70.5(135) and who has been certified by the department (IAC 641-70.2) [Added May 1998; Revised April 2002].
- *Child-Occupied Facility* - a building, or portion of a building, constructed prior to 1978, visited by the same child six years of age or under, on at least two different days within any week (Sunday through Saturday period, provided that each day's visit lasts at least three hours and the combined weekly visits last at least six hours). Child-occupied facilities may include, but are not limited to, day-care centers, preschools and kindergarten classrooms (IAC 641-70.2) [Added May 1998].
- *Clearance Levels* - the value that indicates the maximum amount of lead permitted in dust on a surface following completion of an abatement activity. The value for a single-surface sample from a floor is 40 micrograms per square foot. The value for a single-surface sample from an interior windowsill is 250 micrograms per square foot. The value for a single-surface sample from a window trough is 400 micrograms per square foot (IAC 641-70.2) [Added May 1998; Revised April 2002].
- *Clearance Testing* - an activity conducted following interim controls, lead abatement, paint stabilization, standard treatments, ongoing lead-based paint maintenance, or rehabilitation to determine that the hazard reduction activities are complete and that no soil-lead hazards or dust-lead hazards exist in the dwelling unit or worksite. Clearance testing includes a visual assessment, the collection and analysis of environmental samples, the interpretation of sampling results, and the preparation of a report (IAC 641-70.2) [Added April 2002].
- *Common Area* - a portion of the building that is generally accessible to all occupants. This includes, but is not limited to, hallways, stairways, laundry and recreational rooms, playgrounds, community centers, garages, and boundary fences (IAC 641-70.2) [Added May 1998].
- *Common Area Group* - a group of common areas that are similar in design, construction, and function. Common area groups include, but are not limited to, hallways, stairwells, and laundry rooms (IAC 641-70.2) [Added April 2002].
- *Component Or Building Component* - specific design or structural elements or fixtures of a building, residential dwelling, or child-occupied facility that are distinguished from each other by form, function, and location. These include, but are not limited to, interior components such as ceilings, crown moldings, walls, chair rails, doors, door trim, floors, fireplaces, radiators and other heating units, shelves, shelf supports, stair treads, stair risers, stair stringers, newel posts, railing caps, balustrades, windows and trim (including sashes, window heads, jambs, sills or stools and troughs), built-in cabinets, columns, beams, bath room vanities, countertops, and air conditioners; and exterior components such as painted roofing, chimneys, flashing, gutters and downspouts, ceilings, soffits, fascias, rake boards, cornerboards, bulkheads, doors and door trim, fences, floors, joists, latticework, railings and railing caps, siding, handrails, stair risers and treads, stair stringers, columns, balustrades, windowsills or stools and troughs, casing, sashes and wells, and air conditioners (IAC 641-70.2) [Added May 1998].
- *Composite Sample* - the collection of more than one sample of the same medium (e.g., dust, soil, or paint) from the same type of surface (e.g., floor, interior windowsill, or window trough) such that multiple samples can be analyzed as a single sample (IAC 641-70.2) [Added April 2002].
- *Containment* - a process to protect workers and the environment by controlling exposures to the lead-contaminated dust and debris created during an abatement (IAC 641-70.2) [Added May 1998].
- *Credentialed Radon Mitigation Specialist (Mitigation Specialist)* - an individual who evaluates diagnostic tests to determine appropriate radon or radon progeny mitigation strategies for a building, designs mitigation systems, installs or supervises the installation of radon or radon progeny mitigation techniques on buildings, and meets the requirements for credentialing provided by this chapter (IAC 641-44.2).

- *Department* - Iowa Department of Public Health (IAC 641-43.2 and 641-44.2).
- *Deteriorated Paint* - any interior or exterior paint or other coating that is cracking, flaking, chipping, peeling, or chalking, or any paint or coating located on an interior or exterior surface that is otherwise damaged or separated from the substrate of a building component (IAC 641-70.2) [Added May 1998; Revised April 2002].
- *Diagnostic Tests* - tests performed or procedures used to determine appropriate mitigation methods for a building (IAC 641-44.2).
- *Discipline* - one of the specific types or categories of lead-based paint activities identified in this chapter for which individuals may receive training from approved courses and become certified by the department. For example, lead inspector is a discipline (IAC 641-70.2) [Added May 1998].
- *Distinct Painting History* - the application history, as indicated by its visual appearance or a record of application, over time, of paint or other surface coatings to a component or room (IAC 641-70.2) [Added May 1998].
- *Documented Methodologies* - methods or protocols used to sample for the presence of lead in paint, dust, and soil (IAC 641-70.2) [Added May 1998].
- *Dripline* - the area within three feet surrounding the perimeter of a building (IAC 641-70.2) [Added April 2002].
- *Dust-lead Hazard* - surface dust in residential dwellings or child-occupied facilities that contains a mass-per-area concentration of lead equal to or exceeding 40 micrograms per square foot on floors, 250 micrograms per square foot on interior windowsills, and 400 micrograms per square foot on window troughs based on wipe samples. A dust-lead hazard is present in a residential dwelling or child-occupied facility when the weighted arithmetic mean lead loading for all single-surface or composite samples of floors and interior windowsills is equal to or greater than 40 micrograms per square foot on floors, 250 micrograms per square foot on interior windowsills, and 400 micrograms per square foot on window troughs based on wipe samples. A dust-lead hazard is present on floors, interior windowsills, or window troughs in an unsampled residential dwelling in a multifamily dwelling if a dust-lead hazard is present on floors, interior windowsills, or window troughs, respectively, in at least one sampled residential unit on the property. A dust-lead hazard is present on floors, interior windowsills, or window troughs in an unsampled common area in a multifamily dwelling if a dust-lead hazard is present on floors, interior windowsills, or window troughs, respectively, in at least one sampled common area in the same common area group on the property (IAC 641-70.2) [Added April 2002].
- *Dwelling Unit* - a single, unified combination of rooms designed for use as a dwelling by one family (IAC 641-69.2) [Added April 1999].
- *Elevated Blood Lead (EBL) Child* - any child who has had one venous blood lead level greater than 20 micrograms per decaliter or at least two venous blood lead levels of 15 to 19 micrograms per decaliter (IAC 641-70.2) [Added May 1998].
- *Elevated Blood Lead (EBL) Inspection* - an inspection to determine the sources of lead exposure for an elevated blood lead (EBL) child and the provision within ten working days of a written report explaining the results of the investigation to the owner and occupant of the residential dwelling or child-occupied facility being inspected and to the parents of the elevated blood lead (EBL) child (IAC 641-70.2) [Added May 1998].
- *Elevated Blood Lead (EBL) Inspection Agency* - an agency that employs or contracts with individuals who perform elevated blood lead (EBL) inspections. Elevated blood lead (EBL) inspection agencies may also employ or contract with individuals who perform other lead-based paint activities (IAC 641-70.2) [Added April 2002].

- *Emergency Renovation, Remodeling, and Repainting* - renovation, remodeling, and repainting activities necessitated by nonroutine failures of equipment that were not planned but resulted from a sudden, unexpected event that, if not immediately attended to, presents a safety or public health hazard or threatens equipment or property with significant damage (IAC 641-69.2) [Added April 1999].
- *Encapsulant* - a substance that forms a barrier between lead-based paint and the environment using a liquid-applied coating (with or without reinforcement materials) or an adhesively bonded coating material (IAC 641-70.2) [Added May 1998].
- *Encapsulation* - the application of an encapsulant (IAC 641-70.2) [Added May 1998].
- *Enclosure* - the use of rigid, durable construction materials that are mechanically fastened to the substrate in order to act as a barrier between lead-based paint and the environment (IAC 641-70.2) [Added May 1998].
- *Firm* - a company, partnership, corporation, sole proprietorship, association, or other business entity, other than an elevated blood lead (EBL) inspection agency, that performs or offers to perform lead-based paint activities (IAC 641-70.2) [Added April 1999; Revised April 2002].
- *Hazardous Lead-Based Paint* - lead-based paint that is present on a friction surface where there is evidence of abrasion or where the dust-lead level on the nearest horizontal surface underneath the friction surface (e.g., the windowsill or floor) is equal to or greater than the dust-lead hazard level, lead-based paint that is present on an impact surface that is damaged or otherwise deteriorated from impact, lead-based paint that is present on a chewable surface, or any other deteriorated lead-based paint in any residential building or child-occupied facility or on the exterior of any residential building or child-occupied facility (IAC 641-70.2) [Added April 2002].
- *Interim Controls* - a set of measures designed to temporarily reduce human exposure or likely exposure to lead-based paint hazards, including repairing deteriorated lead-based paint, specialized cleaning, maintenance, painting, temporary containment, ongoing monitoring of lead-based paint hazards or potential hazards, and the establishment and operation of management and resident education programs (IAC 641-70.2) [Added May 1998].
- *Laboratory* - any person performing analysis, not at a testing site, on a passive device to measure radon or radon progeny (charcoal canister, alpha-track, electret, etc.) (IAC 641-43.2).
- *Lead Abatement* - any measure or set of measures designed to permanently eliminate lead-based paint hazards in a residential dwelling or child-occupied facility. Abatement includes, but is not limited to, (1) the removal of lead-based paint and lead-contaminated dust, the permanent enclosure or encapsulation of lead-based paint, the replacement of lead-painted surfaces or fixtures, and the removal or covering of lead-contaminated soil and (2) all preparation, cleanup, disposal, and postabatement clearance testing activities associated with such measures. Lead abatement specifically includes, but is not limited to (IAC 641-70.2) [Added May 1998; Revised April 2002]:
 1. projects for which there is a written contract or other documentation, which provides that an individual will be conducting activities in or to a residential dwelling or child-occupied facility that shall result in or are designed to permanently eliminate lead-based paint hazards
 2. projects resulting in the permanent elimination of lead-based paint hazards that are conducted by firms or individuals certified under 641-70.5(135)
 3. projects resulting in the permanent elimination of lead-based paint hazards that are conducted by firms or individuals who, through their company name or promotional literature, represent, advertise, or hold themselves out to be in the business of performing lead-based paint abatement
 4. projects resulting in the permanent elimination of lead-based paint that are conducted in response to an abatement order. Abatement does not include renovation, remodeling, landscaping, or other activities, when such activities are not designed to permanently eliminate lead-based paint hazards, but, instead, are designed to repair, restore, or remodel a given structure or dwelling, even though these activities may incidentally result in a reduction or elimination of lead-based paint hazards. Furthermore, abatement does

not include interim controls, operations and maintenance activities, or other measures and activities designed to temporarily, but not permanently, reduce lead-based paint hazards.

- *Lead-Based Paint* - paint or other surface coatings that contain lead equal to or in excess of 1.0 milligram per square centimeter or more than 0.5 percent by weight. Lead-based paint is present on any surface that is tested and found to contain lead equal to or in excess of 1.0 milligram per square centimeter or more than 0.5 percent by weight and on any surface like a surface tested in the same room equivalent that has a similar painting history and that is found to be lead-based paint (IAC 641-70.2) [Added May 1998; Revised April 2002].
- *Lead-Based Paint Activities* - in the case of target housing and child-occupied facilities, lead inspection, elevated blood lead (EBL) inspection, lead hazard screen, risk assessment, lead abatement, visual risk assessment, clearance testing conducted after lead abatement, and clearance testing conducted after interim controls, paint stabilization, standard treatments, ongoing lead-based paint maintenance, or rehabilitation pursuant to 24 CFR 35.1340 (IAC 641-70.2) [Added May 1998; Revised April 2002].
- *Lead-Based Paint Hazard* – means hazardous lead-based paint, a dust-lead hazard or a soil-lead hazard (IAC 641-70.2) [Added May 1998; Revised April 2002].
- *Lead Hazard Screen* - a limited risk assessment activity that involves limited paint and dust sampling (IAC 641-70.2) [Added May 1998].
- *Lead Inspection* - a surface-by-surface investigation to determine the presence of lead-based paint and a determination of the existence, nature, severity, and location of lead-based paint hazards in a residential dwelling or child-occupied facility and the provision of a written report explaining the results of the investigation and options for reducing lead-based paint hazards to the person requesting the lead inspection (IAC 641-70.2) [Added May 1998].
- *Lead Professional* - a person who conducts lead abatement, lead inspections, elevated blood lead (EBL) inspections, lead hazard screens, risk assessments, visual risk assessments, clearance testing after lead abatement, or clearance testing after interim controls, paint stabilization, standard treatments, ongoing lead-based paint maintenance, or rehabilitation pursuant to 24 CFR 35.1340 (IAC 641-70.2) [Added May 1998; Revised April 2002].
- *Living Area* - any area of a residential dwelling used by at least one child six years of age or less, including, but not limited to, living rooms, kitchen areas, dens, playrooms, and children's bedrooms (IAC 641-70.2) [Added May 1998].
- *Mitigation System* - any system or materials installed for the purpose of reducing radon or radon progeny concentrations (IAC 641-44.2).
- *Mitigator* - a person who installs mitigation systems for the purpose of abating radon levels within buildings (IAC 641-44.2).
- *Multifamily Dwelling* - a structure that contains more than one separate residential dwelling unit, which is used or occupied, or intended to be used or occupied, in whole or in part, as the home or residence of one or more persons (IAC 641-70.2) [Added May 1998].
- *Occupant Protection Plan* - a plan developed by a certified lead abatement contractor prior to the commencement of lead abatement in a residential dwelling or child-occupied facility that describes the measures and management procedures that will be taken during lead abatement to protect the building occupants from exposure to any lead-based paint hazards (IAC 641-70.2) [Added May 1998].
- *Paint-lead Hazard* - the presence of hazardous lead-based paint in a residential dwelling or a child-occupied facility (IAC 641-70.2) [Added April 2002].

- *Permanently Covered Soil* - soil which has been separated from human contact by the placement of a barrier. Consisting of solid relatively impermeable materials, such as pavement or concrete. Grass, mulch, and other landscaping materials are not considered permanent covering (IAC 641-70.2) [Added May 1998].
- *Person* - an individual, corporation, partnership, firm, association, trust, estate, public or private institution, group, agency, any other state or political subdivision or agency, and a legal successor, representative, agency or agencies of the entities listed in this paragraph (IAC 641-43.2).
- *Play Area* - an area of frequent soil contact by children of less than six years of age as indicated by, but not limited to, factors including the following: the presence of play equipment (sandboxes, swing sets, and sliding boards), toys, or other children's possessions, observations of play patterns, or information provided by parents, residents, caregivers, or property owners (IAC 641-69.2) [Added April 2002].
- *Radon* - the radioactive noble gas radon-222 (IAC 641-43.2 and 641-44.2).
- *Radon Progeny* - the short-lived radonnuclides formed as a result of the decay of radon-222, including polonium-218, lead-214, bismuth-214, and polonium-214 (IAC 641-43.2 and 64-44.2).
- *Recognized laboratory* - an environmental laboratory recognized by the U.S. Environmental Protection Agency pursuant to Section 405(b) of the Federal Toxic Substance Control Act as capable of performing an analysis for lead compounds in paint, soil, and dust (IAC 641-70.2) [Added May 1998].
- *Reduction* - measures designed to reduce or eliminate human exposure to lead-based paint hazards through methods including interim controls and abatement (IAC 641-70.2) [Added May 1998].
- *Rehabilitation* - the improvement of an existing structure through alterations, incidental additions, or enhancements. Rehabilitation includes repairs necessary to correct the results of deferred maintenance, the replacement of principal fixtures and components, improvements to increase the efficient use of energy, and installation of security devices (IAC 641-70.2) [Added April 2002].
- *Renovation, Remodeling, Repainting* - modifying any existing structure or portion of a structure where painted surfaces are disturbed, unless the activity fits the criteria of lead abatement as defined in 641-70.2(135) and is performed by a certified lead abatement contractor as defined in 641-70.2(135). This includes, but is not limited to, removing walls, ceilings, and other painted building components; window replacement; floor refinishing; and sanding, scraping, stripping, water blasting, or otherwise removing paint (IAC 641-69.2) [Added April 1999].
- *Residential Dwelling* (IAC 641-70.2) [Added May 1998] -
 1. a detached single-family dwelling unit, including the surrounding yard, attached structures such as porches and stoops, and detached buildings and structures including, but not limited to, garages, farm buildings, and fences, or
 2. a single-family dwelling unit in a structure that contains more than one separate residential dwelling unit, which is used or occupied, or intended to be used or occupied, in whole or part, as the home or residence of one or more persons.
- *Risk Assessment* - an investigation to determine the existence, nature, severity, and location of lead-based paint hazards in a residential dwelling or child-occupied facility and the provision of a written report explaining the results of the investigation and options for reducing lead-based paint hazards to the person requesting the risk assessment (IAC 641-70.2) [Added May 1998].
- *Soil-lead Hazard* - bare soil on residential real property or on the property of a child occupied facility that contains total lead in excess of 400 parts per million for the dripline, mid-yard, and play areas. A soil-lead hazard is present in a dripline, mid-yard, or play area when the soil-lead concentration from a composite sample of bare soil is equal to or greater than 400 parts per million (IAC 641-70.2) [Added April 2002].

- *Target Housing* - housing constructed prior to 1978 with the exception of housing for the elderly or for persons with disabilities, and housing which does not contain a bedroom, unless at least one child, six years of age or less, resides or is expected to reside in the housing for the elderly or persons with disabilities or housing which does not contain a bedroom (IAC 641-70.2) [Added May 1998; Revised April 1999].
- *Visual Inspection For Clearance Testing* - the visual examination of a residential dwelling or a child-occupied facility following lead abatement or following interim controls, paint stabilization, standard treatments, ongoing lead-based paint maintenance, or rehabilitation pursuant to 24 CFR 35.1340 to determine whether or not the lead abatement, interim controls, paint stabilization, standard treatments, ongoing lead-based paint maintenance, or rehabilitation has been successfully completed (IAC 641-70.2) [Added May 1998; Revised April 2002].
- *Visual Risk Assessment* - a visual assessment to determine the presence of deteriorated paint or other potential sources of lead-based paint hazards in a residential dwelling or child-occupied facility and the provision of a written report explaining the results of the assessment to the person requesting the visual risk assessment (IAC 641-70.2) [Added May 1998].
- *Working Level* - the concentration of radon progeny that will result in 130,000 million electron volts of alpha particle energy released per liter of air. Working level is a measure of radon decay product concentration in air (IAC 641-43.2).
- *Working Level Month* - a cumulative exposure to radon decay products calculated by multiplying the radon daughter concentration in units of working levels by the number of hours exposed and dividing by 170 (IAC 641-44.2).
- *X-Ray Fluorescence Analyzer (XRF)* - an instrument that determines lead concentrations in milligrams per square centimeter (mg/CM²) using the principle of x-ray fluorescence (IAC 641-70.2) [Added May 1998].

**TOXIC SUBSTANCES MANAGEMENT
GUIDANCE FOR IOWA CHECKLIST USERS**

REFER TO CHECKLIST ITEMS:

PCB Management	
PCB Missing Checklist Items	T1.2.1.IA.
PCB General	[Deleted]
PCB Records	[Deleted]
PCB Spills	[Deleted]
PCB Disposal	[Deleted]
(NOTE: These regulations have been reconstituted. See SO.175.25.IA. through SO.175.35.IA. on Discarded Appliance Demanufacturing.)	
Asbestos Management	
Asbestos Missing Checklist Items	T2.2.1.IA.
Asbestos State Specific	T2.3.1.IA. and T2.3.2.IA.
Radon Management	
All Federal Facilities	T3.1.1.IA. and T.3.1.4.IA.
Radon Missing Checklist Items	T3.2.1.IA.
Lead Based Paint	
LBP Missing Checklist Items	T4.2.1.IA.
Notification Requirements	T4.10.1.IA. through T4.10.4.IA.
Training Requirements	T4.15.1.IA.
Work Practice Standards	T4.20.1.IA.

**TOXIC SUBSTANCE MANAGEMENT
GUIDANCE FOR IOWA APPENDIX USERS**

APPENDIX NUMBERS:

APPENDIX ITEMS:

11-1	Certification of Attempted Delivery
11-2	Work Practice Standards for Conducting Lead-based Paint Activities in Target Housing and Child-occupied Facilities

COMPLIANCE CATEGORY: TOXIC SUBSTANCE MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
PCB MANAGEMENT T1.2. Missing Checklist Items T1.2.1.IA. Federal facilities are required to comply with all applicable state regulatory requirements not contained in the checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of findings).	Determine whether any new regulations have been issued since the finalization of the manual. Determine whether the Federal facility has activities or facilities that are regulated but not addressed in the checklists. Verify that the Federal facility is in compliance with all applicable and newly issued regulations.

COMPLIANCE CATEGORY: TOXIC SUBSTANCE MANAGEMENT Iowa Supplement		
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010	
PCBS		
T1.10. General		
T1.10.1.IA. [Deleted April 2002].	(NOTE: These regulations have been reconstituted. See SO.175.25.IA. through SO.175.35.IA. on Discarded Appliance Demanufacturing.)	
T1.10.2.IA. [Deleted April 2002].	(NOTE: These regulations have been reconstituted. See SO.175.25.IA. through SO.175.35.IA. on Discarded Appliance Demanufacturing.)	
T1.10.3.IA. [Deleted April 2002].	(NOTE: These regulations have been reconstituted. See SO.175.25.IA. through SO.175.35.IA. on Discarded Appliance Demanufacturing.)	
T1.10.4.IA. [Deleted April 2002].	(NOTE: These regulations have been reconstituted. See SO.175.25.IA. through SO.175.35.IA. on Discarded Appliance Demanufacturing.)	

COMPLIANCE CATEGORY: TOXIC SUBSTANCE MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
T1.15. PCB RECORDS T1.15.1.IA. [Deleted April 2002].	 (NOTE: These regulations have been reconstituted. See SO.175.25.IA. through SO.175.35.IA. on Discarded Appliance Demanufacturing.)

COMPLIANCE CATEGORY: TOXIC SUBSTANCE MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
T1.25. PCB SPILLS T1.25.1.IA. [Deleted April 2002].	 (NOTE: These regulations have been reconstituted. See SO.175.25.IA. through SO.175.35.IA. on Discarded Appliance Demanufacturing.)

COMPLIANCE CATEGORY: TOXIC SUBSTANCE MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
T1.50. PCB DISPOSAL T1.50.1.IA. [Deleted April 2002].	 (NOTE: These regulations have been reconstituted. See SO.175.25.IA. through SO.175.35.IA. on Discarded Appliance Demanufacturing.)

COMPLIANCE CATEGORY: TOXIC SUBSTANCE MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
ASBESTOS MANAGEMENT T2.2. Missing Checklist Items T2.2.1.IA. Federal facilities are required to comply with all applicable state regulatory requirements not contained in the checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of findings).	Determine whether any new regulations have been issued since the finalization of the manual. Determine whether the Federal facility has activities or facilities that are regulated but not addressed in the checklists. Verify that the Federal facility is in compliance with all applicable and newly issued regulations.

COMPLIANCE CATEGORY: TOXIC SUBSTANCE MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
ASBESTOS MANAGEMENT T2.3. Asbestos State Specific T2.3.1.IA. Permittees for asbestos removal and encapsulation must meet recordkeeping requirements (IAC 8 75-155.4) [Added April 2002; Revised February 2008]. T2.3.2.IA. Permittees for asbestos removal and encapsulation must meet notification requirements (IAC 8 75-155.5) [Added April 2002; Revised February 2008; Revised February 2009].	Verify that the permittee keeps a record of each asbestos project it performs and makes the record available to the division at any reasonable time. Verify that the records are kept for at least six years. Verify that the records include: - the name, address, and license number of the individual who supervised the asbestos project and of each employee or agent who worked on the project - the location and a description of the project and the amount of asbestos material that was removed - the start and completion dates of each instance of removal or encapsulation - a summary of the procedures that were used to comply with all applicable standards - the name and address of each asbestos disposal site where the asbestos-containing waste was deposited - a receipt from the asbestos disposal site indicating the amount of asbestos and disposal date - copies of reports required by 29 CFR 1926.1101(k)(3)(iii) - copies of air sampling results or initial negative assessment as required by 29 CFR 1926.1101(c) - material safety data sheets for all solvents used on the asbestos project. Verify that the permittees notify the Division at least 10 working days before an asbestos project begins. (NOTE: A project begins when site preparations for asbestos abatement, encapsulation, or removal begin; when asbestos abatement, encapsulation, or removal begins; or when any demolition begins, whichever is sooner.) (NOTE: When there is an immediate danger to life, health or property, the permittee may file the notice within five days after beginning the project. An explanation of the emergency must be included. For structures that are both located in an area that is subject to a disaster emergency proclamation and damaged by circumstances related to those that caused the disaster emergency proclamation, the permittee must file the notice as early as possible, but not later than the working day following the initiation of the project.)

COMPLIANCE CATEGORY: TOXIC SUBSTANCE MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010

COMPLIANCE CATEGORY: TOXIC SUBSTANCE MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
RADON GAS T3.1. All Federal Facilities T3.1.1.IA. Radon mitigation specialists must be credentialed (IAC 641-44.1). T3.1.2.IA. Radon mitigation specialists must keep specific records (IAC 641 -44.6) [Revised April 2005 ; Revised February 2008]. T3.1.3.IA. All persons performing measurements for radon or radon progeny must be certified (IAC 641-43.1, IAC 641 -43.3(1) and (3) and 641-43.8) [Revised February 2007; Revised February 2008].	Verify that all persons performing a batement for radon or radon progeny in buildings, other than those that they occupy or those they are constructing for their own occupancy, are credentialed. Verify that certified mitigation specialists ensure that all radon mitigation systems for which they are responsible are installed following acceptable guidelines. Verify that a credentialed radon mitigation specialist maintains, for 5 yr, reports of each mitigation activity, including, but not limited to: - the address or location of the building - the name and phone number of the owner(s) of the building where the radon mitigation is conducted - a written description of each mitigation system and materials installed, diagnostic test results, and cost of each system - the name of the certified radon measurement specialist or technician who performed radon or radon progeny testing before and after radon mitigation of a building, unless the business has waived the testing requirement, and the mitigation specialist saves a copy of the signed waiver - the results of any initial or follow-up radon or radon progeny measurements performed and the measurement methods utilized unless the building owner has waived the testing requirement - the results of the postmitigation radon measurements performed, including method of measurement and all pertinent dates, unless the business has waived the postmitigation measurement testing requirement, and the mitigation specialist maintains a copy of the signed waiver. (NOTE: This checklist item applies to all persons performing measurements for radon or radon progeny in buildings, other than those which they own or occupy, and who provide the results of these measurements to the owner or occupant of these structures.) Verify that all persons performing measurements for radon or radon progeny are certified by the department of public health. (NOTE: This requirement also applies to persons whose place of business is located in Iowa, or in a state other than Iowa, and who offer radon testing to residents of Iowa either directly or through mail.)

COMPLIANCE CATEGORY: TOXIC SUBSTANCE MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
T3.1.4.IA. Radon cer tified persons m ust f ollow specific reporting re quirements (IA C 641-43.6) [Revised A pril 2005].	(NOTE: Certification requirements do not apply to: - persons who test for radon/radon decay products in buildings that they own - persons testing for radon/radon decay products as part of scientific research approved by the department - state o fficials co nducting radon testing as p art o f the state's r adon t esting program or local officials acting on behalf of the state, and approved by the department - officials c onducting r adon t esting a s pa rt o f government pr ograms i n the United States or contractors working for the United States government.) Verify that a certified person submits to the Department within 30 days after any radon/radon progeny testing, or at the request of the Department prior to testing: - the address or location of the building - the name and telephone number of the owner(s) of the building - the n ame an d t elephone n umber o f t he o wner(s) o f t he building where t he radon testing is conducted - the results of any tests performed. Verify t hat t he r esults f or each t est co nducted i nclude, b ut ar e n ot n ecessarily limited to: - the method used for radon or radon decay product testing, media tested, and conditions under which the testing is performed - the level or floor of building where the test(s) are conducted - the results of the test(s) in picoCuries per liter of radon gas or working level of radon decay products - the date on which the test is conducted - the purpose of the test. Verify that the Department is notified within 14 days of any changes in testing results or procedures.

COMPLIANCE CATEGORY: TOXIC SUBSTANCE MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
RADON GAS T3.2. Missing Checklist Items T3.2.1.IA. Federal facilities are required to comply with all applicable state regulatory requirements not contained in the checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of findings).	Determine whether any new regulations have been issued since the finalization of the manual. Determine whether the Federal facility has activities or facilities that are regulated but not addressed in the checklists. Verify that the Federal facility is in compliance with all applicable and newly issued regulations.

COMPLIANCE CATEGORY: TOXIC SUBSTANCE MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
LEAD-BASED PAINT T4.2. Missing Checklist Items T4.2.1.IA. Federal facilities are required to comply with all applicable state regulatory requirements not contained in the checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of findings).	Determine whether any new regulations have been issued since the finalization of the manual. Determine whether the Federal facility has activities or facilities that are regulated but not addressed in the checklists. Verify that the Federal facility is in compliance with all applicable and newly issued regulations.

COMPLIANCE CATEGORY: TOXIC SUBSTANCE MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
LBP MANAGEMENT T4.10. Notification Requirements T4.10.1.IA. Persons who perform renovation, remodeling, and repainting in target housing must meet notification requirements (IAC 641-69.1, 69.3, 641-69.6, and 69.7) [Added April 1999; Revised April 2002; Revised April 2004].	(NOTE: These requirements apply to all persons who perform renovation, remodeling, and repainting for compensation in target housing, except those for minor repair and maintenance activities that disrupt less than 0.1 square feet or less of painted surfaces.) (NOTE: Renovation, remodeling, and repainting in target housing in which a lead inspector or elevated blood level (EBL) inspector has made a written determination that the components affected by the renovation are free of lead-based paint and where the person conducting the renovation, remodeling, or repainting has obtained a copy of the written determination are exempt from these notification requirements.) Verify that the pamphlet <i>Lead Poisoning: How to Protect Iowa Families</i> or the federal pamphlet, <i>Protect Your Family from Lead in Your Home</i>, is provided by the individual conducting the renovation, remodeling, and repainting to the owner and a duly occupied of each dwelling unit (including multifamily units) where renovation, remodeling, and repainting will be performed. Verify that a signed, dated acknowledgement is obtained from the owner and known adult occupant of each dwelling unit where renovation, remodeling, and repainting will be performed affirming that they have received the pamphlet and are aware of the potential health hazards from remodeling, renovating, or repainting housing containing lead-based paint. Verify that the pamphlet is provided and acknowledgement obtained no more than 60 days prior to the commencement of work. (NOTE: If a written acknowledgement cannot be obtained from an adult occupant, there is written certification that the pamphlet has been delivered to the dwelling and that a written acknowledgement could not be obtained from an adult occupant and the certification must include the following: - address of the unit to be remodeled, renovated, or repainted - date and method of delivery of the pamphlet - name of the person delivering the pamphlet - reason for lack of acknowledgement (e.g., occupant refuses to sign, no adult occupant available) - signature of the person conducting the renovating, remodeling, or repainting, and the date of signature.) Verify that, if the parties use a written contract or agreement that is written in a language other than English, the acknowledgement text is written in the same language as the text of the contract or agreement.

COMPLIANCE CATEGORY: TOXIC SUBSTANCE MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
T4.10.2.IA. Persons who perform renovation, remodeling, and repainting in multifamily target housing must meet notification requirements (IAC 641-69.4) [Added April 1999; Revised April 2002].	(NOTE: In lieu of delivering the pamphlet and written acknowledgement, the person conducting the renovating, remodeling, or repainting may obtain a certificate of mailing the pamphlet and written acknowledgement at least 7 days prior to beginning the work.) Verify that, if the general nature, location, and expected starting and ending dates of the planned renovation, remodeling, and repainting change after the initial notification has been conducted, the individual conducting the renovation, remodeling, and repainting provides further notification to the owners and occupants providing revised information on the ongoing or planned activities. Verify that the subsequent notification is provided before the individual conducting the renovation, remodeling, or repainting initiates work beyond that which was described in the original notice. (NOTE: When an adult occupant is unavailable for signature or refuses to sign the acknowledgement or receipt of the pamphlet, the individual conducting the renovating, remodeling, or repainting may certify delivery for each instance in accordance with Appendix 10-1). (NOTE: See T4.10.1.IA. for applicability.) Verify that the notification requirements of T4.10.1. are met. Verify that each owner and occupant of multifamily housing receives written notification of the intended remodeling, repainting, or renovation. Verify that the notice includes the following: - the general nature and location of the planned renovation, remodeling, and repainting activity - the expected starting and ending dates of the planned renovation, remodeling, and repainting activity - a statement of how the owners and occupants can obtain the pamphlet <i>Lead Poisoning: How to Protect Iowa Families</i> or the federal pamphlet, <i>Protect Your Family from Lead in Your Home</i> at no charge from the individual conducting the renovation, remodeling, and repainting activity. Verify that the notification is provided by the individual planning to perform the renovation, remodeling, and repainting, or by the owner on behalf of this individual. Verify that the pamphlet and written acknowledgement are delivered to the owner no more than 60 days prior to the commencement of work. (NOTE: In lieu of delivering the pamphlet and written acknowledgement to the owner, the person conducting the renovating, remodeling, or repainting may obtain a certificate of mailing the pamphlet and written acknowledgement at least 7 days prior to the beginning of work.)

COMPLIANCE CATEGORY: TOXIC SUBSTANCE MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
T4.10.3.IA. Persons who perform emergency renovation, remodeling, and repainting in target housing must meet notification requirements (IA C 641-69.5) [Added April 1999; Revised April 2002].	Verify that the individual planning to perform the renovation, remodeling, and repainting prepares, signs, and dates a statement describing the steps performed to notify all occupants of the intended renovation, remodeling, and repainting, and to provide the pamphlet <i>Lead Poisoning: How to Protect Iowa Families</i> or the federal pamphlet, <i>Protect Your Family from Lead in Your Home</i> at no charge upon request. (NOTE: See T4.10.1.IA. for applicability.) Verify that the individuals performing emergency renovation, remodeling, and repainting: - provide the pamphlet <i>Lead Poisoning: How to Protect Iowa Families</i> or the federal pamphlet, <i>Protect Your Family from Lead in Your Home</i> to the owner of the target housing where renovation, remodeling, and repainting will be performed - notify each owner and occupant of the target housing in writing of the remodeling, repainting, or renovation. Verify that the notice describes the following: - the general nature and location of the renovation, remodeling, and repainting activity - the starting and ending dates of the renovation, remodeling, and repainting activity - a statement of how the owners and occupants can obtain the pamphlet <i>Lead Poisoning: How to Protect Iowa Families</i> or the federal pamphlet, <i>Protect Your Family from Lead in Your Home</i> at no charge from the individual conducting the renovation, remodeling, and repainting activity. Verify that these activities are conducted by the individual performing the renovation, remodeling, and repainting, or by the owner on behalf of this individual. Verify that the individual planning to perform the renovation, remodeling, and repainting prepares, signs, and dates a statement describing the steps performed to notify all occupants of the intended renovation, remodeling, and repainting, and to provide the pamphlet <i>Lead Poisoning: How to Protect Iowa Families</i> or the federal pamphlet, <i>Protect Your Family from Lead in Your Home</i> at no charge upon request. (NOTE: Regardless of who performs the required notification, the individual conducting the renovation, remodeling, and repainting is responsible for ensuring compliance and is liable for any failures to do so.).

**COMPLIANCE CATEGORY:
TOXIC SUBSTANCE MANAGEMENT
Iowa Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
T4.10.4.IA. Individuals who conduct renovation, remodeling, and repainting in target housing must meet notification recordkeeping requirements (IAC 641-69.8) [Added April 1999].	(NOTE: See T4.10.1.IA. for applicability.) Verify that individuals who conduct renovation, remodeling, and repainting in target housing maintain the following records for 3 yr following completion of the work: - the address or location of the target housing where remodeling, renovation, or repainting was conducted - a list of all known occupants of the dwelling units where renovation, remodeling, or repainting was conducted at the commencement of the work - copies of signed, dated acknowledgements (required by T4.10.1) from each owner and occupant of a dwelling unit where renovation, remodeling, or repainting was conducted - copies of signed, dated acknowledgements (required by T4.10.2) from each owner of multifamily target housing where renovation, remodeling, or repainting was conducted in common areas - copies of all signed, dated statements of notification, as well as copies of all notification materials to all owners and occupants and acknowledgements (required by T4.10.3) from each owner and occupant of multifamily target housing where renovation, remodeling, or repainting was conducted in common areas - reports showing that a certified lead inspector or certified elevated blood level has made a written determination that the components affected by the renovation are free of lead-based paint - certifications of attempted delivery - certificates of mailing.

COMPLIANCE CATEGORY: TOXIC SUBSTANCE MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
LBP MANAGEMENT T4.15. Training Requirements T4.15.1.IA. Lead professionals and firms must be certified by the Department (IAC 641-70.1, 70.3 and 641-70.7) [Added May 1998; Revised April 1999; Revised April 2002; Citation Revised April 2004].	(NOTE: These requirements apply to all persons who are lead professionals in Iowa. Nothing in these regulations requires a property owner, manager, or occupant to undertake any particular lead-based paint activity.) Verify that lead professionals and firms are certified by the Department in the appropriate discipline before they conduct lead abatement, clearance testing after lead abatement, lead inspections, elevated blood lead (EBL) inspections, lead hazard screens, risk assessments, and visual risk assessments. Verify that EBL inspections are conducted only by certified EBL inspectors employed by or under contract with a certified EBL inspection agency. (NOTE: Persons who perform these lead activities within residential dwellings that they own are exempt from the certification requirement unless the residential dwelling is occupied by a person other than the owner or a member of the owner's immediate family while these activities are being performed.) Verify that firms performing lead-based paint activities other than elevated blood lead inspections after 15 September 2000, employ only appropriately certified employees to conduct lead-based paint activities. Verify that clearance testing after interim controls, paint stabilization, standard treatments, ongoing lead-based paint maintenance, and rehabilitation are conducted only by certified sampling technicians, certified lead inspector/risk assessors, or certified elevated blood lead (EBL) inspector.

COMPLIANCE CATEGORY: TOXIC SUBSTANCE MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
LBP MANAGEMENT T4.20. Work Practice Standards T4.20.1.IA. Lead abatement, lead inspections, elevated blood lead (EBL) inspections, lead hazard screens, risk assessments, and visual risk assessments must meet specific requirements (IAC 641-70.1 and 70. 6) [Added May 1 998; C itation R evised April 2004].	(NOTE: These requirements apply to all persons who are lead professionals in Iowa. Nothing i n t hese r egulations r equires a pr operty o wner, manager, or occupant to undertake any particular lead-based paint activity.) Verify that l ead abatement, lead inspections, EBL inspections, lead hazard screens, r isk as sessments, an d v isual r isk as sessments meet t he work p ractice standards listed in Appendix 10-2.

Appendix 11-1

Certification of Attempted Delivery

(Source: IAC 641-69.6) [Added April 1999; Revised April 2002]

When an adult occupant is unavailable for signature or refuses to sign the acknowledgement of receipt of the pamphlet, the individual conducting the renovating, remodeling, or repainting is permitted by subrule 69.3(2) to certify delivery for each instance. The certification shall include the address of the unit undergoing renovation, remodeling or repainting, the date and method of delivery of the pamphlet, names of the persons delivering the pamphlet, reason for lack of acknowledgement (e.g., occupant refuses to sign, no adult occupant available), the signature of the individual conducting the renovation, remodeling, and repainting, and the date of signature.

Unavailable for signature.

1. If an adult occupant is unavailable for signature, the certification shall contain the following language:
I certify that I have made a good-faith effort to deliver the pamphlet *Lead Poisoning: How to Protect Iowa Families*, or the federal pamphlet, *Protect Your Family from Lead in Your Home* to the unit listed below at the dates and times indicated, and that an adult occupant was unavailable to sign the acknowledgement. I further certify that I have left a copy of the pamphlet at the unit with the occupant.
2. Below the statement, the certification shall require the printed name and signature of the individual conducting the renovating, remodeling, or repainting, the address of the unit, the attempted delivery dates and times, and the date of signature.

Refused to sign.

1. If the occupant refuses to sign the acknowledgement, the certification shall contain the following language:
I certify that I have made a good-faith effort to deliver the pamphlet *Lead Poisoning: How to Protect Iowa Families*, or the federal pamphlet, *Protect Your Family from Lead in Your Home* to the unit listed below at the dates and times indicated, and that the occupant refused to sign the acknowledgement. I further certify that I have left a copy of the pamphlet at the unit.
2. Below the statement, the certification shall require the printed name and signature of the individual conducting the renovating, remodeling, or repainting, the address of the unit, the attempted delivery dates and times, the location where the pamphlet was left at the unit (e.g., taped to the door, slipped under the door), and the date of signature.

Appendix 11-2

Work Practice Standards for Conducting Lead-based Paint Activities in Target Housing and Child-Occupied Facilities

(Source: IAC 641-70.6) [Added May 1998; Revised April 1999; Revised April 2002]

70.6(1) Prior to March 1, 2000, when performing any lead-based paint activity described as an inspection, elevated blood lead (EBL) inspection, lead hazard screen, risk assessment, visual risk assessment, or lead abatement, a certified individual must perform that activity in compliance with the appropriate requirements below. Beginning March 1, 2000, all lead-based paint activities shall be performed according to the work practice standards in rule 70.6(135) and a certified individual must perform that activity in compliance with the appropriate requirements below.

70.6(2) A certified lead inspector/risk assessor or a certified elevated blood lead (EBL) inspector/risk assessor must conduct lead inspections according to the following standards. Beginning March 1, 2000, lead inspections shall be conducted only by a certified lead inspector/risk assessor or a certified elevated blood lead (EBL) inspector/risk assessor.

- a. When conducting an inspection, the certified lead inspector/risk assessor or elevated blood lead (EBL) inspector/risk assessor shall use the documented methodologies, including selection of rooms and components for sampling or testing, specified in Chapter 7 of the Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (1995, U.S. Department of Housing and Urban Development).
- b. Paint shall be sampled using a adequate quality control by X-ray fluorescence or by laboratory analysis using a recognized laboratory to determine the presence of lead-based paint on a surface. If sampling by X-ray fluorescence, the certified lead inspector/risk assessor or elevated blood lead (EBL) inspector/risk assessor shall use the documented methodologies specified in the Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (1995, U.S. Department of Housing and Urban Development). If sampling by laboratory analysis, the certified lead inspector/risk assessor or elevated blood lead (EBL) inspector/risk assessor shall collect paint samples using the documented methodologies specified in guidance documents issued by the department.
- c. If lead-based paint is identified through an inspection, the certified lead inspector/risk assessor or elevated blood lead (EBL) inspector/risk assessor must conduct a visual inspection to determine the presence of lead-based paint hazards and any other potential lead hazards.
- d. A certified lead inspector/risk assessor or a certified elevated blood lead (EBL) inspector/risk assessor shall prepare a written report for each residential dwelling or child-occupied facility inspected and shall provide a copy of this report to the person requesting the inspection. A certified lead inspector/risk assessor or a certified elevated blood lead (EBL) inspector/risk assessor shall maintain a copy of each written report for no fewer than three years. The inspection report shall include, at least:
 - (1) Date of each inspection;
 - (2) Address of building;
 - (3) Date of construction;
 - (4) Apartment numbers (if applicable);
 - (5) The name, address, and telephone number of the owner or owners of each residential dwelling or child-occupied facility;
 - (6) Name, signature, and certification number of each certified lead inspector/risk assessor or certified elevated blood lead (EBL) inspector/risk assessor conducting the investigation;
 - (7) Name, address, and telephone number of each laboratory conducting an analysis of collected samples;
 - (8) Each testing method and device and sampling procedure employed for paint analysis, including quality control data and, if used, the serial number of any X-ray fluorescence (XRF) device;
 - (9) Specific locations of each painted component tested for the presence of lead-based paint;
 - (10) The results of the inspection expressed in terms appropriate to the sampling method used;
 - (11) A description of the location, type, and severity of identified lead-based paint hazards, and any other potential lead hazards; and
 - (12) A description of interim controls and abatement options for each identified lead-based paint hazard and a suggested prioritization for addressing each hazard. If the use of an encapsulant or enclosure is

recommended, the report shall recommend a maintenance and monitoring schedule for the encapsulant or enclosure.

70.6(3) a certified elevated blood lead (EBL) inspector/risk assessor must conduct elevated blood lead (EBL) inspections according to the following standards. Beginning March 1, 2000, elevated blood lead (EBL) inspections shall be conducted only by a certified elevated blood lead (EBL) inspector/risk assessor.

- a. When conducting an elevated blood lead (EBL) inspection, the certified elevated blood lead (EBL) inspector/risk assessor shall use the documented methodologies, including selection of rooms and components for sampling or testing, specified in Chapter 7 of the Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (1995, U.S. Department of Housing and Urban Development).
- b. Paint shall be sampled using adequate quality control by X-ray fluorescence or by laboratory analysis using a recognized laboratory to determine the presence of lead-based paint on a surface. If sampling by X-ray fluorescence, the certified elevated blood lead (EBL) inspector/risk assessor shall use the documented methodologies specified in the Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (1995, U.S. Department of Housing and Urban Development). If sampling by laboratory analysis, the certified elevated blood lead (EBL) inspector/risk assessor shall collect paint samples using the documented methodologies specified in guidance documents issued by the department.
- c. If lead-based paint is identified through an inspection, the certified elevated blood level (EBL) inspector/risk assessor must conduct a visual inspection to determine the presence of lead-based paint hazards and any other potential lead hazards.
- d. A certified elevated blood lead (EBL) inspector/risk assessor shall prepare a written report for each residential dwelling or child-occupied facility where an elevated blood lead (EBL) inspection has been conducted and shall provide a copy of this report to the owner and the occupant of the dwelling. The report shall include, at least:
 - (1) Date of each elevated blood lead (EBL) inspection;
 - (2) Address of building;
 - (3) Date of construction;
 - (4) Apartment numbers (if applicable);
 - (5) The name, address, and telephone number of the owner or owners of each residential dwelling or child-occupied facility;
 - (6) Name, signature, and certification number of each certified elevated blood lead (EBL) inspector/risk assessor conducting the investigation;
 - (7) Name, address, and telephone number of each laboratory conducting an analysis of collected samples;
 - (8) Each testing method and device and sampling procedure employed for paint analysis, including quality control data and, if used, the serial number of any X-ray fluorescence (XRF) device;
 - (9) Specific locations of each painted component tested for the presence of lead-based paint;
 - (10) The results of the inspection expressed in terms appropriate to the sampling method used;
 - (11) A description of the location, type, and severity of identified lead-based paint hazards, and any other potential lead hazards; and
 - (12) A description of interim controls and abatement options for each identified lead-based paint hazard and a suggested prioritization for addressing each hazard. If the use of an encapsulant or enclosure is recommended, the report shall recommend a maintenance and monitoring schedule for the encapsulant or enclosure.
- e. A certified elevated blood lead (EBL) inspector/risk assessor shall maintain a written record for each residential dwelling or child-occupied facility where an elevated blood lead (EBL) inspection has been conducted for no fewer than ten years. The record shall include, at least:
 - (1) A copy of the written report required by paragraph 70.6(3)"d."
 - (2) Blood lead test results for the elevated blood lead (EBL) child.
 - (3) A record of conversations held with the owners and occupants of each residential dwelling or child-occupied facility prior to, during, and after the EBL inspection.
 - (4) Records of follow-up visits made to each residential dwelling or child-occupied facility where lead-based paint hazards are identified to ensure that lead-based paint hazards are safely repaired.

70.6(4) A certified lead inspector/risk assessor or a certified elevated blood lead (EBL) inspector/risk assessor must conduct lead hazard screens according to the following standards. Beginning March 1, 2000, lead hazard screens shall be conducted only by a certified lead inspector/risk assessor or a certified elevated blood lead (EBL) inspector/risk assessor.

- a. Background information regarding the physical characteristics of the residential dwelling or child-occupied facility and occupant use patterns that may cause lead-based paint exposure to at least one child under the age of six years shall be collected.
- b. A visual inspection of the residential dwelling or child-occupied facility shall be conducted to determine if any deteriorated paint is present and to locate at least two dust sampling locations.
- c. If deteriorated paint is present, each surface with deteriorated paint which is determined to have a distinct painting history must be tested for the presence of lead. In addition, friction surfaces where there is evidence of abrasion and impact surfaces that are damaged or otherwise deteriorated from impact and that have a distinct painting history shall be tested for the presence of lead.
- d. In residential dwellings, a minimum of two composite or single-surface dust samples shall be collected. One sample shall be collected from the floors and the other from the interior windowsills in rooms, hallways, or stairwells where at least one child under the age of six years is most likely to come in contact with dust.
- e. In multifamily dwellings and child-occupied facilities, single-surface or composite dust samples shall also be collected from common areas where at least one child under the age of six years is likely to come in contact with dust.
- f. Dust samples shall be collected using the documented methodologies specified in guidance documents issued by the department. Dust samples shall be analyzed by a recognized laboratory to determine the level of lead.
- g. Soil samples shall be collected and analyzed for lead content in exterior play areas and dripline areas where bare soil is present. In addition, soil samples shall be collected and analyzed for lead content from any other areas of the yard where bare soil is present. Soil and paint samples shall be collected using the documented methodologies specified in guidance documents issued by the department and shall be analyzed by a recognized laboratory to determine the level of lead.
- h. Paint shall be sampled using a adequate quality control by X-ray fluorescence or by laboratory analysis using a recognized laboratory to determine the presence of lead-based paint on a surface. If sampling by X-ray fluorescence, the certified lead inspector/risk assessor or elevated blood lead (EBL) inspector/risk assessor shall use the documented methodologies specified in the Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (1995, U.S. Department of Housing and Urban Development). If sampling by laboratory analysis, the certified lead inspector/risk assessor or elevated blood lead (EBL) inspector/risk assessor shall collect paint samples using the documented methodologies specified in guidance documents issued by the department.
- i. The following standards shall be used to determine whether a residential dwelling or child-occupied facility fails a lead hazard screen:
 - (1) A residential dwelling or child-occupied facility shall fail a lead hazard screen if any deteriorated paint or paint on friction or impact surfaces is found to be lead-based paint.
 - (2) A residential dwelling shall fail a lead hazard screen if any floor dust lead level in a single-surface or composite-surface dust sample is greater than 25 micrograms per square foot.
 - (3) A residential dwelling shall fail a lead hazard screen if any interior windowsill dust level in a single-surface or composite-surface dust sample is greater than 125 micrograms per square foot.
 - (4) A residential dwelling or child-occupied facility shall fail a lead hazard screen if any bare soil is found to be a soil-lead hazard.
- j. A certified lead inspector/risk assessor or a certified elevated blood lead (EBL) inspector/risk assessor shall prepare a written report for each residential dwelling or child-occupied facility where a lead hazard screen is conducted and shall provide a copy of this report to the person requesting the lead hazard screen. A certified lead inspector/risk assessor or a certified elevated blood lead (EBL) inspector/risk assessor shall maintain a copy of each written report for no fewer than three years. The report shall include, at least:
 - (1) Date of each lead hazard screen;
 - (2) Address of building;

- (3) Date of construction;
- (4) Apartment numbers (if applicable);
- (5) The name, address, and telephone number of the owner or owners of each residential dwelling or child-occupied facility;
- (6) Name, signature, and certification number of each certified lead inspector/risk assessor or certified elevated blood lead (EBL) inspector/risk assessor conducting the investigation;
- (7) Name, address, and telephone number of each recognized laboratory conducting an analysis of collected samples;
- (8) Results of the visual inspection;
- (9) Each testing method and device and sampling procedure employed for paint analysis, including quality control data and, if used, the serial number of any X-ray fluorescence (XRF) device;
- (10) Specific locations of each painted component tested for the presence of lead-based paint;
- (11) All results of laboratory analysis of collected paint, dust, and soil samples;
- (12) Any other sampling results;
- (13) Background information collected regarding the physical characteristics of the residential dwelling or child-occupied facility and occupant use patterns that may cause lead-based paint exposure to at least one child under the age of six years; and
- (14) Whether the residential dwelling or child-occupied facility passed or failed the lead hazard screen and recommendations, if warranted, for a follow-up lead inspection or risk assessment, and, as appropriate, any further actions.

70.6(5) A certified lead inspector/risk assessor or a certified elevated blood lead (EBL) inspector/risk assessor must conduct risk assessments according to the following standards. Beginning March 1, 2000, risk assessments shall be conducted only by a certified lead inspector/risk assessor or a certified elevated blood lead (EBL) inspector/risk assessor.

- a. Background information regarding the physical characteristics of the residential dwelling or child-occupied facility and occupant use patterns that may cause lead-based paint exposure to at least one child under the age of six years shall be collected.
- b. A visual inspection for risk assessment shall be undertaken to locate the existence of deteriorated paint and other potential lead hazards and to assess the extent and causes of the paint deterioration.
- c. If deteriorated paint is present, each surface with deteriorated paint which is determined to have a distinct painting history must be tested for the presence of lead.
- d. Friction surfaces where there is evidence of abrasion and impact surfaces that are damaged or otherwise deteriorated from impact and that have a distinct painting history shall be tested for the presence of lead.
- e. In residential dwellings, dust samples shall be collected from the interior windowsill, window trough, and floor in all living areas where at least one child is most likely to come in contact with dust. Dust samples shall be analyzed for lead concentration and may be either composite or single-surface samples.
- f. In multifamily dwellings, dust samples shall also be collected from interior windowsills, window troughs, and floors in common areas adjacent to the sampled residential dwellings or child-occupied facility and in other common areas where the certified lead inspector/risk assessor or certified elevated blood lead (EBL) inspector/risk assessor determines that at least one child under the age of six years is likely to come in contact with dust. Dust samples shall be analyzed for lead concentration and may be either composite or single-surface samples.
- g. In child-occupied facilities, dust samples shall be collected from the interior windowsill, window trough, and floor in each room, hallway, or stairwell utilized by one or more children under the age of six years and in other common areas where the certified lead inspector/risk assessor or certified elevated blood lead (EBL) inspector/risk assessor determines that at least one child under the age of six years is likely to come in contact with dust. Dust samples shall be analyzed for lead concentration and may be either composite or single-surface samples.
- h. Soil samples shall be collected and analyzed for lead content in exterior play areas and dripline areas where bare soil is present. In addition, soil samples shall be collected and analyzed for lead content from any other areas of the yard where bare soil is present.
- i. Dust samples, soil, and paint samples shall be collected using the documented methodologies specified in guidance documents issued by the department. Dust and soil samples shall be analyzed by a recognized laboratory to determine the level of lead.

- j. Paint shall be sampled using adequate quality control by X-ray fluorescence or by laboratory analysis using a recognized laboratory to determine the presence of lead-based paint on a surface.
- k. A certified lead inspector/risk assessor or a certified elevated blood lead (EBL) inspector/risk assessor shall prepare a written report for each residential dwelling or child-occupied facility where a risk assessment is conducted and shall provide a copy of the report to the person requesting the risk assessment. A certified lead inspector/risk assessor or a certified elevated blood lead (EBL) inspector/risk assessor shall maintain a copy of the report for no fewer than three years. The report shall include, at least:
 - (1) Date of each risk assessment;
 - (2) Address of building;
 - (3) Date of construction;
 - (4) Apartment numbers (if applicable);
 - (5) The name, address, and telephone number of the owner or owners of each residential dwelling or child-occupied facility;
 - (6) Name, signature, and certification number of each certified lead inspector/risk assessor conducting the investigation;
 - (7) Name, address, and telephone number of each recognized laboratory conducting an analysis of collected samples;
 - (8) Results of the visual inspection;
 - (9) Each testing method and device and sampling procedure employed for paint analysis, including quality control data and, if used, the serial number of any X-ray fluorescence (XRF) device;
 - (10) Specific locations of each painted component tested for the presence of lead-based paint;
 - (11) All results of laboratory analysis of collected paint, dust, and soil samples;
 - (12) Any other sampling results;
 - (13) Background information collected regarding the physical characteristics of the residential dwelling or child-occupied facility and occupant use patterns that may cause lead-based paint exposure to at least one child under the age of six years;
 - (14) To the extent that they are used as part of the lead-based paint hazard determination, the results of any previous inspections or analyses for the presence of lead-based paint, or other assessments of lead-based paint hazards;
 - (15) A description of the location, type, and severity of identified lead-based paint hazards, and any other potential lead hazards; and
 - (16) A description of interim controls and abatement options for each identified lead-based paint hazard and a suggested prioritization for addressing each hazard. If the use of an encapsulant or enclosure is recommended, the report shall recommend a maintenance and monitoring schedule for the encapsulant or enclosure.

70.6(6) a certified lead abatement contractor or certified lead abatement worker must conduct lead abatement according to the following standards. Beginning March 1, 2000, lead abatement shall be conducted only by a certified lead abatement contractor or a certified lead abatement worker.

- a. A certified lead abatement contractor must be on site during all work site preparation and during the postabatement cleanup of work areas. At all other times when lead abatement is being conducted, the certified lead abatement contractor shall be on site or available by telephone, pager, or answering service, and be able to be present at the work site in no more than two hours.
- b. A certified lead abatement contractor shall ensure that lead abatement is conducted according to all federal, state, and local requirements.
- c. A certified lead abatement contractor shall notify the department in writing at least seven days prior to the commencement of lead abatement in a residential dwelling or child-occupied facility. The notification shall include the following information:
 - (1) The address, including apartment numbers, where abatement will be conducted.
 - (2) The dates when abatement will be conducted.
 - (3) The name, address, telephone number, and Iowa certification number of the certified firm that will conduct the work.
 - (4) The name, address, telephone number, and Iowa certification number for the certified abatement contractor who will serve as the contact person for the project.

- (5) The name, address, and telephone number of the property owner.
- (6) Whether the dwelling is owner-occupied or a rental dwelling.
- (7) If the dwelling is an occupied rental, the names of the occupants.
- (8) The approximate year that the dwelling was built.
- (9) A brief description of the abatement work to be done.
- d. A certified lead abatement contractor or a certified project designer shall develop an occupant protection plan for all lead abatement projects prior to starting lead abatement and shall implement the occupant protection plan during the lead abatement project. The occupant protection plan shall be unique to each residential dwelling or child-occupied facility. The occupant protection plan shall describe the measures and management procedures that will be taken during the abatement to protect the building occupants from exposure to any lead-based paint hazards.
- e. Approved methods must be used to conduct lead abatement and prohibited work practices must not be used to conduct lead abatement. The following are prohibited work practices:
 - (1) Open-flame burning or torching of lead-based paint.
 - (2) Machine sanding or grinding or abrasive blasting or sandblasting of lead-based paint unless used with High Efficiency Particulate Air (HEPA) exhaust control that removes particles of 0.3 microns or larger from the air at 99.97 percent or greater efficiency.
 - (3) Uncontained water blasting of lead-based paint.
 - (4) Dry scraping or dry sanding of lead-based paint except in conjunction with the use of a heat gun or around electrical outlets.
 - (5) Operating a heat gun at a temperature at or above 1100 degrees Fahrenheit.
- f. Soil abatement shall be conducted using one of the following methods:
 - (1) If soil is removed, soil that is a soil-lead hazard shall be replaced by soil with a lead concentration as close to the local background as practicable, but no greater than 400 parts per million. The soil that is removed shall not be used as soil at another residential property or child-occupied facility.
 - (2) If soil is not removed, the soil that is a soil-lead hazard shall be permanently covered.
- g. Postabatement clearance procedures shall be conducted by a certified lead inspector/risk assessor or a certified elevated blood lead (EBL) inspector/risk assessor using the following procedures:
 - (1) Following an abatement, a visual inspection shall be performed to determine if deteriorated paint surfaces or visible amounts of dust, debris, or residue are still present. If deteriorated paint surfaces or visible amounts of dust, debris, or residue are present, these conditions must be eliminated prior to the continuation of the clearance procedures.
 - (2) Following the visual inspection and any required postabatement cleanup, clearance sampling for lead in dust shall be conducted. Clearance sampling may be conducted by employing single-surface sampling or composite dust sampling.
 - (3) Dust samples shall be collected a minimum of one hour after the completion of final postabatement cleanup activities.
 - (4) Dust samples shall be collected using the documented methodologies specified in guidance documents issued by the department. Dust samples shall be analyzed by a recognized laboratory to determine the level of lead.
 - (5) The following postabatement clearance activities shall be conducted as appropriate based upon the extent or manner of abatement activities conducted in the residential dwelling or child-occupied facility:
 - 1. After conducting an abatement with containment between abated and unabated areas, three dust samples shall be taken from each of no fewer than four rooms, hallways, or stairwells within the containment area. Dust samples shall be taken from one interior windowsill and from one window trough (if available), and one dust sample shall be taken from the floor of each of no fewer than four from the floor outside the containment area. If there are fewer than four rooms, hallways, or stairwells within the containment area, then all rooms, hallways, and stairwells shall be sampled.
 - 2. After conducting an abatement with no containment between abated and unabated areas, three dust samples shall be taken from each of no fewer than four rooms, hallways, or stairwells in the residential dwelling or child-occupied facility. Dust samples shall be taken from one interior windowsill and from one window trough (if available), and one dust sample shall be taken from the floor of each room, hallway, or stairwell selected. If there are fewer than four

- rooms, hallways, or stairwells in the residential dwelling or child-occupied facility, then all rooms, hallways, and stairwells shall be sampled.
3. Following an exterior abatement, a visual inspection shall be conducted. All horizontal surfaces in the outdoor living area closest to the abated surface shall be found to be cleaned of visible dust and debris. In addition, a visual inspection shall be conducted to determine the presence of paint chips on the dripline or next to the foundation below any exterior surface abated. If visible dust, debris, or paint chips are present, they must be removed from the site and properly disposed of according to all applicable federal, state, and local standards.
 - (6) The rooms, hallways, and stairwells selected for sampling shall be selected using the documented methodologies specified in the Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (1995, U.S. Department of Housing and Urban Development).
 - (7) The certified lead inspector/risk assessor or certified elevated blood lead (EBL) inspector/risk assessor shall compare the residual lead level as determined by the laboratory analysis from each single-surface dust sample with applicable single-surface clearance levels for lead in dust on floors, interior windowsills, and window troughs. If the residual lead level in a single-surface dust sample exceeds the applicable clearance level, then all the components represented by the failed single-surface dust sample shall be recleaned and retested until clearance levels are met.
 - (8) The certified lead inspector/risk assessor or certified elevated blood lead (EBL) inspector/risk assessor shall compare the residual lead level as determined by the laboratory analysis from each composite dust sample with applicable single-surface clearance levels for lead in dust on floors, interior windowsills, and window troughs divided by half the number of subsamples in the composite sample. If the residual lead level in a composite dust sample exceeds the applicable clearance level divided by half the number of subsamples in the composite sample, then all the components represented by the failed composite dust sample shall be recleaned and retested until clearance levels are met.
- h. In a multifamily dwelling with similarly constructed and maintained residential dwellings, random sampling for the purpose of clearance may be conducted if the following conditions are met:
- (1) The certified lead abatement contractors and certified lead abatement workers who abate or clean the dwellings do not know which residential dwellings will be selected for the random sampling.
 - (2) A sufficient number of residential dwellings are selected for dust sampling to provide a 95 percent level of confidence that no more than 5 percent or 50 of the residential dwellings (whichever is smaller) in the randomly sampled population exceed the appropriate clearance levels.
 - (3) The randomly selected residential dwellings shall be sampled and evaluated for clearance according to the procedures found in paragraph 70.6(6)"g."
- i. The certified lead abatement contractor or a certified project designer shall prepare an abatement report containing the following information:
- (1) Starting and completion dates of the lead abatement project.
 - (2) The name and address of each certified lead abatement contractor and certified lead abatement worker conducting the abatement.
 - (3) The occupant protection plan required by paragraph 70.6(6)"d."
 - (4) The name, address, and signature of each certified lead inspector/risk assessor or certified elevated blood lead (EBL) inspector/risk assessor conducting clearance sampling, the date on which the clearance testing was conducted, and the results of all postabatement clearance testing and all soil analyses, if applicable.
 - (5) The name and address of each laboratory that conducted the analysis of clearance samples and soil samples.
 - (6) A detailed written description of the lead abatement project, including lead abatement methods used, locations of rooms and components where lead abatement occurred, reasons for selecting particular lead abatement methods, and any suggested monitoring of encapsulants or enclosures.
- j. The abatement report shall be completed no later than 30 days after the abatement project passes clearance testing.
- k. The certified lead abatement contractor shall maintain all reports and plans required in this subrule for a minimum of three years
- l. The certified lead abatement contractor shall provide a copy of all reports required by this subrule to the building owner who contracted for the lead abatement.

70.6(7) A certified lead inspector/risk assessor, a certified elevated blood lead (EBL) inspector/risk assessor, or a certified sampling technician must conduct visual risk assessments according to the following standards. Beginning March 1, 2000, visual risk assessments shall be conducted only by a certified lead inspector/risk assessor, a certified elevated blood lead (EBL) inspector/risk assessor, or a certified sampling technician.

- a. Background information regarding the physical characteristics of the residential dwelling or child-occupied facility and occupant use patterns that may cause lead-based paint exposure to at least one child under the age of six years shall be collected.
- b. A visual inspection for risk assessment shall be undertaken to locate the existence of deteriorated paint and other potential lead-based paint hazards and to assess the extent and causes of the paint deterioration.
- c. A certified lead inspector/risk assessor, a certified elevated blood lead (EBL) inspector/risk assessor, or a certified sampling technician shall prepare a written report for each residential dwelling or child-occupied facility where a visual risk assessment is conducted and shall provide a copy of the report to the person requesting the visual risk assessment. A certified lead inspector/risk assessor, a certified elevated blood lead (EBL) inspector/risk assessor, or a certified sampling technician shall maintain a copy of the report for no fewer than three years. The report shall include, at least:
 - (1) Date of each visual risk assessment;
 - (2) Address of building;
 - (3) Date of construction;
 - (4) Apartment numbers (if applicable);
 - (5) The name, address, and telephone number of the owner or owners of each residential dwelling or child-occupied facility;
 - (6) Name, signature, and certification number of each certified sampling technician, certified lead inspector/risk assessor, or certified elevated blood lead (EBL) inspector/risk assessor conducting the visual risk assessment;
 - (7) Specific locations of painted components identified as likely to contain lead-based paint and likely to be lead-based paint hazards; and
 - (8) Information for the owner and occupants on how to reduce lead hazards in the residential dwelling or child-occupied facility.

70.6(8) A certified lead inspector/risk assessor, a certified elevated blood lead (EBL) inspector/risk assessor, or a certified sampling technician must conduct clearance testing according to the following standards. Beginning March 1, 2000, clearance testing following lead abatement shall be conducted only by a certified lead inspector/risk assessor or a certified elevated blood lead (EBL) inspector/risk assessor. Beginning September 15, 2000, clearance testing after interim controls, paint stabilization, standard treatments, ongoing lead-based paint maintenance, and rehabilitation pursuant to 24 CFR 35.1340 shall be conducted only by certified sampling technicians, certified lead inspector/risk assessors, or certified elevated blood lead (EBL) inspector/risk assessors.

- a. Clearance testing following abatement shall be conducted according to paragraph 70.6(6)"g."
- b. Clearance testing after interim controls, paint stabilization, standard treatments, ongoing lead-based paint maintenance, and rehabilitation pursuant to 24 CFR 35.1340 shall be conducted according to the following standards:
 - (1) A certified sampling technician shall perform clearance testing only for a single-family property or for individual dwelling units and associated common areas in a multiunit property. A certified sampling technician shall not perform clearance testing using random sampling of dwelling units or common areas in multifamily properties unless the clearance testing is approved by a certified lead inspector/risk assessor or a certified elevated blood lead (EBL) inspector/risk assessor and the report is signed by a certified lead inspector/risk assessor or a certified elevated blood lead (EBL) inspector/risk assessor.
 - (2) A visual inspection shall be performed to determine if deteriorated paint surfaces or visible amounts of dust, debris, or residue are still present. Both exterior and interior painted surfaces shall be examined for the presence of deteriorated paint. If deteriorated paint surfaces or visible amounts of dust, debris, or residue are present, these conditions must be eliminated prior to the continuation of the clearance testing. However, elimination of deteriorated paint is not required if it has been determined through a lead-based paint inspection that the deteriorated paint is not lead-based paint. If exterior painted surfaces have been disturbed by the interim controls, paint

stabilization, standard treatments, ongoing lead-based paint maintenance, or rehabilitation, the visual inspection shall include an assessment of the ground and any outdoor living areas close to the affected exterior painted surfaces. Visual dust or debris in living areas shall be cleaned up and visible paint chips on the ground shall be removed and properly disposed of according to all applicable federal, state, and local standards.

- (3) Following the visual inspection and any required cleanup, clearance sampling for lead in dust shall be conducted. Clearance sampling may be conducted by employing single-surface sampling or composite dust sampling.
 - (4) Dust samples shall be collected a minimum of one hour after the completion of final cleanup activities.
 - (5) Dust samples shall be collected using the documented methodologies specified in guidance documents issued by the department. Dust samples shall be analyzed by a recognized laboratory to determine the level of lead.
 - (6) The following clearance activities shall be conducted as appropriate based upon the extent or manner of interim controls, paint stabilization, standard treatments, ongoing lead-based paint maintenance, or rehabilitation conducted in the residential dwelling or child-occupied facility:
 1. After conducting interim controls, paint stabilization, standard treatments, ongoing lead-based paint maintenance, or rehabilitation, with containment between treated and untreated areas, three dust samples shall be taken from each of no fewer than four rooms, hallways, or stairwells within the containment area. Dust samples shall be taken from one interior windowsill and from one window trough (if available), and one dust sample shall be taken from the floor of each of no fewer than four rooms, hallways, or stairwells within the containment area. In addition, one dust sample shall be taken from the floor outside the containment area. If there are fewer than four rooms, hallways, or stairwells within the containment area, then all rooms, hallways, and stairwells shall be sampled.
 2. After conducting interim controls, paint stabilization, standard treatments, ongoing lead-based paint maintenance, or rehabilitation, with no containment between treated and untreated areas, three dust samples shall be taken from each of no fewer than four rooms, hallways, or stairwells in the residential dwelling or child-occupied facility. Dust samples shall be taken from one interior windowsill and window trough (if available), and one dust sample shall be taken from the floor of each room, hallway, or stairwell selected. If there are fewer than four rooms, hallways, or stairwells in the residential dwelling or child-occupied facility, then all rooms, hallways, and stairwells shall be sampled.
 - (7) The rooms, hallways, and stairwells selected for sampling shall be selected using the documented methodologies specified in the Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (1995, U.S. Department of Housing and Urban Development).
 - (8) The certified lead inspector/risk assessor, certified elevated blood lead (EBL) inspector/risk assessor, or certified sampling technician shall compare the residual lead level as determined by the laboratory analysis from each single-surface dust sample with applicable single-surface clearance levels for lead in dust on floors, interior windowsills, and window troughs. If the residual lead level in a single-surface dust sample exceeds the applicable clearance level, then all the components represented by the failed single-surface dust sample shall be recleaned and retested until clearance levels are met.
 - (9) The certified lead inspector/risk assessor, certified elevated blood lead (EBL) inspector/risk assessor, or certified sampling technician shall compare the residual lead level as determined by the laboratory analysis from each composite dust sample with applicable single-surface clearance levels for lead in dust on floors, interior windowsills, and window troughs divided by half the number of subsamples in the composite sample. If the residual lead level in a composite dust sample exceeds the applicable clearance level divided by half the number of subsamples in the composite sample, then all the components represented by the failed composite dust sample shall be recleaned and retested until clearance levels are met.
- c. In a multifamily dwelling with similarly constructed and maintained residential dwellings, random sampling for the purpose of clearance may be conducted if the following conditions are met:

- (1) The contractors and the workers who conducted the interim controls, paint stabilization, standard treatments, ongoing lead-based paint maintenance, or rehabilitation do not know which residential dwellings will be selected for the random sampling.
 - (2) A sufficient number of residential dwellings are selected for dust sampling to provide a 95 percent level of confidence that no more than 5 percent or 50 of the residential dwellings (whichever is smaller) in the randomly sampled population exceed the appropriate clearance levels.
 - (3) The randomly selected residential dwellings shall be sampled and evaluated for clearance according to the procedures found in paragraph 70.6(6)"g."
- d. A clearance report must be prepared that provides documentation of the lead abatement, interim controls, paint stabilization, standard treatments, ongoing lead-based paint maintenance, or rehabilitation as well as the clearance testing. When lead abatement is performed, the report shall be an abatement report in accordance with paragraph 70.6(6)"h." When interim controls, paint stabilization, standard treatments, ongoing lead-based paint maintenance, or rehabilitation are performed, the clearance report shall include the following information:
- (1) The address of the residential property and, if only part of a multifamily property is affected, the specific dwelling units and common areas affected.
 - (2) The following information regarding the clearance testing:
 1. The date(s) of the clearance testing.
 2. The name, address, and signature of each certified lead professional performing the clearance examination, including the certification number.
 3. The results of the visual inspection for the presence of deteriorated paint and visible dust, debris, residue, or paint chips.
 4. The results of the analysis of dust samples, in micrograms per square foot, by location of sample.
 5. The name and address of each recognized laboratory that conducted the analysis of the dust samples, including the identification number for each such laboratory recognized by EPA under Section 405(b) of the Toxic Substances Control Act (15 U.S.C. 2685(b)).
 - (3) The following information on the interim controls, paint stabilization, standard treatments, ongoing lead-based paint maintenance, or rehabilitation for which clearance testing was performed:
 1. The start and completion dates of the interim controls, paint stabilization, standard treatments, ongoing lead-based paint maintenance, or rehabilitation.
 2. The name and address of each firm or organization conducting the interim controls, paint stabilization, standard treatments, ongoing lead-based paint maintenance, or rehabilitation and the name of each supervisor assigned.
 3. A detailed written description of the interim controls, paint stabilization, standard treatments, ongoing lead-based paint maintenance, or rehabilitation, including the methods used, locations of exterior surfaces, interior rooms, common areas, and components where the hazard reduction activity occurred, and any suggested monitoring or encapsulants or enclosures.
 4. If interim control of soil hazards was conducted, a detailed description of the location(s) of the interim controls and the method(s) used.
- e. A certified lead inspector/risk assessor or a certified elevated blood lead (EBL) inspector/risk assessor shall maintain a copy of the clearance testing information included in the abatement report specified in paragraph 70.6(6)"h" for no fewer than three years. A certified lead inspector/risk assessor, a certified elevated blood lead (EBL) inspector/risk assessor shall maintain a copy of the clearance testing report specified in paragraph 70.6(8)"d" for no fewer than three years.
- f. Clearance testing shall be performed by persons or entities independent of those performing interim controls, paint stabilization, standard treatments, ongoing lead-based paint maintenance, or rehabilitation, unless the designated party uses qualified in-house employees to conduct clearance testing. An in-house employee shall not conduct both interim controls, paint stabilization, standard treatments, ongoing lead-based paint maintenance, or rehabilitation and the clearance examination for this work

70.6(9) A certified elevated blood lead (EBL) inspection agency shall maintain the written records for all elevated blood lead (EBL) inspections conducted by persons that the agency employs or contracts with to provide elevated blood lead (EBL) inspections in the agency's service area.

70.6(10) A person may be certified as a lead inspector/risk assessor, sampling technician, or elevated blood lead (EBL) inspector/risk assessor and as a lead abatement contractor or lead abatement worker. Except as specified by paragraph 70.6(8)"f," a person who is certified both as a lead inspector/risk assessor, sampling technician, or elevated blood lead (EBL) inspector/risk assessor and as a lead abatement contractor or lead abatement worker shall not provide both lead inspection or visual risk assessment and lead abatement services at the same site unless a written consent or waiver, following full disclosure by the person, is obtained from the owner or manager of the site.

70.6(11) Any paint chip, dust, or soil samples collected pursuant to the work practice standards contained in subrules 70.6(2) to 70.6(6) shall be collected by persons certified as a lead inspector/risk assessor or an elevated blood lead (EBL) inspector/risk assessor. Any paint chip, dust, or soil samples collected pursuant to the work practice standards contained in subrule 70.6(8) for clearance testing following lead abatement shall be collected by persons certified as a lead inspector/risk assessor or an elevated blood lead (EBL) inspector/risk assessor. Any paint chip, dust, or soil samples collected pursuant to the work practice standards contained in subrule 70.6(8) for clearance testing after interim controls, paint stabilization, standard treatments, ongoing lead-based paint maintenance, and rehabilitation pursuant to 24 CFR 35.1340 shall be conducted only by certified sampling technicians, certified lead inspector/risk assessors, or certified elevated blood lead (EBL) inspectors. Any paint chip, dust, or soil samples collected pursuant to the work practice standards contained in rule 70.6(135) shall be analyzed by a recognized laboratory.

70.6(12) Composite dust sampling shall be conducted only in the situations specified in subrules 70.6(4) to 70.6(6) and 70.6(8). If composite sampling is conducted, it shall meet the following requirements:

- a. Composite dust samples shall consist of at least two subsamples.
- b. Every component that is being tested shall be included in the sampling.
- c. Composite dust samples shall not consist of subsamples from more than one type of component.
- d. The results of composite dust samples shall be evaluated by comparing the residual lead level as determined by the laboratory analysis from each composite dust sample with applicable single-surface dust-lead hazard or clearance levels for lead in dust on floors, interior windowsills, and window troughs divided by half the number of subsamples in the composite sample.

SECTION 12

WASTEWATER MANAGEMENT

Iowa Supplement, February 2010

Iowa Supplement, February 2008 This section covers the state requirements for Wastewater Management and is intended to supplement the U.S. TEAM Guide. Refer to the U.S. TEAM Guide and the DOD Component Supplements for Federal, DOD, and service-specific requirements.

Federal Regulations Adopted by the State

The State of Iowa has adopted by reference the following Effluent Standards (list is incomplete) from Title 40, Code of Federal Regulations (CFR), 1 July 2007 edition (IAC 567-62.4) [Revised April 2006; Revised February 2007; Revised February 2009]:

- 40 CFR part 401: General Provisions. .
- 40 CFR Part 125: Subparts I and J: Cooling Water Intake Structures.
- 40 CFR part 403: General Pretreatment Regulations for Existing and New Sources of Pollution
- 40 CFR Part 125: Subpart H; Thermal Discharges
- 40 CFR part 412: Concentrated animal feeding operations (CAFOs).
- 40 CFR part 413: Electroplating Point Source Category
- 40 CFR part 419: Petroleum Refining Point Source Category
- 40 CFR part 423: Steam Electric Power Generating Point Source Category
- 40 CFR part 437: Centralized waste treatment point source category
- 40 CFR part 442: Transportation equipment cleaning point source category
- 40 CFR part 443: Paving and Roofing Materials (Tar and Asphalt) Point Source Category
- 40 CFR part 451: Concentrated aquatic animal production point source category. .

The State of Iowa has adopted by reference: 40 CFR part 129, revised as of July 1, 2007 (IAC 567-62.5) [Revised February 2007; Revised February 2008].

The State of Iowa has adopted by reference 40 CFR 122.27, Silvicultural activities and 40 CFR 122.26, Storm water discharges (IAC 567-64.10 and 567-64.13(1), respectively) [Revised February 2010].

Definitions

- *7-Day, 10-Yr Low Stream Flow* - the lowest average stream flow which would statistically occur for 7 consecutive days once every 10 yr (IAC 567-60.2).
- *Abandoned* - an open feedlot operation structure that has been razed, removed from the site of an open feedlot operation, filled in with earth, or converted to uses other than an open feedlot operation structure so that it cannot be used as an open feedlot operation structure without significant reconstruction (IAC 567-65.100) [Added February 2007].
- *Abandoned Confinement Feeding Operation Structure* - the confinement feeding operation structure has been razed, removed from the site of a confinement feeding operation, filled in with earth, or converted to uses other than a confinement feeding operation structure so that it cannot be used as a confinement feeding operation structure without significant reconstruction (IAC 567-65.1) [Added April 2003].
- *Acute Toxicity* - that level of pollutants which would rapidly induce a severe and unacceptable impact on organisms (IAC 567-60.2).

- *Adjacent* - for the purpose of determining separation distance requirements pursuant to 65.11(455B), that two or more confinement feeding operations are adjacent if they have animal feeding operation structures that are separated at their closest points by less than the following (IAC 567-65.1) [Added April 2003; Revised February 2007]:
 1. 1,250 feet for confinement feeding operations with animal weight capacity less than 1,250,000 pounds for animals other than bovine, or less than 4,000,000 pounds for bovine.
 2. 1,500 feet for confinement feeding operations with animal weight capacity from 1,250,000 pounds to less than 2,000,000 pounds for animals other than bovine; from 1,250,000 pounds to less than 2,500,000 pounds for swine in a farrow-to-finish operation; or 4,000,000 pounds to less than 6,000,000 pounds for bovine.
 3. These distances shall only be used to determine that two or more confinement feeding operations are adjacent if the animal feeding operation structure is constructed after March 20, 1996.
 4. To determine if two or more confinement feeding operations are adjacent, the animal weight capacity of each individual operation shall be used. If two or more confinement feeding operations are not in the same animal weight capacity category, the greater animal weight capacity shall be used to determine the separation distance.
- *Adjacent* - for the purpose of determining whether a permit is required pursuant to 65.7(455B), that two or more confinement feeding operations are adjacent if they have animal feeding operation structures that are separated at their closest points by less than the following (IAC 567-65.1) [Added April 2003]:
 1. 1,250 feet for confinement feeding operations with combined animal weight capacity less than 625,000 pounds for animals other than bovine, or less than 1,600,000 pounds for bovine.
 2. 2,500 feet for confinement feeding operations with combined animal weight capacity of 625,000 or more pounds for animals other than bovine, or 1,600,000 or more pounds for bovine.
 3. These distances shall only be used to determine that two or more confinement feeding operations are adjacent if the animal feeding operation structure is constructed or expanded on or after May 21, 1998.
- *Adjacent* - Two or more open feedlot operations are defined as adjacent if both of the following occur (IAC 567-65.100) [Added February 2007]:
 1. At least one open feedlot operation structure is constructed on or after July 17, 2002.
 2. An open feedlot operation structure which is part of one open feedlot operation is separated by less than 1250 feet from an open feedlot operation structure which is part of the other open feedlot operation.
- *Adjacent* - for the purpose of determining whether an operation permit is required pursuant to 65.4(455B), two or more open feedlots are adjacent if they are separated at their closest points, including any solids settling facility, by less than 1,250 feet (IAC 567-65.1) [Added April 2003].
- *Aerobic Structure* - an animal feeding operation structure other than an egg wash water storage structure which relies on aerobic bacterial action which is maintained by the utilization of air or oxygen and which includes aeration equipment to digest organic matter. Aeration equipment shall be used and shall be capable of providing oxygen at a rate sufficient to maintain an average of 2 milligrams per liter dissolved oxygen concentration in the upper 30 percent of the depth of manure in the structure at all times (IAC 567-65.1) [Added April 2003].
- *Agricultural Drainage Well* - a vertical opening to an aquifer or permeable substratum which is constructed by any means including but not limited to drilling, driving, digging, boring, auguring, jetting, washing, or corings and which is capable of intercepting or receiving surface or subsurface drainage water from land directly or by a drainage system (IAC 567-65.1) [Added April 2003].
- *Agricultural Drainage Well Area* - an area of land where surface subsurface water drains into an agricultural drainage well directly or through a drainage system connecting to the agricultural drainage well (IAC 567-65.1) [Added April 2003].
- *Anaerobic Lagoon* - an unformed manure storage structure, if the primary function of the structure is to store and stabilize manure, the structure is designed to receive manure on a regular basis, and the structure's design

waste loading rates provide that the predominant biological activity is anaerobic. An anaerobic lagoon does not include the following (IAC 567-65.1) [Added April 2003]:

1. A runoff control basin which collects and stores only precipitation-induced runoff from an animal feeding operation in which animals are confined to areas which are unroofed or partially roofed and in which no crop, vegetation, or forage growth or residue cover is maintained during the period in which animals are confined in the operation.
 2. An anaerobic treatment system that includes collection and treatment facilities for all off gases.
- *Animal* - a species classified as cattle, swine, horses, sheep, chickens or turkeys (IAC 567-65.1 and 65.100) [Added April 2003].
 - *Animal Capacity* - the maximum number of animals which the owner or operator will confine in an animal feeding operation at any one time. In a confinement feeding operation, the animal capacity of all confinement buildings will be included in the determination of the animal capacity of the operation, unless the building has been abandoned in accordance with the definition of "abandoned animal feeding operation structure." (IAC 567-65.1) [Added April 2003].
 - *Animal Capacity* - the maximum number of animals which the owner or operator will confine in an open feedlot operation at any one time (IAC 567-65.100) [Added February 2007].
 - *Animal Feeding Operation (AFO)* - a lot, yard, corral, building, or other area in which animals are confined and fed and maintained for 45 days or more in any 12-month period, and all structures used for the storage of manure from animals in the operation. Except as required for an NPDES permit required pursuant to the federal Water Pollution Control Act, 33 U.S.C. Chapter 26, as amended, an animal feeding operation does not include a livestock market. Pursuant to federal regulations, a livestock market could satisfy the definitions of an AFO and a CAFO and thus be subject to NPDES permit requirements. In order to implement the federal NPDES permit program, the commission must adopt rules which are no less stringent than federal regulations. Therefore, for the purposes of the NPDES permit program, an AFO can include a livestock market (IAC 567-65.100) [Added February 2007; Revised February 2010].
 - *Animal-Feeding Operation* - a lot, yard, corral, building, or other area in which animals are confined and fed and maintained for 45 days or more in any 12-month period, and all structures used for the storage of manure from animals in the operation. Except as required for an NPDES permit required pursuant to the federal Water Pollution Control Act, 33 U.S.C. Chapter 26, as amended, an animal feeding operation does not include a livestock market. Open feedlots and confinement feeding operations are considered to be separate animal feeding operations (IAC 567-65.1) [Revised February 2010].
 - *Animal Feeding Operation Structure* - a confinement building, manure storage structure, or egg washwater storage structure (IAC 567-65.1) [Added April 2003].
 - *Animal Unit* - a unit of measurement based upon the product of multiplying the number of animals of each category by a special equivalency factor, as follows (IAC 567-65.1) [Added April 2003]:
 1. Slaughter and feeder cattle 1.000
 2. Immature dairy cattle 1.000
 3. Mature dairy cattle 1.400
 4. Butcher or breeding swine, weighing more than 55 pounds 0.400
 5. Swine weighing 15 pounds or more but not more than 55 pounds 0.100
 6. Sheep or lambs 0.100
 7. Horses 2.000
 8. Turkeys 0.018
 9. Broiler or layer chickens 0.010
 - *Animal Unit* - a unit of measurement based upon the product of multiplying the number of animals of each category by a special equivalency factor, as follows: (IAC 567-65.100) [Added February 2007]
 1. Slaughter and feeder cattle 1.000

2. Immature dairy cattle 1.000
 3. Mature dairy cattle 1.400
 4. Butcher or breeding swine weighing more than 55 pounds 0.400
 5. Swine weighing 15 pounds or more but not more than 55 pounds 0.100
 6. Sheep or lambs 0.100
 7. Horses 2.000
 8. Turkeys weighing 112 ounces or more 0.018
 9. Turkeys weighing less than 112 ounces 0.0085
 10. Chickens weighing 48 ounces or more 0.010
 11. Chickens weighing less than 48 ounces 0.0025
- *Animal Unit Capacity* - a measurement used to determine the maximum number of animal units that may be maintained as part of an animal feeding operation at any one time, including as provided in Iowa Code sections 455B.161A as amended by 2002 Iowa Acts, chapter 1137, section 9, and 455B.200B as amended by 2002 Iowa Acts, chapter 1137, sections 3 to 32 (IAC 567-65.1) [Added April 2003].
 - *Animal Unit Capacity* - a measurement used to determine the maximum number of animal units that may be maintained as part of an open feedlot operation. Only for purposes of determining whether an open feedlot operation must obtain an operating permit, the animal unit capacity of the animal feeding operation shall include the animal unit capacities of both the open feedlot operation and the confinement feeding operation if all of the following occur:
 1. The animals in the open feedlot operation and the confinement feeding operation are all in the same category of animals as used in the definitions of "large CAFO" and "medium CAFO" in 40 CFR Part 122.
 2. The closest open feedlot operation structure is separated by less than 1,250 feet from the closest confinement feeding operation structure.
 3. The open feedlot operation and the confinement feeding operation are under common ownership or management (IAC 567-65.100) [Added February 2007; Revised February 2010].
 - *Animal Weight Capacity* - the sum of the average weight of all animals in a confinement feeding operation when the operation is at full animal capacity. For confinement feeding operations with only one species, the animal weight capacity is the product of multiplying the animal capacity by the average weight during a production cycle. For operations with more than one species, the animal weight capacity of the operation is the sum of the animal weight capacities for all species (IAC 567-65.1) [Added April 2003].
 - *Applicant* - the person applying for a construction or operation permit for an animal feeding operation. The applicant shall be the owner or owners of the animal feeding operation (IAC 567-65.1) [Added April 2003].
 - *Area Drain* - a drain installed to collect surface or storm water from an open area of a building or property (IAC 567-69.1(2)) [Added April 1999; Citation Revised February 2010].
 - *Building Sewer* - that part of the horizontal piping from the building wall to its connection with the main sewer or the primary treatment portion of an on-site wastewater treatment and disposal system conveying the drainage of one building site (IAC 567-69.1(2)) [Added April 1999; Citation Revised February 2010].
 - *Chronic Toxicity* - that level of pollutants which would, over long durations or recurring exposure, cause a continuous, adverse or unacceptable response in organisms (IAC 567-60.2).
 - *Class I Sewage Sludge* - sewage sludge that has excellent quality and has been treated in a process equivalent to processes to further reduce pathogens and does not exceed the pollutant concentrations of Class I sewage sludge in Appendix 12-1 (IAC 567-67.7(1)).
 - *Class II Sewage Sludge* - sewage sludge that has normal quality and has been treated in a process equivalent to processes to significantly reduce pathogens and does not exceed the pollutant concentrations of Class II sewage sludge in Appendix 12-1 (IAC 567-67.8(1)).

- *Cleaning* - removal of waste from private waste facilities and other actions incidental to that removal (IAC 567-68.2).
- *Commercial Manure Applicator* - a person who engages in the business of and charges a fee for applying manure on the land of another person (IAC 567-65.1) [Added April 2003].
- *Commercial Septic Tank Cleaner* - a person or firm engaged in the business of cleaning and disposing of waste from private sewage disposal systems, including a person or firm that owns and rents or leases portable toilets (IAC 567-68.2) [Revised February 2007].
- *Concentrated Animal Feeding Operation or "CAFO"* - an AFO that is defined as a large CAFO, a medium CAFO, or a designated CAFO (IAC 567-65.100) [Added February 2007].
- *Confinement Feeding Operation Building or Confinement Building* - a building used in conjunction with a confinement feeding operation to house animals (IAC 567-65.1) [Added April 2003].
- *Confinement Feeding Operation* - an animal feeding operation in which animals are confined to areas which are totally roofed (IAC 567-65.1) [Added April 2003].
- *Confinement Feeding Operation Structure* - an animal feeding operation structure that is part of a confinement feeding operation (IAC 567-65.1) [Added April 2003].
- *Confinement Site* - a site where there is located a manure storage structure which is part of a confinement feeding operation, other than a small animal feeding operation (IAC 567-65.1) [Added April 2003].
- *Confinement Site Manure Applicator* - a person, service, or a commercial manure service representative, who applies manure on land if the manure originated from a manure storage structure (IAC 567-65.1) [Added April 2003; Revised April 2004].
- *Construction Permit* - a written approval of the Department to construct an animal feeding operation structure (IAC 567-65.1) [Added April 2003].
- *Covered* - organic or inorganic material, placed upon an animal feeding operation structure used to store manure, which significantly reduces the exchange of gases between the stored manure and the outside air. Organic materials include, but are not limited to, a layer of chopped straw, other crop residue, or a naturally occurring crust on the surface of the stored manure. Inorganic materials include, but are not limited to, wood, steel, aluminum, rubber, plastic, or Styrofoam. The materials shall shield at least 90 percent of the surface area of the stored manure from the outside air. Cover shall include an organic or inorganic material which current scientific research shows reduces detectable odor by at least 75 percent. A formed manure storage structure directly beneath a floor where animals are housed in a confinement feeding operation is deemed to be covered (IAC 567-65.1) [Added April 2003].
- *Deep Well* - a well located and constructed in such a manner that there is a continuous layer of low permeability soil or rock at least 5 feet thick located at least 25 feet below the normal ground surface and above the aquifer from which water is to be drawn (IAC 567-65.1) [Added April 2003].
- *Designated CAFO* - an AFO that has been designated as a CAFO pursuant to rule 65.103(455B,459A) (IAC 567-65.100) [Added February 2007].
- *Designated Use Waters* - these are water bodies which maintain flow throughout the year or contain sufficient pooled areas during intermittent flow periods to maintain a viable aquatic community. Designated use segments include the following (IAC 567-61.3(1)(b)) [Revised February 2009; Revised February 2010]:
 1. Primary contact recreational use (Class "A1"). Waters in which recreational or other uses may result in prolonged and direct contact with the water, involving considerable risk of ingesting water in quantities

sufficient to pose a health hazard. Such activities would include, but not be limited to, swimming, diving, water skiing, and water contact recreational canoeing.

2. Secondary contact recreational use (Class "A2"). Waters in which recreational or other uses may result in contact with the water that is either incidental or accidental. During the recreational use, the probability of ingesting appreciable quantities of water is minimal. Class A2 uses include fishing, commercial and recreational boating, any limited contact incidental to shoreline activities and activities in which users do not swim or float in the water body while on a boating activity.
 3. Children's recreational use (Class "A3"). Waters in which recreational uses by children are common. Class A3 waters are water bodies having definite banks and bed with visible evidence of the flow or occurrence of water. This type of use would primarily occur in urban or residential areas.
 4. Cold water aquatic life - Type 1 (Class "B(CW1)"). Waters in which the temperature and flow are suitable for the maintenance of a variety of cold water species, including reproducing and nonreproducing populations of trout (Salmonidae family) and associated aquatic communities.
 5. Cold water aquatic life - Type 2 (Class "B(CW2)"). Waters that include small, channelized streams, headwaters, and spring runs that possess natural cold water attributes of temperature and flow. These waters usually do not support consistent populations of trout (Salmonidae family), but many support associated vertebrate and invertebrate organisms.
 6. Warm water--Type 1 (Class "B(WW-1)"). Waters in which temperature, flow and other habitat characteristics are suitable to maintain warm water game fish populations along with a resident aquatic community that includes a variety of native nongame fish and invertebrate species. These waters generally include border rivers, large interior rivers, and the lower segments of medium-size tributary streams.
 7. Warm water--Type 2 (Class "B(WW-2)"). Waters in which flow or other physical characteristics are capable of supporting a resident aquatic community that includes a variety of native nongame fish and invertebrate species. The flow and other physical characteristics limit the maintenance of warm water game fish populations. These waters generally consist of small perennially flowing streams.
 8. Warm water--Type 3 (Class "B(WW-3)"). Waters in which flow persists during periods when antecedent soil moisture and groundwater discharge levels are adequate; however, aquatic habitat typically consists of nonflowing pools during dry periods of the year. These waters generally include small streams of marginally perennial aquatic habitat status. Such waters support a limited variety of native fish and invertebrate species that are adapted to survive in relatively harsh aquatic conditions.
 9. Lakes and wetlands (Class "B(LW)"). These are artificial and natural impoundments with hydraulic retention times and other physical and chemical characteristics suitable to maintain a balanced community normally associated with lake-like conditions.
 10. Human health (Class "HH"). Waters in which fish are routinely harvested for human consumption or waters both designated as a drinking water supply and in which fish are routinely harvested for human consumption.
 11. Drinking water supply (Class "C"). Waters which are used as a raw water source of potable water supply.
- *Director* - the director of the Department of natural resources or a designee (IAC 567-81.1) [Added April 2001].
 - *Direct Responsible Charge (DRC)* - where shift operation is not required, accountability for and performance of active, daily on-site operation of the plant or distribution system, or of a major segment of the plant or distribution system. Where shift operation is required, "direct responsible charge" means accountability for and performance of active, daily on-site operation of a nonoperating shift, or a major segment of the plant or distribution system. A city manager, superintendent of public works, city clerk, council member, business manager, or other administrative official shall not be deemed to have direct responsible charge of a plant or distribution system unless this person's duties include the active, daily on-site operation of the plant or distribution system. On-site operation may not necessarily mean full-time attendance at the plant or distribution system (IAC 567-81.1) [Added April 2001].
 - *Disposal System* - a system for disposing of sewage, industrial waste, or other wastes, or for the use or disposal of sewage sludge. "Disposal system" includes sewer systems, treatment works, point sources, dispersal systems, and any systems designed for the usage or disposal of sewage sludge (IAC 567-60.2 [Added February 2010]).

- *Distribution Box* - a structure designed to accomplish the equal distribution of wastewater to two or more soil absorption trenches (IAC 567-69.1(2)) [Added April 1999; Citation Revised February 2010].
- *Dwelling* - any house or place used or intended to be used by humans as a place of residence (IAC 567-69.1(2)) [Added April 1999; Citation Revised February 2010].
- *Egg Washwater Storage Structure* - an aerobic or anaerobic structure used to store the wastewater resulting from the washing and in-shell packaging of eggs. It does not include a structure also used as a manure storage structure (IAC 567-65.1) [Added April 2003].
- *Fill Soil* - clean soil, free of debris or large organic material, which has been mechanically moved onto a site and has been in place for less than 1 yr (IAC 567-69.1(2)) [Added April 1999; Citation Revised February 2010].
- *Foundation Drain* - that portion of a building drainage system provided to drain groundwater from the outside of the foundation or over or under the basement floor not including any wastewater and not connected to the building drain (IAC 567-69.1(2)) [Added April 1999; Citation Revised February 2010].
- *Formed Manure Storage Structure* - a covered or uncovered impoundment used to store manure from an animal feeding operation, which has walls and a floor constructed of concrete, concrete block, wood, steel, or similar materials. Similar materials may include, but are not limited to, plastic, rubber, fiberglass, or other synthetic materials. Materials used in a formed manure storage structure shall have the structural integrity to withstand expected internal and external load pressures (IAC 567-65.1) [Added April 2003].
- *Freeboard* - the difference in elevation between the liquid level and the top of the lowest point of an animal feeding operation structure's berm or the lowest external outlet from a formed manure storage structure (IAC 567-65.1) [Added April 2003].
- *General Use Segments* - these are intermittent watercourses and those watercourses which typically flow only for short periods of time following precipitation and whose channels are normally above the water table. These waters do not support a viable aquatic community during low flow, and do not maintain pooled conditions during periods of no flow (IAC 567-61.3(1)(a)) [Revised February 2009; Revised February 2010].
- *Holding Tank for Wastes* - any receptacle for the retention or storage of waste pending removal for further treatment or disposal (IAC 567-68.2).
- *Industrial Waste* - any liquid, gaseous, radioactive, or solid waste substance resulting from any process of industry, manufacturing, trade, or business, or from the development of any natural resource (IAC 567-60.2) [Added February 2010].
- *Intermittent Sand Filters* - beds of granular materials 24 to 36 in. deep underlain by graded gravel and collecting tile. Wastewater is applied intermittently to the surface of the bed through distribution pipes or troughs and the bed is underdrained to collect and discharge the final effluent. Uniform distribution is normally obtained by dosing so as to flood the entire surface of the bed. Filters may be designed to provide free access (open filters), or may be buried in the ground (buried filters or subsurface sand filters) (IAC 567-69.1(2)) [Added April 1999; Citation Revised February 2010].
- *Lake* - a natural or man-made impoundment of water with more than one acre of water surface area at the high water level (IAC 567-69.1(2)) [Added April 1999; Citation Revised February 2010].
- *Large Concentrated Animal Feeding Operation or "large CAFO"* - An AFO is defined as a large CAFO if it stables or confines as many as or more than the numbers of animals specified in any of the following categories: (IAC 567-65.100) [Added February 2007]
 1. 700 mature dairy cows, whether milked or dry;
 2. 1,000 cattle, including but not limited to heifers, steers, bulls, veal calves and cow/calf pairs;
 3. 2,500 swine each weighing 55 pounds or more;

4. 10,000 swine each weighing less than 55 pounds;
 5. 500 horses;
 6. 10,000 sheep or lambs;
 7. 55,000 turkeys;
 8. 30,000 laying hens or broilers, if the AFO uses a liquid manure handling system;
 9. 125,000 chickens (other than laying hens), if the AFO uses other than a liquid manure handling system;
 10. 82,000 laying hens, if the AFO uses other than a liquid manure handling system;
 11. 1,000 animal units, where more than one category of animals is maintained using the same type of operation.
- *Major* - for municipalities, means a facility having an average wet weather design flow of 1.0 million gallons per day (MGD) or greater. For industries major means a facility which is designated by EPA as being a major industry based on the EPA point rating system (IAC 567-60.2) [Added February 2010].
 - *Manure* - animal excreta or other commonly associated wastes of animals including, but not limited to, bedding, litter, or feed losses. Manure does not include wastewater resulting from the washing and in-shell packaging of eggs (IAC 567-65.1) [Added April 2003].
 - *Manure* - animal excreta or other commonly associated wastes of animals including, but not limited to, bedding, compost, litter, feed losses, raw materials or other materials commingled with manure or set aside for disposal (IAC 567-65.100) [Added February 2007].
 - *Manure Storage Structure* - a formed manure storage structure or an unformed manure storage structure. A manure storage structure does not include an egg washwater storage structure (IAC 567-65.1) [Added April 2003].
 - *Medium Concentrated Animal Feeding Operation or "Medium CAFO"* - The term medium CAFO includes any AFO with the type and number of animals that fall within any of the ranges listed in paragraph "a" of this definition and which has been defined or designated as a CAFO. An AFO is defined as a medium CAFO if: (IAC 567-65.100) [Added February 2007]
 1. The type and number of animals that it stables or confines fall within any of the following ranges:
 - a. 200 to 699 mature dairy cows, whether milked or dry;
 - b. 300 to 999 cattle, including but not limited to heifers, steers, bulls, veal calves and cow/calf pairs;
 - c. 750 to 2,499 swine each weighing 55 pounds or more;
 - d. 3,000 to 9,999 swine each weighing less than 55 pounds;
 - e. 150 to 499 horses;
 - f. 3,000 to 9,999 sheep or lambs;
 - g. 16,500 to 54,999 turkeys;
 - h. 9,000 to 29,999 laying hens or broilers, if the AFO uses a liquid manure handling system;
 - i. 37,500 to 124,999 chickens (other than laying hens), if the AFO uses other than a liquid manure handling system;
 - j. 25,000 to 81,999 laying hens, if the AFO uses other than a liquid manure handling system;
 - k. 300 to 999 animal units, where more than one category of animals is maintained using the same type of operation; and
 2. Either one of the following conditions is met:
 - a. Manure or process wastewater is discharged into waters of the United States through a man-made ditch, flushing system, or other similar man-made device; or
 - b. Manure or process wastewater is discharged directly into waters of the United States which originate outside of and pass over, across or through the facility or otherwise come into direct contact with animals confined in the operation.
 - *Mixing Zone* - a delineated portion of a stream or river in which wastewater discharges will be allowed to combine and disperse into the water body. The chronic criteria of subrule 61.3(3) will apply at the boundary of this zone (IAC 567-60.2).

- *Mound System* - an alternative aboveground system used to absorb effluents from septic tanks in cases where either seasonally high water table, high bedrock conditions, slowly permeable soils or limited land areas prevent conventional subsurface absorption systems (IAC 567-69.1(2)) [Added April 1999; Citation Revised February 2010].
- *New Animal Feeding Operation* - an animal feeding operation whose construction was begun after July 22, 1987, or whose operation is resumed after having been discontinued for a period of 12 months or more (IAC 567-65.1) [Added April 2003].
- *NPDES Permit* - a written permit of the Department pursuant to the National Pollutant Discharge Elimination System (NPDES) program, to authorize and regulate the operation of a CAFO (IAC 567-65.100) [Added February 2007].
- *Nutrient Management Plan (NMP)* - a plan which provides for the management of manure, process wastewater, settled open feedlot effluent, settleable solids, open feedlot effluent, including the application of effluent, as provided in 65.112(459A) (IAC 567-65.100) [Added February 2007].
- *Open Feedlot* - an unroofed or partially roofed animal feeding operation in which no crop, vegetation, or forage growth or residue cover is maintained during the period that animals are confined in the operation (IAC 567-65.1) [Added April 2003].
- *Operation Permit* - a written permit of the Department authorizing the operation of a manure control facility or part of one (IAC 567-65.1) [Added April 2003].
- *Open Feedlot* – a lot, yard, corral, building or other area used to house animals in conjunction with an open feedlot operation (IAC 567-65.100) [Added April 2006].
- *Open Feedlot* - a lot, yard, corral, building, or other area used to house animals in conjunction with an open feedlot operation (IAC 567-65.100) [Added February 2007].
- *Open Feedlot Effluent* - a combination of manure, precipitation-induced runoff, or other runoff from an open feedlot before its settleable solids have been removed (IAC 567-65.100) [Added February 2007].
- *Open Feedlot Effluent* – a combination of manure, precipitation-induced runoff, or other runoff from an open feedlot before its settleable solids have been removed (IAC 567-65.100) [Added April 2006].
- *Open Feedlot Operation* – an unroofed or partially roofed animal feeding operation if crop, vegetation, or forage growth or residue is not maintained as part of the animal feeding operation during the period that animals are confined in the animal feeding operation (IAC 567-65.100) [Added April 2006].
- *Open Feedlot Operation* - an unroofed or partially roofed animal feeding operation if crop, vegetation, or forage growth or residue is not maintained as part of the animal feeding operation during the period that animals are confined in the animal feeding operation. 2005 Iowa Code Supplement section 459A.103 provides that two or more open feedlot operations under common ownership or management are deemed to be a single open feedlot operation if they are adjacent or utilize a common area or system for open feedlot effluent disposal. To determine if two or more open feedlot operations are deemed to be one open feedlot operation, the first test is whether the open feedlot operations are under common ownership or management. If they are not under common ownership or management, they are not one open feedlot operation. The second test is whether the two open feedlot operations are adjacent or utilize a common area or system for open feedlot effluent disposal. If the two operations are not adjacent and do not use a common area or system for open feedlot effluent disposal, they are not one open feedlot operation (IAC 567-65.100) [Added February 2007].
- *Open Feedlot Operation Structure* – an open feedlot, settled open feedlot effluent basin, a solids settling facility or an AT system. Open feedlot operation structure does not include a manure storage structure (IAC 567-65.100) [Added April 2006].

- *Open Feedlot Operation Structure* - an open feedlot, settled open feedlot effluent basin, a solids settling facility, or an AT system. "Open feedlot operation structure" does not include a manure storage structure as defined in Iowa Code section 459.102 (IAC 567-65.100) [Added February 2007].
- *Operator-in-Charge* - person or persons on site in direct responsible charge for a plant or distribution system. A city manager, superintendent of public works, city clerk, council member, business manager, or other administrative official shall not be deemed to be the operator-in-charge of a plant or distribution system unless this person's duties include the active, daily on-site operation of the plant or distribution system. On-site operation may not necessarily mean full-time attendance at the plant or distribution system (IAC 567-81.1) [Added April 2001].
- *Owner* - the person who has title to the property where the animal feeding operation is located or the person who has title to the animal feeding operation structures. It does not include a person who has a lease to use the land where the animal feeding operation is located or to use the animal feeding operation structures (IAC 567-65.1) [Added April 2003].
- *Owner* - the person who has title to the property where the animal feeding operation is located or the person who has title to the animal feeding operation structures. "Owner" does not include a person who has a lease to use the land where the animal feeding operation is located or to use the animal feeding operation structures (IAC 567-65.100) [Added February 2007].
- *Percolation Test* - a falling water level procedure used to determine the ability of soils to absorb primary treated wastewater (IAC 567-69.1(2)) [Added April 1999].
- *Plant* - those facilities which are identified as either a water treatment plant, defined as that portion of the water supply system which in some way alters the physical, chemical, or bacteriological quality of the water, or a wastewater treatment plant, defined as the facility or group of units used for the treatment of wastewater from public sewer systems and for the reduction and handling of solids removed from such wastes (IAC 567-81.1) [Added April 2001; Revised April 2005].
- *Point Source* - any discernible, confined, and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, or vessel or other floating craft, from which pollutants are or may be discharged. "Point source" does not include return flows from irrigated agriculture or agricultural storm water runoff (IAC 567-60.2) [Added February 2010].
- *Pond* - a natural or man-made impoundment of water with a water surface area of one acre or less at the high water level (IAC 567-69.1(2)) [Added April 1999; Revised February 2010].
- *Population Equivalent* - for a wastewater treatment plant means the calculated number of people which would contribute the same biochemical oxygen demand (BOD) per day as the system in question, assuming that each person contributes 0.167 pounds of five-day, 20°C, BOD per day (IAC 567-81.1) [Added April 2001].
- *Pretreatment* - the reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater prior to or in lieu of discharging or otherwise introducing such pollutants in to a POTW. The reduction or alteration may be obtained by physical, chemical, or biological processes, by process changes, or by other means, except as prohibited in 40 CFR 403.6(d) (IAC 567-60.2) [Added February 2010].
- *Primary Treatment* - a treatment process designed to remove organic and inorganic settleable solids from wastewater by the physical process of sedimentation (IAC 567-81.1) [Added April 2001].

- *Primary Treatment Unit*- a unit or system to separate the floating and settleable solids from the wastewater before the partially treated effluent is discharged for secondary treatment (IAC 567-69.1(2)) [Added April 1999; Citation Revised February 2008; Revised February 2010].
- *Private Sewage Disposal Systems* -
 1. a system which provides for the treatment or disposal of domestic sewage from four or fewer dwelling units or the equivalent of fewer than 16 individuals on a continuing basis. "Private sewage disposal systems" includes, but is not limited to, septic tanks as defined in subrule 567-69.1(2); holding tanks for waste; and impervious vault toilets, portable toilets, and chemical toilets as described in 567-69.15(455B) (IAC 567-68.2) [Revised February 2007].
 2. a system which provides for the treatment or disposal of domestic sewage from four or fewer dwelling units or the equivalent of less than 16 individuals on a continuing basis. This includes domestic waste, whether residential or nonresidential, but does not include industrial waste of any flow rate (IAC 567-69.1(2)) [Added February 2010].
- *Process Wastewater* - water directly or indirectly used in the operation of the AFO for any or all of the following: spillage or overflow from animal or poultry watering systems; washing, cleaning, or flushing pens, barns, manure pits, or other AFO facilities; direct contact swimming, washing, or spray cooling of animals; or dust control. Process wastewater also includes any water which comes into contact with any raw materials, products, or by products including manure, litter, feed, milk, eggs or bedding (IAC 567-65.100) [Added February 2007].
- *Production Area* - that part of an AFO that includes the area in which animals are confined, the manure storage area, the raw materials storage area, egg washing and egg processing facilities, and the waste containment areas. The area in which animals are confined includes, but is not limited to, open lots, housed lots, feedlots, stall barns, free stall barns, milk rooms, milking centers, cow yards, barnyards, medication pens, walkers, animal walkways, confinement housed, and stables. The manure storage area includes, but is not limited to, lagoons, solids settling facilities, settled open feedlot effluent basins, storage sheds, stockpiles, under house or pit storages, liquid impoundments, static piles, and composting piles. The raw materials storage area includes, but is not limited to, feed silos, silage bunkers, and bedding materials. The waste containment area includes, but is not limited to, settling basins and areas within berms and diversions which separate uncontaminated storm water. Also included in the definition of production area is any area used in the storage, handling, treatment, or disposal of mortalities (IAC 567-65.100) [Added February 2007; Revised February 2010].
- *Professional Soil Analysis* - an alternative to the percolation test which depends upon a knowledgeable person evaluating the soil characteristics, such as color, texture, and structure, in order to determine an equivalent percolation or loading rate. A person performing a professional soil analysis shall demonstrate training and experience in soil morphology, such as testing absorption qualities of soil by the physical examination of the soil's color, mottling, texture, structure, topography, and hillslope position. (IAC 567-69.1(2)) [Added April 1999; Revised February 2010].
- *Publicly Owned Treatment Works (POTW)* - any device or system used in the treatment of municipal sewage or industrial wastes of a liquid nature which is owned by a municipal corporation or other public body created by or under Iowa law and having jurisdiction over disposal of sewage, industrial wastes or other wastes, or a designated and approved management agency under section 208 of the Act (IAC 567-60.2) [Added February 2010].
- *Qualified Confinement Feeding Operation* - a confinement feeding operation which has an animal unit capacity of (IAC 567-65.1) [Added April 2003]:
 1. 5,333 or more for animals other than swine as part of a farrowing and gestating operation or farrow-to-finish operation or cattle as part of a cattle operation
 2. 2,500 or more for a swine farrowing and gestating operation
 3. 5,400 or more for a swine farrow-to-finish operation
 4. 8,500 or more for a confinement feeding operation maintaining cattle.

- *Release* - an actual, imminent or probable discharge of manure from an animal feeding operation structure to surface water, groundwater, drainage tile line or intake, or to a designated area resulting from storing, handling, transporting or land-applying manure (IAC 567-65.1) [Added April 2003].
- *Release* - an actual, imminent or probable discharge of process wastewater, manure, open feedlot effluent, settled open feedlot effluent, or settleable solids from an open feedlot operation structure to surface water, groundwater, or an actual, imminent or probable discharge directly to a drainage tile line or intake resulting from storing, handling, transporting or land-applying process wastewater, manure open feedlot effluent, settled open feedlot effluent or settleable solids (IAC 567-65.100) [Added February 2007].
- *Roof Drain* - a drain installed to receive water collecting on the surface of a roof and discharging into an area or storm drain system (IAC 567-69.1(2)) [Added April 1999].
- *Secondary Treatment System* - a system which provides biological treatment of the effluent from septic tanks or other primary treatment units to meet minimum effluent standards as required in these rules and NPDES General Permit No. 4. Examples include soil absorption systems, sand filters, mechanical/aerobic systems, or other systems providing equivalent treatment (IAC 567-69.1(2)) [Added April 1999; Citation Revised February 2008].
- *Septage* - the liquid and solid material pumped from a septic tank, cesspool, or similar domestic sewage treatment system, or from a holding tank, when the system is cleaned or maintained (IAC 567-69.1(2)) [Added April 1999; Citation Revised February 2008; Revised February 2010].
- *Septage* - the liquid and solid material pumped from a septic tank, cesspool, or similar domestic sewage treatment system, or from a holding tank, when the system is cleaned or maintained (IAC 567-68.2) [Revised February 2007].
- *Septic Tank* - a watertight structure into which wastewater is discharged for solids separation and digestion, referred to as part of the closed portion of the treatment system (IAC 567-69.1(2)) [Added April 1999; Citation Revised February 2008].
- *Settleable Solids* - that portion of open feedlot effluent that meets all the following requirements: (IAC 567-65.100) [Added February 2007]:
 1. The solids do not flow perceptibly under pressure.
 2. The solids are not capable of being transported through a mechanical pumping device designed to move a liquid.
 3. The constituent molecules of the solids do not flow freely among themselves but do show the tendency to separate under stress.
- *Settled Open Feedlot Effluent* - a combination of manure, precipitation-induced runoff, or other runoff originating from an open feedlot after its settleable solids have been removed (IAC 567-65.100) [Added February 2007].
- *Sewage* - the water-carried waste products from residences, public buildings, institutions, or other buildings, including the bodily discharges from human beings or animals together with such groundwater infiltration and surface water as may be present (IAC 567-60.2) [Added February 2010].
- *Sinkhole* - any depression caused by the dissolution or collapse of subsurface materials in a carbonate formation or in gypsum or rock salt deposits through which water may be drained or lost to the local groundwater system. Such depressions may or may not be open to the surface at times. Intermittently, sinkholes may hold water forming a pond (IAC 567-60.2).
- *Small Animal Feeding Operation* - an animal feeding operation which has an animal unit capacity of 500 or fewer animal units (IAC 567-65.1) [Added April 2003].

- *Solids Settling Facility* – a basin, terrace, diversion or other structure or solids removal method which is part of an open feedlot operation and which is designed and operated to remove settleable solids from open feedlot effluent. A solids settling facility does not include a basin, terrace, diversion or other structure or solids removal method which retains the liquid portion of open feedlot effluent for more than 7 consecutive days following a precipitation event (IAC 567-65.100) [Added April 2006].
- *Stream* - any watercourse listed as being a "designated use segment" in rule 567-61.3(455B) which includes any watercourse which maintains flow throughout the year or contains sufficient pooled areas during intermittent flow periods to maintain a viable aquatic community of significance (IAC 567-69.1(2)) [Added April 1999; Citation Revised February 2008].
- *Subsurface Soil Absorption System* - a system of perforated conduits connected to a distribution system, forming a series of subsurface, water-carrying channels into which the primary treated effluent is discharged for direct absorption into the soil (referred to as part of the open portion of the treatment system) (IAC 567-69.1(2)) [Added April 1999; Citation Revised February 2008; Revised February 2010].
- *Subsurface Sand Filter* - a system in which the effluent from the primary treatment unit is discharged into perforated pipes, filtered through a layer of sand, and collected by lower perforated pipes for discharge to the surface or to a subsurface absorption system. A subsurface sand filter is an intermittent sand filter which is placed within the ground and provided with a natural topsoil cover over the crown of the distribution pipes (IAC 567-69.1(2)) [Added April 1999; Citation Revised February 2008].
- *Tank* - any container which is placed on a vehicle to transport waste removed from a private waste facility (IAC 567-68.2).
- *Toilet Unit* - a portable or fixed tank or vessel holding untreated human waste without secondary wastewater treatment which is emptied for disposal. "Toilet unit" does not include a portable or fixed tank or vessel holding untreated human waste that is part of a recreational vehicle or marine vessel. (IAC 567-68.2) [Added February 2007].
- *Upset* - an upset is 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 preventative maintenance, or careless or improper operation (IAC 567-63.6(6)) [Added February 2010].
- *Vehicle* - a device used to transport a tank (IAC 567-68.2).
- *Waste* - human or animal excreta, water, scum, sludge, septage, and grease solids from private sewage disposal (IAC 567-68.2) [Revised February 2007].
- *Wastewater Treatment Plant* - the facility or group of units used for the treatment of wastewater from public sewer systems and for the reduction and handling of solids removed from such wastes (IAC 567-81.1) [Added April 2001].
- *Water of the State* - any stream, lake, pond, marsh, watercourse, waterway, well, spring, reservoir, aquifer, irrigation system, drainage system, and any other body or accumulation of water, surface or underground, natural or artificial, public or private, which are contained within, flow through or border upon the state or any portion thereof (IAC 567-65.100) [Added February 2007].
- *Zone of Initial Dilution* - a delineated portion of a mixing zone in which wastewater discharges will be allowed to rapidly combine and begin dispersing into the water body. The acute criteria of subrule 61.3(3) will apply at the boundary of this zone (IAC 567-60.2).

**WASTEWATER MANAGEMENT
GUIDANCE FOR IOWA CHECKLIST USERS**

REFER TO CHECKLIST ITEMS:

Missing Checklist Items	WA.2.1.IA.
Discharges to the Environment	WA.5.1.IA.
Permits	WA.10.1.IA. and WA.10.2.IA.
State Permits	WA.15.1.IA. through WA.15.5.IA.
Treatment Works	
Operators	WA.20.1.IA. through WA.20.14.IA
Discharges to a POTW/FOTW	
General	WA.25.1.IA. and WA.25.2.IA.
Pretreatment Standards	WA.30.1.IA.
Limitations for Mixing Zones	WA.90.1.IA. through WA.90.6.IA.
Other Discharges and Dischargers	WA.95.1.IA. through WA.95.9.IA.
Individual Sewage Systems	WA.100.1.IA. through WA.100.20.IA.
Land Application of Sludge	
General	WA.105.1.IA. through WA.105.4.IA.
For areas not specifically addressed in this regulation, but which are addressed in Federal regulations at 40 CFR Part 503, as adopted 19 February 1993, the Federal regulation has been adopted under IAC 567-67.1(1). See the U.S. TEAM Guide.	
Vectors and Pathogens	WA.110.1.IA.
Monitoring	WA.120.1.IA.
Recordkeeping and Reporting	WA.125.1.IA. and WA.125.2.IA.
State Specific Requirements	WA.130.1.IA. through WA.130.3.IA.
Wastewater Reuse	WA.155.1.IA.

**WASTEWATER MANAGEMENT
GUIDANCE FOR IOWA APPENDIX USERS**

REFER TO APPENDIX NUMBERS:

REFER TO APPENDIX ITEMS:

12-1	Class I and Class II Sludge Pollutant Concentration
12-2	[Deleted]
12-3	[Deleted]
12-4	On-Site Wastewater Treatment and Disposal System Siting Distances
12-5	Cumulative Pollutant Loading Rates
12-6	Classification for Wastewater Treatment and Water Treatment Plant Grades, and Water Distribution System Grades

COMPLIANCE CATEGORY: WASTEWATER MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
WA.2. MISSING CHECKLIST ITEMS WA.2.1.IA. Federal facilities are required to comply with all applicable state regulatory requirements not contained in the checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of findings).	Determine whether any new regulations have been issued since the finalization of the manual. Determine whether the Federal facility has activities or facilities that are regulated but not addressed in the checklists. Verify that the Federal facility is in compliance with all applicable and newly issued regulations.

COMPLIANCE CATEGORY: WASTEWATER MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2007
WA.5. DISCHARGES TO THE ENVIRONMENT WA.5.1.IA. Facilities must avoid discharges into navigable water (IA C 5 67-62.1(1) through (2)) [Revised February 2010; Added February 2010].	(NOTE: Moved from WA.20.2.IA.) Verify that the facility avoids the following discharges into navigable water: - any discharge of any pollutant from a point source unless authorized by a NPDES permit - any radiological, chemical, or biological warfare agent or high-level radioactive waste.

COMPLIANCE CATEGORY: WASTEWATER MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
WA.10. PERMITS WA.10.1.IA. Facilities proposing to conduct activities covered by a general permit must file a complete Notice of Intent with the Department (IAC 567-64.6 and 567-64.15) [Revised April 2003; Revised February 2008; Revised February 2010].	Verify that a facility proposing to conduct activities covered by a general permit files a complete Notice of Intent with the Department. (NOTE: The following is a list of general permits adopted by the Department: - Storm Water Discharge Associated with Industrial Activity, NPDES General Permit No. 1, effective October 1, 2007, to October 1, 2012. Facilities assigned Standard Industrial Classification codes 1442, 2951, and 3273, and those facilities assigned Standard Industrial Classification codes 1422 and 1423 that have engaged primarily in rock crushing are not eligible for coverage under General Permit No. 1 - Storm Water Discharge Associated with Industrial Activity for Construction Activities, NPDES General Permit No. 2, effective October 1, 2007, to October 1, 2012 - Part I, provision B, section 1, paragraph A of General Permit No. 2 is amended to read as follows: Except for discharges identified under Parts I.B.2. and I.B.3., this permit may authorize the discharge of storm water associated with industrial activity from construction sites, (those sites or common plans of development or sale that will result in the disturbance of one or more acres of total land area) - Part VIII, under the definition: Storm water discharge associated with industrial activity, paragraph (x) of General Permit No. 2 is amended to read as follows: "Construction activity including clearing, grading and excavation activities except: operations that result in the disturbance of less than one acre of total land area that is not part of a larger common plan of development or sale." - Storm Water Discharge Associated with Industrial Activity from Asphalt Plants, Concrete Batch Plants, Rock Crushing Plants, and Construction Sand and Gravel Facilities, NPDES General Permit No. 3, effective October 1, 2007, to October 1, 2012. General Permit No. 3 authorizes storm water discharges from facilities primarily engaged in manufacturing asphalt paving mixtures and which are classified under Standard Industrial Classification 2951, primarily engaged in manufacturing Portland cement concrete and which are classified under Standard Industrial Classification 3273, those facilities assigned Standard Industrial Classifications 1422 or 1423 which are primarily engaged in the crushing, grinding or pulverizing of limestone or granite, and construction sand and gravel facilities which are classified under Standard Industrial Classification 1442. General Permit No. 3 does not authorize the discharge of water resulting from dewatering activities at rock quarries and the transferor's authorization issued under NPDES General Permit No. 2 for, and only for, the transferred property, shall be deemed by the Department as being discontinued without further action of the transferor - "Discharge from Private Sewage Disposal Systems," NPDES Permit No. 4,

COMPLIANCE CATEGORY: WASTEWATER MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
WA.10.2.IA. Wastewater disposal systems and discharges to the environment must meet NPDES permitting requirements (IA C 5 67-64.4) [Citation Revised February 2008; Revised February 2010; Added February 2010].	effective March 18, 2009 to March 17, 2011 - "Discharge from Mining and Processing Facilities," NPDES General Permit No. 5, effective July 18, 2001.) (NOTE: Moved from WA.15.2.IA.) Verify that an individual NPDES permit is obtained for any discharge of a pollutant from any point source into navigable waters. (NOTE: An NPDES permit is not required for the following: - discharges of dredged or fill material into navigable waters which are regulated under Section 404 of the Act - the introduction of sewage, industrial wastes or other pollutants into a POTW by indirect dischargers. (This exclusion from requiring an NPDES permit applies only to the actual addition of materials into the subsequent treatment works) - any discharge in compliance with the instruction of an On-Scene Coordinator pursuant to 40 CFR Part 300 (The National Oil and Hazardous Substances Pollution Contingency Plan) or 33 CFR 153.10(e) (Pollution by Oil and Hazardous Substances) - any introduction of pollutants from non-point source agricultural and silvicultural activities, including storm water runoff from orchards, cultivated crops, pastures, range lands, and forest lands, except that this exclusion does not apply to the following: - discharges from concentrated animal feeding operations - discharges from concentrated aquatic animal production facilities - discharges to aquaculture projects - discharges from silvicultural point sources - return flows from irrigated agriculture - water transfers, which are defined as activities that convey or connect navigable waters without subjecting the transferred water to intervening industrial, municipal, or commercial use.) (NOTE: The director may issue general permits for the following activities: - storm water point sources requiring an NPDES permit - private sewage disposal system discharges where subsoil discharge is not possible as determined by the administrative authority - for any discharge, except storm water only discharge, from a mining or processing facility.)

COMPLIANCE CATEGORY: WASTEWATER MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
WA.15. STATE PERMITS WA.15.1.IA. All construction, installation, or modification of a wastewater disposal system must be permitted (IAC 567 -64.2(1), (8), (11), and (13)) [Revised February 2010].	Verify that a construction permit is obtained prior to the construction, installation or modification to the wastewater disposal system. (NOTE: Construction permits are not required for the following: - storm sewers or storm water disposal systems that transport storm water only - any disposal system or extension or addition to any existing disposal system that receives only domestic or sanitary sewage from a building or housing occupied by 15 persons or less - a privately owned pretreatment facility, except an anaerobic lagoon, where a treatment unit or units provide partial reduction of the strength or toxicity of the waste stream prior to additional treatment and disposal by another person, corporation, or municipality.) Verify that, within 30 days after completion of construction, installation or modification of any wastewater disposal system, a certification by a registered professional engineer that the project was completed in accordance with the approved plans and specifications is submitted. Verify that notice is given to the appropriate regional field office of the Department 30 days prior to any planned physical alterations or additions to the permitted facility. (NOTE: Notice is required only when: - notice has not been given to any other section of the Department - the alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source as defined in 567-60.2(455B) - the alteration or addition results in a significant change in the permittee's sludge use or disposal practices - the alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are not subject to effluent limitations in the permit.)
WA.15.2.IA. [Moved February 2010].	(NOTE: Moved to WA.10.2.IA.)

COMPLIANCE CATEGORY: WASTEWATER MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
WA.15.3.IA. Wastewater disposal systems must have an permit to operate (IAC 5 67-64.3(1)) [Citation Revised February 2008; Revised February 2010].	Verify that the wastewater disposal system has a Director-issued operation permit. Verify that the wastewater disposal system is operated in compliance with permit conditions. (NOTE: The following systems do not require a permit: - private sewage disposal systems which do not discharge into, or have the potential to reach, a water of the state or subsurface drainage tile - semipublic sewage disposal system, the construction of which has been approved by the Department and which does not discharge into a waters of the state - a pretreatment system, the effluent of which is to be discharged directly to another disposal system for final treatment and disposal; - a discharge from a geothermal heat pump which does not reach a navigable water.)
WA.15.4.IA. Wastewater disposal permit holders must meet monitoring, recordkeeping, and reporting requirements (IAC 5 67-63.2 and 567 -63.7 and 63. 12) [Revised February 2010].	Verify that permit holders maintain records of all information resulting from any monitoring required in their permit. Verify that the following information is included for all samples: - date, exact place, and time of sampling - dates the analyses were performed - who performed the analyses - analytical techniques or methods used - the analyses results. Verify that records of monitoring activities and results (including all original strip chart recordings for continuous monitoring instrumentation and calibration and maintenance records) are maintained for a minimum of 3 yr. Verify that records of operation are submitted monthly and within 15 days following the close of the reporting period. Verify that all instances of noncompliance not reported within 24 hours are reported at the time monitoring reports are submitted. Verify that all permittees report any permit noncompliance that may endanger human health or the environment including, but not limited to, violations of maximum daily limits for any toxic pollutant or hazardous substance. Verify that, within 24 hours from the time the permittee becomes aware of the circumstances, information is provided orally to the appropriate regional field office of the Department. Verify that a written report is submitted within 5 days of the occurrence and includes:

COMPLIANCE CATEGORY: WASTEWATER MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
WA.15.5.IA. Agricultural drainage wells must be registered with the Department (IAC 567-51.8).	- a description of noncompliance and its cause - the period of noncompliance including exact dates and times - whether the noncompliance has been corrected or the anticipated time it is expected to continue - the steps taken or planned to reduce, eliminate, and prevent a reoccurrence of the noncompliance. (NOTE: This is repeated in WA.20.9.IA.) Verify that the agricultural drainage wells are registered with the Department.

COMPLIANCE CATEGORY: WASTEWATER MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
WA.20. TREATMENT WORKS WA.20.1.IA. Wastewater treatment plants must meet operator certification and notification requirements (IAC 567-81.2 and 81.13) [Revised April 2001]. WA.20.2.IA. [Deleted February 2010]. WA.20.3.IA. POTWs and semipublic sewage disposal systems must meet the minimum level of effluent quality attainable by secondary treatment (IAC 567-62.3(1) and (2)) [Revised February 2010].	Verify that the wastewater treatment plant has certified operators in appropriate certification types. Verify that the operator-in-charge is certified at the same classification as the plant and at an equal or higher grade than the grade designation for the plant. Verify that person(s) responsible for the operation of a plant operating shift and under the supervision of the operator-in-charge is Grade II certified for Grade III and IV plants and Grade I certified for all other plants. Verify that plant owners and operators notify the Department of a change in operators-in-charge within 30 days after the change. Verify that plant owners report the following to the Department in January of odd-numbered years: - method of treatment provided - average daily pumpage - the operator-in-charge. Verify that plant owners without a certified operator submit a compliance plan indicating what action will be taken to obtain a certified operator within 30 days of notice of violation. (NOTE: All certifications expire on 30 June of odd-numbered years and must be renewed every 2 years in order to maintain certification.) (NOTE: See Appendix 12-6 for Operator Classifications.) (NOTE: Redundant, see WA.5.1.IA. for prohibited discharges.) Verify that the POTWs and semipublic sewage disposal systems meet the following minimum levels of effluent quality by secondary treatment: - 5-day carbonaceous biochemical oxygen demand: - 30-day average may not exceed 25 mg/L - 7-day average may not exceed 40 mg/L - 30-day average percent removal may not be less than 85 percent - suspended solids - 30-day average may not exceed 30 mg/L

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	- 7-day average may not exceed 45 mg/L - 30-day average percent removal may not be less than 85 percent - the effluent values for pH are maintained within the limits of 6.0 to 9.0 unless the POTWs demonstrates the following: - inorganic chemicals are not added to the waste stream as part of the treatment process - contributions from industrial sources do not cause the pH of the effluent to be less than 6.0 or greater than 9.0. (NOTE: Under certain circumstances, on a case by case basis, the effluent quality standards may be lessened. Such circumstances are: - treatment works during wet weather that receive a combined flow from combined sewers (sewers that transport both sewage and storm water) - treatment works that take industrial wastes, when: - the permitted discharge of the 5-day carbonaceous biochemical oxygen demand and suspended solids would not be greater than that which would be permitted if such discharges were discharged directly into the waters of the state - the flow or loading of the 5-day carbonaceous biochemical oxygen demand and suspended solids introduced does not exceed 10 percent of the design flow or loading of the POTWs - waste stabilization ponds, when: - suspended solids, the 30-day average does not exceed 80 mg/L - suspended solids, the 7-day average does not exceed 120 mg/L - separate sewers, when approved by the Department - facilities designed to split flow, when approved by the Department - to match the degree of effluent reduction achievable by application of the best practicable control technology.)
WA.20.4.IA. Effluent limitations must be achieved within a reasonable time after receipt of notice from the Department (IAC 5 67-62.6(2)).	Verify that upon receipt of notice from the Department, the facility complies with effluent limitations within a reasonable time period.
WA.20.5.IA. Sources other than POTWs and semipublic sewage disposal systems that are not subject to the Federal adopted effluent standards must meet effluent limitations (IAC 5 67-62.6(3)(a)) [Revised February 2010].	Verify that sources other than publicly owned treatment works and semipublic sewage disposal that are not subject to the Federal adopted effluent standards meet any effluent limitations set by the Department. (NOTE: Effluent limitations that represent the best engineering judgment of the Department will be established for wastes from sources other than POTWs and privately owned domestic sewage treatment works that are not subject to the Federal adopted effluent standards.)

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WA.20.6.IA. Sources that are not major contributing industries or that do not have Federal pretreatment standards must meet pretreatment requirements for incompatible wastes (IAC 567-62.6(4)) [Revised February 2010].	Verify that sources within a point source category adopted by reference in 62.4 (Federal effluent and pretreatment standards) for which there are promulgated effluent limitation guidelines, but no promulgated pretreatment standards, use the promulgated effluent limitation for the pretreatment standard for incompatible pollutants.
WA.20.7.IA. An effluent, alone or with the effluent of other sources, must meet water quality standards (IAC 567-62.8(2) and (3)) [Citation Revised February 2010].	Verify that any effluent, alone or with the effluent of other sources, does not violate water quality standards. (NOTE: The Department or a POTW may impose pretreatment requirements more stringent than the applicable effluent standards or pretreatment standards if more stringent requirements are necessary to prevent violations of water quality standards, interference or pass through.) Verify that any Department or POTW imposed pretreatment requirements are met.
WA.20.8.IA. [Deleted April 2002].	(NOTE: Redundant; see WA.15.3.IA. for permit requirements.)
WA.20.9.IA. Wastewater disposal systems must keep monitoring records (IAC 567-63.2 and 63.7) [Revised February 2008].	Verify that the wastewater disposal system maintain records of all information resulting from any monitoring required in their permit. Verify that the following information is included for all samples: - date, exact place, and time of sampling - dates the analyses were performed - who performed the analyses - analytical techniques or methods used - the analyses results. Verify that records of monitoring activities and results (including all original strip chart recordings for continuous monitoring instrumentation and calibration and maintenance records) are maintained for a minimum of 3 yr. Verify that records of operation are submitted monthly and within 15 days following the close of the reporting period. Verify that all instances of noncompliance not reported under 63.12(455B) are

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WA.20.10.IA. Waste dischargers must meet monitoring requirements (IAC 567-63.3) [Revised February 2008; Revised February 2010]. WA.20.11.IA. All major municipal and industrial dischargers must carry out effluent toxicity testing (IAC 567-63.4) [Revised February 2010].	reported at the time monitoring reports are submitted. (NOTE: This is repeated in WA.15.4.IA.) Verify that organic waste dischargers, inorganic waste dischargers, and significant industrial users of POTWs meet all monitoring requirements incorporated in their operation permits. Verify that all permit required monitoring results are reported to the Department. (NOTE: The Department recognizes that most well-run facilities will be monitored more closely by the operator as appropriate to the particular system. However, the results of any monitoring beyond the requirements need not be reported to the Department, but are maintained for 3 years.) (NOTE: Minor dischargers may be required by the Department to conduct effluent toxicity tests based on case-by-case evaluation of the impact of the discharge on the receiving stream or industrial contribution to the system.) Verify that all major municipal and industrial dischargers conduct, at a minimum, one valid effluent toxicity test annually and the results placed in the operation permit. Verify that effluent toxicity testing requirements specified in the operational permit are met by the discharger. Verify that the effluent toxicity tests are done in accordance with the following general requirements: - a 24 h composite sample of the effluent is collected at the location stated in the operation permit - all composite samples are delivered to the testing laboratory within a reasonable time (~24 hours) after collection - all testing commences within 36 h after sample collection - results are reported to the Department within 30 days of completing the test (including tests performed at a greater frequency than required in the operating permit) - testing follows the <i>Standard Operation Procedure: Effluent Toxicity Testing, Iowa Department of Natural Resources</i> - all effluent toxicity testing is performed using the water flea (<i>Ceriodaphnia dubia</i>) and the fathead minnow (<i>Pimephales promelas</i>) - effluent toxicity testing includes, at a minimum, two different concentrations of effluent (one 100 percent, and the second of a diluted sample) - all effluent toxicity tests are pass/fail in nature - in the case of a positive toxicity test in the diluted effluent sample, the following procedures are required: - at a minimum, quarterly effluent toxicity tests are performed until three

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WA.20.12.IA. By-passes and upsets of sewage or wastes in the waste disposal system must be reported to the Department (IAC 567-63.6(2) through (5)) [Revised February 2010].	successful tests are determined to be negative, after which normal testing will resume - if a second test (in a row), or 3 out of 5 tests are found to be positive, the discharger conducts a toxicity reduction evaluation. (NOTE: When the pretest chemical analysis for un-ionized ammonia nitrogen (NH₃-N) or total residual chlorine (TRC) on the diluted effluent sample exceeds 0.9 mg/L for NH₃-N and 0.1 mg/L for TRC, a positive test result is likely to have been caused by high concentrations of NH₃ or TRC, and the test result will not be used to determine if follow-up testing is needed.) Verify that all by-passes except mechanical failure, Department permission is received before the by-pass Verify that all by-passes as a result of a mechanical failure are reported to the Department within 12 h. Verify that bypasses are reported with the monthly operation report, as a separate attachment, that includes: - the reason for the bypass, including the amount and duration of any rainfall event that may have contributed to the bypass - the date and time of onset or discovery of the bypass - the duration of the bypass - an estimate of the amount of untreated or partially treated sewage or wastewater that was discharged - the location of the bypass - the name of any body of surface water that was affected by the bypass. Verify that any additional monitoring, sampling, or analysis of the bypass or upset requested by the regional field office of the Department is completed. Verify that all subsequent findings and laboratory results concerning a bypass are submitted in writing to the appropriate regional field office of the Department as soon as they become available.
WA.20.13.IA. Holders of operation permits must submit records of operation monthly to the Department (IAC 567-63.8).	Verify that the records of operation are submitted monthly to the Department.
WA.20.14.IA. Laboratories conducting analyses for wastewater treatment and	Verify that all laboratories conducting required analyses required are certified in accordance with 567-Chapter 83 except for the following:

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disposal must be certified (IAC 567-63.1(4)) [Added February 2008 ; Revised February 2010].	- routine, on-site monitoring for pH , temperature, dissolved oxygen, total residual chlorine and other pollutants analyzed immediately upon sample collection - settleable solids, physical measurements such as flow and cell depth - operational monitoring tests. Verify that all instrumentation used for conducting any analyses are properly calibrated according to the manufacturer's instructions.

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DISCHARGES TO A POTW/FOTW WA.25. General WA.25.1.IA. POTWs must have a Department approved plan of action that complies with its NPDES permit (IAC 567-64.7(6)) [Citation Revised February 2010]. WA.25.2.IA. Facilities must not discharge into a POTWs and privately owned domestic sewage treatment works that are not subject to the Federal adopted effluent standards any pollutant which would cause pass through or interference (IAC 567-62.6(3)(b)) [Citation Revised February 2010].	Verify that the POTW has a Department approved plan of action that complies with its NPDES permit. Verify that the POTW follows the conditions of its plan of action and its NPDES permit. Verify that the following wastes are not introduced into privately owned treatment works: - wastes that create a fire or explosion hazard in the treatment works - wastes at a flow rate or pollution discharge rate, or both, which is excessive over relatively short time periods so that there is a treatment process upset and subsequent loss of treatment efficiency so that the effluent limitations in the permit of the treatment works are violated.

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DISCHARGES TO A POTW / FOTW WA.30. Pretreatment Standards WA.30.1.IA. Pretreatment limitations must be met (IAC 567-62.4, 567-62.5, and 567-62.6(2)) [Revised February 2010].	Verify that, upon receipt of notice from the Department, the facility complies with any Department required pretreatment limitations within a reasonable time period. (NOTE: Federal effluent and pretreatment standards are adopted in 567-62.4 and toxic effluent standards in 40 CFR Part 129, revised as of July 1, 2007.)

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WA.95. OTHER DISCHARGES AND DISCHARGERS WA.95.1.IA. Confinement feeding operations must meet permit, certification, and manure management plan requirements (IA C 5 67-65.4 through 567-65.18) [Revised April 2 002; Citation Revised April 2003 ; Revised April 2006; Revised February 2007].	Verify that a confinement feeding operation that obtains a construction permit after 20 March 1996, submits to the Department a certification from a licensed professional engineer that the manure storage structure in which manure is stored in a liquid or semiliquid form or the egg washwater storage structure was: - constructed in accordance with the design plan - supervised by the licensed professional engineer or a designee of the engineer during critical points of the construction (the designee will not be the permittee, owner of the confinement feeding operation, a direct employee of the permittee or owner, or the contractor or an employee of the contractor) - inspected by the licensed professional engineer after completion of construction and before commencement of operation - constructed in accordance with drainage tile removal standards, including a report of the findings and actions taken to comply with this subrule. Verify that a confinement feeding operation obtains an operation permit and follows the permit conditions. Verify that the following persons have a Department approved manure management plan, including an original manure management plan and an updated manure management plan: - an applicant for a construction permit for a confinement feeding operation - the owner of a confinement feeding operation other than a small animal feeding operation, if one of the following applies: - the confinement feeding operation was constructed or expanded after May 31, 1985, regardless of whether the confinement feeding operation structure was required to have a construction permit - the owner constructs a manure storage structure, regardless of whether the person is required to be issued a permit for the construction pursuant to Iowa Code section 455B.200A as amended by 2002 Iowa Acts, chapter 1137, sections 28 and 29, or whether the person has submitted a prior manure management plan - a person who applies manure in Iowa that was produced in a confinement feeding operation, other than a small operation located outside of Iowa. (NOTE: A research college is exempt from the manure management plan requirements for research activities and experiments performed under the authority of the research college and related to animal feeding operations.)
WA.95.2.IA. Confinement feeding operations must meet	Verify that the water pollution control facilities is constructed and maintained to

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minimum waste control requirements (IAC 567-65.2(1) through (8)) [Revised April 2002; Revised April 2006]. WA.95.3.IA. Animal-feeding operations, certain confinement feeding operations, and open feedlot operations must have a construction permit (IAC 567-65.7(1) and (2), 65.8, 65.105(1) and (2), and 65.108) [Revised April 2004; Revised April 2006].	meet the minimum manure control requirements. Verify that the minimum level of manure control for a confinement feeding operation is the retention of all manure produced in the confinement enclosures between periods of manure application. Verify that manure from a confinement feeding operation is not discharged directly into a water of the state or into a tile line that discharges to waters of the state. Verify that manure is removed from the control facilities as necessary to prevent overflow or discharge of manure from the facilities. Verify that no direct discharge is allowed from an animal feeding operation into a publicly owned lake, a sinkhole, or an agricultural drainage well. Verify that all manure removed from an animal feeding operation or its manure control facilities is land applied in a manner that will not cause surface or groundwater pollution. Verify that as soon as practical but not later than six months after the use of an animal feeding operation is discontinued, all manure is removed from the discontinued animal feeding operation and its manure control facilities and land-applied. Verify that the animal feeding operation has a construction permit prior to the construction, in stallation, or modification of a manure control system for the animal feeding operation or reopening the operation if it was discontinued for 24 months or more. Verify that a confinement feeding operation obtains a construction permit prior to any of the following: - constructing or modifying any unformed manure storage structure - constructing, installing or modifying a confinement building or a formed manure storage structure at a confinement feeding operation if, after construction, installation or expansion, the animal unit capacity of the operation is 1,000 animal units or more - initiating a change that would result in an increase in the volume of manure or a modification in the manner in which manure is stored in any unformed manure storage structure, even if no construction or physical alteration is necessary - initiating a change, even if no construction or physical alteration is necessary, that would result in an increase in the volume of manure or a modification in the manner in which manure is stored in a formed manure storage structure if, after the change, the animal unit capacity of the operation is 1,000 animal units or more - constructing or modifying any egg washwater storage structure

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	- initiating a change that would result in an increase in the volume of egg washwater or a modification in the manner in which egg washwater is stored, even if no construction or physical alteration is necessary - repopulating a confinement feeding operation if it was closed for 24 months or more and if any of the following apply: - the confinement feeding operation uses an unformed manure storage structure or egg washwater storage structure - the confinement feeding operation includes only confinement buildings and formed manure storage structures and has an animal unit capacity of 1,000 animal units or more - installing a permanent manure transfer piping system, unless the Department determines that a construction permit is not required. (NOTE: Animal feeding operations and confinement feeding operations not required to obtain a construction permit: - an animal feeding operation structure used in conjunction with a small animal feeding operation - an animal feeding operation structure related to research activities and experiments performed under the authority and regulations of a research college.) Verify that open feedlot operations obtain a construction permit prior to any of the following: - the construction, including expansion, of a settled open feedlot effluent basin or AT system if the open feedlot operation is required to be issued an NPDES permit - the Department has previously issued the open feedlot operation a construction permit and any of the following applies: - the animal unit capacity of the open feedlot operation will be increased to more than the animal unit capacity approved by the Department in the previous construction permit - the volume of settled open feedlot effluent, settleable solids and open feedlot effluent stored at the open feedlot operation would be more than the volume approved by the Department in the previous construction permit - the open feedlot operation was discontinued for 24 months or more and the animal unit capacity would be 1000 animal units or more. (NOTE: A construction permit is not required for the following. - if the basin or system is part of an open feedlot operation which is owned by a research college conducting research activities - solids settling facilities are being constructed.) (NOTE: Construction begins on an animal feeding operation structure is constructed when any of the following occur: - excavation for a proposed animal feeding operation structure, or excavation for footings for a proposed animal feeding operation structure - installation of forms for concrete for an animal feeding operation structure - installation of piping for movement of manure within or between a animal

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WA.95.4.IA. Permitted animal-feeding operations must meet self-monitoring and reporting requirements (IAC 567-63.5) [Revised February 2010].	feeding operation structures Construction does not begin upon occurrence of any of the following: - removal of trees, brush, or other vegetative growth - construction of driveways or roads - general earth moving for leveling or compacting at the site - installation of temporary utility services.) Verify that a confinement feeding operation structure is not constructed on the 100 year flood plain. (NOTE: Placing fill material on flood plain land to elevate the land above the 100 year level is not considered as removing the land from the 100 year flood plain.) Verify that animal-feeding operations meet the self-monitoring and reporting requirements in their operational permit. (NOTE: The following are the minimum requirements which may be part of the operational permit: - measurement of liquid level in waste storage facilities - measurement of daily precipitation - sampling and analysis of groundwater - other measurements necessary to evaluate the adequacy of a waste disposal system.) Verify that reports of self-monitoring results are submitted by the tenth day of the month following the quarter being reported to the appropriate regional field office of the Department. Verify that the quarterly reports cover the periods January through March, April through June, July through September, and October through December.
WA.95.5.IA. Manure management plans are required for manure produced from confinement operations (IAC 567-65.16) [Added April 2001; Revised April 2002; Revised April 2003].	(NOTE: A manure management plan is not required for an egg washwater storage structure.) Verify that the following persons submit manure management plans to the Department: -an applicant for a construction permit for a confinement feeding operation (not required of an applicant for an egg washwater storage structure) - the owners of confinement feeding operations other than a small animal feeding operation, if the operation was constructed or expanded after 31 May 1985, regardless of whether the operation was required to have a construction permit - a person who applies manure in Iowa that was produced in a confinement feeding operation, other than a small operation, located outside of Iowa.

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WA.95.6.IA. Releases from confinement feeding operations and open feedlots must meet reporting requirements (IAC 5 67-65.2(9) and 65. 101(9)) [Added April 2002 ; Revised April 2006; Revised February 2007].	Verify that the management plan is submitted at least 30 days before construction begins. Verify that the confinement operation or applicator has an approved manure management plan. Verify that manure is not removed from a manure storage structure that is part of a confinement feeding operation required to submit a manure management plan, until the Department has approved the plan. (NOTE: A research college is exempt from this requirement for research activities and experiments performed under the authority of the research college and related to animal feeding operations.) (NOTE: Owners of confinement feeding operations which submitted a manure management plan are not required to submit a new plan if the plan meets the requirements of Iowa Code section 455B .200 which are summarized in 65.17(455B). Persons who have previously submitted manure management plans which do not meet the current plan requirements, and persons who have not previously submitted a manure management plan but are now required to do so, had until July 1999, to submit a manure management plan which meets the requirements.)
	(NOTE: This checklist item does not apply to land application of manure in compliance with these rules, or to precipitation or snowmelt-induced runoff from open feedlots which complies with the minimum control requirements of these rules.) Verify that any person storing, handling, transporting, or land-applying manure from a confinement operation that becomes aware of a release notifies the Department of the occurrence of release as soon as possible but not later than 6 hr after the onset or discovery of the release. Verify that the local police Department or the office of the sheriff of the affected county is also contacted within 6 hours. Verify that a written report of the release is submitted at the request of the Department within 30 days after the verbal report. Verify that all subsequent findings and laboratory results are reported and submitted in writing to the Department as soon as they become available.
WA.95.7.IA. Confinement site manure applicators must be certified (IAC 5 67-65.19(1)) [Added April 2003;	Verify that commercial manure applicators and confinement site manure applicators do not apply dry or liquid manure to land, unless the person is certified.

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WA.100. INDIVIDUAL SEWAGE SYSTEMS WA.100.1.IA. Commercial septic tank cleaners must obtain a license from the Department (IAC 567-68.3) [Revised February 2007]. WA.100.2.IA. Licensed commercial septic tank cleaners must meet operational and record keeping requirements (IAC 567-68.6 and 68.9) [Revised February 2007 ; Revised February 2008].	Verify that commercial septic tank cleaners annually apply for and obtain a license from the Department before engaging in the commercial cleaning of and disposal of septage from any private sewage disposal system in the state. (NOTE: The license period will run from July 1 to June 30 of the following year. The owner of a septic tank may clean the owner's own tank without being licensed if all other requirements of this chapter are met.) Verify that the licensed commercial cleaner performs the following practices: - supervises the removal and disposal of waste from a private sewage disposal system - maintains records of private sewage disposal systems cleaned and the location, method of waste disposal, and the volume of septage disposed of for each trip - maintain these records for 5 years and make them available upon request to county board of health or Department officials - submit the records with the waste management plan. Verify that, for all vehicles, tanks and equipment used in the commercial cleaning of private sewage disposal systems, the licensee meets the following requirements: - prevent the dripping, falling, spilling, leaking, or discharging of waste onto roads, rights-of-way or other public properties. - provide the equipment necessary for proper cleaning of private sewage disposal systems. - ensure proper construction and repair of cleaning equipment to allow easy cleaning and maintenance in an essentially rust-free and sanitary condition and appearance. - if septage is to be land-applied, provide a mechanism for properly mixing lime with the septage or a means to incorporate or inject the septage. Verify that septic tanks are emptied of all waste. (NOTE: Sludge may be loosened by pumping liquid back into the tank or adding dilution water. The tank does not have to be washed out with fresh water; however, no more than four inches of waste can be left in the bottom.) Verify that pumps and associated piping are installed with watertight connections

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WA.100.3.IA. Disposal of septage from private sewage disposal systems must meet operational and management requirements (IAC 567-68.10) [Revised February 2007].	to prevent leakage. Verify that a titration capability is provided or use in cleaning private sewage disposal systems to disperse sludge and scum into the liquid for proper cleaning. Verify that all vehicles display the license number (except for the year) assigned to the commercial septic tank cleaner with 3-inch or larger letters and numbers on the side of the tank or vehicle. Verify that any tanks or equipment used for hauling septage from private sewage disposal systems are not used for hauling hazardous or toxic wastes as defined in 567-Chapter 131 or other wastes detrimental to land application or wastewater treatment plants. Verify that any tanks or equipment used for hauling septage from private sewage disposal systems are not used in a manner that would contaminate a potable water supply or endanger the food chain or public health. Verify that wastes from toilet units is disposed of by discharge to a publicly owned treatment works or other permitted wastewater treatment system with the treatment works owner's approval. Verify that septage from septic tanks or other types of private sewage disposal systems that normally discharge effluent for further treatment (such as mechanical/aerobic treatment tanks, siphon tanks or distribution boxes) are disposed of by utilizing one or more of the following methods: - discharged to a publicly owned treatment works or other permitted wastewater treatment system with the treatment works owner's approval - discharged to permitted septage lagoons or septage drying beds with the septage system owner's approval - land-applied. Verify that, when septage is land applied, the maximum application rate is 30,000 gallons of septage per acre of cropland per 365-day period with the nitrogen application rate no more than is utilized by the crop. Verify that a crop capable of using the nitrogen applied is grown and harvested from the site after application of the maximum annual allocation or, at a minimum, every third year. Verify that the following site restrictions are met when septage is applied to land: - septage is not applied to a lawn or a home garden - septage is not applied to land where there is a bedrock layer or seasonal high water table within 3 feet of the soil surface - land application sites have soil pH maintained above 6.0, unless crops prefer soils with lower pH conditions (if the soil pH is below 6.0, it is acceptable to

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	use agricultural lime to increase the pH to an acceptable level) - soil pH is measured and reported as part of the annual waste management plan - septage is not applied to ground that has greater than 9 percent slope - if application on frozen or snow-covered ground is necessary, it is limited to land areas of less than 5 percent slope and application rates of less than 2,500 gallons per acre per day - septage is not applied to land that is 35 feet or less from an open waterway - if septage is applied within 200 feet of a stream, lake, sinkhole or tile line surface intake located downgradient of the land application site, it is injected or applied to the surface and mechanically incorporated into the soil within 48 hours of application - if the septage is applied to land subject to flooding more frequently than once in 10 years, the septage is injected or is applied to the surface and mechanically incorporated into the soil within 48 hours - septage is not applied within 750 feet of an occupied residence, except the residence of the owner of the septic tank that was pumped, nor within 500 feet of a well - crop harvesting restrictions are met: - food crops with harvested parts that touch the septage/soil mixture and are totally above ground is not harvested for 14 months after application of domestic septage - food crops with harvested parts below the surface of the land is not harvested for 38 months after application of domestic septage - animal feed, fiber, and those food crops with harvested parts that do not touch the soil surface is not harvested for 30 days after application of the domestic septage. - animals are not allowed to graze on the land for 30 days after application of septage. Verify that one of the following vector attraction reduction requirements is met when septage is applied to land: - septage is injected below the surface of the land with no significant amount of the septage present on the land surface within one hour after the septage is injected - septage applied to the land surface is incorporated into the soil within six hours after application to or placement on the land - septage is stabilized by adding and thoroughly mixing sufficient alkaline material such as hydrated or quick lime to produce a mixture with a pH of 12. Verify that, when septage is applied to land, the person who applies the septage develops the following information and retains the information for 5 years and include it in the annually submitted waste management plan: - the location, by either street address or latitude and longitude, of each site on which septage is applied - the number of acres and precise application area in each site on which septage is applied.

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	- the gallons of septage applied each time - the total gallons applied at each site to date for the year - the date and time septage is applied to each site - the rate, in gallons per acre, at which septage is applied to each site - a description of how the vector attraction reduction requirements are met - the following certification statement is provided with the records when the records are submitted to or requested by the Department: "I certify, under penalty of law, that the pathogen requirements and the vector attraction reduction requirements have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment." Verify that, if septage is discharged (with owner approval) to a permitted sanitary landfill, the following requirements are met: - septage is stabilized by adding and thoroughly mixing sufficient lime to produce a mixture with a pH of 12 - a minimum of 30 minutes of contact time is provided after mixing the lime with the septage prior to discharging to the landfill. (NOTE: Other methods of stabilization may be acceptable.)
WA.100.4.IA. Private sewage disposal systems must have a construction permit before installation or alteration (IAC 567-69.1(1), (3)(a), (3)(c), (4), and (5) [Added April 1999 ; Revised February 2007 ; Revised February 2010].	(NOTE: Chapter 69 is intended to act as a permit by rule for private sewage disposal systems. Activities in compliance with Chapter 69 are permitted by the Director.) Verify that private sewage disposal systems have a construction permit before installation or alteration. Verify that no private sewage disposal systems are installed, repaired, or rehabilitated where a publicly owned treatment works (POTW) is available or where a local ordinance requires connection to a POTW. (NOTE: Alteration includes any changes that affect the treatment or disposal of the waste. Repair of existing components that does not change the treatment or disposal of the waste is exempt.)
WA.100.5.IA. Private sewage disposal systems must meet discharge restrictions (IAC 567-69.4) [Added April 1999; Revised February 2010].	Verify that all discharges from private sewage disposal systems which are discharged into, or have the potential to reach, any designated waters of the state or subsurface drainage tile are treated in a manner that will conform to the requirements of NPDES General Permit No. 4 issued by the Department of Natural Resources. Verify that, prior to the use of any system discharging to designated waters of the state or a subsurface drainage tile, a Notice of Intent to be covered by NPDES

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WA.100.6.IA. Private sewage disposal systems must meet siting requirements (IAC 567-69.3(2)) [Added April 1999; Revised February 2010].	General Permit No. 4 is submitted to the Department. Verify that systems covered by NPDES General Permit No. 4 meet all applicable requirements listed in the permit, including effluent sampling and monitoring.
	Verify that private sewage disposal systems are located in accordance with the minimum distances listed in Appendix 12-4. WA.100.7.IA. Private sewage disposal systems must meet septic tank requirements (IAC 567-69.8(1), (3)(a), (3)(e), and (4)(a)) [Added April 1999; Revised February 2010]. Verify that every private sewage disposal system has as a primary treatment unit a septic tank and all wastewater from the facility serviced discharges into the septic tank. Verify that septic tanks are not located upon property under ownership different from the ownership of that property or lot upon which the wastewater originates unless easements to that effect are legally recorded and approved. Verify that all septic tank effluent is discharged into a secondary treatment system. Verify that septic tanks are not used for the disposal of chemical wastes or grease in quantities which might be detrimental to the bacterial action in the tank or for the disposal of drainage from roof drains, foundation drains, or area drains. Verify that access necessary for adequate inspection, operation, and maintenance is provided to all parts of septic tanks. Verify that septic tanks are not made of metal. (NOTE: IAC 567-69.8 contains additional construction details for septic tanks.) WA.100.8.IA. Private sewage disposal system must meet soil absorption system requirements (IAC 567-69.9(1)) [Added April 1999; Revised February 2010]. Verify that, where possible, private sewage disposal system use soil absorption for secondary treatment. Verify that nothing enters the subsurface absorption system that does not first pass through the septic tank. Verify that roof, foundation, and storm drains do not discharge into or upon subsurface absorption systems. Verify that there is no construction of any kind (including driveways) covering the

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	septic tank, distribution box, or absorption field of an on-site wastewater treatment and disposal system. Verify that vehicle access over the septic tank, distribution box, or absorption field of an on-site wastewater treatment and disposal system is infrequent, primarily limited to vegetation maintenance. Verify that no wastewater is discharged upon any property under ownership different from the ownership of the property or lot upon which it originates unless easements to that effect are legally recorded and approved by the administrative authority. (NOTE: IAC 567-69.9 contains additional construction and design requirements for subsurface soil absorption systems.)
WA.100.9.IA. Impervious vault toilets must meet specific requirements (IAC 567-69.17) [Added April 1999; Citation Revised February 2010].	Verify that impervious vault toilets are located in accordance with the distances given in Appendix 12-4 for the closed portion of the treatment system. Verify that impervious vault toilets meet the following construction standards: - the vault is constructed of reinforced, impervious concrete at least 4 in. thick - the superstructure including floor slab, seat, seat cover, riser and building provide permanent safe, sanitary facilities - the vault has a cleanout opening fitted with a fly-tight cover. Verify that wastewater from impervious vault toilets is disposed of at a public sewage treatment facility.
WA.100.10.IA. Portable toilets must meet specific requirements (IAC 567-69.18) [Added April 1999 ; Revised February 2010].	Verify that portable toilets are designed to receive and retain the wastes deposited in them. Verify that portable toilets are located and maintained in a manner that will prevent the creation of any nuisance condition. Verify that disposal of waste from portable toilets is at a public sewage treatment facility.
WA.100.11.IA. [Deleted February 2010].	(NOTE: Chemical toilet requirements in IAC 567-69.15 deleted.)
WA.100.12.IA. Private sewage disposal system using	Verify that packed bed media filters are used when the administrative authority

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media filters must meet general requirements (IAC 567-69.13 [Added April 2004; Revised February 2010]).	determines the site is unacceptable for a full-sized soil absorption system. Verify that all filters having an open discharge are sampled in accordance with the requirements of NPDES General Permit No. 4 if applicable. Verify that there is no construction, such as buildings or concrete driveways covering any part of an intermittent sand filter. Verify that free access sand filters are preceded by a secondary treatment system discharging a treated effluent with BOD and TSS values less than 30 mg/L. Verify that free access filters are not buried by soil or sod and are covered to protect against severe weather conditions and to avoid encroachment of weeds or animals. Verify that pumps are installed when adequate elevation is not available for the system to operate by gravity. Verify that peat moss biofilter systems are certified by an ANSI-accredited third-party certifier to meet National Sanitation Foundation Standard 40, Class I, including appendices (March 2008), or equivalent testing as determined by the Department. Verify that a maintenance contract for the proper monitoring and servicing of the treatment system is established between the owner and a certified technician for the life of the system. Verify that the maintenance provider performs the required maintenance and reporting to the owner and to the administrative authority. (NOTE: The maintenance provider shall also report any discontinuance of maintenance of the biofilter system to the administrative authority.) Verify that peat moss biofilter systems are inspected annually by the maintenance provider. Verify that a copy of all maintenance contracts are on file in the office of the administrative authority. Verify that all recirculating textile filter systems are certified by an ANSI-accredited third-party certifier to meet National Sanitation Foundation Standard 40, Class I, including appendices (March 2008), or equivalent testing by as determined by the Department. Verify that maintenance contracts and responsibility waivers are recorded with the county recorder and in the abstract of title for the premises on which the system is installed. (NOTE: The maintenance provider shall also report any discontinuance of

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WA.100.13.IA. Private sewage disposal systems using aerobic treatment units must meet general requirements (IAC 567-69.14) [Added April 2004 ; Revised February 2010].	maintenance of the system to the administrative authority.) Verify that recirculating textile filter systems are inspected, at minimum, annually by the maintenance provider. Verify that mechanical/aerobic systems are used only when the administrative authority determines that the site is unacceptable for a soil absorption system. Verify that all individual mechanical aerobic wastewater treatment plants are certified by an ANSI-accredited third-party certifier to meet National Sanitation Foundation Standard 40, Class 1, including appendices (May 1996). Verify that all aerobic treatment units are preceded by a septic or trash tank with a minimum capacity of 500 gallons. Verify that the effluent from aerobic treatment units receive additional treatment through the use of intermittent sand filters, or soil absorption systems. Verify that a maintenance contract with a manufacturer-certified technician is maintained at all times. Verify that maintenance agreements and responsibility waivers are recorded with the county recorder and in the abstract of title for the premises on which mechanical aerobic treatment systems are installed. Verify that mechanical aerobic units are inspected for proper operation at least twice a year on six month intervals. Verify that all aerobic treatment unit systems having an open discharge are sampled in accordance with the requirements of NPDES General Permit No. 4 if applicable.
WA.100.14.IA. Private sewage disposal systems using constructed wetlands must meet general requirements (IAC 567-69.15) [Added April 2004 ; Revised February 2010].	Verify that constructed wetlands are only used where soil percolation rates at the site exceed 120 minutes per inch Verify that the effluent from a constructed wetland receives additional treatment through the use of intermittent sand filters. Verify that all constructed wetland systems having an open discharge are sampled in accordance with the requirements of NPDES General Permit No. 4 if applicable. Verify that wetland system sites are bermed to prevent surface water from entering the trenches or beds.

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WA.100.15.IA. All private sewage disposal systems that discharge above the ground surface must meet inspection requirements (IAC 567-69.5) [Added February 2010]	Verify that vegetation is established on the wetlands at time of construction. Verify that only indigenous plant species are used, preferably collected within a 100-mile radius of the site. Verify that in the late fall the vegetation is mown and the detritus left on the wetland surface as a temperature mulch and in the early spring the mulch is removed and disposed of to allow for adequate bed aeration. (NOTE: IAC 567-69-15 contains additional wetland design requirements.)
	Verify that all private sewage disposal systems that discharge above the ground surface are inspected annually to ensure proper operation. Verify that private sewage disposal systems that require a maintenance contract are inspected by a manufacturer's certified technician or person demonstrating knowledge of the system in accordance with the manufacturer's standards. Verify that private sewage disposal systems that do not require a maintenance contract are visually inspected by a person with knowledge of the system for any malfunction and have the septic tank opened, inspected, and pumped if needed. Verify that a record of the inspections and any tank pumpings are maintained and be made available to the administrative authority upon request. (NOTE: Mound systems are permitted only after a thorough site evaluation has been made and landscaping, dwelling placement, effect on surface drainage, and general topography have been considered.) Verify that mound systems are not utilized on sites subject to flooding with a ten-year or greater frequency. Verify that mound systems are located in accordance with the distances specified in Appendix 12-4 as measured from the outer edge of the sand in the mound. Verify that no buildings, driveways or other surface or subsurface obstructions are within 50 feet on the down-gradient side of the mound when the mound is constructed on a slope greater than 5 percent. Verify that no future construction is permitted in this effluent disposal area as long as the mound is in use. (NOTE: IAC 567-69.10 lists additional construction details for mound systems.)
WA.100.16.IA. Private sewage disposal systems using a mound system must meet site requirements (IAC 567-69.10(1) and (4)) [Added February 2010].	

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WA.100.17.IA. Private sewage disposal systems using an at-grade system must meet site requirements (IAC 567-69.11(1) and (3)) [Added February 2010].	(NOTE: At-grade systems are permitted only after a thorough site evaluation has been made and landscaping, dwelling placement, effect on surface drainage, and general topography have been considered.) Verify that at-grade systems are not utilized on sites subject to flooding with a ten-year or greater frequency. Verify that at-grade systems are located in accordance with the distances specified in Appendix 12-4 as measured from the outer edge of the sand in the mound. Verify that no buildings, driveways or other surface or subsurface obstructions are within 25 feet on the down-gradient side of the at-grade system when the mound is constructed on a slope greater than 5 percent. Verify that no future construction is permitted in this effluent disposal area as long as the mound is in use. (NOTE: IAC 567-69.11 lists additions construction details for mound systems.)
WA.100.18.IA. Private sewage disposal systems using waste stabilization ponds must meet location and design requirements (IAC 567-69.161(1) through (5)) [Added February 2010].	Verify that waste stabilization ponds are only used for nonresidential applications and are designed by an Iowa-licensed engineer. Verify that a septic tank precedes a waste stabilization pond. Verify that waste stabilization ponds meet the following separation distances: - 1,000 feet from the nearest inhabitable residence, commercial building, or other inhabitable structure unless the inhabitable or commercial building is the property of the owner of the proposed treatment facility or there is a written agreement with the owner of the building. - 1,000 feet from public shallow wells - 400 feet from public deep wells - 400 feet from private wells - 400 feet from lakes and public impoundments - 25 feet from property lines and rights-of-way Verify that the wastewater depth for a waste stabilization pond is 3 feet to 5 feet and uniform. Verify that a minimum freeboard of 2 feet is maintained at all times. Verify that waste stabilization pond embankments meet the following requirements: - constructed of impermeable materials and compacted - the ratio of inside embankment slopes is 3 horizontal to 1 vertical and the outside embankment slope ratio is at least 3:1 - berm tops are at least 4 feet wide

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WA.100.19.IA. Private sewage disposal systems using waste stabilization ponds must meet operational requirements (IAC 567-69.16(6) through (8)) [Added February 2010].	- are seeded from the outside toe to the inside high water line - from the high water line down the embankment diagonally, about 5 feet is riprapped for erosion and vegetation control. Verify that inlet and outlet structures meet the following requirements: - the inlet is placed no higher than 12 inches above the bottom of the pond - the inlet discharges near the middle of the pond at a point opposite the overflow structure and onto a concrete splash plate at least 2 feet square - the outlet pipe withdraws water from a submerged depth of at least 1 foot - the intake for the outlet pipe is 3 to 5 feet from the embankment. - the inlet and outlet is separated to the maximum extent possible, ideally by a berm or baffle constructed in the lagoon to prevent short-circuiting. Verify that all surface water is diverted away from the waste stabilization pond. Verify that all waste stabilization ponds having an open discharge are sampled in accordance with the requirements of NPDES General Permit No. 4 if applicable. Verify that all waste stabilization ponds are fenced adequately to prevent entrance of livestock and to discourage entrance by people into the area. Verify that signs are posted warning of possible health and safety hazards. Verify that vegetation on the top and sides of the berm are mowed and the length maintained. Verify that no trees are allowed to become established.
WA.100.20.IA. Grease interceptors must be provided for kitchen flows when grease can be expected to be discharged (IAC 567-69.7(4)) [Added February 2010].	Verify that grease interceptors are provided for kitchen flows at restaurants, nursing homes, schools, hospitals and other facilities from which grease can be expected to be discharged. Verify that grease interceptors are installed on a separate building sewer serving kitchen flows into which the grease will be discharged. Verify that the discharge from the grease interceptor flows to a properly designed septic tank or to a building sewer and then to the septic tank.

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LAND APPLICATION OF SLUDGE WA.105. General WA.105.1.IA. Land application of sewage sludge must be permitted (IAC 567-67.1(2) and 67.6) [Revised February 2008]. WA.105.2.IA. Applicators of Class I sewage sludge must meet specific operating requirements (IAC 567-67.7(2)) [Revised April 2002]. WA.105.3.IA. Applicators of Class II sewage sludge must meet specific operating requirements (IAC 567-67.8(2)) [Revised April 2002].	Verify that, prior to any land application of sewage sludge, a permit is obtained by the sewage sludge generator. (NOTE: The permit for land application for any sewage sludge generating facility will be issued concurrently and as part of a state operation permit or NPDES permit.) Verify that the sewage sludge is supplied only to applicators that comply with applicable requirements. Verify that applicators of sewage sludge comply with the following operating requirements: - only Class I sewage sludge is applied to a lawn or home garden - sewage sludge is not applied to land that is 35 ft from an open waterway - sewage sludge is applied to the land at an annual whole sludge application rate that is equal to or less than the agronomic nitrogen uptake rate, unless otherwise specified by the Department - provide an information sheet to anyone that receives the sewage sludge in a container of any sort that contains the following information: - name and address of the sewage sludge generator - a statement that a application of the sewage sludge to the land is prohibited except in accordance with the instructions on the information sheet - annual application rate for the sewage sludge. Verify that the applicator of Class II sewage sludge complies with the following operating requirements: - Class II sewage sludge is not applied to home or garden - land application sites accepting sewage sludge that does not meet the pollutant concentrations for Class I sewage sludge, follow the cumulative loading rates listed in Appendix 12-5 - Class II sewage sludge is not applied to land if it will adversely affect a threatened or endangered species or its designated critical habitat - apply Class II sewage sludge so that the annual whole sludge application rate is equal to or less than the agronomic nitrogen uptake rate, unless otherwise specified by the Department

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	- apply Class I sewage sludge only to areas where soil is classified as acceptable throughout the top 5 ft of soil - do not apply sewage sludge to soils classified as sand, loamy sand, and silt - maintain a soil pH level of 6.0 or higher unless: - crops prefer lower pH conditions - sludge meets the pollution concentrations in Appendix 12-1 for Class I - the site does not exceed calcium carbonate equivalent levels according to sound farm management practices - Class II sewage sludge application does not cause soil loss exceeding the limits set by the soil conservation district, and no sewage is applied to ground having greater than 9 percent slope unless approved by the Department - do not apply Class II sewage sludge to frozen or snow-covered ground unless necessary, and if necessary do not apply to lands with a greater than 5 degree slope unless approved by the Department - do not apply Class II sewage sludge within 35 ft of an open waterway, and, if it is applied within 200 ft incorporate it into the soil within 48 hr unless approved by the Department - if Class I sewage sludge is applied to land subject to flooding more frequently than once in 10 yr, sludge is incorporated into the soil within 48 hr - do not apply Class II sewage sludge within 200 ft of any occupied residence or well unless written agreement of both the owner and an approved farm management plan are received, in which case the distance may be reduced to a minimum of 35 ft - food crops with harvested parts that come in contact with sewage sludge are not harvested for 38 mo - food crops, feed crops, and fiber crops are not harvested for 30 days after application of sewage sludge - animals do not graze on land for 30 days after application of sewage sludge - turf grown on land where sewage sludge has been applied is not harvested for 1 yr after application, unless otherwise specified by the Department - public access to land with a high potential for public exposure is restricted for 1 yr after application of the sewage sludge - public access to land with a low potential for public exposure is restricted for 30 days after application of the sewage sludge - when required by the Director, groundwater monitoring wells and surface monitoring points are installed and a monitoring program implemented - written notice is given to the Department before initial application of sewage sludge, including: - location, by legal description, of the land application site and the land owner - name, address, telephone number, and National Elimination System permit number (if appropriate) of the sewage sludge generator and the applicator.
WA.105.4.1A. Class II sewage sludge disposal must	Verify that Class II sewage sludge is disposed of according to the following

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meet specific requirements (IAC 567-67.9(2) and (3)).	requirements: - it is not used for beneficial land application - it is disposed of according to the surface disposal subpart of 40 CFR 503 (see U.S. TEAM Guide) and IAC 567-103.6 (specific requirements for sanitary landfills that accept only municipal sewage sludge) (see SO.135.32.IA and SO.135.33.IA) or the incineration subpart of 40 C FR 503 (see U.S. TEAM Guide).

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LAND APPLICATION OF SLUDGE WA.110. Vectors and Pathogens WA.110.1.IA. Land application of Class I sewage sludge must meet vector attraction reduction requirements (IAC 567-67.7(1)(c) and 67.8(1)(c)) [Revised February 2007].	Verify that land application Class I and Class II sewage sludge meets one of the following vector attraction reduction requirements: - the mass of volatile solids in the sewage sludge are reduced by a minimum of 38 percent - the specific oxygen uptake rate (SOUR) for sewage sludge treated in an aerobic process are equal to or less than 1.5 mg of oxygen per hour per gram of total solids (dry weight basis) at 20 °C - digest a portion of the previously anaerobically digested sewage sludge anaerobically in the laboratory in a bench-scale unit for 40 additional days between 30 and 37 deg C. At the end of the 40 days, the volatile solids in the sewage sludge at the beginning of that period is reduced by less than 17 percent - digest a portion of the previously aerobically digested sewage sludge that has percent solids of 2 percent or less aerobically in the laboratory in a bench-scale unit for 30 additional days at 20 deg C. At the end of the 30 days, the volatile solids in the sewage sludge at the beginning of that period is reduced by less than 15 percent - sewage sludge is treated in an aerobic process for 14 days or longer. During that time, the temperature of the sewage sludge are higher than 40 deg C and the average temperature of the sewage sludge are higher than 45 deg C - the pH of sewage sludge are raised to 12 or higher by alkali addition and, without the addition of more alkali, remains at 12 or higher for 2 h and then at 11.5 or higher for an additional 22 h - sewage sludge are injected below the surface of the land and no significant amount of the sewage sludge are present on the land surface within 1 h after the sewage sludge is injected - sewage sludge applied to the land surface or placed on a surface disposal site is incorporated into the soil within 6 h after application to or placement on the land.

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LAND APPLICATION OF SLUDGE WA.120. Monitoring WA.120.1.IA. Class I and Class II sewage sludge applications must be monitored (IAC 567 -67.7(3) and 67. 8(3)) [Revised February 2008].	Verify that the applicator of Class I and Class II sewage sludge the pollutants listed in Appendix 12-1, pathogen density and vector attraction reduction requirements at the following frequency bases on the amount of sewage sludge: - less than 290 metric tons (325 English ton): once per year - 290 to less than 1,500 metric tons (325 to 1,680 English ton): once per quarter - 1,500 to less than 15,000 metric tons (1680 to 16,800 English ton): once per 60 days - 15,000 metric tons (or 16,800 English ton) or greater: once per month. (NOTE: After 2 yr, the Department may reduce the frequency of monitoring, but in no case may the frequency of monitoring be less than once a year when sewage sludge is applied to the land.)

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LAND APPLICATION OF SLUDGE WA.125. Recordkeeping and Reporting WA.125.1.IA. Both the generator and bulk applicator of Class I sewage sludge must keep required records for 5 yr (IAC 567-67.7(4)) [Revised February 2008]. WA.125.2.IA. Both the generator and applicator of Class II sewage sludge must keep required records for 5 yr (IAC 567-67.8(4)) [Citation Revised February 2007 ; Revised February 2008].	Verify that the generator and bulk sludge applicator of Class I sewage sludge develop and retain the following information for 5 yr: - the concentration level of each pollutant listed in Appendix 12-1 - a certification statement stating: "I certify, under the penalty of law, that the Class I sewage sludge requirements have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment" - description of how the processes to further reduce pathogens requirements are met - description of how one of the vector attraction reduction requirements are met - description of how management practices are met for each site. Verify that treatment works with a design flow rate of 1,000,000 gal/day or greater and treatment works that serve 10,000 or more submit the above information to the Department by February 19 of each year for the previous calendar year. Verify that the generator and applicator of Class II sewage sludge develop and retain the following information for 5 yr: - the concentration level of each pollutant listed in Appendix 12-1 - a certification statement stating: "I certify, under the penalty of law, that the Class II sewage sludge requirements have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment" - description of how the processes to further reduce pathogens requirements are met - description of how the vector attraction reduction requirements are met - description of how the management practices for class II sewage sludge are met for each site - location and area of each site - date and time and amount of sewage sludge applied to each site - the amount and cumulative amount of each pollutant listed in Appendix 12-1 in the sewage sludge applied to each sight (if subject to cumulative loading limits) - the amount of sewage sludge applied to each site.

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	Verify that treatment works with a design flow rate of 1 million gallons per day or greater and treatment works that serve 10,000 people or more submit the above information to the Department by February 19 of each year for the previous calendar year.

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LAND APPLICATION OF SLUDGE WA.130. State Specific Requirements WA.130.1.IA. Land application of waste from private waste facilities must meet specific requirements (IAC 567-68.10 (2)) [Revised February 2008 ; Revised February 2010].	Verify that land application of septage meets the following requirements: - application is not made at a rate higher than 30,000 gal of septage per 365-day period per acre of cropland - the nitrogen application rate is no more than is utilized by the crop. Verify that a crop capable of using the nitrogen applied is grown and harvested from the site after application of the maximum annual allocation or, at a minimum, every third year. Verify that the following site restrictions are met when septage is applied to land: - septage is not applied to a lawn or a home garden - septage is not applied to land where there is a bedrock layer or seasonal high water table within 3 feet of the soil surface - land application sites have soil pH maintained above 6.0, unless crops prefer soils with lower pH conditions and the soil pH is reported as part of the annual waste management plan - septage is not applied to ground that has greater than 9 percent slope - if application on frozen or snow-covered ground is necessary, application is limited to land areas of less than 5 percent slope and application rates of less than 2,500 gallons per acre per day - septage is not applied to land that is 35 feet or less from an open waterway - if septage is applied within 200 feet of a stream, lake, sinkhole or tile line surface intake located downgradient of the land application site, the septage is injected or applied to the surface and mechanically incorporated into the soil within 48 hours of application - if the septage is applied to land subject to flooding more frequently than once in 10 years, the septage is injected or is applied to the surface and mechanically incorporated into the soil within 48 hours - septage is not applied within 750 feet of an occupied residence, except the residence of the owner of the septic tank that was pumped, nor within 500 feet of a well. Verify that land application of septage meets crop harvesting restrictions: - food crops with harvested parts that touch the septage/soil mixture and are totally above ground are not harvested for 14 months after application of domestic septage - food crops with harvested parts below the surface of the land are not harvested for 38 months after application of domestic septage - animal feed, fiber, and those food crops with harvested parts that do not

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WA.130.2.IA. Land application of waste from private waste facilities must meet specific requirements for vector reduction (IAC 567 - 68.10(3)) [Revised February 2008; Citation Revised February 2010].	touch the soil surface are not harvested for 30 days after application of the domestic septage - animals are not allowed to graze on the land for 30 days after application of septage. Verify that, when septage is applied to land, one of the following vector attraction reduction requirements is met: - septage is injected below the surface of the land, with no significant amount of septage present on the land surface within 1 h after application - septage is applied to the surface of the land and incorporated into the soil within 6 h after application - septage is stabilized by adding and thoroughly mixing sufficient alkaline material such as hydrated or quick lime to produce a mixture with a pH of 12 - a minimum of 30 minutes of contact time is provided after mixing the lime with the septage prior to applying to land - each container of septage is monitored for compliance by testing, using a pH meter or litmus paper, two representative samples of the batch of lime-treated domestic septage taken a minimum of 30 minutes apart to verify that the pH remains at 12 or greater for the minimum 30-minute time period.
WA.130.3.IA. Records of land applicators of septage from private waste facilities must be kept for 5 yr (IAC 567-68.10(4)) [Revised February 2008 ; Citation Revised February 2010].	Verify that any person who land applies septage develops and maintains the following records for 5 yr: - location, by either street address or latitude and longitude, of each site on which septage is applied - number of acres in each site on which septage is applied - the date and time septage is applied to each site - the rate in gal/365-day period, at which septage is applied to each site - a description of how the vector attraction reduction requirements are met - the following statement: “I certify, under the penalty of law, that the pathogen and the vector attraction reduction requirements have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.” Verify that the information recorded above is included in the annually submitted waste management plan.

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WA.155. WASTEWATER REUSE WA.155.1.IA. Treated final effluent reused for golf course irrigation must meet specific requirements (IAC 567-62.10) [Added February 2010].	Verify that treated final effluent meets one of the following conditions: - a minimum residual chlorine level of 0.5 mg/l is maintained at a minimum of 15 minutes contact time of chlorine to wastewater prior to the irrigation of the golf course with treatment plant effluent - disinfected effluent is held in a retention pond with a detention time of at least 20 days prior to reuse as irrigation on a golf course. (NOTE: For this purpose, effluent may be disinfected using any common treatment technology, and either an existing pond or a pond constructed specifically for effluent retention may be used.) Verify that a golf course utilizing treated final effluent takes all of the following actions: - clearly state on all scorecards that treated final effluent is used for irrigation of the golf course and oral contact with golf balls and tees should be avoided - post signs that warn against consumption of water at all water hazards - color code, label, or tag all piping and sprinklers associated with the distribution or transmission of the treated final effluent to clearly warn against the consumptive use of the contents - restrict the access of the public to any area of the golf course where spraying is being conducted. (NOTE: Treated final effluent may be used in other manners as specified in the NPDES permit.)

Appendix 12-1

Class I and Class II Sludge Pollutant Concentration

(Source: IAC 567-67.7(1) and 567-67.8(1)) [Revised February 2008]

Class I Sewage Sludge: The concentration of each pollutant in the sewage sludge shall not exceed the following:

Pollutant	Monthly Average Concentration (milligrams per kilogram)*
Arsenic	41
Cadmium	39
Copper	1500
Lead	300
Mercury	17
Molybdenum	75
Nickel	420
Selenium	100
Zinc	2800

* Dry weight basis.

Class II Sewage Sludge: The concentration of any pollutant in the sewage sludge shall not exceed the following:

Pollutant	Ceiling Concentration (milligrams per kilogram)*
Arsenic	75
Cadmium	85
Copper	4300
Lead	840
Mercury	57
Molybdenum	75
Nickel	420
Selenium	100
Zinc	7500

* Dry weight basis

Appendix 12-2

Criteria for Dissolved Oxygen in Class B Surface Water
(NOTE: Appendix 12-3 not referenced in the WA Chapter.)

Appendix 12-3

Criteria for Chemical Constituents

(NOTE: Appendix 12-3 not referenced in the WA Chapter.)

Appendix 12-4

On-Site Wastewater Treatment and Disposal System Siting Distances

(Source: IAC 567-69.3(2)) [Added April 1999; Citation Revised February 2010]

Minimum Distance (ft)	Closed Portion of Treatment System ¹	Open Portion of Treatment System ²
Private water supply well	50	100
Public water supply well	200	200
Groundwater heat pump borehole	50	100
Lake or reservoir	50	100
Stream or pond	25	25
Edge of drainage ditch	10	10
Dwelling or other structure	10	10
Property lines (unless a mutual easement is signed and recorded)	10	10
Other type subsurface treatment system	5	10
Water lines continually under pressure	10	10
Suction water lines	50	100
Foundation drains or subsurface tiles	10	10

¹Includes septic tanks, mechanical aeration tanks and impervious vault toilets.

²Includes subsurface absorption systems, mound systems, intermittent sand filters, constructed wetlands or waste stabilization ponds.

Appendix 12-5

Cumulative Pollutant Loading Rates

(Source: IAC 567-67.8(2))

Pollutant	Cumulative Pollutant Kilograms per hectare	Pollutant Loading Rate pounds per acre
Arsenic	41	36
Cadmium	39	34
Copper	1500	1335
Lead	300	267
Mercury	17	15
Nickel	420	373
Selenium	100	89
Zinc	2800	2490

Appendix 12-6

Classification for Wastewater Treatment and Water Treatment Plant Grades, and Water Distribution System Grades

(Source: IAC 567-81.3) [Added April 2001]

81.3(1) Classifications. The wastewater treatment plant classifications are listed in the following table:

Grade Based on Design Pounds of BOD(5)/Day					
	Less than 334	335 - 835	836 - 2,505	2,506 -8,350	More than 8,350
Based on Design Population Equivalent					
Treatment Type	Less than 2,000	2,000 - 5,000	5,001 - 15,000	15,000 - 50,000	More than 50,000
Primary Treatment	I	I	I	III	IV
Waste Stabilization Lagoon	IL	IL	IIL	IL	IL
Aerated Lagoon System	IL	IL	IIL	IIL	IIL
Fixed Film Biological Treatment	II	II	III	III	IV
Activated Sludge	II	III	III	IV	IV

81.3(2) Unknown design BOD(5) loading. When the design BOD5 loading is unknown, the plant BOD(5) loading shall be determined by using the average pounds of BOD(5) of the 24-hour composite samples taken in the last 12 months. If no 24-hour composite samples were taken, then grab samples shall be used.

81.3(3) IL and IIL wastewater operator requirements. A Grade I, II, III, or IV wastewater treatment certificate will satisfy the certification requirements for a Grade IL plant. A Grade II, III, or IV wastewater treatment certificate will satisfy the certification requirements for a Grade IIL plant.

SECTION 13
WATER QUALITY MANAGEMENT
Iowa Supplement, February 2010

This section covers the state requirements for Water Quality Management and is intended to supplement the U.S. TEAM Guide. Refer to the U.S. TEAM Guide and the DOD Component Supplements for Federal, DOD, and service-specific requirements.

Definitions

- *Abandoned Well* - a well whose use has been permanently discontinued (Iowa Administrative Code (IAC) 567-49.1). The term also includes wells which are no longer in use or which are in such a state of disrepair that continued use for the purpose of accessing water is unsafe or impractical (IAC 567-39.3).
- *Abandoned Well* - a well whose use has been permanently discontinued. A well shall be considered abandoned when its condition is such that continued use is impractical or no longer desired (IAC 567-49.2) [Added April 2005].
- *Action Level* - the concentration of lead or copper in water which determines, in some cases, the treatment requirements that a water system is required to complete (IAC 567-40.2).
- *Activated Sludge* - a biological wastewater treatment process in which a mixture of wastewater and sludge floc, produced in a raw or settled wastewater by the growth of microorganisms, is agitated and aerated in the presence of a sufficient concentration of dissolved oxygen, followed by sedimentation (IAC 567-81.1) [Added April 2001].
- *Administrative Authority* - local boards of health (IAC 567-49.1).
- *Aerated Lagoon System* - a lagoon system which utilizes aeration to enhance oxygen transfer and mixing in the cell (IAC 567-81.1) [Added April 2001].
- *Aeration* - the process of initiating contact between air and water. This definition includes but is not limited to: spraying the water in the air, bubbling air through the water, or forcing the air into the water by pressure (IAC 567-81.1) [Added April 2001].
- *Antisiphon Device* - a device which will prevent back siphonage by means of a relief valve which automatically opens to the atmosphere, preventing the creation of subatmospheric pressure within a pipe, thereby preventing water from reversing its flow (IAC 567-40.2).
- *Average Daily Pumpage* - the total quantity of water pumped during the most recent one-year period of record divided by 365 days (IAC 567-81.1) [Added April 2001].
- *Backflow* - the flow of water or other liquids, mixtures, or substances into the distribution system of a potable water supply from any source other than its permitted source (IAC 567-40.2).
- *Backflow Preventer* - a device or means to prevent backflow into a potable water system (IAC 567-40.2).
- *Backflow Prevention Device* - any device, method or type of construction to prevent backflow of water, liquids, mixtures, or substances into a well or into the distribution pipes of a potable supply of water from any source other than its intended source (IAC 567-49.2) [Added April 2005].

- *Casing* - a tubular retaining structure installed in an excavated hole to maintain the well opening (IAC 567-39.3).
- *Certified Well Contractor* - a contractor certified to construct wells, install pitless adapters, and abandon wells (IAC 567-82.1) [Added April 2003].
- *Cesspool* - a covered excavation, lined or unlined, into which wastes from toilets or urinals are discharged for disposal. Cesspools are not an approved method of sewage disposal (IAC 567-49.1).
- *Chlorination* - the addition of a chlorine compound or chlorine gas to water to inactivate pathogenic organisms (IAC 567-81.1) [Added April 2001].
- *Cistern* - a tank in which rainwater from roof drains is stored (IAC 567-40.2).
- *Class 1 Well* - a well 100 ft or less in depth and 18 in. or more in diameter (IAC 567-39.3, 567-49.2 and 567-82.1) [Revised April 2003; Citation Revised April 2005].
- *Class 2 Well* - a well more than 100 ft in depth and less than 18 in. in diameter or a bedrock well. Bedrock wells include wells completed in a single confined aquifer, in a single unconfined aquifer, and in multiple aquifers (IAC 567-39.3 and 82.1) [Revised April 2003].
- *Class 2 Well* - a well more than 100 feet in depth or less than 18 inches in diameter or a bedrock well. Bedrock wells include (IAC 567-49.2) [Added April 2005]:
 1. Wells completed in a single confined aquifer;
 2. Wells completed in a single unconfined aquifer; and
 3. Wells completed in multiple aquifers.
- *Class 3 Well* - a sandpoint well or a well 50 ft or less in depth constructed by joining a screened drive point with lengths of pipe and driving the assembly into a shallow sand and gravel aquifer (IAC 567-39.3, 567-49.2 and 567-82.1) [Revised April 2003; Citation Revised April 2005].
- *Classification* - the type of plant or system, either wastewater treatment plants, water treatment plants, or water distribution systems (IAC 567-81.1).
- *Coagulation* - a process using coagulation chemicals and mixing by which colloidal and suspended materials are destabilized and agglomerated into flocs (IAC 567-81.1) [Added April 2001].
- *Coagulation* - a process using coagulation chemicals and mixing by which colloidal and suspended materials are destabilized and agglomerated into flocs (IAC 567-40.2).
- *Community Water System (CWS)* - a public water supply system which has at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents (IAC 567-81.1) [Added April 2001].
- *Compliance Cycle* - the 9-yr 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; and the third begins 1 January 2011 and ends 31 December 2019 (IAC 567-40.2).
- *Compliance Period* - a 3-yr period within a compliance cycle. 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; and the third from 1 January 1999 to 31 December 2001 (IAC 567-40.2).
- *Conforming Well* - a well that complies with the standards of this chapter, including wells properly plugged according to 567 - Chapter 39 (IAC 567-49.2) [Added April 2005].

- *Contaminant* - any physical, chemical, biological, or radiological substance or matter in water (IAC 567-40.2).
- *Corrosion Inhibitor* - a substance capable of reducing the corrosivity of water toward metal plumbing materials, especially lead and copper, by forming a protective film on the interior surface of those materials (IAC 567-40.2).
- *Cross-Connection* - any actual or potential connection between a potable water supply and any other source or system through which it is possible to introduce into the potable system any used water, industrial fluid, gas, or other substance other than the intended potable water with which the system is supplied (IAC 567-40.2).
- *Deep Well* - a well located and constructed in such a manner that there is a continuous layer of low permeability soil or rock at least 5 feet thick located at least 25 feet below the normal ground surface and above the aquifer from which water is to be drawn (IAC 567-49.2) [Added April 2005].
- *Diatomaceous Earth Filtration* - a process resulting in substantial particulate removal in which
 1. precoat cakes of diatomaceous earth filter media is deposited on a support membrane (septum)
 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 (IAC 567-40.2).
- *Direct Charge* - the certified well contractor at the well site responsible for ensuring that the well services are performed as required in 567--Chapters 38, 39, 43, 49 and 110 (IAC 567-82.1) [Added April 2003].
- *Direct Filtration* - a series of processes including coagulation and filtration, but excluding sedimentation, resulting in substantial particulate removal (IAC 567-40.2).
- *Director* - the director of the department of natural resources or a designee (IAC 567-81.1) [Added April 2001].
- *Direct Responsible Charge (DRC)* - where shift operation is not required, accountability for and performance of active, daily on-site operation of the plant or distribution system, or of a major segment of the plant or distribution system. Where shift operation is required, "direct responsible charge" means accountability for and performance of active, daily on-site operation of an operating shift, or a major segment of the plant or distribution system. A city manager, superintendent of public works, city clerk, council member, business manager, or other administrative official shall not be deemed to have direct responsible charge of a plant or distribution system unless this person's duties include the active, daily on-site operation of the plant or distribution system. On-site operation may not necessarily mean full-time attendance at the plant or distribution system (IAC 567-81.1) [Added April 2001].
- *Direct Surface Water Filtration* - a water treatment system that applies surface water and groundwater under the influence (influenced groundwater as defined in rule 567-40.2(455B)) directly to the filters after chemical treatment consisting of coagulation and flocculation or chemical treatment consisting of coagulation. This type of system eliminates the sedimentation unit process (IAC 567-81.1) [Added April 2001].
- *Disinfectant* - any oxidant, including but not limited to, chlorine, chlorine dioxide, chloramines, and ozone, added to water in any part of the treatment process or distribution process that is intended to kill or inactivate pathogenic microorganisms (IAC 567-40.2).
- *Disinfection* - a process which inactivates pathogenic organisms in water by chemical oxidants or equivalent agents (IAC 567-40.2).
- *Disinfection* - a process which inactivates pathogenic organisms in water by chemical oxidants or equivalent agents (IAC 567-81.1) [Added April 2001].

- *Dose Equivalent* - the product of the absorbed dose from ionizing radiation and factors which account for differences in biological effectiveness due to the type of radiation and its distribution in the body as specified by the International Commission on Radiological Units and Measurements (IAC 567-40.2).
- *Electrodialysis* - the demineralization of water by the removal of ions through special membranes under the influence of a direct-current electric field (IAC 567-81.1) [Added April 2001].
- *Established Grade* - the permanent point of contact of the ground to artificial surface with the casing or curbing or the well (IAC 567-49.2) [Citation Revised April 2005].
- *Filtration* - a process for removing particulate matter from water by passage through a porous media (IAC 567-40.2).
- *First-Draw Sample* - a 1-L sample to tap water that has been standing in plumbing pipes at least 6 h and is collected without flushing the tap (IAC 567-40.2).
- *Fixed Film Biological Treatment* - a treatment process in which wastewater is passed over a media onto which are attached biological organisms capable of oxidizing the organic matter, normally followed by sedimentation. This definition includes but is not limited to: trickling filters, rotating biological contactors, packed towers and activated filters (IAC 567-81.1) [Added April 2001].
- *Fluoridation* - the addition of fluoride to produce the optimum fluoride concentration in water (IAC 567-81.1) [Added April 2001].
- *Grade* - one of six levels of classification of operator certification, designated as either I, IL, II, IIL, III, or IV (IAC 567-81.1).
- *Initial Compliance Period* - the first full 3-yr compliance period of a compliance cycle (IAC 567-40.2).
- *Ion Exchange* - the process of using ion exchange materials such as resin or zeolites to remove undesirable ions from water and substituting acceptable ions, for example, ion exchange for nitrate removal or ion exchange for softening (IAC 567-81.1) [Added April 2001].
- *Landowner* - an individual, trust, partnership, corporation, government or governmental subdivision or agency, association, or other legal entity that has legal or equitable title to a piece of land (IAC 567-38.1).
- *Landowner's Agent* - a person who acts for or in place of the landowner by authority from the landowner (IAC 567-38.1).
- *Lead Service Line* - a service line made of lead which connects the water main to the building inlet and any lead pigtail, gooseneck, or other fitting which is connected to the lead line. A lead gooseneck is not considered a lead service line unless it exceeds 10 ft (IAC 567-40.2).
- *Major Rehabilitation or Reconstruction* - replacement, extension, or removal of all or a portion of the well casing (IAC 567-49.1).
- *Maximum Total Trihalomethane (TTHM) Potential* - the maximum concentration of TTHM produced in a given water containing a disinfectant residual after 7 days at 25 °C or above (IAC 567-40.2).
- *Medium-Size Water System* - a water system that serves greater than 3300 and less than or equal to 50,000 persons (IAC 567-40.2).
- *Nonpublic Water Supply* - a water system that has fewer than 15 service connections or serves less than 25 people, or one that has more than 15 service connections or services more than 25 people for less than 60 days a year (IAC 567-49.1).

- *Nonpublic Water Supply Well* - a well that does not supply a public water supply system (IAC 567-49.2) [Added April 2005].
- *Nonregulated Well* - a well used to supply water for a nonregulated use (a use of water less than 25,000 gallons per day which is not required to have a water use permit) (IAC 567-49.2) [Added April 2005].
- *Nontransient Noncommunity Water System (NTNC)* - a public water system other than a community water system which regularly serves at least 25 of the same persons four hours or more per day for four or more days per week for 26 or more weeks per year (IAC 567-81.1) [Added April 2001].
- *Nontransient, Noncommunity (NTNC) Water System* - a public water system other than a community water system which regularly serves at least 25 of the same persons 4 h or more per day, for four or more days per week, for 26 or more weeks per year (IAC 567-40.2).
- *Operator-in-Charge* - person or persons on site in direct responsible charge for a plant or distribution system. A city manager, superintendent of public works, city clerk, council member, business manager, or other administrative official shall not be deemed to be the operator-in-charge of a plant or distribution system unless this person's duties include the active, daily on-site operation of the plant or distribution system. On-site operation may not necessarily mean full-time attendance at the plant or distribution system (IAC 567-81.1) [Added April 2001].
- *Optimal Corrosion Control Treatment* - the corrosion control treatment that minimizes the lead and copper concentrations at users' taps while ensuring that the treatment does not cause the water system to violate any drinking water standards (IAC 567-40.2).
- *Permitted Use* - a use of water in excess of 25,000 gallons per day which requires a water use permit pursuant to 567 - Chapters 50 through 52 and Iowa Code chapter 455B, division III, part 4 (IAC 567-49.2) [Added April 2005].
- *Pitless Adapter* - a device designed for attachment to one or more openings through a well casing. It shall be constructed so as to prevent the entrance of contaminants into the well through such openings, conduct water from the well, protect the water from freezing or extremes of temperature, and provide access to water system parts within the well (IAC 567-49.2) [Added April 2005].
- *Pitless Unit* - an assembly which extends the upper end of the well casing to above grade. It shall be constructed so, as to prevent the entrance of contaminants into the well, conduct water from the well, and protect the water from freezing or extremes of temperature, and shall provide full access to the well and to water system parts within the well. It shall provide a pitless well cap for the top terminal of the well (IAC 567-49.2) [Added April 2005].
- *Plant* - those facilities which are identified as either a water treatment plant, defined as that portion of the water supply system which in some way alters the physical, chemical, or bacteriological quality of the water, or a wastewater treatment plant, defined as the facility or group of units used for the treatment of wastewater from public sewer systems and for the reduction and handling of solids removed from such wastes (IAC 567-81.1) [Added April 2001; Revised April 2005].
- *Plug* - the closure of an abandoned well with plugging materials by procedures which will permanently seal the well from contamination by surface drainage and permanently seal off the well from contamination into an aquifer (IAC 567-39.3).
- *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 (IAC 567-40.2).

- *Population Equivalent* - for a wastewater treatment plant means the calculated number of people which would contribute the same biochemical oxygen demand (BOD) per day as the system in question, assuming that each person contributes 0.167 pounds of five-day, 20°C, BOD per day (IAC 567-81.1) [Added April 2001].
- *Private Water Well* - a well that does not supply a public water supply system (IAC 567-38.1).
- *Public Water Supply System (also referred to as a system or a water system)* - a system for the provision to the public of piped water for human consumption, if the 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. The term also includes (1) any collection, treatment, storage, and distribution facilities under control of the supplier of water and used primarily in connection with the system, and (2) any collection (including wells) or pretreatment storage facilities not under this control which are used primarily in connection with the system. A public water supply system is either a community water system or a noncommunity water system, defined as follows:
 1. community water system - a public water supply system which has at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents
 2. noncommunity water system - a public water supply system that is not a community water system (IAC 567-40.2).
- *Public Water System Certificate* - a certificate issued by the department certifying that an operator has successfully completed the certification requirements of this chapter. The certificate specifies the grades and classifications for which the certificate is valid (IAC 567-81.1).
- *Pump Installer* - a person certified by the department to perform pump services (IAC 567-49.2) [Added April 2005].
- *Pumps and Pumping Equipment* - any equipment or materials, including seals, tanks, fittings and controls utilized or intended for use in withdrawing or obtaining water for any use (IAC 567-49.2) [Added April 2005].
- *Regional Water System* - a public water supply system in which the projected number of service connections in at least 50 percent of the length of the distribution system does not average more than eight service connections per linear mile of water main (IAC 567-40.2).
- *Reverse Osmosis* - the process in which external pressure is applied to mineralized water against a semipermeable membrane to effectively reduce total dissolved solids (TDS) and radionuclides content as the water is forced through the membrane (IAC 567-81.1) [Added April 2001].
- *Rural Water District* - a water supply incorporated and organized as such pursuant to Iowa Code chapter 357A or 504A (IAC 567-81.1) [Added April 2001].
- *Sanitary Seal* - a watertight fitting which uses mechanical compression that is installed on wells that terminate in a well house (IAC 567-49.2) [Added April 2005].
- *Sanitary Survey* - a review and on-site inspection conducted by the Department of the water source, facilities, equipment, operation, maintenance, and records of a public water supply system for the purpose of evaluating the adequacy of these inspected items for producing and distributing safe drinking water and identifying improvements necessary to maintain or improve drinking water quality (IAC 567-40.2).
- *Shallow Well* - a well located and constructed in such a manner that there is not a continuous layer of low permeability soil or rock (or equivalent retarding mechanism acceptable to the department) at least 5 feet thick, the top of which is located at least 25 feet below the normal ground surface and above the aquifer from which water is to be drawn (IAC 567-49.2) [Added April 2005].
- *Significant Noncompliance* - the failure to comply with any national primary drinking water standard as adopted by the state of Iowa according to criteria established by the administrator of the federal Environmental Protection Agency (IAC 567-40.2) [Added February 2007].

- *Slow Sand Filtration* - a process involving passage of raw water through a bed of sand at low velocity (generally less than 0.4 mi/h (0.02 ft/min)) resulting in substantial particulate removal by physical and biological mechanisms (IAC 567-40.2).
- *Small Water System* - a water system that serves 3300 persons or fewer (IAC 567-40.2).
- *Stabilization* - the addition of chemical compounds to water to maintain an ionic equilibrium whereby the water is not in a depository or corrosive state (IAC 567-81.1) [Added April 2001].
- *Standby Well* - a water well which is temporarily taken out of service with the expectation of being returned to service at a future date (IAC 567-39.3).
- *Supplier of Water* - any person who owns or operates a public water supply system (IAC 567-40.2).
- *Surface Water* - all water which is open to the atmosphere and subject to surface runoff (IAC 567-40.2).
- *Total Trihalomethanes (TTHM)* - the sum of the concentration in mg/L of the trihalomethane compounds trichloromethane (chloroform), dibromochloromethane, bromodichloromethane, and tribromomethane (bromoform), rounded to two significant figures (IAC 567-40.2).
- *Unregulated Contaminants* - a contaminant for which no maximum contaminant level (MCL) has been set, but which does have federal monitoring requirements for certain public water systems set forth in CFR Title 40 Part 141.40, and additional reporting requirements in rule 567-42.3 (IAC 567-40.2) [Revised April 2005].
- *Upper Terminus* - the upper ten feet of the well casing as measured from the finished surface grade (IAC 567-49.2) [Added April 2005].
- *USEPA Methods - Methods for Chemical Analysis of Water and Wastes* (IAC 567-40.2).
- *Virus* - a virus of fecal origin which is infectious to humans by waterborne transmission (IAC 567-40.2).
- *Waste Stabilization Lagoon* - an excavation designed and constructed to receive raw or pretreated waste-water in which stabilization is accomplished by several natural self-purification processes. This definition includes both anaerobic and aerobic lagoons (IAC 567-81.1) [Added April 2001].
- *Water Distribution System* - that portion of the water supply system in which water is conveyed from the water treatment plant or other supply point to the premises of the consumer, including storage facilities and pumping stations. For the purposes of this chapter, a water distribution system does not include individual service lines to the premises of the consumer, which are not under the control of the system (IAC 567-81.1) [Added April 2001].
- *Water Distribution System* - that portion of the water supply system in which water is conveyed from the water treatment plant or other supply point to the premises of the consumer, including storage facilities and pumping stations (IAC 567-40.2) [Added April 2005].
- *Water Supply System* - the system of pipes, structures, and facilities through which water for a public water supply is obtained, treated, sold or distributed for human consumption or household use (IAC 567-81.1) [Added April 2001].
- *Water Systems* - any part of the mechanical portion of a water well that delivers water from the well to a valve that separates the well from the plumbing system. "Water systems" includes the pump, drop pipe to the well, electrical wire from the pump to the first electrical panel or connection outside the casing, piping from the well to the pressure tank or first valve outside the casing, pitless unit or adapter, and all related miscellaneous fittings necessary to operate the pump. "Water systems" does not include any outside piping to other buildings and does

not include the piping that carries the water in the remainder of the distribution system (IAC 567-49.2) [Added April 2005].

- *Water Treatment Plant* - that portion of the water supply system which in some way alters the physical, chemical, or microbiological quality of the water (IAC 567-81.1) [Added April 2001].
- *Water Well* - an excavation that is drilled, cored, bored, augured, washed, driven, dug, jetted, or otherwise constructed for assessing groundwater (IAC 567-39.3).
- *Water Well* - any excavation that is drilled, cored, bored, augured, washed, driven, dug, jetted, or otherwise constructed for the purpose of exploring for groundwater, monitoring groundwater, utilizing the geothermal properties of the ground, or extracting water from or injecting water into the aquifer. "Water well" does not include an open ditch or drain tiles or an excavation made for obtaining or prospecting for oil, natural gas, minerals, or products mined or quarried (IAC 567-82.1) [Added April 2003].
- *Well* - any excavation that is drilled, cored, driven, dug, bored, augured, jetted, washed or is otherwise constructed for the purpose of exploring for groundwater, monitoring groundwater, utilizing the geothermal properties of the ground, or extracting water from or injecting water into the aquifer. "Well" does not include an open ditch, drain tiles, an excavation made for obtaining or prospecting for oil, natural gas, minerals, or products mined or quarried, lateral geothermal heat exchange systems less than 20 feet deep, nor temporary dewatering wells such as those used during the construction of subsurface facilities only for the duration of the construction (IAC 567-49.2) [Added April 2005].
- *Well Cap* - a snug-fitting, watertight device used above flood level that excludes dust and vermin and allows for screened venting (IAC 567-49.2) [Added April 2005].
- *Well Construction* - constructing a water well and installing necessary casing, screen, liners, grout, seals, and other appurtenances (IAC 567-49.2) [Added April 2005].
- *Well Driller* - a person certified by the department to perform well drilling services (IAC 567-49.2) [Added April 2005].
- *Well Liner* - a pipe used to line the inside of a well hole but not designed to hold hydraulic or structural loading. Liners must be installed within a casing or in an ungrouted open borehole (IAC 567-49.2) [Added April 2005].
- *Well Plugging* - the closure of an abandoned well with plugging materials by procedures which will permanently seal the well from contamination by surface drainage and permanently seal off the well from contamination into an aquifer. Well plugging includes the proper application of filling and sealing materials (IAC 567-49.2) [Added April 2005].
- *Well Plugging Contractor* - a contractor certified to plug only class 1 or class 3 wells but not certified to abandon class 2 wells, construct wells, or install pitless adapters (IAC 567-82.1) [Added April 2003].
- *Well Reconstruction* - modification of the original construction of a well. "Well reconstruction" includes, but is not limited to, deepening the well, installing a liner, installing or replacing a screen with one of a different diameter or length, installing a pitless adapter, extending the casing, or hydrofracturing a well. Replacing a screen with one of identical diameter and length or replacing a pitless adapter is considered repair, not reconstruction (IAC 567-49.2) [Added April 2005].
- *Well Rehabilitation* - the physical or chemical cleaning of a well (IAC 567-49.2) [Added April 2005].
- *Well Seal* - a device used to cover or seal a well that establishes or maintains a junction between the casing of the well and the piping, electric conduit or equipment installed, so as to prevent water or other foreign material from entering the well at the uppermost terminal (IAC 567-49.2) [Added April 2005].

- *Well Services* - new well construction, well reconstruction, installation of pitless equipment, or well plugging (IAC 567-82.1) [Added April 2003].

**WATER QUALITY MANAGEMENT
GUIDANCE FOR IOWA CHECKLIST USERS**

REFER TO CHECKLIST ITEMS:

Missing Checklist Items	WQ.2.1.IA.
State-Specific Requirements	
Permits/Notifications/Exemptions	WQ.5.1.IA. and WQ.5.2.IA.
Operators	WQ.6.1.IA.
Public Water Systems	
General	WQ.10.1.IA. through WQ.10.5.IA.
Monitoring/Sampling	WQ.15.1.IA. through WQ.15.5.IA.
Disinfection and Filtration	WQ.20.1.IA. through WQ.20.8.IA.
Lead and Copper	[Deleted]
Notification and Reporting Requirements	WQ.30.1.IA. through WQ.30.7.IA.
Community Water Systems	
Standards	WQ.35.1.IA. through WQ.35.5.IA.
Monitoring/Sampling	WQ.40.1.IA. through WQ.40.23.IA.
Lead and Copper	[Deleted]
Noncommunity Water Systems	
Standards	WQ.60.1.IA. and WQ.60.2.IA.
Monitoring/Sampling	WQ.65.1.IA. through WQ.65.7.IA.
Nontransient Noncommunity Water Systems	
Standards	WQ.76.1.IA. through WQ.76.4.IA.
Monitoring/Sampling	WQ.77.1.IA. through WQ.77.18.IA.
Lead and Copper	[Deleted]
Private/Other	WQ.85.1.IA.
Drinking Water Wells	WQ.90.1.IA. through WQ.90.10.IA.
Miscellaneous Wells	WQ.100.1.IA. through WQ.100.8.IA.
Injection Control Wells (UIC)	WQ.109.1.IA.
Water Quality Standards	WQ.115.1.IA. through WQ.115.6.IA.
Water Use Permits	WQ.120.1.IA. through WQ.120.5.IA.

**WATER QUALITY MANAGEMENT
GUIDANCE FOR IOWA APPENDIX USERS**

REFER TO APPENDIX NUMBERS:

REFER TO APPENDIX ITEMS:

13-1	Total Coliform Monitoring Frequency for Regional Water Systems
13-2	Minimum Lateral Distance Requirements for Nonpublic Water Wells
13-3	Water Treatment and Distribution System Grades
13-4	Designated Use Segments
13-5	Criteria for Chemical Constituents
13-6	Well Separation Distances from Source Of Contamination
13-7	Escherichia Coli (E. coli) Content for Class A waters
13-8	Water Temperature Limitations for Representative Locations in the Mississippi River

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
WQ.2. MISSING CHECKLIST ITEMS WQ.2.1.IA. Federal facilities are required to comply with all applicable state regulatory requirements not contained in the checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of findings).	Determine whether any new regulations have been issued since the finalization of the manual. Determine whether the Federal facility has activities or facilities that are regulated but not addressed in the checklists. Verify that the Federal facility is in compliance with all applicable and newly issued regulations.

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
STATE-SPECIFIC REQUIREMENTS WQ.5. Permits/ Notifications/ Exemptions WQ.5.1.IA. Facilities with public water supply systems must meet construction permitting and approval requirements (IAC 567-40.1 and 40.4(2) [Revised April 2003]. WQ.5.2.IA. Public water systems must meet permitting requirements (IAC 567-43.2(2), (6), and 43.3(3)) [Citation Revised April 2003; Citation Revised February 2008].	Verify that systems have a valid permit prior for any construction or modification to the system. Verify that public water sources and underground finished water storage facilities have approval from the Department prior to conducting site surveys. Verify that systems have a valid operating permit. Verify that system owners notify the Director within 30 days of any change in conditions identified in the permit application. Verify that systems have a valid construction permit prior to constructing, installing, or modifying any project. (NOTE: Construction permits are not required for point-of-use treatment devices installed by a noncommunity water system, except those devices required by the Department to meet a drinking water standard.)

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
STATE-SPECIFIC REQUIREMENTS WQ.6. Operators WQ.6.1.IA. Water treatment plants and water distribution systems must meet operator certification and notification requirements (IAC 567-81.2 and 81.13) [Revised April 2001; Revised April 2005].	Verify that the wastewater treatment plant has certified operators in appropriate certification types. Verify that the operator-in-charge is certified at the same classification as the plant or water distribution system and at an equal or higher grade than the grade designation for the plant or water distribution system. Verify that person(s) responsible for the operation of a plant operating shift or a water distribution subsystem and under the supervision of the operator-in-charge is Grade II certified for Grade III and IV plants and water distribution systems and Grade I certified for all other plants and water distribution systems. Verify that plant and water distribution system owners and operators notify the Department of a change in operators-in-charge within 30 days after the change. Verify that, when requested, plant and water distribution system owners report the following to the Department: - method of treatment provided - average daily pumpage - the operator-in-charge. Verify that plant owners without a certified operator submit a compliance plan indicating what action will be taken to obtain a certified operator within 30 days of notice of violation. (NOTE: All certifications expire on 30 June of odd-numbered years and must be renewed every 2 years in order to maintain certification.) (NOTE: See Appendix 12-6 for Operator Classifications.)

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
PUBLIC WATER SYSTEMS WQ.10. General WQ.10.1.IA. Public water systems must meet use requirements for bottled water, point-of-use devices, and point-of-entry devices (IAC 567-41.1 and 567-43.1(3)(a), (b), and (d)) [Revised April 2004; Citation Revised February 2009]. WQ.10.2.IA. Public water systems must meet cross-connection control requirements (IAC 567-43.1(4)).	(NOTE: IAC 567-40 through 537-44 applies to all public water supply systems, unless a system meets all of the following conditions: - consists of distribution and storage facilities only (i.e., does not have any collection and treatment facilities) - obtains all of its water from, but is not owned or operated by, a public water supply system to which primary drinking water standards apply - does not sell water to any person - is to a carrier that conveys passengers in interstate commerce.) Verify that bottled water, point-of-use devices, or point-of-entry devices are not used to achieve permanent compliance with a maximum contaminant level (MCL), action level, or treatment technique requirement for primary drinking water standards and water supplies. (NOTE: The Department may require a system which exceeds an action level or a required treatment technique to use bottled water as a condition of an interim compliance schedule or as a temporary measure to avoid an unreasonable risk to health.) (NOTE: Noncommunity public water supply systems may be allowed by the department to use point-of-use devices to achieve MCL compliance provided the contaminant does not pose an imminent threat to health (such as bacteria) nor place a sensitive population at risk (such as infants for nitrate or nitrite).) (NOTE: See WQ.10.1.IA. for applicability.) Verify that connection between a public water supply and any other system that does not meet monitoring or drinking water standards does not occur. Verify that piping systems or plumbing equipment carrying nonpotable water, contaminated water, stagnant water, liquids, mixtures, or waste mixtures are not connected to a public water supply unless properly equipped with an antisiphon device or backflow preventer approved by the Department. Verify that positive separation is provided by the use of an air gap separation or an approved backflow preventer at all water loading stations for bulk transport tanks and that the following requirements are met: - the minimum air gap is twice the diameter of the discharge pipe - the backflow preventer for this application is a reduced pressure backflow

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
WQ.10.3.IA. Public water systems must meet specific requirements where phosphate compounds are used (IAC 567-42.4(3)(b)(2)) [Citation Revised April 2002; Revised April 2005]	preventer or an antisiphon device that complies with the standards of the American Water Works Association and has been approved by the Foundation for Cross-Connection Control and Hydraulic Research, University of Southern California. (NOTE: See WQ.10.1.IA. for applicability.) Verify that, when phosphate compounds are added to any public water supply system that includes iron or manganese removal or ion exchange softening, these compounds are applied after the iron or manganese removal or ion exchange softening treatment units, unless the Director has approved addition prior to these units. Verify that total phosphate concentration in the finished water does not exceed 10 mg/L as PO₄. Verify that chlorine is applied to the phosphate solution in sufficient quantity to give an initial concentration of 10 mg/L in the phosphate solution and that a chlorine residual is maintained in the phosphate solution at all times. Verify that test kits are provided which are capable of measuring polyphosphate and orthophosphate in a range from 0.0 to 10.0 mg/L in increments no greater than 0.1 mg/L. Verify that continuous application or injection of phosphate compounds directly into a well does not occur.
WQ.10.4.IA. Public water systems must meet specific requirements where fluorosilicic acid is used (IAC 567-42.4(3)(b)(3)) [Citation Revised April 2002].	(NOTE: See WQ.10.1.IA. for applicability.) Verify that, where fluorosilicic acid (also called hydrofluorosilicic acid) is added to a public water supply, the operator is equipped with a fluoride test kit with a minimum range of 0.0 to 2.0 mg/L in increments no greater than 0.1 mg/L. Verify that distilled water and standard fluoride solutions of 0.2 mg/L and 1.0 mg/L are provided.
WQ.10.5.IA. Return water in public water systems must meet specific requirements (IAC 567-43.1(6)) [Added April 2004].	(NOTE: See WQ.10.1.IA. for applicability.) Verify that steam condensate, cooling water from engine jackets, water used in conjunction with heat exchange devices, or treated wastewater are not returned to the public water supply system.

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
WQ.15.4.IA. [Deleted April 2004]. WQ.15.5.IA. Public water systems must meet groundwater repeat sampling requirements when nitrate or nitrite concentrations exceed MCL limitations (IAC 567-41.3) [Added April 2005].	(NOTE: IAC 567-41.2 is equivalent to Federal requirements.) (NOTE: IAC 567-41.3 is similar to 40 CFR 141.23, Inorganic chemical sampling and analytical requirements, except for the following addition.) Verify that for community, NTC, and NTNC systems, the repeat monitoring frequency for groundwater and surface water systems meets the following requirements: - quarterly for at least one year following any one sample in which the concentration is greater than or equal to 5.0 mg/L as N - monthly for at least one year following any one sample in which the concentration is greater than or equal to 10.0 mg/L as N - monthly for at least one year following any nitrite MCL exceedance. Verify that special purpose samples, such as those taken to determine whether disinfection practices are sufficient following pipe placement, replacement, or repair, are not be used to determine compliance with the MCL for total coliforms.

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
PUBLIC WATER SYSTEMS WQ.20. Disinfection and Filtration WQ.20.1.IA. [Deleted April 2004]. WQ.20.2.IA. [Deleted April 2004]. WQ.20.3.IA. Public water systems must meet continuous disinfection requirements (IAC 567-42.4(3)(b)(1)) [Citation Revised April 2004].	(NOTE: Regulations equivalent to Federal requirements.) (NOTE: IAC 567-41.2, Biological Maximum Contaminant Levels (MCL) and Monitoring Requirements, is equivalent to Federal requirements.) (NOTE: See WQ.15.1.IA. for applicability.) Verify that continuous disinfection is provided at all public water supply systems. (NOTE: Groundwater systems which meet the following requirements are exempt from the continuous disinfection requirements: - have no treatment facilities or have only fluoride, sodium hydroxide, or soda ash addition - meet bacterial drinking water standards - do not show other actual or potential hazardous contamination by microorganisms.) (NOTE: Chlorine is the preferred disinfecting agent and may be accomplished with liquid chlorine, calcium or sodium hypochlorites, or chlorine dioxide. Other disinfecting agents will be considered provided a residual can be maintained in the distribution system, reliable application equipment is available, and testing procedures for a residual are recognized in SM.) Verify that a minimum free available chlorine residual of 0.3 mg/L or a minimum total available chlorine residual of 1.5 mg/L is continuously maintained throughout the water distribution system, except for those point on the distribution system that terminate as dead ends or areas that represent very low use when compared to usage throughout the rest of the distribution system. Verify that test kits capable of measuring free and combined chlorine residuals in the following increments are provided at all chlorination facilities: - increments no greater than 0.1 mg/L in the range below 0.5 mg/L - increments no greater than 0.2 mg/L in the range 0.5 mg/L to 1.0 mg/L - increments no greater than 0.3 mg/L in the range 1.0 mg/L to 2.0 mg/L - method of analysis is recognized in SM.

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
WQ.20.4.IA. Public water systems using a surface water source or a groundwater source under the direct influence of surface water must meet specific reporting and recordkeeping requirements (IAC 567-42.4(3)(c)(2) and 43.5(2)(d)) [Revised April 2005].	Verify that a bottle of at least 56 percent ammonium hydroxide is provided at all gas chlorination installations for leak detection and that leak repair kits are available where ton chlorine cylinders are used. (NOTE: See WQ.15.1.IA. for applicability.) (NOTE: These systems report the information specified in this section monthly beginning 29 June 1993 or when filtration is installed, whichever is later.) Verify that turbidity measurements are reported within 10 days after the end of each month the system serves water to the public, including the following information: - total number of filtered water turbidity measurements taken during the month - number and percentage of filtered water turbidity measurements taken during the month which are less than or equal to the turbidity limits for the filtration technology being used - date and value of any turbidity measurements taken during the month that exceed 5 NTU. Verify that disinfection information is reported within 10 days after the end of each month the system serves water to the public, including the following: - lowest daily measurement of residual disinfectant concentration in mg/L in water entering the distribution system - date and duration of each period when the residual disinfectant concentration in water entering the distribution system fell below 0.3 mg/L free residual chlorine or 1.5 mg/L total residual chlorine and when the Department was notified of the occurrence - the following information on samples taken in conjunction with total coliform monitoring: - number of instances where the residual disinfectant concentration is measured - number of instances where the residual disinfectant concentration is not measured but HPC is measured - number of instances where the residual disinfectant concentration is measured but not detected and no HPC is measured - number of instances where no residual disinfectant concentration is detected and where HPC is greater than 500/mL - number of instances where the residual disinfectant concentration is not measured and HPC is greater than 500/mL.
WQ.20.5.IA. [Deleted April 2004].	(NOTE: IAC 567-41.7 was rescinded.)

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
WQ.20.6.IA. [Deleted April 2004].	(NOTE: IAC 567-41.7 was rescinded.)
WQ.20.7.IA. [Deleted April 2004].	(NOTE: IAC 567-41.7 was rescinded.)
WQ.20.8.IA. Public water systems using a surface water source or a groundwater source under the direct influence of surface water must meet disinfection requirements (IAC 567-43.5(2)(b)) [Added April 2005].	(NOTE: See WQ.15.1.IA. for applicability.) (NOTE: Disinfection requirements for community and noncommunity public water supply systems using surface water or groundwater under the direct influence of surface water is similar to 40 CFR 141.72 with the following changes.) Verify that the disinfection system includes either of the following: - redundant components, including an auxiliary power supply with automatic start-up and alarm to ensure that disinfectant application is maintained continuously while water is being delivered to the distribution system - automatic shutoff of delivery of water to the distribution system whenever there is less than 0.3 mg/L of residual disinfectant concentration in the water. Verify that the residual disinfectant concentration in the water entering the distribution system is not less than 0.3 mg/L free residual or 1.5 mg/L total residual chlorine for more than 4 hours.

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
PUBLIC WATER SYSTEMS WQ.25. Lead and Copper WQ.25.1.IA. [Deleted April 2004]. WQ.25.2.IA. [Deleted April 2004] WQ.25.3.IA. [Deleted February 2008] WQ.25.4.IA. [Deleted February 2008]. WQ.25.5.IA. [Deleted February 2008]. WQ.25.6.IA. [Deleted April 2004]. WQ.25.7.IA. [Deleted April 2004]. WQ.25.8.IA. [Deleted April 2004].	 (NOTE: Regulations equivalent to Federal requirements.) (NOTE: Regulations equivalent to Federal requirements.) (NOTE: IAC 567-43.7, Lead and Copper Treatment Techniques, is equivalent to 40 CFR 141.81 through 141.84.) (NOTE: IAC 567-43.7, Lead and Copper Treatment Techniques, is equivalent to 40 CFR 141.81 through 141.84.) (NOTE: IAC 567-43.7, Lead and Copper Treatment Techniques, is equivalent to 40 CFR 141.81 through 141.84.) (NOTE: Regulations equivalent to Federal requirements.) (NOTE: Regulations equivalent to Federal requirements.) (NOTE: Regulations equivalent to Federal requirements.)

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
PUBLIC WATER SYSTEMS WQ.30. Notification and Reporting Requirements WQ.30.1.IA. Public water systems must meet construction, installation, or modification certification requirements (IAC 567-41.1 and 567-43.4) [Revised February 2009]. WQ.30.2.IA. Public water systems must meet operation recordkeeping requirements (IAC 567-42.4(3)(a)) [Revised April 2005]	Verify that systems submit a certification by a registered professional engineer that the project was completed in accordance with the approved plans and specifications within 30 days after completion of construction, installation, or modification of any project. (NOTE: IAC 567-40 through 537-44 applies to all public water supply systems, unless a system meets all of the following conditions: - consists of distribution and storage facilities only (i.e., does not have any collection and treatment facilities) - obtains all of its water from, but is not owned or operated by, a public water supply system to which primary drinking water standards apply - does not sell water to any person - is to a carrier that conveys passengers in interstate commerce.) (NOTE: See WQ.30.1.IA. for applicability.) Verify that systems complete monthly operation records unless the system meets all of the following: - supplies an annual average of not more than 25,000 gpd or serves no more than an average of 250 individuals daily - a community public water supply that does not provide any type of treatment - a NTNC or TNC that only has a cation-exchange softening or iron/manganese removal treatment unit that complies with the following: - a commercially available "off-the-shelf" unit designed for home use - self-contained, requiring only a piping connection for installation - operates throughout a range of 35 to 80 psi - has not been installed for the purpose of removing a contaminant which has a maximum contaminant level, treatment technique, action level, or health advisory - does not utilize surface water, either in whole or in part, as a water source - does not use a treatment technique such as blending to achieve compliance. Verify that the reports are maintained at the facility for inspection by the department for a period of 5 years. Verify that, for CWS and NTNC public water systems, the monthly operation reports are signed by the certified operator in charge. Verify that, for TNC public water systems, the monthly operation report when

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
WQ.30.3.IA. Public water systems that exceed the total coliform MCL must meet reporting and public notification requirements (IAC 567-41.2(1)(c)(5)(1) through (3))	required by the department, is signed by the owner or the owner's designee. Verify that monthly operation reports are completed as follows: - noncommunity supplies measure and record total water used each week (daily measurement/recording recommended) - community supplies measure and record daily water used - record of measurement of intended effect of any treatment at locations and by methods best indicating effectiveness of treatment process - where the raw water does not meet primary drinking water standards and treatment is used, record of daily measurement of the primary standard constituent or an appropriate indicator constituent - where a treatment is practiced for the purpose of achieving the recommended level of any federal secondary standard, record daily measurements of the secondary constituent - record of daily measurement of chemicals which are potentially toxic in excessive concentration, such as fluoride, iodine, bromine, and chlorine, including: - amount of chemical applied each day - record of weekly measurement of all other chemicals applied, and - where the supplier of water is attempting to maintain a residual of the chemical throughout the system, record of daily measurement of the chemical - record of monthly measurement of static water levels and pumping water levels for all groundwater sources. Verify that the supplier of water maintains a record of all chemicals added to raw, partially treated or finished water, including a clear identification of the chemical by brand or generic name, and dosage rate. (NOTE: See WQ.30.1.IA. for applicability.) Verify that systems that exceed the MCL for total coliforms report the violation to the water supply section of the Department by telephone no later than the end of the next business day after it learns of the violation and notifies the public. Verify that systems which fail to meet a coliform monitoring requirement report to monitoring violation to the Department within 10 days after the system discovers the violation and notifies the public. Verify that, if fecal coliforms or <i>E. coli</i> are detected in a routine or repeat sample, systems notify the Department by telephone by the end of the day when the system is notified of the test result and notify the public. (NOTE: If systems are notified after the Department office is closed, they must notify the Department before the end of the next business day.)

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
WQ.30.4.IA. [Deleted April 2004].	(NOTE: IAC 567-41.10 is equivalent to the Federal requirements.)
WQ.30.5.IA. [Deleted February 2008].	(NOTE: IAC 567-42.1, Public Notification, is equivalent to 40 CFR Subpart Q.)
WQ.30.6.IA. [Deleted February 2008].	(NOTE: IAC 567-41.10 was rescinded.)
WQ.30.7.IA. Public water systems must meet recordkeeping requirements (IAC 567-42.5) [Revised April 2005].	(NOTE: See WQ.30.1.IA. for applicability.) (NOTE: Record maintenance requirements are similar to federal requirements found in 40 CFR 141.33 and 141.91 with the following additions.) Verify that analytical records include: - the date, place, and time of sampling, and the name of the person who collected the sample - identification of the sample as to whether it was a routine distribution system sample, check sample, raw or process water sample, or other special purpose sample - date of analysis - laboratory and person responsible for performing analysis - the analytical technique or method used - results of the analysis. (NOTE: Actual laboratory reports may be kept or data may be transferred to tabular summaries.) Verify that records of action taken by the system to correct violations of primary drinking water regulations (including administrative orders) are kept for not less than 5 years after the last action taken with respect to the particular violation involved. Verify that records concerning an operation or construction permit are maintained for at least 10 yr after the system achieves compliance with the MCL, the action level, the treatment technique requirement, the health advisory level, or after the system completes the associated construction project.

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
COMMUNITY WATER SYSTEMS	
WQ.35. Standards	
WQ.35.1.IA. [Deleted April 2004].	(NOTE: IAC 567-41.2, Biological Maximum Contaminant Levels (MCL) and Monitoring Requirements, is equivalent to Federal requirements.)
WQ.35.2.IA. Community water systems using surface water or groundwater under the direct influence of surface water must meet MCL and analytical methodology requirements for macroscopic organisms and algae (IAC 567-41.2(4)(a), (b), and (e)) [Revised April 2005].	(NOTE: This checklist item applies to both community and noncommunity public water supply systems using surface water or groundwater under direct influence of surface water.) Verify that the finished water is free of any macroscopic organisms, such as plankton, worms, or cysts. Verify that the finished water algal cell count does not exceed 500 organisms/mL or 10 percent of the total cells found in the raw water, whichever is greater. Verify that if the department determines that excessive algal cells may be present, systems measure algal cells using Method 10200F.
WQ.35.3.IA. Community water systems must meet inorganic chemical (IOC) MCL requirements (IAC 567-41.3(1)(b)(1)).	(NOTE: These regulations are essentially the same as the Federal regulations. See the U.S. TEAM Guide for specific requirements.) (NOTE: The recommended fluoride level is 1.1 mg/L.)
WQ.35.4.IA. [Deleted April 2004].	NOTE: Regulation is equivalent to Federal requirements.)
WQ.35.5.IA. [Deleted April 2004].	(NOTE: IAC 567-41.8, Radionuclides, is equivalent to the Federal requirements, 40 CFR 141.26 and 141.66.)

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
WQ.40.6.IA. [Deleted April 2004].	(NOTE: IAC 567-41.3 is equivalent to Federal requirements.)
WQ.40.7.IA. [Deleted April 2004].	(NOTE: IAC 567-41.3 is equivalent to Federal requirements.)
WQ.40.8.IA. Community water systems must meet IOC analytical methodology requirements (IAC 567-41.3(1)(e)(1) through (4) and (1)(f)).	Verify that systems use USEPA, ASTM, SM, and USGS analytical methods for IOC monitoring (see definitions for ASTM, SM, and USGS). Verify that systems meet sample preservation, container, and maximum holding time procedure requirements for collection of samples for antimony, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, nitrate, nitrite, selenium, and thallium. Verify that USEPA analytical methods are used for unregulated IOC monitoring.
WQ.40.9.IA. Community water systems must meet organic chemical compliance calculation requirements (IAC 567-41.5(1)(b)(4)).	Verify that systems monitoring more often than annually determine compliance with MCLs for organic chemicals by running an annual average at any sampling point. Verify that samples below the MDL are calculated at zero for the purpose of determining the annual average. Verify that, if confirmation samples are required by the Department, systems base compliance on the average of the 2 samples. (NOTE: The Department may allow systems which have a distribution system separable from other parts of the distribution system with no interconnections to give public notice to only the area served by that portion of the system which is out of compliance.)
WQ.40.10.IA. Community water systems must meet treatment technique requirements for acrylamide and epichlorohydrin (IAC 567-41.5(1)(b)(5)).	Verify that systems annually provide written certification to the Department, using third party or manufacturer's certification, that when acrylamide and epichlorohydrin are used in drinking water systems, the combination, or product, of dose and monomer level does not exceed the following levels: - acrylamide = 0.05 percent dosed at 1 ppm (or equivalent) - epichlorohydrin = 0.01 percent dosed at 20 ppm (or equivalent).

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
WQ.40.11.IA. Community water systems must meet VOC monitoring requirements (IAC 567-41.5(1)(c)(1)(2)(1) through (2)(6), (2)(8) through (2)(11), and (1)(4)).	Verify that systems began monitoring VOCs on 1 January 1993. (NOTE: These regulations are essentially the same as the Federal regulations. See the U.S. TEAM Guide for specific requirements.) (NOTE: Groundwater systems that do not detect a VOC contaminant may apply to the Department for a waiver from initial monitoring frequency. Groundwater systems with waivers must take one sample at each sampling point during the time the waiver is effective and update its vulnerability assessment.) (NOTE: Small systems may have a waiver for the initial round of monitoring for 1,2,4-trichlorobenzene. Detection is defined as greater than or equal to 0.0005 mg/L.) (NOTE: Surface water systems that do not detect a VOC contaminant may apply to the Department for a waiver after initial monitoring.) (NOTE: The Department may decrease quarterly monitoring requirement to annually. Systems monitoring annually must monitor during the quarter(s) that previously yielded the highest analytical result. Systems that have 3 consecutive annual samples with no detection of a contaminant may apply for a waiver.) (NOTE: If the results of the first required analyses do not detect vinyl chloride, the Department may reduce quarterly monitoring to one sample required during each compliance period.) Verify that surface water systems monitor for vinyl chloride as specified by the Department. Verify that, if a confirmation sample is required, systems average the result with the first sampling result and use the average for determination of compliance.
WQ.40.12.IA. Community water systems must meet SOC monitoring requirements (IAC 567-41.5(1)(c)(1)(3)(1) through (3)(5), (3)(7), (3)(8), and (1)(4)).	(NOTE: These regulations are essentially the same as the Federal regulations. See the U.S. TEAM Guide for specific requirements.) (NOTE: Systems may apply to the Department for a waiver from specific SOC monitoring requirements.) Verify that, if a confirmation sample is required, systems average the result with the first sampling result and use the average for determination of compliance.
WQ.40.13.IA. Community water systems must meet composite sampling	(NOTE: The Department may reduce the total number of samples a system must analyze by allowing the use of compositing. Composite samples from a maximum of 5 sampling points are allowed, provided the detection limit of the

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requirements (IAC 567-41.5(1)(c)(1)(5)(1) through (5)(3), and (5)(6)). WQ.40.14.IA. Community water systems must meet general sampling requirements for TTHMs (IAC 567-41.5(1)(e)(1), (2), and (4)).	method used for analysis is less than one-fifth of the MCL.) Verify that compositing of samples is done in the laboratory and analyzed within 14 days of sample collection. Verify that, if the concentration in the composite sample is greater than or equal to 0.0005 mg/L for any VOC or SOC contaminant, systems collect a follow-up sample from each sampling point included in the composite and analyze it within 14 days. (NOTE: If duplicates of the original sample taken from each sampling point used in the composite are available, the system may use these instead of resampling. The duplicate must be analyzed and the results reported to the Department within 14 days of collection.) (NOTE: Compositing may only be permitted by the Department at sampling points within a single system, unless the population served by the system is less than 3300 persons. In systems serving less than or equal to 3300 persons the Department may permit compositing among different systems provided the 5 sample limit is maintained.) (NOTE: The Department may allow the use of monitoring data collected after 1 January 1988, for VOCs, and 1 January 1990, for SOCs, for purposes of initial monitoring compliance. If the data meet other requirements, the Department may use the data to meet the initial monitoring requirement for the initial compliance period beginning 1 January 1993. Systems which use grandfathered samples for VOCs and which did not detect any VOC contaminants must have begun monitoring annually beginning 1 January 1993.) Verify that systems base the number of samples taken on the number of treatment plants used by the systems and that all samples required within a calendar quarter are collected within a 24-h period. (NOTE: Multiple wells drawing from a single aquifer may be considered as one treatment plant for determining the minimum number of samples.) Verify that the following systems perform analyses for TTHMs at quarterly intervals on at least 4 water samples for each treatment plant used by the systems: - systems utilizing surface water sources, in whole or in part - systems utilizing only groundwater sources, which have not been determined by the Department to qualify for the groundwater monitoring requirements. Verify that at least 25 percent of these samples are collected at locations within the distribution system reflecting the maximum residence time of the water in the system and that the remaining 75 percent are collected at representative locations in the distribution system, taking into account the following:

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WQ.40.15.IA. Community water systems utilizing only groundwater sources must meet specific sampling requirements for TTHMs (IAC 567-41.5(1)(e)(3)).	- number of persons served - different sources of water - different treatment methods employed. Verify that quarterly results are averaged. (NOTE: The Department may allow a system to reduce monitoring frequency to a minimum of one sample analyzed for TTHMs per quarter collected at a location within the distribution system reflecting the maximum residence time of the water in the system. If any time during this reduce monitoring the results from any analysis exceed 0.10 mg/L of TTHMs and the results are confirmed by at least one check sample taken promptly after the results are received or if the system makes any significant change to its source of water or treatment program, the system is required to immediately begin monitoring at the pre-reduced frequency level and does so for at least 1 yr before the frequency may be reduced again.) Verify that systems determine compliance with the TTHM MCL based on a running annual average of quarterly samples. Verify that, if the average covering any 12-mo period exceeds the MCL, the supplier of water notifies the public and monitors as specified by the Department after the public notification. (NOTE: The Department may allow a system to reduce monitoring frequency to a minimum of one sample analyzed for TTHMs per quarter collected at a location within the distribution system reflecting the maximum residence time of the water in the system.) Verify that, if any time during this reduce monitoring the results from any analysis exceed 0.10 mg/L of TTHMs and the results are confirmed by at least one check sample taken promptly after the results are received or if the system makes any significant change to its source of water or treatment program, the system immediately begins monitoring at the pre-reduced frequency level and does so for at least 1 yr before the frequency is be reduced again. Verify that, in the event of any significant change to the system's raw water or treatment program, the system immediately analyses an additional sample for maximum TTHM potential, collected at a point in the distribution system reflecting the maximum residence time of the water in the system, and uses it in determining whether the system is required to comply with the general monitoring requirement specified in WQ.40.14.IA.
WQ.40.16.IA. Community water systems must meet approval requirements prior to modifying existing treatment	Verify that systems have Departmental approval of a modification plan and of safeguards protecting the bacteriological quality of drinking water prior to modifying existing treatment processes

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processes (IAC 567-41.5(1)(e)(6)). WQ.40.17.IA. Community water systems must meet analytical methodology requirements for TTHMs, endrin, VOCs, and SOCs (IAC 567-41.5(1)(e)(5) and (f)(1) through (3)). WQ.40.18.IA. [Deleted April 2005]. WQ.40.19.IA. [Deleted April 2004] WQ.40.20.IA. [Deleted April 2004]. WQ.40.21.IA. Community water systems must meet sodium monitoring and reporting requirements (IAC 567-41.11(1)) [Revised April 2004].	Verify that systems monitor for TTHMs, VOCs, and SOCs using USEPA methods. Verify that systems monitor for endrin using USEPA Methods 505 and 508. (NOTE: IAC 567(1)(f)(4) is equivalent to 40 CFR 141.24(h)(13), PCB Analytical Methodology.) (NOTE: IAC 567-41.11 revised.) (NOTE: IAC 567-41.11 revised.) Verify that community public water systems collect and analyze one sample per source or plant, for the purpose of determining the sodium concentration in the distribution system. (NOTE: Systems utilizing multiple wells drawing raw water from a single aquifer may be considered as one source for determining the minimum number of samples to be collected.) Verify that systems utilizing a surface water source, in whole or in part, monitor for sodium at least once annually at the entry point to the distribution system. Verify that systems utilizing groundwater sources monitor at least once every 3 years at the entry point to the distribution system. Verify that community water systems that utilize cation exchange treatment collect one sodium sample of the finished water per year after all treatment. (NOTE: Systems may be required to monitor more frequently where sodium levels are variable or if certain types of treatment are used, such as cation

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WQ.40.22.IA. Community water systems using chlorine dioxide for disinfection or oxidation must monitor for chlorite (IAC 567-41.6(c)(3)) [Added April 2005].	exchange softening.) Verify that the sodium level is reported to the public by at least one of the following methods: - local public health officials are given written notification by direct mail within 3 months of receipt of the analytical results and a copy of this notice is sent to the department within ten days of its issuance - the community public water supply includes the sodium level in its annual consumer confidence report. (NOTE: Monitoring for disinfection byproducts is similar to Federal requirements with the following additions.) Verify that, if the system does not use chlorine dioxide on a daily basis, the system conducts daily monitoring each day chlorine dioxide is used, and any required monthly monitoring during those months in which chlorine dioxide is used during any portion of the month. (NOTE: Daily entry point to the distribution system samples may be analyzed by system personnel.) Verify that monthly distribution system samples are analyzed by a certified laboratory using an approved ion chromatography method.
WQ.40.23.IA. Community water systems adding chemical disinfectant to the water must monitor for total trihalomethanes (TTHM) and haloacetic acids (HAA5) (IAC 567-41.6(c)(4)) [Added April 2005].	NOTE: Monitoring for disinfection byproducts is similar to Federal requirements with the following additions.) Verify that both the TTHM and HAA5 samples are collected as paired samples during the same time period in order for each parameter to have the same annual average period for result comparison. (NOTE: A paired sample is one that is collected at the same location and time and is analyzed for both TTHM and HAA5 parameters.)

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COMMUNITY WATER SYSTEMS	
WQ.50. Lead and Copper	
WQ.50.1.IA. [Deleted April 2004].	(NOTE: IAC 567-41.4, Lead, Copper, and Corrosivity, is equivalent to the Federal requirements.)
WQ.50.2.IA. [Deleted April 2004].	(NOTE: IAC 567-41.4 is equivalent to the Federal requirements.)
WQ.50.3.IA. [Deleted April 2004].	(NOTE: IAC 567-41.4 is equivalent to the Federal requirements.)
WQ.50.4.IA. [Deleted April 2004].	(NOTE: IAC 567-41.4 is equivalent to the Federal requirements.)
WQ.50.5.IA. [Deleted April 2004].	(NOTE: IAC 567-41.4 is equivalent to the Federal requirements.)
WQ.50.6.IA. [Deleted April 2004].	(NOTE: IAC 567-41.4 is equivalent to the Federal requirements.)
WQ.50.7.IA. [Deleted April 2004].	(NOTE: IAC 567-41.4 is equivalent to the Federal requirements.)

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NONCOMMUNITY WATER SYSTEMS WQ.60. Standards WQ.60.1.IA. Noncommunity water systems using surface water or groundwater under the direct influence of surface water must meet MCL and analytical methodology requirements for macroscopic organisms and algae (IAC 567-41.2(4)(a), (b), and (e)) [Revised April 2005]. WQ.60.2.IA. [Deleted April 2004].	Verify that finished water is free of any macroscopic organisms, such as plankton, worms, or cysts. Verify that the finished water algal cell count does not exceed 500 organisms/mL or 10 percent of the total cells found in the raw water, whichever is greater. Verify that, when the Department determines that excessive algal cells may be present, systems measure algal cells using Method 10200F. (NOTE: IAC 567-41.3, Maximum Contaminant Levels (MCLs) and Monitoring Requirements for Inorganic Contaminants Other Than Lead or Copper, is equivalent to Federal requirements.)

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federal government must have a certified operator (IAC 567-43.1(5)(b)) [Added April 2001; Citation Revised April 2002]. WQ.65.7.IA. Noncommunity water supply systems must meet coliform monitoring frequency requirements (IAC 567-41.2(1)(c)(5) and (7)) [Added April 2005].	water or surface water source, has a certified operator in direct responsible charge of the treatment and distribution systems (see WQ.6.1.IA.). Verify that any TNC that uses chlorine dioxide as a disinfectant or oxidant has a certified operator in direct responsible charge of the system. Verify that the minimum number of coliform monitoring samples taken is 5 routine samples per month unless the department determines that the following noncommunity water systems may monitor total coliforms at the same frequency as a like-sized community water system: - a noncommunity system using only groundwater and serving more than 1,000 persons - a noncommunity water system using surface water, in total or in part, regardless of the number of persons it serves - a noncommunity water system using groundwater under the direct influence of surface water, regardless of the number of persons it serves - a noncommunity water system serving schools or daycares - a noncommunity water system owned or managed by a state agency, such as a park or rest area. Verify that a noncommunity water system using only groundwater (except groundwater under the direct influence of surface water) and serving 1,000 persons or fewer monitors each calendar quarter that the system provides water to the public. Verify that special purpose samples, such as those taken to determine whether disinfection practices are sufficient following pipe placement, replacement, or repair, are not used to determine compliance with the MCL for total coliforms.

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NONTRANSIENT NONCOMMUNITY WATER SYSTEMS WQ.76. Standards WQ.76.1.IA. [Deleted April 2004]. WQ.76.2.IA. [Deleted April 2004] WQ.76.3.IA. [Deleted April 2004]. WQ.76.4.IA. Nontransient noncommunity water systems that primarily serve children (child care facilities and schools) must meet fluoride MCL (IAC 567-41.3(1)(a)) [Added April 2005].	(NOTE: IAC 567-41.2, Biological Maximum Contaminant Levels (MCL) and Monitoring Requirements, is equivalent to Federal requirements.) (NOTE: IAC 567-41.3, Maximum Contaminant Levels (MCLs) and Monitoring Requirements for Inorganic Contaminants Other Than Lead or Copper, is equivalent to Federal requirements.) (NOTE: IAC 567-41.5, Organic Chemicals, is equivalent to Federal requirements.) Verify nontransient noncommunity water systems that primarily serve children (child care facilities and schools) comply with the maximum contaminant level for fluoride, 4.0 mg/L.) (NOTE: Federal fluoride MCLs only apply to community water systems.)

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NONTRANSIENT NONCOMMUNITY WATER SYSTEM WQ.77. Monitoring / Sampling	
WQ.77.1.IA. [Deleted April 2004].	(NOTE: IAC 567-41.2 is equivalent to Federal requirements.)
WQ.77.2.IA. [Deleted April 2004]	(NOTE: IAC 567-41.3 is equivalent to Federal requirements.)
WQ.77.3.IA. [Deleted April 2004].	(NOTE: IAC 567-41.3 is equivalent to Federal requirements.)
WQ.77.4.IA. [Deleted April 2004].	(NOTE: IAC 567-41.3 is equivalent to Federal requirements.)
WQ.77.5.IA. [Deleted April 2004].	(NOTE: IAC 567-41.3 is equivalent to Federal requirements.)
WQ.77.6.IA. [Deleted April 2004].	(NOTE: IAC 567-41.3 is equivalent to Federal requirements.)
WQ.77.7.IA. [Deleted April 2004].	(NOTE: IAC 567-41.3 is equivalent to Federal requirements.)
WQ.77.8.IA. [Deleted April 2004].	(NOTE: IAC 567-41.3 is equivalent to Federal requirements.)
WQ.77.9.IA. NTNC water	Verify that systems monitoring more often than annually determine compliance

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systems must meet organic chemical compliance calculation requirements (IAC 567-41.5(1)(b)(4)).	with MCLs for organic chemicals by running an annual average at any sampling point. Verify that samples below the MDL are calculated at zero for the purpose of determining the annual average. Verify that, if confirmation samples are required by the Department, systems base compliance on the average of the 2 samples. (NOTE: The Department may allow systems which have a distribution system separable from other parts of the distribution system with no interconnections to give public notice to only the area served by that portion of the system which is out of compliance.)
WQ.77.10.IA. NTNC water systems must meet treatment technique requirements for acrylamide and epichlorohydrin (IAC 567-41.5(1)(b)(5)).	Verify that systems annually provide written certification to the Department, using third party or manufacturer's certification, that when acrylamide and epichlorohydrin are used in drinking water systems, the combination, or product, of dose and monomer level does not exceed the following levels: - acrylamide = 0.05 percent dosed at 1 ppm (or equivalent) - epichlorohydrin = 0.01 percent dosed at 20 ppm (or equivalent).
WQ.77.11.IA. NTNC water systems must meet VOC monitoring requirements (IAC 567-41.5(1)(c)(1)(2)(1) through (2)(6), (2)(8) through (2)(11), and (1)(4)).	Verify that systems began monitoring VOCs on 1 January 1993. (NOTE: These regulations are essentially the same as the Federal regulations. See the U.S. TEAM Guide for specific requirements.) (NOTE: Groundwater systems that do not detect a VOC contaminant may apply to the Department for a waiver from initial monitoring frequency. Groundwater systems with waivers must take one sample at each sampling point during the time the waiver is effective and update its vulnerability assessment.) (NOTE: Small systems may have a waiver for the initial round of monitoring for 1,2,4-trichlorobenzene. Detection is defined as greater than or equal to 0.0005 mg/L.) (NOTE: Surface water systems that do not detect a VOC contaminant may apply to the Department for a waiver after initial monitoring.) (NOTE: The Department may decrease quarterly monitoring requirement to annually. Systems monitoring annually must monitor during the quarter(s) that previously yielded the highest analytical result. Systems that have 3 consecutive annual samples with no detection of a contaminant may apply for a waiver.) (NOTE: If the results of the first required analyses do not detect vinyl chloride, the Department may reduce quarterly monitoring to one sample required during

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WQ.77.12.IA. NTNC water systems must meet SOC monitoring requirements (IAC 567-41.5(1)(c)(1)(3)(1) through (3)(5), (3)(7), (3)(8), and (1)(4)).	each compliance period.) Verify that surface water systems monitor for vinyl chloride as specified by the Department. Verify that, if a confirmation sample is required, systems average the result with the first sampling result and use the average for determination of compliance. (NOTE: These regulations are essentially the same as the Federal regulations. See the U.S. TEAM Guide for specific requirements.) (NOTE: Systems may apply to the Department for a waiver from specific SOC monitoring requirements.) Verify that, if a confirmation sample is required, systems average the result with the first sampling result and use the average for determination of compliance.
WQ.77.13.IA. NTNC water systems must meet composite sampling requirements (IAC 567-41.5(1)(c)(1)(5)(1) through (5)(3), and (5)(6)).	(NOTE: The Department may reduce the total number of samples a system must analyze by allowing the use of compositing. Composite samples from a maximum of 5 sampling points are allowed, provided the detection limit of the method used for analysis is less than one-fifth of the MCL.) Verify that compositing of samples is done in the laboratory and analyzed within 14 days of sample collection. Verify that, if the concentration in the composite sample is greater than or equal to 0.0005 mg/L for any VOC or SOC contaminant, systems collect a follow-up sample from each sampling point included in the composite and analyze it within 14 days. (NOTE: If duplicates of the original sample taken from each sampling point used in the composite are available, the system may use these instead of resampling. The duplicate must be analyzed and the results reported to the Department within 14 days of collection.) (NOTE: Compositing may only be permitted by the Department at sampling points within a single system, unless the population served by the system is less than 3300 persons. In systems serving less than or equal to 3300 persons the Department may permit compositing among different systems provided the 5 sample limit is maintained.) (NOTE: The Department may allow the use of monitoring data collected after 1 January 1988, for VOCs, and 1 January 1990, for SOC, for purposes of initial monitoring compliance. If the data meet other requirements, the Department may use the data to meet the initial monitoring requirement for the initial compliance period beginning 1 January 1993. Systems which use grandfathered samples for

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WQ.77.14.IA. NTNC water systems must meet analytical methodology requirements for endrin, VOCs, and SOC (IAC 567-41.5(1)(f)(1) through (3)).	VOCs and which did not detect any VOC contaminants must have begun monitoring annually beginning 1 January 1993.) Verify that systems monitor for VOCs and SOC using USEPA methods. Verify that systems monitor for endrin using USEPA Methods 505 and 508.
WQ.77.15.IA. [Deleted April 2003].	(NOTE: IAC 567-41.11 was revised.)
WQ.77.16.IA. [Deleted April 2003].	(NOTE: IAC 567-41.11 was revised.)
WQ.77.17.IA. NTNC water systems using chlorine dioxide for disinfection or oxidation must monitor for chlorite (IAC 567-41.6(c)(3)) [Added April 2005].	(NOTE: Monitoring for disinfection byproducts is similar to Federal requirements with the following additions.) Verify that, if the system does not use chlorine dioxide on a daily basis, the system conducts daily monitoring each day chlorine dioxide is used, and any required monthly monitoring during those months in which chlorine dioxide is used during any portion of the month. (NOTE: Daily entry point to the distribution system samples may be analyzed by system personnel.) Verify that monthly distribution system samples are analyzed by a certified laboratory using an approved ion chromatography method.
WQ.77.18.IA. NTNC water systems adding chemical disinfectant to the water must monitor for total trihalomethanes (TTHM) and haloacetic acids (HAA5) (IAC 567-41.6(c)(4)) [Added April 2005].	NOTE: Monitoring for disinfection byproducts is similar to Federal requirements with the following additions.) Verify that both the TTHM and HAA5 samples are collected as paired samples during the same time period in order for each parameter to have the same annual average period for result comparison. (NOTE: A paired sample is one that is collected at the same location and time and is analyzed for both TTHM and HAA5 parameters.)

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NONTRANSIENT NONCOMMUNITY WATER SYSTEM WQ.78. Lead and Copper	
WQ.78.1.IA. [Deleted April 2004]	(NOTE: IAC 567-41.4, Lead, Copper, and Corrosivity, is equivalent to the Federal requirements.)
WQ.78.2.IA. [Deleted April 2004].	(NOTE: IAC 567-41.4 is equivalent to the Federal requirements.)
WQ.78.3.IA. [Deleted April 2004].	(NOTE: IAC 567-41.4 is equivalent to the Federal requirements.)
WQ.78.4.IA. [Deleted April 2004].	(NOTE: IAC 567-41.4 is equivalent to the Federal requirements.)
WQ.78.5.IA. [Deleted April 2004].	(NOTE: IAC 567-41.4 is equivalent to the Federal requirements.)
WQ.78.6.IA. [Deleted April 2004].	(NOTE: IAC 567-41.4 is equivalent to the Federal requirements.)
WQ.78.7.IA. [Deleted April 2004].	(NOTE: IAC 567-41.4 is equivalent to the Federal requirements.)

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STATE-SPECIFIC CATEGORIES OF WATER SYSTEMS WQ.85. Private / Other WQ.85.1.IA. Regional water systems must meet routine total coliform monitoring requirements (IAC 567-41.2(1)(c)(1)(4) and (c)(1)(7)).	Verify that systems sample for coliform bacteria at the frequencies specified in Appendix 13-1. (NOTE: At no time may the sampling frequency be less than that specified for community water systems, which is based on population sizes served.) Verify that systems with less than 82 mi of pipe collect a minimum of 5 routine total coliform samples per month, unless the Department specifies another monitoring frequency. Verify that special purpose samples, such as those taken to determine whether disinfection practices are sufficient following pipe placement, replacement, or repair, are not be used to determine compliance with the MCL for total coliforms.

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WQ.90. DRINKING WATER WELL WQ.90.1.IA. Certified well contractors must meet specific requirements (IAC 567-82.2 and 82.12(1)(a) and (b)). WQ.90.2.IA. Nonpublic water wells must be permitted and meet location requirements (IAC 567-49.3, 567-49.4, and 567-49.6) [Revised April 2005; Revised February 2008].	Verify that all well services are performed by a well contractor who has been certified by the Department except that a person may construct or reconstruct a well, install pitless equipment or plug a well on the person's own property without being certified. (NOTE: The well contractor must notify the Department or the county prior to drilling or reconstructing a well that does not have the required construction permits. A well contractor must notify the department prior to drilling a well if the use of the water requires a water use allocation and the owner has not applied for or been issued a water use allocation.) Verify that a certified well contractor is present at the well site and in direct charge of the well services being performed or provided. Verify that certified well contractors submit drilling records and drill cutting samples to the Geological Survey Bureau of the Department of Natural Resources as follows: - within 30 days of completion of any water well used as part of a public water supply, well used for withdrawal of water for which a permit is required by rule IAC 567-50.1, or wells used to monitor groundwater quantity or quality - within 30 days of completion of any water well used as part of a nonpublic water supply or other water wells used to access groundwater. (NOTE: Prior to constructing a water well to be used as part of a nonpublic water supply or other water well used to access groundwater, the certified well contractor must contact the local health department in the county in which the water well is to be located to determine if submittal of drill cutting samples is required.) (NOTE: This checklist applies to all nonpublic water supply wells constructed for the purpose of domestic, livestock, irrigation, recreation, and commercial or industrial use and to existing water wells undergoing reconstruction. This checklist item does not apply to ponds, surface water supplies, public water supply wells, horizontal heat pump installations, elevator shafts, underground storage tank monitoring wells or monitoring wells for solid waste disposal facilities.) (NOTE: WQ.90.2.IA. is repeated in WQ.100.2.IA.) Verify that no well construction or reconstruction is initialed until a permit is

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WQ.90.3.IA. Nonpublic water wells must meet specific well construction standards (IAC 567-49.7, 567-49.16, 567-49-17, and 567-49.25) [Revised April 2005].	issued by the proper authority. Verify that nonpublic water wells meet the minimum lateral distance requirements specified in Appendix 13-2. Verify that the minimum separation distance between a well and an anaerobic lagoon, earthen manure slurry storage basin, earthen manure storage basin, or runoff control basin is 400 feet if the lagoon or basin was permitted by the department after January 1, 1989, or if the applicant demonstrates through percolation testing that the seepage loss through the lagoon or basin does not exceed 1/16 inch per day (0.0625 inch/day). Verify that wells are not located within frost pits. (NOTE: Frost pits that do not contain wells are permitted for the purpose of housing pressure tanks and valves, for example, provided the frost pits are not located closer than ten feet from any well.) Verify that nonpublic water wells are located, in relation to buildings, so that they are reasonably accessible for cleaning, treatment, repair, test, inspection, and other maintenance. Verify that nonpublic water wells are not located in basements. Verify that no well is located on a property not owned by the well owner unless an easement allowing such placement is reviewed and approved by the administrative authority and the easement is legally recorded. (NOTE: See applicability note in WQ.90.2.IA.) (NOTE: WQ.90.3.IA. is repeated in WQ.100.3.IA.) Verify that water used in the construction process is obtained from a potable water source that will not result in contamination of the well. Verify that water used for drilling is treated with 3 pints of 5.25 percent sodium hypochlorite solution per 100 gallons of water or 0.25 pounds of 65 percent calcium hypochlorite per 100 gallons of water or other additives to produce an equivalent concentration of chlorine residual (50 ppm). Verify that the upper terminal casing of all wells extends at least 12 inches above established grade or pump house floor, or the 100-year flood level, whichever is higher. Verify that a well cap or sanitary seal is installed immediately following well completion. (NOTE: A well cap can be used on an exposed well, a sanitary seal only on a well

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	terminating within a well house. Any openings in the cap or seal, such as for pump wiring or water depth measurement, must be properly grommated or sealed except properly screened and oriented vent openings.) Verify that the ground surface immediately adjacent to the well casing is compacted and graded so that surface water is diverted away from the casing. Verify that permitted use wells are equipped with an access port having a minimum diameter of 3/4 inch. Verify that the access port is fitted with a threaded cap or plug and be located to allow insertion of a steel tape or electric probe into the well for measurement of water levels. Verify that, when a spool type of pitless adapter is used which obstructs clear access to the water, a 3/4-inch pipe is attached to the spool and brought to the surface below the well cap to allow water level measurements. Verify that a well cap is used on any well not protected by a well house and seals tightly against the casing to exclude surface water, dirt, insects or any foreign matter from entering the well. Verify that the well casing terminate at least one foot above the finished grade surface. (NOTE: A split-top sanitary seal may only be used on a well terminating within a well house. Any openings in the cap or seal, such as for pump wiring, water depth measurement, or chemical feed, shall be properly grommated or sealed, except properly screened and oriented vent openings. There shall be no openings through the well cap except for a factory installed vent, air line chemical feed, and power supply wiring, unless a proposal is submitted to and approved by the administrative authority. To be approved, the proposal must show that any entrance into the well cap is watertight and meets the following conditions: prevents surface water from entering the water supply, is secured in position, is removable with tools only, and is resistant to weathering and corrosion.) Verify that a well cap used on a well that has a pitless adapter or pitless unit has a screened vent hole, pointing downward, with not less than 24-mesh noncorrosive screen, and that is at least ½ inch in diameter. Verify that vent openings terminate at least 12 inches above finished ground surface. (NOTE: Venting is required on all wells except Class 3 wells or flowing water wells.) Verify that filters and water treatment equipment are installed and operated in accordance with manufacturers' directions.

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WQ.90.4.IA. Nonpublic water wells must meet pump installation requirements (IAC 567-49.12) [Revised April 2005].	(NOTE: See applicability note in WQ.90.2.IA.) (NOTE: WQ.90.4.IA. is repeated in WQ.100.4.IA.) Verify that the installation of pumps are planned and carried out so the pump will meet the following requirements: - installed so that it and its surroundings are not exposed to chemical or biological contamination - properly sized so as to provide the volume of water necessary, where obtainable, for an adequate water supply - designed to meet the well characteristics and not exceed the yield of the well except for low yield seepage/storage wells - installed for operation without repriming or breaking suction - installed in such a manner as to provide adequate protection against contamination of the water supply from any surface or subsurface sources - installed in a manner so that it is accessible for maintenance, repair, and removal. Verify that pump motor lubricant or coolant oil is United States Department of Agriculture- or United States Food and Drug Administration-approved food contact grade formulations. Verify that other power pumps located over the well are mechanically joined to the casing or on a pump foundation or stand in such a manner as to effectively seal the top of the well. Verify that a sanitary seal is used where the pump is not located over the well and the pump delivery or suction pipe emerges from the top. Verify that a hand pump, hand pump head, hand pump stand or similar device is constructed so that there are no openings into the interior of the pump or well casing where rain water, insects or vermin can enter. Verify that hand pumps are provided with a casing vent and have a closed, downward-directed spout and a sealed pump rod packing assembly. Verify that a hand pump is attached to a well casing by a sealed flange or other method approved by the administrative authority to adequately prevent the entrance of surface water, dirt, animals, insects, or other foreign matter. Verify that the flange is not less than 12 inches above a concrete slab or the ground surface. Verify that, where a well casing functions as a hand pump cylinder wall, the plunger is not less than 25 feet below the ground surface.

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WQ.90.5.IA. Nonpublic water wells must meet disinfection, water analysis, and abandonment requirements (IAC 567-49.26, 567-49.27, and 567-49.28) [Revised April 2005].	(NOTE: A casing wall weep hole is not permitted.) (NOTE: See applicability note in WQ.90.2.IA.) (NOTE: WQ.90.5.IA. is repeated in WQ.100.5.IA.) Verify that all new, repaired or rehabilitated wells are pumped to waste until the water is free of drilling mud, drill cuttings and sand, and the water is clear. Verify that wells and water systems are disinfected by the contractor following completion of construction and whenever any well services have been performed. (NOTE: A chlorine solution such as a sodium or calcium hypochlorite must be used. Chlorine compounds used for well disinfection must meet NSF Standard 61 and have no additives.) Verify that the disinfectant remained in the well for a minimum of 2 hours if a concentration of at least 100 mg/L chlorine is achieved, or a minimum of 24 hours if at least 50 mg/L is achieved. (NOTE: For emergency situations, a contact time of a minimum of 30 minutes is provided at a chlorine concentration of at least 200 mg/L.) Verify that the owner of a new, reconstructed, or rehabilitated well submits a water sample to a certified laboratory for coliform bacteria and nitrate analysis. Verify that the water sample is collected at least 10 days and not more than 30 days after a well is put into service following the construction, reconstruction, or rehabilitation. Verify that the analysis results were submitted to the administrative authority. (NOTE: If the water sample analysis detects presence of bacteria, the disinfection procedure described in rule 49.26(455B) must be repeated.) Verify that abandoned wells are properly plugged as required in 567-Chapter 39 (see WQ.100.2.IA.) Verify that under no circumstances are abandoned wells be used for the disposal of debris, solid waste, septic tank sludge or effluents, or for any other type of unauthorized disposal of waste materials, or as a receptacle for field tile drainage.
WQ.90.6.IA. Nonpublic water wells must meet requirements for interconnections, cross	(NOTE: See applicability note in WQ.90.2.IA.) (NOTE: Requirements for abandoned well is now in WQ.100.8.IA.)

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connections, and sampling faucets (IAC 567-49.20 and 567-49.23) [Revised April 2005].	Verify that no connection between a well or boring and another well, boring, water supply system, any chemical injection or contamination source is allowed unless the connection is: - protected by an air gap - protected by a backflow prevention device - between wells or borings that meet the construction standards of this chapter, are used for the same purpose, and have equivalent quality water supply. Verify that, in all pressure water systems, provision are made for collection of water samples directly from the well by installation of a sampling faucet before the pressure tank and prior to encountering any water treatment equipment. Verify that the sampling faucet is installed at least 12 inches above the floor, have a downturned spout and be in an accessible location. Verify that all sample faucets are metal and have a smooth (nonthreaded) outlet.
WQ.90.7.IA. Standby wells must meet specific standards (IAC 567-39.10(1)).	Verify that standby wells are disinfected according to <i>American Water Works Association Standard A100</i> prior to being taken out of use for a long period of time and are disinfected and checked for bacteria and nitrates when placed back in service. Verify that standby wells are not subject to contaminations by surface drainage or from other causes. Verify that standby well casings are provided with an airtight cover when the well is not in use. Verify that wells are repaired so that there is no degradation of groundwater and it is suitable for use prior to being classified as a standby well.
WQ.90.8.IA. Private water wells must meet permitting requirements (IAC 567-38.3(1), 38.6, and 38.8(2)) [Revised April 2003].	Verify that landowner's or their agents have a valid construction permit prior to drilling or constructing new private water well. (NOTE: Examples of private water wells requiring well construction permits include, but are not limited to, the following: - domestic wells - livestock wells - irrigation wells - recreational-use wells - monitoring wells - heat pump wells - industrial wells - dewatering wells, except that dewatering wells are exempt from the construction standards for nonpublic water wells.)

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WQ.90.9.IA. [Moved April 2003]. WQ.90.10.IA. Public water wells must meet specific requirements (IAC 567-43.3(7)(b)(1)) [Added April 2005; Citation Revised February 2008].	Verify that a private well construction permit is obtained for all replacement wells. (NOTE: A private well construction permit is required for modification to a well such as changes in physical dimensions including, but are not limited to, deepening the well and changing the diameter or length of the casing or the screen. A private well construction permit is not required for the repair, maintenance, or rehabilitation of an existing well that does not change its physical dimensions.) Verify that a water withdrawal permit is obtained prior to withdrawal of more than 25,000 gpd of water from any source or combination of sources. (NOTE: This is repeated in WQ.100.1.IA.) (NOTE: Moved to WQ.109.1.IA, April 2003.) Verify that wells are planned and constructed to adapt to the geologic and groundwater conditions of the proposed well site to ensure production of water from the wells that is both microbially safe and free of substances that could cause harmful human health effects. Verify that drainage is directed away from the well in all directions for a minimum radius of 15 feet. Verify that the well is separated from contamination sources by the distances specified in Appendix 13-6. Verify that the owner of the proposed well has proof of legal control of the land for a 200-foot radius around the well, through purchase, lease, easement, ordinance, or other similar means. (NOTE: When the proposed well is located in an existing well field and will withdraw water from the same aquifer as the existing well(s), individual separation distances may be waived if substantial historical data are available indicating that no contamination has resulted. Verify that no well is constructed within the projected plume of any known anthropogenic groundwater contamination without the department's written approval. Verify that, if required by the department, an identification tag is applied to each well.

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WQ.100 MISCELLANEOUS WELLS WQ.100.1.IA. Private water wells must meet permitting requirements (IAC 567-38.3(1), 38.6, and 38.8(2)) [Revised April 2003]. WQ.100.2.IA. Nonpublic water wells must be permitted and meet location requirements (IAC 567-49.3, 567-49.4, and 567-49.6) [Revised April 2005].	Verify that landowner's or their agents have a valid construction permit prior to drilling or constructing new private water well. (NOTE: Examples of private water wells requiring well construction permits include, but are not limited to, the following: - domestic wells - livestock wells - irrigation wells - recreational-use wells - monitoring wells - heat pump wells - industrial wells - dewatering wells, except that dewatering wells are exempt from the construction standards for nonpublic water wells.) Verify that a private well construction permit is obtained for all replacement wells. (NOTE: A private well construction permit is required for modification to a well such as changes in physical dimensions including, but are not limited to, deepening the well and changing the diameter or length of the casing or the screen. A private well construction permit is not required for the repair, maintenance, or rehabilitation of an existing well that does not change its physical dimensions.) Verify that a water withdrawal permit is obtained prior to withdrawal of more than 25,000 gpd of water from any source or combination of sources. (NOTE: This is repeated in WQ.100.1.IA.) (NOTE: The provisions of 567-49 apply to all nonpublic water supply wells constructed for the purpose of domestic, livestock, irrigation, recreation, and commercial or industrial use. The provisions also apply to existing water wells undergoing reconstruction. This chapter does not apply to public water supply wells, horizontal heat pump installations, elevator shafts, underground storage tank monitoring wells as covered under 567 -- Chapter 135, or monitoring wells for solid waste disposal facilities as covered in 567 -- Chapter 110.) (NOTE: WQ.100.2.IA. is repeated in WQ.90.2.) Verify that no well construction or reconstruction is initialed until a permit is

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WQ.100.3.IA. Nonpublic water wells must meet specific well construction standards (IAC 567-49.7, 567-49.16, 567-49-17, and 567-49.25) [Revised April 2005].	issued by the proper authority. Verify that nonpublic water wells meet the minimum lateral distance requirements specified in Appendix 13-2. Verify that the minimum separation distance between a well and an anaerobic lagoon, earthen manure slurry storage basin, earthen manure storage basin, or runoff control basin is 400 feet if the lagoon or basin was permitted by the department after January 1, 1989, or if the applicant demonstrates through percolation testing that the seepage loss through the lagoon or basin does not exceed 1/16 inch per day (0.0625 inch/day). (NOTE: The percolation test shall meet the requirements of ASTM-1587 and 567 -- subrule 65.15(11).) Verify that nonpublic water wells are located, in relation to buildings, so that they are reasonably accessible for cleaning, treatment, repair, test, inspection, and other maintenance. Verify that nonpublic water wells are not located in basements. Verify that wells are not located within frost pits. (NOTE: Frost pits that do not contain wells are permitted for the purpose of housing pressure tanks and valves, for example, provided the frost pits are not located closer than ten feet from any well.) Verify that no well is located on a property not owned by the well owner unless an easement allowing such placement is reviewed and approved by the administrative authority and the easement is legally recorded. (NOTE: See applicability note in WQ.100.2.IA.) (NOTE: WQ.100.3.IA. is repeated in WQ.90.3.) Verify that water used in the construction process is obtained from a potable water source that will not result in contamination of the well. Verify that water used for drilling is treated with 3 pints of 5.25 percent sodium hypochlorite solution per 100 gallons of water or 0.25 pounds of 65 percent calcium hypochlorite per 100 gallons of water or other additives to produce an equivalent concentration of chlorine residual (50 ppm). Verify that the upper terminal casing of all wells extends at least 12 inches above established grade or pump house floor, or the 100-year flood level, whichever is higher. Verify that a well cap or sanitary seal is installed immediately following well

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	completion. (NOTE: A well cap shall be used on an exposed well, a sanitary seal only on a well terminating within a well house. Any openings in the cap or seal, such as for pump wiring or water depth measurement, shall be properly grommeted or sealed except properly screened and oriented vent openings.) Verify that the ground surface immediately adjacent to the well casing is compacted and graded so that surface water is diverted away from the casing. Verify that permitted use wells are equipped with an access port having a minimum diameter of 3/4 inch. Verify that the access port is fitted with a threaded cap or plug and be located to allow insertion of a steel tape or electric probe into the well for measurement of water levels. Verify that, when a spool type of pitless adapter is used which obstructs clear access to the water, a 3/4-inch pipe is attached to the spool and brought to the surface below the well cap to allow water level measurements. Verify that a well cap is used on any well not protected by a well house and seals tightly against the casing to exclude surface water, dirt, insects or any foreign matter from entering the well. Verify that the well casing terminate at least one foot above the finished grade surface. (NOTE: A split-top sanitary seal may only be used on a well terminating within a well house. Any openings in the cap or seal, such as for pump wiring, water depth measurement, or chemical feed, shall be properly grommeted or sealed, except properly screened and oriented vent openings. There shall be no openings through the well cap except for a factory installed vent, air line chemical feed, and power supply wiring, unless a proposal is submitted to and approved by the administrative authority. To be approved, the proposal must show that any entrance into the well cap is watertight and meets the following conditions: prevents surface water from entering the water supply, is secured in position, is removable with tools only, and is resistant to weathering and corrosion.) Verify that a well cap used on a well that has a pitless adapter or pitless unit has a screened vent hole, pointing downward, with not less than 24-mesh noncorrosive screen, and that is at least ½ inch in diameter. Verify that vent openings terminate at least 12 inches above finished ground surface. (NOTE: Venting is required on all wells except Class 3 wells or flowing water wells.) Verify that filters and water treatment equipment are installed and operated in

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WQ.100.4.IA. Nonpublic water wells must meet pump installation requirements (IAC 567-49.12) [Revised April 2005].	accordance with manufacturer's directions. (NOTE: See applicability note in WQ.100.2.IA.) (NOTE: WQ.100.4.IA. is repeated in WQ.90.4.) Verify that the installation of pumps are planned and carried out so the pump will meet the following requirements: - installed so that it and its surroundings are not exposed to chemical or biological contamination - properly sized so as to provide the volume of water necessary, where obtainable, for an adequate water supply - designed to meet the well characteristics and not exceed the yield of the well except for low yield seepage/storage wells - installed for operation without repriming or breaking suction - installed in such a manner as to provide adequate protection against contamination of the water supply from any surface or subsurface sources - installed in a manner so that it is accessible for maintenance, repair, and removal. Verify that pump motor lubricant or coolant oil is United States Department of Agriculture- or United States Food and Drug Administration-approved food contact grade formulations. Verify that other power pumps located over the well are mechanically joined to the casing or on a pump foundation or stand in such a manner as to effectively seal the top of the well. Verify that a sanitary seal is used where the pump is not located over the well and the pump delivery or suction pipe emerges from the top. Verify that a hand pump, hand pump head, hand pump stand or similar device is constructed so that there are no openings into the interior of the pump or well casing where rain water, insects or vermin can enter. Verify that hand pumps are provided with a casing vent and have a closed, downward-directed spout and a sealed pump rod packing assembly. Verify that a hand pump is attached to a well casing by a sealed flange or other method approved by the administrative authority to adequately prevent the entrance of surface water, dirt, animals, insects, or other foreign matter. Verify that the flange is not less than 12 inches above a concrete slab or the ground surface. Verify that, where a well casing functions as a hand pump cylinder wall, the

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WQ.100.5.IA. Nonpublic water wells must meet disinfection, water analysis, and abandonment requirements (IAC 567-49.26, 567-49.27, and 567-49.28) [Revised April 2005].	plunger is not less than 25 feet below the ground surface. (NOTE: A casing wall weep hole is not permitted.) (NOTE: See applicability note in WQ.100.2.IA.) (NOTE: WQ.100.5.IA. is repeated in WQ.90.5.) Verify that all new, repaired or rehabilitated wells are pumped to waste until the water is free of drilling mud, drill cuttings and sand, and the water is clear. Verify that wells and water systems are disinfected by the contractor following completion of construction and whenever any well services have been performed. (NOTE: A chlorine solution such as a sodium or calcium hypochlorite must be used. Chlorine compounds used for well disinfection must meet NSF Standard 61 and have no additives.) Verify that the disinfectant remained in the well for a minimum of 2 hours if a concentration of at least 100 mg/L chlorine is achieved, or a minimum of 24 hours if at least 50 mg/L is achieved. (NOTE: For emergency situations, a contact time of a minimum of 30 minutes shall be provided at a chlorine concentration of at least 200 mg/L.) Verify that the owner of a new, reconstructed, or rehabilitated well submits a water sample to a certified laboratory for coliform bacteria and nitrate analysis. Verify that the water sample is collected at least 10 days and not more than 30 days after a well is put into service following the construction, reconstruction, or rehabilitation. Verify that the analysis results were submitted to the administrative authority. (NOTE: If the water sample analysis detects presence of bacteria, the disinfection procedure described in rule 49.26(455B) must be repeated.) Verify that abandoned wells are properly plugged as required in 567-Chapter 39 (see WQ.100.2.IA.) Verify that under no circumstances are abandoned wells be used for the disposal of debris, solid waste, septic tank sludge or effluents, or for any other type of unauthorized disposal of waste materials, or as a receptacle for field tile drainage.
WQ.100.6.IA. Nonpublic water wells must meet	(NOTE: See applicability note in WQ.100.2.IA.)

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requirements for interconnections, cross connections, and sampling faucets (IAC 567-49.20 and 567-49.23) [Revised April 2005]. WQ.100.7.IA. Nonpotable water wells must meet backflow prevention requirements for chemical injection systems (IAC 567-49.24) [Added April 2005].	(NOTE: WQ.100.6.IA. is repeated in WQ.90.6.) Verify that no connection between a well or boring and another well, boring, water supply system, any chemical injection or contamination source is allowed unless the connection is: - protected by an air gap - protected by a backflow prevention device - between wells or borings that meet the construction standards of this chapter, are used for the same purpose, and have equivalent quality water supply. Verify that, in all pressure water systems, provision are made for collection of water samples directly from the well by installation of a sampling faucet before the pressure tank and prior to encountering any water treatment equipment. Verify that the sampling faucet is installed at least 12 inches above the floor, have a downturned spout and be in an accessible location. Verify that all sample faucets are metal and have a smooth (nonthreaded) outlet. (NOTE: See applicability note in WQ.100.2.IA.) (NOTE: WQ.100.7.IA. is repeated in WQ.90.7.) Verify that, where a chemical injection system is connected directly to a water well used for irrigation and that is not used as a potable water supply, a single-check spring-loaded backflow preventer is installed between the point of chemical injection on the pump discharge piping and the water well in accordance with the manufacturer's instructions. Verify that the check valve can withstand a minimum hydraulic pressure of 150 psi without leaking. Verify that the backflow device is provided with the following: - valving so that water can be drained from the system to prevent freezing - a vacuum relief valve to prevent backsiphoning of chemicals into the well - an automatic low-pressure drain at least [sic] inches in diameter, positioned so that when draining occurs liquid will flow away from the well - the low-pressure drain is at least six inches above grade - the automatic low-pressure drain can quickly drain the check valve body of water when operation of the water well pump is discontinued - a watertight seal around the check valve - an inspection port 4 inches in diameter to allow inspection of the operation of the check valve. Verify that the water well pump and the chemical injection pump are electrically connected so that, when the water well pump stops, the chemical pump will shut

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WQ.100.8.IA. Abandoned wells must meet plugging requirements (IAC 567-39.2, 39.5(1), (2), and (4), and 39.6(2)) [Added April 2005].	off automatically. (NOTE: Moved from WQ.90.6.IA.) (NOTE: Some examples of types of wells covered by this section are those accessing groundwater (withdrawing water from or injecting water into the groundwater) and include, but are not limited to, the following: - public and nonpublic water wells - test wells - observation wells - monitoring wells - agricultural drainage wells - heat pump recirculation wells - cooling water wells.) Some examples of wells not covered by this section include, but are not limited to, the following: - small diameter (2 in. or less) test holes - observation or monitoring wells installed for a limited time which can be sealed by withdrawal of the casing and allowing the hole to collapse - soil borings - septic tanks - underground storage tanks - cisterns, if not used for accessing groundwater.) Verify that Class 1 wells abandoned prior to 25 April 1990 are properly plugged. Verify that Class 2 and 3 wells abandoned prior to 25 April 1990 are properly plugged by 1 July 2000. Verify that all classes of wells abandoned on or after 25 April 1990 are properly plugged within 90 days of the date of abandonment. Verify that an Abandoned Water Well Plugging Record is submitted within 30 days of the date of plugging completion.

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WQ.109. UNDERGROUND INJECTION WELLS (UIC) WQ.109.1.IA. Pollutants other than heat must not be disposed of in wells (IAC 567-62.9 and 141.7) [Added April 2003].	Verify that the disposal of heat is sufficiently controlled to protect the public health and welfare and to prevent pollution of ground and surface water resources. Verify that hazardous waste is not disposed of in wells.

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WATER QUALITY STANDARDS WQ.115. WQ.115.1.IA. Surface waters must meet specific criteria (IAC 567-61.3(1) and (2)) [Revised April 2004; Revised April 2005; Revised February 2007; Revised February 2010].	(NOTE: Moved from WA.90.2.IA., April 2004.) (NOTE: General use segments are intermittent watercourses and those watercourses that typically flow only for short periods of time following precipitation and whose channels are normally above the water table. These waters do not support a viable aquatic community during low flow, and do not maintain pooled conditions during periods of no flow.) Verify that general use segments are protected for livestock and wildlife watering, aquatic life, noncontact recreation, crop irrigation, and industrial, agricultural, domestic and other incidental water withdrawal uses. Verify that designated use waters are protected for all uses of general use segments including: - primary contact recreational use (Class "A1") - secondary contact recreational use (Class "A2") - children's recreational use (Class "A3") - cold water aquatic life (Class "B(CW1)") - cold water aquatic life - Type 2 (Class "B(CW2)") -- warm water-Type 1 (Class "B(WW-1)") - warm water-Type 2 (Class "B(WW-2)") - warm water-Type 3 (Class "B(WW-3)") - lakes and wetlands (Class "B(LW)") - human health (Class "HH") - drinking water supply (Class "C") (NOTE: Designated use waters are defined in Appendix 13-4.) Verify that all surface waters including general use and designated use waters, at all places and at all times, are protected and meet the following criteria: - free from substances attributable to point source wastewater discharges that will settle to form sludge deposits - free from floating debris, oil, grease, scum and other floating materials attributable to wastewater discharges or agricultural practices in amounts sufficient to create a nuisance - free from materials attributable to wastewater discharges or agricultural practices producing objectionable color, odor or other aesthetically objectionable conditions - free from substances attributable to wastewater discharges or agricultural practices in concentrations or combinations which are acutely toxic to human, animal, or plant life

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WQ.115.2.IA. Class A water must meet specific criteria (IAC 567-61.3(3)a) [Revised April 2004; Revised February 2010].	- free from substances, attributable to wastewater discharges or agricultural practices, in quantities which would produce undesirable or nuisance aquatic life - the turbidity of the receiving water does not increase by more than 25 Nephelometric turbidity units by any point source discharge - acceptable levels cations and anions to protect livestock water (guidelines are found in the "Supporting Document for Iowa Water Quality Management Plans," Chapter IV, July 1976, as revised on November 11,2009) - the Escherichia coli (E. coli) content of water that enters a sinkhole or losing stream segment, regardless of the water body's designated use, does not exceed a Geometric Mean value of 126 organisms/100 ml or a sample maximum value of 235 organisms/100 ml. Verify that no new wastewater discharges are allowed on watercourses that directly or indirectly enter sinkholes or losing stream segments. (NOTE: Moved from WA.90.3.IA., April 2004.) Verify that waters designated as Class "A1," "A2," or "A3" are protected for primary contact, secondary contact, and children's recreational uses Verify that the escherichia coli (E coli) content does not exceed the levels listed in Appendix 13-7. (NOTE: When a water body is designated for more than one of the recreational uses, the most stringent criteria for the appropriate season apply.) Verify that the pH of Class A water is not less than 6.5 or greater than 9.0. Verify that the maximum change in pH as a result of a waste discharge does not exceed 0.5 pH units.
WQ.115.3.IA. Class B waters must meet specific criteria (IAC 567-61.3(3)b) [Revised April 2004; Revised February 2007; Revised February 2010].	(NOTE: Moved from WA.90.4.IA., April 2004.) Verify that all waters which are designated as Class B(CW1), B(CW2_ B(WW-1), B(WW-2), B(WW-3) or B(LW) are protected for wildlife, fish, aquatic and semiaquatic life. Verify that all Class "B" waters meet the following criteria: - dissolved oxygen is not less than the values shown in Table 2 of Appendix 13-5 - the pH is not less than 6.5 nor greater than 9.0 and the maximum change permitted as a result of a waste discharge does not exceed 0.5 pH units - the specific numerical criteria shown in Tables 1, 2, and 3 of Appendix 13-5

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WQ.115.4.IA. Class C waters must meet specific criteria (IAC 567-61.3(c)) [Revised April 2004; Citation Revised February 2010].	Verify that effluent monitoring or in stream monitoring, or both, are required to determine compliance. (NOTE: Moved from WA.90.5.IA., April 2004.) Verify that waters that are designated as Class C are protected as a raw water source of potable water supply. Verify that Class C waters meet the following criteria for radioactive substances. - the combined radium-226 and radium-228 do not exceed 5 picocuries per liter at the point of withdrawal - gross alpha particle activity (including radium-226 but excluding radon and uranium) do not exceed 15 picocuries per liter at the point of withdrawal - the average annual concentration at the point of withdrawal of beta particle and photon radioactivity from man-made radionuclides other than tritium and strontium-90 do not produce an annual dose equivalent to the total body or any internal organ greater than 4 millirem/year - the average annual concentration of tritium does not exceed 20,000 picocuries per liter at the point of withdrawal and the average annual concentration of strontium-90 does not exceed 8 picocuries per liter at the point of withdrawal. Verify that all substances toxic or detrimental to humans or detrimental to treatment process are limited to nontoxic or nondetrimental concentrations in the surface water. Verify that the pH of Class C waters is not less than 6.5 or greater than 9.0.
WQ.115.5.IA. Effluent cannot violate applicable water quality standards (IAC 567-62.8(2) [Added April 2004].	Verify that no effluent, alone or in combination with the effluent of other sources, causes a violation of any applicable water quality standard.
WQ.115.6.IA. Discharges to Class B waters must meet temperature requirements (IAC 567-61.3(3)(b)(5)) [Revised April 2004; Revised February 2007; Revised February 2010].	Verify that no heat is added to interior streams or the Big Sioux River that would cause an increase of more than 3° C or raise the stream temperature above 32° C. Verify that no heat is added to streams designated as cold water fisheries that would cause an increase of more than 2° C or raise the stream temperature above 20° C. Verify that no heat is added to lakes and reservoirs that would cause an increase of

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	more than 2° C or raise the stream temperature above 32° C. Verify that no heat is added to the Missouri River that would cause an increase of more than 3° C or raise the stream temperature above 32° C. Verify that no heat is added to the Mississippi River that would cause an increase of more than 3° C or raise the stream temperature above 32° C Verify that the water temperature at representative locations in the Mississippi River meet the temperature requirements listed in Appendix 13-8. Verify that the rate of temperature change does not exceed 1° C per hour.

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
WQ.120. WATER USE PERMITS WQ.120.1.IA. [Deleted May 1998]. WQ.120.2.IA. Use, diversion, or storage of water must be reported to the Department (IAC 567-52.6) [Revised May 1998]. WQ.120.3.IA. Withdrawal, diversion, or storage of water requires a water permit or registration (IAC 567-51.2, 567-51.3, 567-51.5, 567-51.6, and 567-51.7) [Revised May 1998; Revised February 2007].	Verify that reports of water used, diverted, or stored are submitted to the Department by the permittee. Verify that a permit is obtained for any of the following: - storage of 18 acre-ft or more of water in permanent storage - diversion of water or any other material from the surface directly into any aquifer, including diversion by means of an agricultural drainage well - withdrawal of groundwater for use as a heat exchange media in a heating/cooling system - use of more than 25,000 gal of water per day for any purpose. Verify that the following obtain permit coverage through registration: - test pumping of sources of water to determine adequacy of the source and effects of such withdrawals - use of water which is a minor, nonrecurring use, including but not limited to highway construction and maintenance, charging of lagoons, drilling wells, and hydrostatic testing of pipelines - withdrawal of water for research purposes by the department's IGS through its agents, employees, or contractees. (NOTE: A permit is not required for the following uses of more than 25,000 gal/day: - operators of a hydraulic dredge that returns all water used as a transport medium directly back into the pit from which it is withdrawn by the dredge (excavation of rock and gravel products) - withdrawal of water from a gravel pit or rock quarry sump pit for material washing if the wash water is discharged directly back into the pit from which it was withdrawn.)

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT Iowa Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: February 2010
WQ.120.4.IA. [Moved May 1998].	(NOTE: Moved to and combined with WQ.120.3.IA., May 1998.)
WQ.120.5.IA. [Moved May 1998].	(NOTE: Moved to and combined with WQ.120.3.IA., May 1998.)

Appendix 13-1

Total Coliform Monitoring Frequency for Regional Water Systems (Source: IAC 567-41.2(1)(c)(1)(4))

Miles of Pipe	Samples/Month - Minimum
0 - 9	1
10 - 25	2
26 - 49	3
50 - 81	4
82 - 121	5
122 - 169	6
170 - 225	7
226 - 289	8
290 - 361	9
362 - 441	10
442 - 529	11
530 - 625	12
626 - 729	13
730 - 841	14
842 - 961	15
962 - 1089	16
1090 - 1225	17
1226 - 1364	18
1365 - 1521	19
1522 - 1681	20
1682 - 1849	21
1850 - 2025	22
2026 - 2209	23
2010 - 2401	24
2402 - 2601	25
2602 - 3249	28
3250 - 3721	30
3722 - 4489	33
greater than 4489	35

Appendix 13-2

Minimum Lateral Distance Requirements for Nonpublic Water Wells

(Source: IAC 567-49.6(1)) [Citation Revised February 2008]

Source of Contamination	Minimum Lateral Distance (feet)	
	Shallow Well	Deep Well
Formed manure storage structure, confined building, feedlot solids settling facility, open feedlot	200	100
Public water supply well	400	200

For All Wells

Source of Contamination	Minimum Lateral Distance (feet)
Earthen manure storage basin, runoff control basins and anaerobic lagoons (see subrule 49.6(2) below)	1000
Domestic wastewater lagoon	400
Sanitary landfills	1000
Preparation or storage area for spray materials, commercial fertilizers or chemicals that may result in groundwater contamination	100
Drainage wells	1000
Conforming wells	10
Nonconforming wells	100
Soil absorption field, any sewage treatment system with an open discharge, pit privy or septic tank discharge line (not conforming to 567 -- Chapter 69)	100
Septic tank, concrete vault privy, sewer of tightly joined tile or equivalent material, sewer-connected foundation drain, or sewers under pressure	50
Sewer of cast iron with leaded or mechanical joints, sewer of plastic pipe with glued or compression joints, independent clear water drains, cisterns, well pits, or pump house floor drains	10
Hydrants	10
Property lines (unless a mutual easement is signed and recorded by both parties)	4
Liquid hydrocarbon storage tanks	100
Ditches, streams, ponds, or lakes	25
Frost Pit	10

Appendix 13-3

Water Treatment and Distribution System Grades

(Source: IAC 567-81.4 and 81.5) [Added April 2001; Revised April 2002; Revised April 2005]

567-81.4(455B). Water Treatment Plant Grades.

81.4(1) Classifications. The water treatment plant classifications are listed in the following table:

Treatment Type	Average Daily Pumpage in MGD				
	0 - 0.1	> 0.1 - 0.5	> 0.1 - 0.5	> 0.5 - 1.5	> 1.5
Iron or manganese removal; aeration; chlorination; fluoridation; stabilization; any other chemical addition; or any combination of these processes.	I	II	II	II	III
Ion exchange	II	II	II	III	III
Direct surface water filtration.	II	II	II	III	III
Utilization of lime, soda ash or other chemical addition for pH adjustment in the precipitation and coagulation of iron or manganese.	II	II	II	III	III
Complete surface water clarification or lime softening of surface water or groundwater.	III	III	III	III	IV
Reverse osmosis and electrodialysis.	II	II	II	III	IV
Activated carbon for THM or synthetic organics removal.	III	III	III	III	IV

81.4(2) Average daily pumpage. When the average daily pumpage is unknown, the plant grade will be determined from the population of the most recent census and an evaluation of commercial, industrial, and other users.

567-81.5(455B). Water Distribution System Grades.

81.5(1) Classifications. The water distribution plant classifications are listed in the following table:

	Grade**			
	Average Daily Pumpage			
	0 - 0.1	> 0.1 - 1.5	> 1.5 - 5	> 5
All municipal water systems	I	II	III	IV
Community water systems not classified as a Grade A water system	I	II	III	IV
Nontransient noncommunity water systems not classified as Grade A water system	I	II	III	IV
	Miles in Pipe			
	0 - 00	> 100 - 1,000	> 1,000 - 2,500	> 2,500
Rural water districts	II	II	III	IV

* Note: A public water system with a well, storage, and a distribution system shall be classified as a water distribution system if no treatment is provided.

** For Grade A water system classification, see subrule 81.6(1).

81.5(2) Average daily pumpage. When the average daily pumpage is unknown, the system grade will be determined from the population of the most recent census and an evaluation of commercial, industrial, and other users.

Appendix 13-4

Designated Use Segments

(Source: IAC 567-61.3(1)) [Added April 2004; Revised April 2005; Revised February 2010]

General Use segments are water bodies which maintain flow throughout the year or contain sufficient pooled areas during intermittent flow periods to maintain a viable aquatic community.

All perennial rivers and streams as identified by the U.S. Geological Survey 1:100,000 DLG Hydrography Data Map (published July 1993) or intermittent streams with perennial pools in Iowa not specifically listed in the surface water classification of 61.3(5) are designated as Class B(WW-1) waters.

All perennial rivers and streams as identified by the U.S. Geological Survey 1:100,000 DLG Hydrography Data Map (published July 1993) or intermittent streams with perennial pools in Iowa are designated as Class A1 waters.

Designated uses of segments may change based on a use attainability analysis consistent with 61.2(5)"e." Designated use changes will be specifically listed in the surface water classification of 61.3(5).

Designated use waters are to be protected for all uses of general use segments in addition to the specific uses assigned. Designated use segments include:

- (1) Primary contact recreational use (Class "A1"). Waters in which recreational or other uses may result in prolonged and direct contact with the water, involving considerable risk of ingesting water in quantities sufficient to pose a health hazard. Such activities would include, but not be limited to, swimming, diving, water skiing, and water contact recreational canoeing.
- (2) Secondary contact recreational use (Class "A2"). Waters in which recreational or other uses may result in contact with the water that is either incidental or accidental. During the recreational use, the probability of ingesting appreciable quantities of water is minimal. Class A2 uses include fishing, commercial and recreational boating, any limited contact incidental to shoreline activities and activities in which users do not swim or float in the water body while on a boating activity.
- (3) Children's recreational use (Class "A3"). Waters in which recreational uses by children are common. Class A3 waters are water bodies having definite banks and bed with visible evidence of the flow or occurrence of water. This type of use would primarily occur in urban or residential areas.
- (4) Cold water aquatic life-Type 1 (Class "B(CW1)"). Waters in which the temperature and flow are suitable for the maintenance of a variety of cold water species, including reproducing and nonreproducing populations of trout (Salmonidae family) and associated aquatic communities.
- (5) Cold water aquatic life-Type 2 (Class "B(CW2)"). Waters that include small, channeled streams, headwaters, and spring runs that possess natural cold water attributes of temperature and flow. These waters usually do not support consistent populations of trout (Salmonidae family), but may support associated vertebrate and invertebrate organisms.
- (6) Warm water-Type 1 (Class "B(WW-1)"). Waters in which temperature, flow and other habitat characteristics are suitable to maintain warm water game fish populations along with a resident aquatic community that includes a variety of native nongame fish and invertebrate species. These waters generally include border rivers, large interior rivers, and the lower segments of medium-size tributary streams.
- (7) Warm water-Type 2 (Class "B(WW-2)"). Waters in which flow or other physical characteristics are capable of supporting a resident aquatic community that includes a variety of native nongame fish and invertebrate species. The flow and other physical characteristics limit the maintenance of warm water game fish populations. These waters generally consist of small perennially flowing streams.

- (8) Warm water-Type 3 (Class "B(WW-3)"). Waters in which flow persists during periods when antecedent soil moisture and groundwater discharge levels are adequate; however, aquatic habitat typically consists of nonflowing pools during dry periods of the year. These waters generally include small streams of marginally perennial aquatic habitat status. Such waters support a limited variety of native fish and invertebrate species that are adapted to survive in relatively harsh aquatic conditions.
- (9) Lakes and wetlands (Class "B(LW)"). These are artificial and natural impoundments with hydraulic retention times and other physical and chemical characteristics suitable to maintain a balanced community normally associated with lake-like conditions.
- (10) Human health (Class "HH"). Waters in which fish are routinely harvested for human consumption or waters both designated as a drinking water supply and in which fish are routinely harvested for human consumption.
- (11) Drinking water supply (Class "C"). Waters which are used as a raw water source of potable water supply.

Appendix 13-5

Criteria for Chemical Constituents

(Source: IAC 567-61.3(1)b) [Added April 2004; Revised February 2007; Revised February 2008]

Table 1: Criteria for Chemical Constituents. (All Values as Micrograms Per Liter Unless Noted Otherwise).

Human health criteria for carcinogenic parameters noted below were based on the prevention of an incremental cancer risk of 1 in 100,000. For parameters not having a noted human health criteria, the U.S. Environmental Protection Agency has not developed final national human health guideline values. For noncarcinogenic parameters, the recommended EPA criterion was selected. For Class C water, the EPA criteria for fish and water consumption were selected using the same considerations for carcinogenic and noncarcinogenic parameters as noted above. For Class C waters for which no EPA human health criteria were available, the EPA MCL value was selected.

Parameter		Use Designations							
		B (CW1)	B (CW2)	B (WW-1)	B (WW-2)	B (WW-3)	B (LW)	C	HH
Alachlor	MCL	—	—	—	—	—	—	2	—
Aldrin	Acute	—	—	3	3	3	—	—	—
	Human Health — Fish	—	—	—	—	—	—	—	.00050 ^(e)
	Human Health + — F & W	—	—	—	—	—	—	—	.00049 ^(f)
Aluminum	Chronic	87	—	87	87	87	748	—	—
	Acute	1106	—	750	750	750	983	—	—
Antimony	Human Health — Fish	—	—	—	—	—	—	—	640 ^(e)
	Human Health + — F & W	—	—	—	—	—	—	—	5.6 ^(f)
Arsenic (III)	Chronic	200	—	150	150	150	200	—	—
	Acute	360	—	340	340	340	360	—	—
	Human Health — Fish	—	—	—	—	—	—	—	50 ^{(e)(g)}
	Human Health — F & W	—	—	—	—	—	—	—	.18 ^{(f)(g)}
Asbestos	Human Health — F & W	—	—	—	—	—	—	—	7 ^{(a)(f)}
Atrazine	MCL	—	—	—	—	—	—	3	—
Barium	Human Health + — F & W	—	—	—	—	—	—	—	1000 ^(f)
Benzene	Human Health — F & W	—	—	—	—	—	—	—	22 ^(f)
	Human Health — Fish	—	—	—	—	—	—	—	510 ^(e)
Benzo(a)Pyrene	Human Health — F & W	—	—	—	—	—	—	—	.038 ^(f)
	Human Health — Fish	—	—	—	—	—	—	—	.18 ^(e)
Beryllium	MCL	—	—	—	—	—	—	4	—
Bromoform	Human Health — F & W	—	—	—	—	—	—	—	43 ^(f)
	Human Health — Fish	—	—	—	—	—	—	—	1400 ^(e)
Cadmium	Chronic	1	—	.45 ^(h)	.45 ^(h)	.45 ^(h)	1	—	—

Parameter		Use Designations							
		B (CW1)	B (CW2)	B (WW-1)	B (WW-2)	B (WW-3)	B (LW)	C	HH
	Acute	4	—	4.32 ^(h)	4.32 ^(h)	4.32 ^(h)	4	—	—
	Human Health + — Fish	—	—	—	—	—	—	—	168 ^(e)
	MCL	—	—	—	—	—	—	5	—
Carbofuran	MCL	—	—	—	—	—	—	40	—
Carbon Tetrachloride	Human Health — F & W	—	—	—	—	—	—	—	2.3 ^(h)
	Human Health — Fish	—	—	—	—	—	—	—	16 ^(e)
Chlordane	Chronic	0.004	—	0.0043	0.0043	0.0043	0.004	—	—
	Acute	2.5	—	2.4	2.4	2.4	2.5	—	—
	Human Health — Fish	—	—	—	—	—	—	—	.0081 ^(e)
	Human Health — F & W	—	—	—	—	—	—	—	.008 ^(h)
Chloride	Chronic	389 ^{(m)*}	389 ^{(m)*}	389 ^{(m)*}	389 ^{(m)*}	389 ^{(m)*}	389 ^{(m)*}	—	—
	Acute	629 ^{(m)*}	629 ^{(m)*}	629 ^{(m)*}	629 ^{(m)*}	629 ^{(m)*}	629 ^{(m)*}	—	—
	MCL	—	—	—	—	—	—	250*	—
Chlorobenzene	Human Health + — Fish	—	—	—	—	—	—	—	1.6* ^(e)
	Human Health + — F & W	—	—	—	—	—	—	—	130 ^(h)
	MCL	—	—	—	—	—	—	100	—
Chlorodibromomethane	Human Health — F & W	—	—	—	—	—	—	—	4.0 ^(h)
	Human Health — Fish	—	—	—	—	—	—	—	130 ^(e)
Chloroform	Human Health — F & W	—	—	—	—	—	—	—	57 ^(h)
	Human Health — Fish	—	—	—	—	—	—	—	4700 ^(e)
Chloropyrifos	Chronic	0.041	—	0.041	0.041	0.041	0.041	—	—
	Acute	0.083	—	0.083	0.083	0.083	0.083	—	—
Chromium (VI)	Chronic	40	—	11	11	11	10	—	—
	Acute	60	—	16	16	16	15	—	—
	Human Health + — Fish	—	—	—	—	—	—	—	3365 ^(e)
	MCL	—	—	—	—	—	—	100	—
Copper	Chronic	20	—	16.9 ⁽ⁱ⁾	16.9 ⁽ⁱ⁾	16.9 ⁽ⁱ⁾	10	—	—
	Acute	30	—	26.9 ⁽ⁱ⁾	26.9 ⁽ⁱ⁾	26.9 ⁽ⁱ⁾	20	—	—
	Human Health + — Fish	—	—	—	—	—	—	—	1000 ^(e)
	Human Health + — F & W	—	—	—	—	—	—	—	1300 ^(h)
Cyanide	Chronic	5	—	5.2	5.2	5.2	10	—	—
	Acute	20	—	22	22	22	45	—	—
	Human Health + — F & W	—	—	—	—	—	—	—	140 ^(h)

Parameter		Use Designations							
		B (CW1)	B (CW2)	B (WW-1)	B (WW-2)	B (WW-3)	B (LW)	C	HH
	Human Health — Fish	—	—	—	—	—	—	—	140 ^(e)
Dalapon	MCL	—	—	—	—	—	—	200	—
Dibromochloropropane	MCL	—	—	—	—	—	—	0.2	—
4,4-DDT ++	Chronic	0.001	—	0.001	0.001	0.001	0.001	—	—
	Acute	0.9	—	1.1	1.1	1.1	0.55	—	—
	Human Health — Fish	—	—	—	—	—	—	—	.0022 ^(e)
	Human Health — F & W	—	—	—	—	—	—	—	.0022 ^(f)
o-Dichlorobenzene	MCL	—	—	—	—	—	—	600	—
para-Dichlorobenzene	Human Health + — F & W	—	—	—	—	—	—	—	63 ^(f)
	Human Health + — Fish	—	—	—	—	—	—	—	190 ^(e)
3,3-Dichlorobenzidine	Human Health — Fish	—	—	—	—	—	—	—	.28 ^(e)
	Human Health — F & W	—	—	—	—	—	—	—	.21 ^(f)
Dichlorobromomethane	Human Health — F & W	—	—	—	—	—	—	—	5.5 ^(f)
	Human Health — Fish	—	—	—	—	—	—	—	170 ^(e)
1,2-Dichloroethane	Human Health — F & W	—	—	—	—	—	—	—	3.8 ^(f)
	Human Health — Fish	—	—	—	—	—	—	—	370 ^(e)
1,1-Dichloroethylene	Human Health — F & W	—	—	—	—	—	—	—	330 ^(f)
	Human Health — Fish	—	—	—	—	—	—	—	7.1* ^(e)
cis-1,2-Dichloroethylene	MCL	—	—	—	—	—	—	70	—
1,2-trans-Dichloroethylene	Human Health + — F & W	—	—	—	—	—	—	—	10* ^(f)
	Human Health — Fish	—	—	—	—	—	—	—	140 ^(e)

Parameter		Use Designations							
		B (CW1)	B (CW2)	B (WW-1)	B (WW-2)	B (WW-3)	B (LW)	C	HH
Dichloromethane	MCL	—	—	—	—	—	—	5	—
1,2-Dichloropropane	Human Health — F & W	—	—	—	—	—	—	—	5.0 ^(h)
	Human Health — Fish	—	—	—	—	—	—	—	150 ^(e)
Dieldrin	Chronic	0.056	—	0.056	0.056	0.056	0.056	—	—
	Acute	0.24	—	0.24	0.24	0.24	0.24	—	—
	Human Health — Fish	—	—	—	—	—	—	—	.00054 ^(e)
	Human Health — F & W	—	—	—	—	—	—	—	.00052 ^(h)
Dinoseb	MCL	—	—	—	—	—	—	7	—
2,3,7,8-TCDD (Dioxin)	Human Health — F & W	—	—	—	—	—	—	—	5.0 ^{-8(h)}
	Human Health — Fish	—	—	—	—	—	—	—	5.1 ^{-8(e)}
Diquat	MCL	—	—	—	—	—	—	20	—
2,4-D	Human Health + — F & W	—	—	—	—	—	—	—	100 ^(h)
Endosulfan ^(b)	Chronic	0.056	—	0.056	0.056	0.056	0.15	—	—
	Acute	0.11	—	0.22	0.22	0.22	0.3	—	—
	Human Health + — Fish	—	—	—	—	—	—	—	89 ^(e)
	Human Health + — F & W	—	—	—	—	—	—	—	62 ^(h)
Endothall	MCL	—	—	—	—	—	—	100	—
Endrin	Chronic	0.05	—	0.036	0.036	0.036	0.036	—	—
	Acute	0.12	—	0.086	0.086	0.086	0.086	—	—
	Human Health + — Fish	—	—	—	—	—	—	—	.06 ^(e)
	Human Health + — F & W	—	—	—	—	—	—	—	.059 ^(h)
Ethylbenzene	Human Health + — F & W	—	—	—	—	—	—	—	530 ^(h)
	Human Health — Fish	—	—	—	—	—	—	—	2100 ^(e)
Ethylene dibromide	MCL	—	—	—	—	—	—	0.05	—
Di(2-ethylhexyl)adipate	MCL	—	—	—	—	—	—	400	—

Parameter		Use Designations							
		B (CW1)	B (CW2)	B (WW-1)	B (WW-2)	B (WW-3)	B (LW)	C	HH
bis(2-ethylhexyl)pht halate	Human Health — F & W	—	—	—	—	—	—	—	12 ^(f)
	Human Health — Fish	—	—	—	—	—	—	—	22 ^(e)
Fluoride	MCL	—	—	—	—	—	—	4000	—
Glyphosate	MCL	—	—	—	—	—	—	700	—
Heptachlor	Chronic	0.0038	—	0.0038	0.0038	0.0038	0.0038	—	—
	Acute	0.38	—	0.52	0.52	0.52	0.38	—	—
	Human Health — Fish	—	—	—	—	—	—	—	.00079 ^(e)
	Human Health — F & W	—	—	—	—	—	—	—	.00079 ^(f)
Heptachlor epoxide	Chronic	0.0038	—	0.0038	0.0038	0.0038	0.0038	—	—
	Acute	0.52	—	0.52	0.52	0.52	0.52	—	—
	Human Health — F & W	—	—	—	—	—	—	—	.00039 ^(f)
	Human Health — Fish	—	—	—	—	—	—	—	.00039 ^(e)
Hexachlorobenzene	Human Health — F & W	—	—	—	—	—	—	—	.0028 ^(f)
	Human Health — Fish	—	—	—	—	—	—	—	.0029 ^(e)
Hexachlorocyclopentadiene	Human Health — F & W	—	—	—	—	—	—	—	40 ^(f)
	Human Health — Fish	—	—	—	—	—	—	—	1100 ^(e)
Lead	Chronic	3	—	7.7 ^(f)	7.7 ^(f)	7.7 ^(f)	3	—	—
	Acute	80	—	197 ^(f)	197 ^(f)	197 ^(f)	80	—	—
	MCL	—	—	—	—	—	—	50	—
gamma-BHC (Lindane)	Chronic	N/A	—	N/A	N/A	N/A	N/A	—	—
	Acute	0.95	—	0.95	0.95	0.95	0.95	—	—
	Human Health + — Fish	—	—	—	—	—	—	—	1.8 ^(e)
	Human Health + — F & W	—	—	—	—	—	—	—	.98 ^(f)
Mercury (II)	Chronic	3.5	—	0.9	0.9	0.9	0.91	—	—
	Acute	6.5	—	1.64	1.64	1.64	1.7	—	—
	Human Health + — Fish	—	—	—	—	—	—	—	.15 ^(e)
	Human Health + — F & W	—	—	—	—	—	—	—	.05 ^(f)
Methoxychlor	Human Health + — F & W	—	—	—	—	—	—	—	100 ^(f)
Nickel	Chronic	350	—	93 ^(k)	93 ^(k)	93 ^(k)	150	—	—

Parameter		Use Designations							
		B (CW1)	B (CW2)	B (WW-1)	B (WW-2)	B (WW-3)	B (LW)	C	HH
	Acute	3250	—	843 ^(k)	843 ^(k)	843 ^(k)	1400	—	—
	Human Health + — Fish	—	—	—	—	—	—	—	4600 ^(e)
	Human Health + — F & W	—	—	—	—	—	—	—	610 ^(f)
Nitrate as N	MCL	—	—	—	—	—	—	10*	—
Nitrate + Nitrite as N	MCL	—	—	—	—	—	—	10*	—
Nitrite as N	MCL	—	—	—	—	—	—	1*	—
Oxamyl (Vydate)	MCL	—	—	—	—	—	—	200	—
Parathion	Chronic	0.013	—	0.013	0.013	0.013	0.013	—	—
	Acute	0.065	—	0.065	0.065	0.065	0.065	—	—
Pentachloroph enol (PCP)	Chronic	(d)	—	(d)	(d)	(d)	(d)	—	—
	Acute	(d)	—	(d)	(d)	(d)	(d)	—	—
	Human Health — Fish	—	—	—	—	—	—	—	30 ^(e)
	Human Health — F & W	—	—	—	—	—	—	—	2.7 ^(f)
Phenols	Chronic	50	—	50	50	50	50	—	—
	Acute	1000	—	2500	2500	2500	1000	—	—
	Human Health + — Fish	—	—	—	—	—	—	—	1700* ^(e)
	Human Health + — F & W	—	—	—	—	—	—	—	21* ^(f)
Picloram	MCL	—	—	—	—	—	—	500	—
Polychlorinate d	Chronic	0.014	—	0.014	0.014	0.014	0.014	—	—
Biphenyls (PCBs)	Acute	2	—	2	2	2	2	—	—
	Human Health — Fish	—	—	—	—	—	—	—	.00064 ^(e)
	Human Health — F & W	—	—	—	—	—	—	—	.00064 ^(f)
Polynuclear Aromatic	Chronic	0.03	—	0.03	3	3	0.03	—	—
Hydrocarbons (PAHs)**	Acute	30	—	30	30	30	30	—	—
	Human Health — Fish	—	—	—	—	—	—	—	.18 ^(e)
	Human Health — F & W	—	—	—	—	—	—	—	.038 ^(f)
Selenium	Chronic	10	—	5	5	5	70	—	—
	Acute	15	—	19.3	19.3	19.3	100	—	—

Parameter		Use Designations							
		B (CW1)	B (CW2)	B (WW-1)	B (WW-2)	B (WW-3)	B (LW)	C	HH
	Human Health + — F & W	—	—	—	—	—	—	—	170 ^(h)
	Human Health + — Fish	—	—	—	—	—	—	—	4200 ^(e)
Silver	Chronic	N/A	—	N/A	N/A	N/A	N/A	—	—
	Acute	30	—	3.8	3.8	3.8	4	—	—
	MCL	—	—	—	—	—	—	50	—
2,4,5-TP (Silvex)	MCL	—	—	—	—	—	—	10	—
Simazine	MCL	—	—	—	—	—	—	4	—
Styrene	MCL	—	—	—	—	—	—	100	—
Tetracholoret hylene	Human Health — F & W	—	—	—	—	—	—	—	6.9 ^(h)
	Human Health — Fish	—	—	—	—	—	—	—	33 ^(e)
Thallium	Human Health + — F & W	—	—	—	—	—	—	—	.24 ^(h)
	Human Health + — Fish	—	—	—	—	—	—	—	.47 ^(e)
Toluene	Chronic	50	—	50	150	150	50	—	—
	Acute	2500	—	2500	7500	7500	2500	—	—
	Human Health + — Fish	—	—	—	—	—	—	—	15* ^(e)
	Human Health + — F & W	—	—	—	—	—	—	—	1300 ^(h)
Total Residual Chlorine (TRC)	Chronic	10	—	11	11	11	10	—	—
	Acute	35	—	19	19	19	20	—	—
Toxaphene	Chronic	0.037	—	0.002	0.002	0.002	0.037	—	—
	Acute	0.73	—	0.73	0.73	0.73	0.73	—	—
	Human Health — Fish	—	—	—	—	—	—	—	.0028 ^(e)
	Human Health — F & W	—	—	—	—	—	—	—	.0028 ^(h)
1,2,4- Trichlorobenz ene	MCL	—	—	—	—	—	—	70	—
1,1,1- Trichlorethan e	MCL	—	—	—	—	—	—	200	—
	Human Health + — Fish	—	—	—	—	—	—	—	173* ^(e)
1,1,2- Trichloroetha ne	Human Health — F & W	—	—	—	—	—	—	—	6 ^(h)

Parameter		Use Designations							
		B (CW1)	B (CW2)	B (WW-1)	B (WW-2)	B (WW-3)	B (LW)	C	HH
Trichloroethylene (TCE)	Chronic	80	—	80	80	80	80	—	—
	Acute	4000	—	4000	4000	4000	4000	—	—
	Human Health — Fish	—	—	—	—	—	—	—	300 ^(e)
	Human Health — F & W	—	—	—	—	—	—	—	25 ^(f)
Trihalomethanes (total) ^(c)	MCL	—	—	—	—	—	—	80	—
Vinyl Chloride	Human Health — F & W	—	—	—	—	—	—	—	.25 ^(f)
	Human Health — Fish	—	—	—	—	—	—	—	24 ^(e)
Xylenes (Total)	MCL	—	—	—	—	—	—	10*	—
Zinc	Chronic	200	—	215 ^(f)	215 ^(f)	215 ^(f)	100	—	—
	Acute	220	—	215 ^(f)	215 ^(f)	215 ^(f)	110	—	—
	Human Health + — Fish	—	—	—	—	—	—	—	26 ^{*(e)}
	Human Health + — F & W	—	—	—	—	—	—	—	7.4 ^{*(f)}

* units expressed as milligrams/liter

** to include the sum of known and suspected carcinogenic PAHs (includes benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene)

† expressed as nanograms/liter

+ represents the noncarcinogenic human health parameters

++ the concentrations of 4,4-DDT or its metabolites; 4,4-DDE and 4,4-DDD, individually shall not exceed the human health criteria.

(a) units expressed as million fibers/liter (longer than 10 micrometers)

(b) includes alpha-endosulfan, beta-endosulfan, and endosulfan sulfate in combination or as individually measured

(c) The sum of the four trihalomethanes (bromoform [tribromomethane], chlorodibromomethane, chloroform [trichloromethane], and dichlorobromomethane) may not exceed the MCL.

(d) Class B numerical criteria for pentachlorophenol are a function of pH using the equation:

Criterion (µg/l) = e [1.005(pH) - x], where e = 2.71828 and x varies according to the following table:						
	B(CW1)	B(CW2)	B(WW-1)	B(WW-2)	B(WW-3)	B(LW)
Acute	3.869	--	4.869	4.869	4.869	4.869
Chronic	4.134	--	5.134	5.134	5.134	5.134
(e) This Class HH criterion would be applicable to any Class B(LW), B(CW1), B(WW-1), B(WW-2), or B(WW-3) water body that is also designated Class HH.						
(f) This Class HH criterion would be applicable to any Class C water body that is also designated Class HH.						
(g) inorganic form only						
(h) Class B(WW-1), B(WW-2), and B(WW-3) criteria listed in main table are based on a hardness of 100 mg/l (as CaCO3 (mg/l)). Numerical criteria (µg/l) for cadmium are a function of hardness (as CaCO3 (mg/l)) using the equation for each use according to the following table:						
	B(WW-1)		B(WW-2)			
Acute	e[1.0166Ln(Hardness) - 3.924]		e[1.0166Ln(Hardness) - 3.924]			
Chronic	e[0.7409Ln(Hardness) - 4.719]		e[0.7409Ln(Hardness) - 4.719]			
	B(WW-3)					
Acute	e[1.0166Ln(Hardness) - 3.924]					
Chronic	e[0.7409Ln(Hardness) - 4.719]					
(i) Class B(WW-1), B(WW-2), and B(WW-3) criteria listed in main table are based on a hardness of 100 mg/l (as CaCO3 (mg/l)). Numerical criteria (µg/l) for copper are a function of hardness (CaCO3 (mg/l)) using the equation for each use according to the following table:						
	B(WW-1)		B(WW-2)			
Acute	e[0.9422Ln(Hardness) - 1.700]		e[0.9422Ln(Hardness) - 1.700]			
Chronic	e[0.8545Ln(Hardness) - 1.702]		e[0.8545Ln(Hardness) - 1.702]			
	B(WW-3)					
Acute	e[0.9422Ln(Hardness) - 1.700]					
Chronic	e[0.8545Ln(Hardness) - 1.702]					
(j) Class B(WW-1), B(WW-2), and B(WW-3) criteria listed in main table are based on a hardness of 100 mg/l (as CaCO3 (mg/l)). Numerical criteria (µg/l) for lead are a function of hardness (CaCO3 (mg/l)) using the equation for each use according to the following table:						
	B(WW-1)		B(WW-2)			
Acute	e[1.2731Ln(Hardness) - 1.46]		e[1.2731Ln(Hardness) - 1.46]			
Chronic	e[1.2731Ln(Hardness) - 4.705]		e[1.2731Ln(Hardness) - 4.705]			
	B(WW-3)					
Acute	e[1.2731Ln(Hardness) - 1.46]					
Chronic	e[1.2731Ln(Hardness) - 4.705]					
(k) Class B(WW-1), B(WW-2), and B(WW-3) criteria listed in main table are based on a hardness of 100 mg/l (as CaCO3 (mg/l)). Numerical criteria (µg/l) for nickel are a function of hardness (CaCO3 (mg/l)) using the equation for each use according to the following table:						
	B(WW-1)		B(WW-2)			
Acute	e[0.846Ln(Hardness) + 2.255]		e[0.846Ln(Hardness) + 2.255]			
Chronic	e[0.846Ln(Hardness) + 0.0584]		e[0.846Ln(Hardness) + 0.0584]			
	B(WW-3)					
Acute	e[0.846Ln(Hardness) + 2.255]					
Chronic	e[0.846Ln(Hardness) + 0.0584]					
(l) Class B(WW-1), B(WW-2), and B(WW-3) criteria listed in main table are based on a hardness of 100 mg/l (as						

CaCO₃ (mg/l)). Numerical criteria (µg/l) for zinc are a function of hardness (CaCO₃ (mg/l)) using the equation for each use according to the following table:

	B(WW-1)	B(WW-2)
Acute	$e[0.8473\text{Ln(Hardness)} + 0.884]$	$e[0.8473\text{Ln(Hardness)} + 0.884]$
Chronic	$e[0.8473\text{Ln(Hardness)} + 0.884]$	$e[0.8473\text{Ln(Hardness)} + 0.884]$
	B(WW-3)	
Acute	$e[0.8473\text{Ln(Hardness)} + 0.884]$	
Chronic	$e[0.8473\text{Ln(Hardness)} + 0.884]$	

Table 2: Criteria for Dissolved Oxygen. (All Values Expressed in Milligrams Per Liter as N).

	B(CW)	B(CW2)	B(WW-1)	B(WW-2)	B(LW)
Minimum value for at least 16 hours of every 24-hours period	7.0	7.0	5.0	5.0	5.0*
Minimum value at any time during every 24-hour period	5.0	5.0	5.0	4.0	5.0*

* applies only to the upper layer of stratification in lakes

Table 3a: Acute Criterion for Ammonia in Iowa Streams
Acute Criterion, mg/l as N (or Criterion Maximum Concentration, CMC)

pH	Class B(WW), B(LR)& B(LW)	Class B(CW) Cold Water
6.5	48.8	32.6
6.6	46.8	31.3
6.7	44.6	29.8
6.8	42	28
6.9	39.1	26.1
7	36.1	24.1
7.1	32.8	21.9
7.2	29.5	19.7
7.3	26.2	17.5
7.4	23	15.3
7.5	19.9	13.3
7.6	17	11.4
7.7	14.4	9.64
7.8	12.1	8.11
7.9	10.1	6.77
8	8.4	5.62
8.1	6.95	4.64
8.2	5.72	3.83
8.3	4.71	3.15
8.4	3.88	2.59
8.5	3.2	2.14
8.6	2.65	1.77
8.7	2.2	1.47

pH	Class B(WW), B(LR)& B(LW)	Class B(CW) Cold Water
8.8	1.84	1.23
8.9	1.56	1.04
9	1.32	0.885

Table 3b. Chronic Criterion for Ammonia in Iowa Streams -- Early Life Stages Present.
Chronic Criterion -- Early Life Stages Present, mg/l as N (or Criterion Continuous Concentration, CCC)
 Temperature, °C

pH	0	14	16	18	20	22	24	26	28	30
6.5	6.67	6.67	6.06	5.33	4.68	4.12	3.62	3.18	2.8	2.46
6.6	6.57	6.57	5.97	5.25	4.61	4.05	3.56	3.13	2.75	2.42
6.7	6.44	6.44	5.86	5.15	4.52	3.98	3.5	3.07	2.7	2.37
6.8	6.29	6.29	5.72	5.03	4.42	3.89	3.42	3	2.64	2.32
6.9	6.12	6.12	5.56	4.89	4.3	3.78	3.32	2.92	2.57	2.25
7	5.91	5.91	5.37	4.72	4.15	3.65	3.21	2.82	2.48	2.18
7.1	5.67	5.67	5.15	4.53	3.98	3.5	3.08	2.7	2.38	2.09
7.2	5.39	5.39	4.9	4.31	3.78	3.33	2.92	2.57	2.26	1.99
7.3	5.08	5.08	4.61	4.06	3.57	3.13	2.76	2.42	2.13	1.87
7.4	4.73	4.73	4.3	3.78	3.32	2.92	2.57	2.26	1.98	1.74
7.5	4.36	4.36	3.97	3.49	3.06	2.69	2.37	2.08	1.83	1.61
7.6	3.98	3.98	3.61	3.18	2.79	2.45	2.16	1.9	1.67	1.47
7.7	3.58	3.58	3.25	2.86	2.51	2.21	1.94	1.71	1.5	1.32
7.8	3.18	3.18	2.89	2.54	2.23	1.96	1.73	1.52	1.33	1.17
7.9	2.8	2.8	2.54	2.24	1.96	1.73	1.52	1.33	1.17	1.03
8	2.43	2.43	2.21	1.94	1.71	1.5	1.32	1.16	1.02	0.897
8.1	2.1	2.1	1.91	1.68	1.47	1.29	1.14	1	0.879	0.773
8.2	1.79	1.79	1.63	1.43	1.26	1.11	0.973	0.855	0.752	0.661
8.3	1.52	1.52	1.39	1.22	1.07	0.941	0.827	0.727	0.639	0.562
8.4	1.29	1.29	1.17	1.03	0.906	0.796	0.7	0.615	0.541	0.475
8.5	1.09	1.09	0.99	0.87	0.765	0.672	0.591	0.52	0.457	0.401
8.6	0.92	0.92	0.836	0.735	0.646	0.568	0.499	0.439	0.386	0.339
8.7	0.778	0.778	0.707	0.622	0.547	0.48	0.422	0.371	0.326	0.287
8.8	0.661	0.661	0.601	0.528	0.464	0.408	0.359	0.315	0.277	0.244
8.9	0.565	0.565	0.513	0.451	0.397	0.349	0.306	0.269	0.237	0.208
9	0.486	0.486	0.442	0.389	0.342	0.3	0.264	0.232	0.204	0.179

Table 3c. Chronic Criterion for Ammonia in Iowa Streams -- Early Life Stages Absent.
Chronic Criterion -- Early Life Stages Absent, mg/l as N (or Criterion Continuous Concentration, CCC)

pH	Temperature (°C)									
	0-7	8	9	10	11	12	13	14	15*	16*
6.5	10.8	10.1	9.51	8.92	8.36	7.84	7.35	6.89	6.46	6.06
6.6	10.7	9.99	9.37	8.79	8.24	7.72	7.24	6.79	6.36	5.97
6.7	10.5	9.81	9.2	8.62	8.08	7.58	7.11	6.66	6.25	5.86
6.8	10.2	9.58	8.98	8.42	7.9	7.4	6.94	6.51	6.1	5.72
6.9	9.93	9.31	8.73	8.19	7.68	7.2	6.75	6.33	5.93	5.56
7	9.6	9	8.43	7.91	7.41	6.95	6.52	6.11	5.73	5.37
7.1	9.2	8.63	8.09	7.58	7.11	6.67	6.25	5.86	5.49	5.15
7.2	8.75	8.2	7.69	7.21	6.76	6.34	5.94	5.57	5.22	4.9
7.3	8.24	7.73	7.25	6.79	6.37	5.97	5.6	5.25	4.92	4.61
7.4	7.69	7.21	6.76	6.33	5.94	5.57	5.22	4.89	4.59	4.3
7.5	7.09	6.64	6.23	5.84	5.48	5.13	4.81	4.51	4.23	3.97
7.6	6.46	6.05	5.67	5.32	4.99	4.68	4.38	4.11	3.85	3.61
7.7	5.81	5.45	5.11	4.79	4.49	4.21	3.95	3.7	3.47	3.25
7.8	5.17	4.84	4.54	4.26	3.99	3.74	3.51	3.29	3.09	2.89
7.9	4.54	4.26	3.99	3.74	3.51	3.29	3.09	2.89	2.71	2.54
8	3.95	3.7	3.47	3.26	3.05	2.86	2.68	2.52	2.36	2.21
8.1	3.41	3.19	2.99	2.81	2.63	2.47	2.31	2.17	2.03	1.91
8.2	2.91	2.73	2.56	2.4	2.25	2.11	1.98	1.85	1.74	1.63
8.3	2.47	2.32	2.18	2.04	1.91	1.79	1.68	1.58	1.48	1.39
8.4	2.09	1.96	1.84	1.73	1.62	1.52	1.42	1.33	1.25	1.17
8.5	1.77	1.66	1.55	1.46	1.37	1.28	1.2	1.13	1.06	0.99
8.6	1.49	1.4	1.31	1.23	1.15	1.08	1.01	0.951	0.892	0.836
8.7	1.26	1.18	1.11	1.04	0.976	0.915	0.858	0.805	0.754	0.707
8.8	1.07	1.01	0.944	0.885	0.829	0.778	0.729	0.684	0.641	0.601
8.9	0.917	0.86	0.806	0.756	0.709	0.664	0.623	0.584	0.548	0.513
9	0.79	0.74	0.694	0.651	0.61	0.572	0.536	0.503	0.471	0.442

* At 15°C and above, the criterion for fish early life stage (ELS) absent is the same as the criterion for fish ELS present.

TABLE 4. Aquatic Life Criteria for Sulfate for Class B Waters (all values expressed in milligrams per liter)

Hardness mg/l as CaCO ₃	Chloride		
	Cl- < 5 mg/l	5 <= Cl- < 25	25 <= Cl- <= 500
H < 100 mg/l	500	500	500
100 <= H <= 500	500	$[-57.478 + 5.79 (\text{hardness}) + 54.163 (\text{chloride})] \times 0.65$	$[1276.7 + 5.508 (\text{hardness}) - 1.457 (\text{chloride})] \times 0.65$
H > 500	500	2,000	2,000

Appendix 13-6

Well Separation Distances from Source Of Contamination

(Source: IAC 567-43.3(7) Table A) [Added April 2005]

	REQUIRED MINIMUM DISTANCE FROM WELL, IN FEET	
	Deep Well ¹	Shallow Well ¹
WASTEWATER STRUCTURES:		
Point of Discharge to Ground Surface		
Sanitary & industrial discharges	400	400
Water treatment plant wastes	50	50
Well house floor drains	5	5
Sewers & Drains²		
Sanitary & storm sewers, drains	0 – 25 feet: prohibited 25 – 75 feet if water main pipe 75 – 200 feet if sanitary sewer pipe	0 – 25 feet: prohibited 25 – 75 feet if water main pipe 75 – 200 feet if sanitary sewer main pipe
Sewer force mains	0 – 75 feet: prohibited 75 – 400 feet if water main pipe 400 – 1000 feet if water main or sanitary sewer pipe	0 – 75 feet: prohibited 75 – 400 feet if water main pipe 400 – 1000 feet if water main or sanitary sewer main pipe
Water plant treatment process wastes that are treated onsite	0 – 5 feet: prohibited 5 – 50 feet if sanitary sewer pipe	0 – 5 feet: prohibited 5 – 50 feet if sanitary sewer main pipe
Water plant wastes to sanitary sewer	0 – 25 feet: prohibited 25 – 75 feet if water main pipe 75 – 200 feet if sanitary sewer pipe	0 – 25 feet: prohibited 25 – 75 feet if water main pipe 75 – 200 feet if sanitary sewer main pipe
Well house floor drains to sewers	0 – 25 feet: prohibited 25 – 75 feet if water main pipe 75 – 200 feet if sanitary sewer pipe	0 – 25 feet: prohibited 25 – 75 feet if water main pipe 75 – 200 feet if sanitary sewer main pipe
Well house floor drains to surface	0 – 5 feet: prohibited 5 – 50 feet if sanitary sewer pipe	0 – 5 feet: prohibited 5 – 50 feet if sanitary sewer main pipe
Land Disposal of Treated Wastes		
Irrigation of wastewater	200	400
Land application of solid wastes ³	200	400
Other		
Cesspools & earth pit privies	200	400
Concrete vaults & septic tanks	100	200
Lagoons	400	1000
Mechanical wastewater treatment plants	200	400
Soil absorption fields	200	400
CHEMICALS:		
Chemical application to ground	100	200

	REQUIRED MINIMUM DISTANCE FROM WELL, IN FEET	
	Deep Well ¹	Shallow Well ¹
surface		
Chemical & mineral storage above ground	100	200
Chemical & mineral storage on or underground	200	400
Transmission pipelines (such as fertilizer, liquid petroleum, or anhydrous ammonia)	200	400
ANIMALS:		
Animal pasturage	50	50
Animal enclosure	200	400
Earthen silage storage trench or pit	100	200
Animal Wastes		
Land application of liquid or slurry	200	400
Land application of solids	200	400
Solids stockpile	200	400
Storage basin or lagoon	400	1000
Storage tank	200	400
MISCELLANEOUS:		
Basements, pits, sumps	10	10
Cemeteries	200	200
Cisterns	50	100
Flowing streams or other surface water bodies	50	50
Railroads	100	200
Private wells	200	400
Solid waste landfills and disposal sites	1000	1000

¹ Deep and shallow wells, as defined in 567—40.2(455B): A deep well is a well located and constructed in such a manner that there is a continuous layer of low permeability soil or rock at least 5 feet thick located at least 25 feet below the normal ground surface and above the aquifer from which water is to be drawn. A shallow well is a well located and constructed in such a manner that there is not a continuous layer of low permeability soil or rock (or equivalent retarding mechanism acceptable to the department) at least 5 feet thick, the top of which is located at least 25 feet below the normal ground surface and above the aquifer from which water is to be drawn.

² The separation distances are dependent upon two factors: the type of piping that is in the existing sewer or drain, as noted in the table, and that the piping was properly installed in accordance with the standards.

³ Solid wastes are those derived from the treatment of water or wastewater. Certain types of solid wastes from water treatment processes may be land-applied within the separation distance on an individual, case-by-case basis.

⁴ Solid waste means garbage, refuse, rubbish, and other similar discarded solid or semisolid materials, including but not limited to such materials resulting from industrial, commercial, agricultural, and domestic activities.

Appendix 13-7
Escherichia Coli (E. coli) Content for Class A waters
 (Source: IAC 567-61.3(3)(a)(1)) [Added February 2010]

The Escherichia coli (E. coli) content shall not exceed the levels noted in the Bacteria Criteria Table when the Class "A1," "A2," or "A3" uses can reasonably be expected to occur.

Bacteria Criteria Table (organisms/100 ml of water)		
Use or Category	Geometric Mean	Sample Maximum
Class A1		
3/15 - 11/15	126	235
11/16 - 3/14	Does not apply	Does not apply
Class A2 (Only)		
3/15 - 11/15	630	2880
11/16 - 3/14	Does not apply	Does not apply
[Class A2 and B(CW)]or OIW or ONRW		
Year-Round	630	2880
Class A3		
3/15 - 11/15	126	235
11/16 - 3/14	Does not apply	Does not apply
Class A1 - Primary Contact Recreational Use		
Class A2 - Secondary Contact Recreational Use		
Class A3 - Children's Recreational Use		

When a water body is designated for more than one of the recreational uses, the most stringent criteria for the appropriate season shall apply.

Appendix 13-8

Water Temperature Limitations for Representative Locations in the Mississippi River

(Source: IAC 567-61.3(3)(b)(5)5) [Added February 2010]

The water temperature at representative locations in the Mississippi River shall not exceed the maximum limits in the table below during more than 1 percent of the hours in the 12-month period ending with any month.

Moreover, at no time shall the water temperature at such locations exceed the maximum limits in the table below by more than 2° C.

Zone II--Iowa-Minnesota state line to the northern Illinois border (Mile Point 1534.6)

Zone III--Northern Illinois border (Mile Point 1534.6) to Iowa-Missouri state line.

Month	Zone II	Zone III
January	4° C	7° C
February	4° C	7° C
March	12° C	14° C
April	18° C	20° C
May	24° C	26° C
June	29° C	29° C
July	29° C	30° C
August	29° C	30° C
September	28° C	29° C
October	23° C	24° C
November	14° C	18° C
December	9° C	11° C

REPORT DOCUMENTATION PAGE				Form Approved OMB No. 0704-0188	
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1. REPORT DATE (DD-MM-YYYY) February 2010		2. REPORT TYPE Final		3. DATES COVERED (From - To)	
4. TITLE AND SUBTITLE The Environmental Assessment and Management (TEAM) Guide: Iowa Supplement				5. FUNDING NUMBERS AEC: MIPR 0010005589 ANG: F9WFEV0028G001 NGB: W45XMA00130245 Commerce: 1301-09-SA00110 Army Reserve: MIPR10C0DCD201 USACE: 96x3123 DHS: HAHQDC-09-X-00436 DLA: MIPR SP1001090 USPS: MOA-05-CERL-01 State Department: IAG F3NF369350G002	
6. AUTHOR(S) Carolyn O'Rourke and Patricia A.Kemme					
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) U.S. Army Engineer Research and Development Center (ERDC) Construction Engineering Research Laboratory (CERL) PO Box 9005 Champaign, IL 61826-9005				8. PERFORMING ORGANIZATION REPORT NUMBER ERDC/CERL SR-06-10 Revised February 2010	
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) See the report Preface for a complete list of the sponsors.				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release; distribution is unlimited.					
13. SUPPLEMENTARY NOTES Original document prepared by CERL. Copies are available from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161 or can be downloaded from the HQ AFCEE or CERL (DENIX) bulletin boards. Supersedes USACERL SR-95/50 and all its revisions.					
14. ABSTRACT Environmental assessments help determine compliance with current environmental regulations. The U.S. Air Force, U.S. Army, Defense Logistics Agency (DLA), and Corps of Engineers (Civil Works) have adopted environmental compliance programs that identify compliance problems before they are cited as violations by the U.S. Environmental Protection Agency. Since 1984, the U.S. Army Construction Engineering Research Laboratory, in cooperation with numerous Department of Defense (DOD) components, has developed environmental compliance assessment checklist manuals. The Environmental Assessment and Management (TEAM) Guide was developed for use by all DOD components. Currently there are five participating DOD components: the Air Force, Air National Guard, Army, Civil Works, and DLA. These agencies have agreed to share the development and maintenance of this Guide. The Guide combines Code of Federal Regulations and management practices into a series of checklists that show legal requirements and the specific operations or items to review. TEAM Guide is supplemented by DOD component-specific manuals detailing DOD component regulations and policies. The Iowa Supplement was developed to be used in conjunction with the TEAM Guide, using existing Iowa state environmental legislation and regulations as well as suggested management practices.					
15. SUBJECT TERMS Environmental Compliance Assessment and Management Program, environmental compliance checklists, The Environmental Assessment and Management (TEAM) Guide, environmental compliance laws and regulations					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			Carolyn O'Rourke
Unclassified	Unclassified	Unclassified	SAR	598	19b. TELEPHONE NUMBER 217-398-5553