WATER, ENERGY, AND ENVIRONMENT, DEPARTMENT OF

TITLE 130, DEPARTMENT OF WATER, ENERGY, AND ENVIRONMENT

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TITLE 130 - NEBRASKA DEPARTMENT OF WATER, ENERGY, AND ENVIRONMENT

Chapter 1 - DEFINITIONS

001 "Agronomic rates" means the application of livestock wastes and process wastewater at rates that meet crop needs for nitrogen and phosphorus, while taking into account other sources of nutrients, and without leading to or causing water quality impairment due to over application.

002 "Animal feeding operation" means a location where beef cattle, dairy cattle, horses, swine, sheep, poultry, or other livestock have been, are, or will be stabled or confined and fed or maintained for a total of forty-five days or more in any twelve-month period and crops, vegetation, forage growth, or post-harvest residues are not sustained in the normal growing season over any portion of the location. Two or more animal feeding operations under common ownership are deemed to be a single animal feeding operation if they are adjacent to each other or if they utilize a common area or system for the disposal of livestock waste. Animal feeding operation does not include aquaculture as defined in Neb. Rev. Stat. § 2-3804.01.

003 "Applicant" means the person applying for the permit or major modification.

004 "Application area" means land utilized for the land application of livestock wastes.

005 "Authorized representative" means:

005.01 In the case of a corporation, a principal executive officer in charge of a principal business function and of at least the level of vice president;

005.02 In the case of a limited liability company, a manager, or a person as described in Neb. Rev. Stat. § 21-2606 (1)(g), or a principal executive officer;

005.03 In the case of a partnership, a general partner;

005.04 In the case of a sole proprietorship, the proprietor; or

005.05 In the case of a municipal, state or other public entity, a principal executive officer or ranking elected official.

006 "Best Management Practices" means schedules of activities, prohibitions, maintenance procedures, and other management practices found to be the most effective methods based on the best available technology achievable for specific sites to prevent or reduce the discharge of pollutants to waters of the State and control odor where appropriate. Best management practices also include operating procedures and practices to control site runoff, spillage, leaks, sludge or waste disposal, or drainage from raw material storage.

007 “Borrow site” means a location where earth is excavated for use as fill at another location.

008 “Concentrated animal feeding operation” or “CAFO” means an animal feeding operation that is:

008.01 Defined as a large concentrated animal feeding operation because of size;

008.02 Defined as a medium concentrated animal feeding operation because of size and because animals are in direct contact with waters of the State or waste is discharged to waters of the state through a man-made conduit; or

008.03 Designated as a medium or small concentrated animal feeding operation by the Director.

009 "Construct" or "Construction" means the initiation of physical on-site activities.

010 “Construction and operating permit” means the state permit to construct and operate a livestock waste control facility, including conditions imposed on the livestock waste control facility and the associated animal feeding operation.

011 "Construction approval" means an approval issued prior to December 1, 2006, by the Department allowing construction of a livestock waste control facility.

012 "Council" means the Nebraska Environmental Quality Council.

013 "Department" means the Nebraska Department of Water, Energy, and Environment.

014 "Dewatering days" means days that have suitable weather and soil conditions for land application of accumulated livestock wastes.

015 "Director" means the director of the Nebraska Department of Water, Energy, and Environment.

016 "Discharge" means the spilling, leaking, pumping, pouring, emitting, emptying, or dumping of pollutants into any waters of the State or in a place which will likely reach waters of the State.

017 "Diversion terrace" means an individually designed grade channel with a supporting ridge on the lower side, constructed across the slope with a non-erosive grade.

018 "Existing livestock waste control facility" means a livestock waste control facility in existence prior to April 15, 1998, that does not hold a permit and which has requested an inspection prior to January 1, 2000.

019 "Existing non-permitted livestock waste control facility" means a livestock waste control facility constructed and operated without an inspection and permit by the Department prior to April 15, 1998, or a livestock waste control facility previously exempted from a permit by the Department.

020 "Ground water" means water occurring beneath the surface of the ground that fills available openings in rock or soil materials such that they may be considered saturated.

021 "Holding pond" means an impoundment made by constructing an excavated pit, dam, embankment or combination of these for temporary storage of liquid livestock wastes, generally receiving runoff from open lots and contributing drainage area.

022 "Irrigation distribution system" means any device or combination of devices having a hose, pipe, or other conduit through which livestock wastes or a mixture of water and livestock wastes is drawn and applied for agricultural or horticultural purposes.

023 "Lagoon" means an impoundment made by constructing an excavated pit, dam, embankment or combination of these for treatment of liquid livestock waste by anaerobic, aerobic or facultative digestion. Such impoundment predominantly receives waste from a totally housed animal feeding operation.

024 “Large concentrated animal feeding operation” or “Large animal feeding operation” means an animal feeding operation that stables or confines as many as or more than the number of animals specified in any of the following categories:

024.01 700 mature dairy cows, whether milked or dry;

024.02 1,000 veal calves;

024.03 1,000 cattle other than mature dairy cows or veal calves and including but not limited to heifers, steers, bulls, and cow/calf pairs;

024.04 2,500 swine each weighing 55 pounds or more;

024.05 10,000 swine each weighing less than 55 pounds;

024.06 500 horses;

024.07 10,000 sheep or lambs;

024.08 55,000 turkeys;

024.09 30,000 laying hens or broilers, if the animal feeding operation uses a liquid manure handling system;

024.10 125,000 chickens, other than laying hens, if the animal feeding operation uses other than a liquid manure handling system;

024.11 82,000 laying hens, if the animal feeding operation uses other than a liquid manure handling system;

024.12 5,000 ducks, if the animal feeding operation uses a liquid manure handling system; or

024.13 30,000 ducks, if the animal feeding operation uses other than a liquid manure handling system.

025 "Liquid manure storage pits" means earthen or lined pits located wholly or partially beneath a semi- or totally housed animal feeding operation or at some removed location used to collect waste production.

026 "Livestock waste control facility" means any structure or combination of structures utilized to control livestock waste until it can be used, recycled, or disposed of in an environmentally acceptable manner. Such structures include, but are not limited to, diversion terraces, holding ponds, settling basins, liquid manure storage pits, lagoons, and other such devices utilized to control livestock wastes.

027 "Livestock wastes" means animal and poultry excreta and associated feed losses, bedding, spillage or overflow from watering systems, wash and flushing waters, sprinkling waters from livestock cooling, precipitation polluted by falling on or flowing onto an animal feeding operation, and other materials polluted by livestock wastes.

028 “Major modification” means an expansion or increase to the lot area or feeding area; change in the location of the animal feeding operation; change in the methods of waste treatment, waste storage, or land application of waste; increase in the number of animals; change in animal species; or change in the size or location of the livestock waste control facility.

029 “Medium animal feeding operation” means an animal feeding operation that confines or stables the type and number of animals in any of the following ranges:

029.01 200 to 699 mature dairy cows, whether milked or dry;

029.02 300 to 999 veal calves;

029.03 300 to 999 cattle other than mature dairy cows or veal calves. Cattle include but are not limited to heifers, steers, bulls, and cow/calf pairs;

029.04 750 to 2,499 swine each weighing 55 pounds or more;

029.05 3,000 to 9,999 swine each weighing less than 55 pounds;

029.06 150 to 499 horses;

029.07 3,000 to 9,999 sheep or lambs;

029.08 16,500 to 54,999 turkeys;

029.09 9,000 to 29,999 laying hens or broilers, if the animal feeding operation uses a liquid manure handling system;

029.10 37,500 to 124,999 chickens, other than laying hens, if the animal feeding operation uses other than a liquid manure handling system;

029.11 25,000 to 81,999 laying hens, if the animal feeding operation uses other than a liquid manure handling system;

029.12 1,500 to 4,999 ducks, if the animal feeding operation uses a liquid manure handling system; or

029.13 10,000 to 29,999 ducks, if the animal feeding operation uses other than a liquid manure handling system.

030 "Medium concentrated animal feeding operation" means a medium animal feeding operation, as defined by the type and number of animals that it confines or stables, and which has been defined or designated as a concentrated animal feeding operation. An animal feeding operation is defined as a medium concentrated animal feeding operation if e ither one of the following conditions is met:

030.01 Pollutants are discharged into waters of the state through a man-made ditch, flushing system, or other similar man-made device; or

030.02 Pollutants are discharged directly into waters of the state that originate outside of and pass over, across, or through the animal feeding operation or otherwise come into direct contact with the animals confined in the operation.

031 "National Pollutant Discharge Elimination System (NPDES) permit" means either a general permit or an individual permit, issued by the Department pursuant to Subsection 11 of Neb. Rev. Stat. § 81-1505. A general permit authorizes categories of disposal practices or livestock waste control facilities and covers a geographic area corresponding to existing geographic or political boundaries, though it may exclude specified areas from coverage. General permits are limited to the same or similar types of animal feeding operations or livestock waste control facilities which require the same or similar monitoring and, in the opinion of the Director of the Department of Water, Energy, and Environment, are more appropriately controlled under a NPDES general permit than under an individual permit.

032 "New animal feeding operation" means an animal feeding operation constructed after July 16, 2004.

033 "New livestock waste control facility" means any livestock waste control facility for which a construction permit, an operating permit, a NPDES permit, a construction approval, or a construction and operating permit or an application therefore is submitted on or after April 15, 1998.

034 "100-year, 24-hour rainfall event" means a rainfall event with a probable recurrence interval of one in one hundred (100) years.

035 "Open discharge system" means a system in which the water is pumped or diverted directly into a ditch or canal in such a manner that the force of gravity at the point of discharge into the ditch or canal cannot cause water to flow back to the point from which the water was pumped or diverted.

036 "Open lot animal feeding operations" means pens or similar concentrated areas, including small shed-type areas or open-front buildings, with dirt, or concrete (or paved or hard) surfaces, wherein animals or poultry are substantially or entirely exposed to the outside environment except for possible small portions affording some protection by windbreaks or small shed-type areas.

037 “Operating permit” means a permit issued prior to December 1, 2006, by the Department after the completion of the livestock waste control facility in accordance with the construction approval and the submittal of a completed certification form to the Department;

038 "Operator" means the person responsible for the operation of an animal feeding operation.

039 "Owner" means the person who owns an animal feeding operation or part of an animal feeding operation.

040 "Person" means any individual, partnership, limited liability company, association, public or private corporation, trustee, receiver, assignee, agent, municipality or other governmental subdivision, public agency, other legal entity; or any officer or governing or managing body of any public or private corporation, municipality, governmental subdivision, public agency, or any other legal entity.

041 ”Process wastewater” means water directly or indirectly used in the operation of the animal feeding operation 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 animal feeding operation facilities; direct contact swimming, washing, or spray cooling of animals; or dust control. Process wastewater also includes spent foot bath water and any water that comes into contact with any raw materials, products, or byproducts including manure, litter, feed, milk, eggs or bedding.

042 “Production area” means that part of an animal feeding operation that includes the animal confinement area, the manure storage area, the raw materials storage area, and the waste containment areas. The animal confinement areas includes but is not limited to open lots, housed lots, feedlot, confinement houses, stall barns, free stall barns, milkrooms, milking centers, cowyards, barnyards, medication pens, walkers, animal walkways, and stables. The manure storage area includes but is not limited to lagoons, runoff ponds, 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 that separate uncontaminated storm water. Also included in the definition of production area is any egg washing or egg processing facility, and any area used in the storage, handling, treatment, or disposal of mortalities.

043 "Settling basin" shall mean an individually designed low gradient, broad, flat channel with a supporting ridge on the lower side, which functions to trap and store settleable solids, both manure and sediment, for subsequent removal.

044 "Small animal feeding operation" means an animal feeding operation with fewer animals than a medium animal feeding operation.

045 "Small concentrated animal feeding operation" means an animal feeding operation that is designated as a concentrated animal feeding operation and is not a medium or large concentrated animal feeding operation.

046 "Surface water" means all streams, lakes, ponds, impounding reservoirs, marshes, wetlands, watercourses, waterways, springs, canal systems, drainage systems, and all other bodies or accumulations of water, natural or artificial, public or private, situated wholly or partly within, or bordering upon, the State. Impounded waters in this definition do not include areas designated by the Department as wastewater treatment or wastewater retention facilities or irrigation reuse pits.

047 "Totally housed animal feeding operation" means an operation that is totally under roof where animals are housed, rainfall is prevented from becoming process wastewater, and all manure, litter, and process wastewater is contained. The roofed structure may or may not be enclosed on the sides.

048 "25-year, 24-hour rainfall event" means a rainfall event with a probable recurrence interval of one in twenty-five (25) years.

049 "Water pollution" means the man-made or man-induced alteration of the chemical, physical, biological, or radiological integrity of water.

050 "Waters of the State" means all waters within the jurisdiction of this State including all streams, lakes, ponds, impounding reservoirs, marshes, wetlands, watercourses, waterways, wells, springs, irrigation systems, drainage systems, and all other bodies or accumulations of water, surface or underground, natural or artificial, public or private, situated wholly or partly within or bordering upon the State.

Enabling Legislation: Neb. Rev. Stat. § 81-1504(13); § 81-1502; §§ 54-2416 to 54-2438; § 21-2606(1)(g)

Legal Citation: Title 130, Ch. 1, Nebraska Department of Water, Energy, and Environment

TITLE 130 - NEBRASKA DEPARTMENT OF WATER, ENERGY, AND ENVIRONMENT

Chapter 2 - ANIMAL FEEDING OPERATIONS: REQUIREMENTS AND PROHIBITIONS

001 Any small animal feeding operation is exempt from the inspection, and construction and operating permit requirements, unless the animal feeding operation has discharged pollutants to waters of the State, or the Department has determined that such a discharge is more likely than not to occur. Operations with animals that are in contact with, or which have direct access to, surface waters, or operations with a man-made ditch, pipe, or other conveyance from the operation to surface waters are considered to be discharging. Animal feeding operations for other species not listed (e.g. bison, elk) that confine animals with a total animal weight of less than 300,000 pounds are considered small animal feeding operations.

002 Any person owning or operating a large or medium animal feeding operation that does not have a NPDES permit, construction approval, operating permit or construction and operating permit, has not been notified that no permit is required, or any person proposing an expansion or increase to the lot area or feeding area of a large or medium animal feeding operation, shall submit a completed Form A - 'Request for Inspection of Livestock Operation' to the Department, as published on the Department website (see https://dwee.nebraska.gov) and available in paper form on request. The inspection fee established in Chapter 3 shall accompany the inspection request.

003 A livestock waste control facility is required for an existing or proposed animal feeding operation when livestock wastes have discharged or have the potential to discharge in a manner that is not lawfully authorized by permit or these regulations.

004 When livestock waste control facilities are required by the Department, the owner or operator of the animal feeding operation is required to apply for construction and operating permit as provided in Chapter 4. In the case of an existing animal feeding operation, the owner or operator will be notified in writing following an inspection by the Department whether or not a facility is required and, if required, the applicant shall submit an application according to the compliance dates in the notification.

005 Any existing construction permit issued by the Department prior to July 16, 2004, that has not been revoked shall automatically be considered a construction approval under these regulations without further administrative action by the Department.

006 State operating permits issued pursuant to Neb. Rev. Stat. § 81-1505(11) prior to July 16, 2004, shall continue in effect until superseded by a National Pollutant Discharge Elimination System (NPDES) permit issued by the Department, unless otherwise revoked by the Department or exempted by these regulations. State operating permits issued to small or medium animal feeding operations that have not been required to seek coverage under a

NPDES permit shall automatically expire at midnight on December 31, 2005, without further administrative action by the Department.

007 The Department may require an engineering evaluation or assessment of a livestock waste control facility by a licensed professional engineer where the Department determines:

007.01 The facility has visible signs of structural failure;

007.02 The facility has signs of discharge or proven discharge due to structural weakness, improper maintenance, or inadequate capacity; or

007.03 The Department has reason to believe that an existing livestock waste control facility has violated, or threatens to violate, the Environmental Protection Act, the Livestock Waste Management Act, or any rules or regulations adopted and promulgated under such acts.

008 Any person who owns or operates an animal feeding operation shall not:

008.01 Provide or present false or misleading information to the Department or omit relevant facts when submitting reports or applications to the Department;

008.02 Allow livestock at an animal feeding operation to come into direct contact with waters of the State, apply livestock waste on or into waters of the State, or to otherwise allow or cause a discharge;

008.03 Apply manure, litter, or process wastewater to land in a manner that results in a discharge to waters of the State or that is not in accordance with nutrient management practices that ensure appropriate agricultural utilization of the nutrients in the manure, litter, or process wastewater;

008.04 Stockpile livestock waste in a drainage way or other location where it is likely to impact waters of the State;

008.05 Deny the Department access to an animal feeding operation for inspection purposes or deny access to any records required under the regulations, at any reasonable time;

008.06 Construct an animal feeding operation or any portion thereof prior to an inspection by the Department, unless exempted from inspection by the Nebraska Environmental Protection Act, Livestock Waste Management Act, or these regulations;

008.07 Construct a livestock waste control facility without a construction and operating permit, or construction approval or not in compliance with a construction and operating permit or construction approval issued by the Department, unless exempted from the requirements for a construction and operating permit by the Nebraska Environmental Protection Act, Livestock Waste Management Act, or these regulations. The use of a borrow site for construction of other components of the animal feeding operation does not constitute construction of the livestock waste control facility;

008.08 Operate an animal feeding operation prior to construction of an approved livestock waste control facility, unless exempted from the requirements for a construction and operating permit by the Nebraska Environmental Protection Act, Livestock Waste Management Act, or these regulations;

008.09 Operate an animal feeding operation without a construction approval, operating permit, construction and operating permit or a NPDES permit as required in Chapter 5 of these regulations, unless exempted from permitting under these regulations.

008.10 Discharge animal excreta, feed, bedding, spillage, or overflow from water systems, wash and flushing waters, sprinkling water from livestock cooling, precipitation polluted by falling on or flowing onto an animal feeding operation, or other materials polluted by livestock waste in violation of or without first obtaining a NPDES permit, a construction and operating permit, construction approval, or exemption from the Department, if required by the Nebraska Environmental Protection Act, Livestock Waste Management Act, or these regulations;

008.11 Place or allow dead animals or animal parts in a livestock waste control facility. Dead animals or animal parts shall not be land applied with livestock waste except when properly composted or when dead animals have been processed by an approved means of mortality disposal;

008.12 Dispose of chemicals in a livestock waste control facility; or

008.13 Violate the terms of an operating permit, construction approval, construction and operating permit or NPDES permit or any provision of the Livestock Waste Management Act and regulations.

009 The owner or operator of an animal feeding operation or proposed animal feeding operation is exempt from Sections 008.07 and 008.08 above, provided that:

009.01 The animal feeding operation or proposed animal feeding operation has been inspected by the Department pursuant to this chapter; and

009.02 Based on the inspection, no livestock waste control facility is required by the Department; or

009.03 No construction and operating permit or NPDES permit is required by the Department.

010 Any person who owns or operates an animal feeding operation shall report any discharge of manure, litter, or process wastewater to the Department within 24 hours of the event and provide a written report to the Department within five days of the event.

Enabling Legislation: Neb. Rev. Stat. §§ 81-1504(10)(11)(12)(13)(20)(21); § 81-1505(10)(11); § 81-1505(16); § 81-1506(1)(a), § 81-1506(2)(a),(b),(c),(d),(e), §

81-1506(5)(a); § 81-1508.02; § 81-1510; § 81-1511; §§ 54-2416 to 54-2438

Legal Citation: Title 130, Ch. 2, Nebraska Department of Water, Energy, and Environment

TITLE 130 - NEBRASKA DEPARTMENT OF WATER, ENERGY, AND ENVIRONMENT

Chapter 3 - FEES: INSPECTION, APPLICATION, ANNUAL PERMIT

001 Any person owning or operating an animal feeding operation which does not hold a NPDES permit, construction approval, operating permit, or construction and operating permit, has not been notified by the Department that no NPDES permit or construction and operating permit is required, or is not exempt under Neb. Rev. Stat. § 54-2422, shall submit the required inspection request with the appropriate fee as follows:

001.01 One hundred dollars for each small animal feeding operation;

001.02 Two hundred dollars for each medium animal feeding operation; or

001.03 Five hundred dollars for each large animal feeding operation.

002 Any person who fails to request an inspection as required in Neb. Rev. Stat. § 54-2423 shall be assessed, except for good cause shown, a late fee of fifty dollars for a small or a medium animal feeding operation or a late fee of five hundred dollars for a large animal feeding operation for each offense. Each month a violation continues constitutes a separate offense.

003 Any person required to obtain a NPDES permit for an animal feeding operation or a construction and operating permit for a livestock waste control facility shall submit an application fee of two hundred dollars with the application. Any modification meeting the definition of a major modification in Neb. Rev. Stat. § 54-2417(10) and these regulations requires the submittal of an application for a major modification and an application fee.

004 Beginning January 1, 2006, and each year thereafter, any person who has a valid NPDES permit or who has a large concentrated animal feeding operation and a construction approval, construction and operating permit, or operating permit under these regulations shall be assessed and pay an annual fee based on the permitted capacity as established in Neb. Rev. Stat. § 54-2428. The annual fee is due on or before March 1.

Enabling Legislation: Neb. Rev. Stat. § 81-1504(10)(11)(13)(20); § 81-1505(10)(11); § 54-2416 to § 54-2438

Legal Citation: Title 130, Ch. 3, Nebraska Department of Water, Energy, and Environment

TITLE 130 - NEBRASKA DEPARTMENT OF WATER, ENERGY, AND ENVIRONMENT

Chapter 4 - CONSTRUCTION AND OPERATING PERMIT, CONSTRUCTION APPROVAL, MAJOR MODIFICATION APPLICATION: TERMS AND CONDITIONS

001 Each application for a construction and operating permit shall include the following:

001.01 The application fee;

001.02 A completed Form B – 'Livestock Waste Control Application', as published on the Department website (see https://dwee.nebraska.gov) and available in paper form on request;

001.03 A completed Form C – 'Applicant Disclosure', as published on the Department website (see https://dwee.nebraska.gov) and available in paper form on request;

001.04 A completed nutrient management plan and supporting documentation as specified in Chapter 14;

001.05 A description of the methods that will be implemented to ensure the facility is constructed in accordance with the applicable design criteria and these regulations. At a minimum, this shall include liner design, construction, and testing; pipe size and type of material; pipe placement verification; sealing of joints or seams in concrete, steel, or flexible membrane liners; placement of splash pads or other protective devices; and other items which may be design specific as determined by the Department, such as lift stations or manholes;

001.06 A detailed construction quality assurance plan for the construction of the livestock waste control facility for any large concentrated animal feeding operation;

001.07 Supporting geotechnical reports as necessary to support design calculations and ground water information, with appropriate copies from the source of the information;

001.08 Written evidence that any necessary approvals related to the animal feeding operation from the Department's Dam Safety Division for any dam structures or for the storage of runoff from any non-feedlot contributing drainage area have been obtained; and

001.09 For a large concentrated animal feeding operation, a plan describing best management practices to minimize odors from the animal feeding operation, the facility, and the disposal of livestock waste. At a minimum, the plan should describe the following:

001.09A Considerations given to the location of the animal feeding operation, facility and application area;

001.09B Selection of size and type of facility to minimize odors, and facilitate management of waste;

001.09C Management procedures to be incorporated in operation of the facility; and

001.09D Methods and scheduling procedures to minimize odors during application.

001.10 Five copies of the complete application in addition to the original.

002 Each application for a major modification of an operating permit, a construction approval, or a construction and operating permit or an application for a construction and operating permit shall include the following:

002.01 The application fee;

002.02 A completed Form B – 'Livestock Waste Control Application', as published on the Department website (see https://dwee.nebraska.gov) and available in paper form on request;

002.03 A completed Form C – 'Applicant Disclosure', as published on the Department website (see https://dwee.nebraska.gov) and available in paper form on request;

002.04 A detailed description of the major modification requested. For a major modification involving construction, include the appropriate construction details listed in Section 001.06 through Section 001.09 above;

002.05 A completed nutrient management plan and supporting documentation as specified in Chapter 14, unless such information has been previously submitted and is unchanged;

002.06 Five copies of the application in addition to the original.

003 An application submitted prior to an initial inspection will be returned to the applicant without review. An application for a construction and operating permit for a large concentrated animal feeding operation or a National Pollutant Discharge Elimination System permit is subject to the requirements of the Engineers and Architects Regulation Act. An application, requiring the proper seal and signature of a Nebraska registered professional engineer, submitted without the proper seal will be returned to the applicant without review.

004 The applicant may request that the Department delay review of an application for construction and operating permit or major modification until an application for an individual NPDES permit is submitted. When such a delay is requested, the application for construction and operating permit or major modification and the application for a NPDES permit will be reviewed simultaneously in accordance with the processes and timelines for review of an individual NPDES permit as provided for in Title 119 (Nebraska Administrative Code) - Rules and Regulations Pertaining to the Issuance of Permits Under the

National Pollutant Discharge Elimination System.

005 In the event the Department determines that a NPDES permit is not required or the applicant requests that the review of the application for construction and operating permit or major modification proceed independent of the NPDES permit application, the review will proceed as provided for in the Livestock Waste Management Act.

006 Any person who obtains or has obtained a construction approval or a construction and operating permit shall:

006.01 Comply with any construction or compliance schedule established by the Department;

006.02 Submit reports and supporting documentation, as required by the Department, to verify compliance with any approved plan;

006.03 Certify, and ensure that the designer, if applicable, likewise certifies, that the facility was constructed pursuant to the application approved by the Department;

006.04 Comply with the nutrient management plan, as described in Chapter 14 of this Title;

006.05 Submit plans for the design, installation and operation of a ground water monitoring system, when required by the Department;

006.06 Implement ground water monitoring within the timeframe approved by the Department and continue monitoring, if required by the Department pursuant to Chapter 13, until the Department determines it is no longer necessary;

006.07 Follow any additional terms or conditions deemed necessary by the Department to ensure compliance with these regulations; and

006.08 If required by the permit, complete, individually or through an authorized representative or employee, a land application training program approved by the Department within 180 days of construction approval or permit coverage unless such training was satisfactorily completed in the previous 5 years. Additional training is required every 5 years. The approval- or permit-holder is responsible for ensuring that the required training is maintained. Records of training shall be kept by the approval- or permit-holder.

007 Routine repairs or minor maintenance of facility side-slope erosion may be considered repair work, without requiring a major modification or issuance of a construction and operating permit. Appropriate records shall be maintained. Items that are considered routine or minor include the repair or replacement of piping or erosion protection devices to original specification and repair of berms above the freeboard level in livestock waste control facilities.

008 The Department shall be notified and approval obtained prior to the installation of any new erosion protection measures, such as splash pads or wave protection devices. Any major modification would require a new application and construction approval.

009 The Department shall be notified if sloughing, slope failure, or excessive erosion of a facility occurs, or where other failure has occurred. The owner or permittee may be required to provide an engineering evaluation and any other information the Department determines necessary to ensure that the design and construction is acceptable such that the excessive erosion or other failure is not likely to recur. In the event the existing design or construction is determined to be inadequate, the owner or permittee may be required to submit an application for a major modification.

Enabling Legislation: Neb. Rev. Stat. §§ 81-1504(10)(11)(12)(13)(20)(21); § 81-1505(10)(11); § 81-3447; §§ 54-2416 to 54-2438

Legal Citation: Title 130, Ch. 4, Nebraska Department of Water, Energy, and Environment

TITLE 130 - NEBRASKA DEPARTMENT OF WATER, ENERGY, AND ENVIRONMENT

Chapter 5 – NPDES PERMIT: WHEN TO APPLY, APPLICATION, TERMS AND CONDITIONS, ANNUAL REPORT

001 An owner or operator of a concentrated animal feeding operation that discharges is required to obtain an NPDES permit. The owner or operator of a concentrated animal feeding operation which is required to obtain an NPDES permit shall apply for an individual NPDES permit or submit a request for coverage under a general NPDES permit. The owner or operator shall obtain coverage according to the following schedule:

001.01 An operation that was already defined as a concentrated animal feeding operation prior to April 14, 2003, was required to comply by April 14, 2003;

001.02 For an operation defined as a concentrated animal feeding operation as of April 14, 2003, that was not defined as a concentrated animal feeding operation prior to that date, including previously exempted or totally housed animal feeding operations, by a date specified by the Director or, if no date has been specified, by February 27, 2009;

001.03 For an operation that became defined as a concentrated animal feeding operation but is not a new source:

001.03A No less than 180 days prior to the time the operation commences operation for newly constructed operations not subject to effluent limitation guidelines; or

001.03B As soon as possible, but no later than 90 days after becoming defined as a concentrated animal feeding operation for other operations, except that the schedule is by February 27, 2009, or 90 days after becoming defined as a concentrated animal feeding operation, whichever is later, if an operational change that makes the operation a concentrated animal feeding operation would not have made it one prior to April 14, 2003.

001.04 For new sources, including any existing animal feeding operation which will be defined as a concentrated animal feeding operation following an expansion or the owner of any new concentrated animal feeding operation, at least 180 days prior to the time the concentrated animal feeding operation commences operation unless permission for a later date has been granted by the Director; or

001.05 For operations that are designated concentrated animal feeding operations, no later than 90 days after receiving notice of designation.

002 The permittee is required to submit an application to renew an individual NPDES permit or submit a request for coverage under a NPDES general permit no later than 180 days before the expiration of the permit unless permission for submittal at a later date has been granted by the Director. The permittee does

not need to apply to renew a NPDES permit or seek coverage if:

002.01 The animal feeding operation has permanently ceased operation or is no longer a concentrated animal feeding operation; and

002.02 The permittee has demonstrated to the satisfaction of the Director that any required corrective action has been completed; that all manure, litter, and process wastewater has been removed from the operation and disposed of in an agronomic manner; and there will be no further discharge of manure, litter, or associated process wastewater that was generated while the operation was a concentrated animal feeding operation, other than agricultural storm water discharge from land application areas.

003 Each application for a NPDES permit or request for coverage under a NPDES general permit shall consist of and include at a minimum, the following:

003.01 The appropriate fee;

003.02 A completed Form B – 'Livestock Waste Control Application', as published on the Department website (see https://dwee.nebraska.gov) and available in paper form on request;

003.03 A completed Form C – 'Applicant Disclosure', as published on the Department website (see https://dwee.nebraska.gov) and available in paper form on request;

003.04 A completed nutrient management plan and supporting documentation as specified in Chapter 14, unless such information has previously been submitted and is unchanged;

003.05 Written evidence that the applicant has obtained any necessary approvals related to the animal feeding operation from the Department's Dam Safety Division for any dam structures or for the storage of runoff from any non-feedlot contributing drainage area; and

003.06 Any other relevant information required by the Department.

004 Each application for a major modification of a National Pollutant Discharge Elimination System permit or NPDES application shall consist of and include, at a minimum, the following:

004.01 The appropriate fee;

004.02 A completed Form B – 'Livestock Waste Control Application', as published on the Department website (see https://dwee.nebraska.gov) and available in paper form on request;

004.03 A completed Form C – 'Applicant Disclosure', as published on the Department website (see https://dwee.nebraska.gov) and available in paper form on request;

004.04 A detailed description of the major modification requested, including compliance with Section 003.06 above;

004.05 A completed nutrient management plan and supporting documentation as specified in Chapter 14, unless such information has been previously submitted and is unchanged; and

004.06 Any other relevant information required by the Department.

005 The Department may require an operation to obtain an individual NPDES permit, instead of coverage under a NPDES general permit, where the Department determines that the quality of waters of the State may be better protected by requiring the owner of the operation to apply for an individual NPDES permit.

006 All NPDES permit applications will be processed, and permit duration shall be determined, as provided for in Title 119 (Nebraska Administrative Code) – Rules and Regulations Pertaining to the Issuance of Permits Under the National Pollutant Discharge Elimination System.

007 The NPDES permittee shall operate the facility in accordance with the NPDES permit, the site-specific nutrient management plan, these regulations, and any terms and conditions as determined by the Department, including the following:

007.01 The NPDES permittee shall, at any reasonable time, allow the Department access to the animal feeding operation, facility, ground water monitoring wells, and all records required under these regulations and the permit;

007.02 There shall be no discharge of manure, litter, or process wastewater pollutants into waters of the State from the production area or land application area except as provided in the effluent limitations in Chapter 7;

007.03 Any discharge of manure, litter, or process wastewater shall be reported to the Department within 24 hours of the event and in a written report to the Department within five days of the event;

007.04 The NPDES permittee, authorized representative, or an employee of the operation shall complete a land application training program approved by the Department within 180 days of NPDES permit coverage unless such training was satisfactorily completed in the previous 5 years. Additional training is required every 5 years. The NPDES permittee is responsible for ensuring that the required training is maintained. Records of training shall be kept by the NPDES permittee;

007.05 The NPDES permittee is required to comply with the terms of the Nutrient Management Plan as described in Chapter 14. This includes, but is not limited to, protocols for land application of manure, litter, and process wastewater and shall contain all fields available for land application, field-specific rates of application, and any timing limitations of land

application. In calculating the field-specific rate of application, the permittee shall follow a linear or narrative rate approach, as described in Chapter 14 Section 003 of this Title. The permittee shall also conduct a field phosphorus risk assessment prior to initial land application of manure, litter, or process wastewater and then prior to subsequent land application if the risk value of any site category listed in Table 3 of Appendix A – 'Field Phosphorous Risk Assessment' has changed, but in no case less than once every five years;

007.06 The NPDES permittee shall submit an annual report for the previous calendar year to the Department by March 1. The annual report shall include the following:

007.06A The maximum number and type of animals at the operation at any one time, whether in pen confinement or housed under roof;

007.06B Estimated amount of total manure, litter, and process wastewater generated by the operation in the previous calendar year reported in tons or gallons, as appropriate;

007.06C Estimated amount of total manure, litter, and process wastewater transferred to other persons from the operation in the previous calendar year reported in tons or gallons, as appropriate;

007.06D Total number of acres for land application covered by the nutrient management plan;

007.06E Total number of acres under control of the operation that were used for land application of manure, litter, and process wastewater in the previous calendar year;

007.06F Summary of all manure, litter, and process wastewater discharges from the production area that occurred in the previous calendar year, including the date, time over which the discharge occurred, and the approximate volume discharged with supporting figures;

007.06G The name, address, and telephone number of the person who is primarily responsible for land application practices at the operation, whether that person is an authorized representative or employee of the operation, and the date that land application training was last completed;

007.06H A statement indicating whether the current version of the operation’s nutrient management plan was developed and approved by a certified nutrient management planner; and

007.06I The actual crop(s) planted and actual yield(s) for each field, the actual nitrogen and phosphorus content of the manure, litter, and process wastewater, the results of calculations conducted in accordance with a linear or narrative rate of application as described in Chapter 14, Section 003 of this Title, and the amount of manure, litter, and process

wastewater applied to each field during the previous 12 months; and for any CAFO that implements a nutrient management plan that addresses rates of application in accordance with the narrative rate approach, the results of any soil testing for nitrogen and phosphorus taken during the preceding 12 months, the data used in calculations conducted in accordance with the nutrient management plan, and the amount of any supplemental fertilizer applied during the previous 12 months.

007.07 The NPDES permittee shall submit the annual permit fee to the Department by March 1 of each year.

Enabling Legislation: Neb. Rev. Stat. §§ 81-1504(11)(12)(13)(20)(21); § 81-1505(10)(11); § 81-1510; § 81-1511; §§ 54-2416 to 54-2438

Legal Citation: Title 130, Ch. 5, Nebraska Department of Water, Energy, and Environment

TITLE 130 - NEBRASKA DEPARTMENT OF WATER, ENERGY, AND ENVIRONMENT

Chapter 6 – NPDES PERMIT, CONSTRUCTION AND OPERATING PERMIT, OPERATING PERMIT, CONSTRUCTION APPROVAL, MAJOR MODIFICATION, APPLICATION: ISSUANCE, DENIAL, REVOCATION, REJECTION, MODIFICATION, TRANSFER, OR SUSPENSION

001 A NPDES permit, a construction and operating permit, construction approval, major modification, or application may be denied, revoked, modified or suspended for cause, including, but not limited to, the following:

001.01 Allowing a discharge of livestock wastes into waters of the State, except as provided by a permit or these regulations;

001.02 Violation of Title 117 (Nebraska Administrative Code) – Nebraska Surface Water Quality Standards or Title 118 (Nebraska Administrative Code) – Ground Water Quality Standards and Use Classification;

001.03 Obtaining approval by misrepresentation or failure to disclose fully all relevant facts;

001.04 Refusal to allow the Director or his or her representative:

001.04A Access to the operation and facility at any reasonable time;

001.04B Access to records or failure to provide records required under these regulations or conditions of a NPDES permit, operating permit, construction and operating permit, or construction approval; or

001.04C Access to any waste sources, surface water or ground water to obtain samples at the operation or facility.

001.05 Failure to inspect, operate, and maintain the operation and facility as specified in the approved application and these regulations;

001.06 Failure to inspect, operate, and maintain the mechanical devices identified in Chapter 10 in proper working condition;

001.07 Failure to pay the appropriate fee; or

001.08 Violation of, or failure to comply with, the requirements in these rules and regulations, or the terms or conditions of a NPDES permit, construction approval, operating permit, or construction and operating permit.

002 In the event these regulations are amended or superseded, the Department may modify a construction approval, operating permit, construction and operating permit, or NPDES permit and include a schedule for compliance.

003 A construction and operating permit, construction approval, operating permit or NPDES permit may be transferred to another person. A completed

transfer request form shall be submitted to the Department at least 30 days prior to the proposed transfer. The transfer is complete only upon written approval by the Director. The transfer request shall include the following:

003.01 A completed Form D – 'Permit Transfer Request', as published on the Department website (see https://dwee.nebraska.gov) and available in paper form on request, signed and dated by the current authorized representative and the authorized representative for the proposed owner or operator.

003.02 A Form C – 'Applicant Disclosure', as published on the Department website (see https://dwee.nebraska.gov) and available in paper form on request, completed by the new owner or operator.

004 In addition to other permit review determinations under the Livestock Waste Management Act and the Environmental Protection Act, pursuant to Neb. Rev. Stat. § 54-2431, the Department shall reject an application for a NPDES permit, construction and operating permit or major modification, or revoke or suspend a NPDES permit, or a construction and operating permit upon a finding that the applicant or permittee is unsuited to perform the obligations of a permitholder. Whenever the Director initiates proceedings under this section, those proceedings shall be as set out in Neb. Rev. Stat. § 81-1507 and Title 115.

Enabling Legislation: Neb. Rev. Stat. § 81-1504(10)(11)(12)(13)(20)(21); § 81-1505(10)(11); § 54-2416 to § 54-2438

Legal Citation: Title 130, Ch. 6, Nebraska Department of Water, Energy, and Environment

TITLE 130 - NEBRASKA DEPARTMENT OF WATER, ENERGY, AND ENVIRONMENT

Chapter 7 - EFFLUENT LIMITATIONS FOR CONCENTRATED ANIMAL FEEDING OPERATIONS

001 For existing large beef, dairy, horse, sheep, swine, poultry, and veal calf concentrated animal feeding operations and new large beef, dairy, horse, and sheep concentrated animal feeding operations, there shall be no discharge of manure, litter, or process wastewater pollutants into waters of the state from the production area except that when precipitation causes an overflow of manure, litter, or process wastewater, the overflow may be discharged into waters of the state provided the production area is:

001.01 Designed, constructed, operated and maintained to contain all manure, litter, and process wastewater including the runoff and the direct precipitation from a 25-year, 24- hour rainfall event; and

001.02 Operated in accordance with these regulations.

002 For new large swine, poultry, and veal calf concentrated animal feeding operations, there shall be no discharge of manure, litter, or process wastewater pollutants into waters of the state from the production area. The production area shall be operated in accordance with these regulations and designed, constructed, operated and maintained to contain all manure, litter, and process wastewater including all runoff and direct precipitation.

003 The owner of a large concentrated animal feeding operations may request that the Director establish alternative permit limitations as provided below:

003.01 New and existing beef and dairy, based upon site-specific alternative technologies that achieve a quantity of pollutants discharged from the production area equal to or less than the quantity of pollutants that would be discharged under the baseline performance standards in Section 001 above; or

003.02 New swine, poultry, and veal calf, based upon site-specific innovative technologies that can be demonstrated to achieve overall environmental performance across all media that is equal or more than the reductions achieved by baseline or voluntary alternative performance standards. The site-specific alternative technologies shall be capable of achieving a quantity of pollutants discharged from the production area that is no more than the quantity of pollutants that would be discharged under the baseline performance standards.

004 In order to request alternative NPDES permit limitations as provided for in Section 003.01 above, the owner shall submit a site-specific supporting technical analysis and any other relevant information and data that would support such site-specific effluent limitations within a time frame specified by the Director. The analysis shall include calculation of the quantity of pollutants discharged, on a mass basis where appropriate, based on a site-specific analysis of a livestock waste control facility designed, constructed, operated, and

maintained to contain all manure, litter, and process wastewater, including the runoff from a 25-year, 24-hour rainfall event. The Director may require any additional information deemed necessary to support such a request. At a minimum, the technical analysis of the discharge of pollutants shall include:

004.01 All daily inputs to the facility, including manure, litter, all process wastewaters, precipitation, and runoff;

004.02 All daily outputs from the facility, including losses due to evaporation, sludge removal, and the removal of wastewater for use on cropland or transferred offsite;

004.03 A calculation determining the predicted median annual overflow volume based on a 25-year period of actual rainfall data applicable to the site;

004.04 Site-specific pollutant data, including nitrate-nitrogen, ammonia-nitrogen, phosphorus, 5-day biochemical oxygen demand (BOD5), and the non-filterable residue (also called total dissolved solids or TDS) for the operation from representative sampling and analysis of all sources of input to the facility, or other appropriate pollutant data; and

004.05 Predicted annual average discharge of pollutants, expressed as a mass discharge on a daily basis in pounds per day where appropriate and calculated considering Section 004.01 through Section 004.04 above.

005 For NPDES permitted large beef, dairy, heifer, swine, poultry, horse, sheep, and veal concentrated animal feeding operations that land apply manure, litter, or process wastewater, discharges from the land application areas under control of the NPDES permittee are subject to compliance with the following:

005.01 Implement a nutrient management plan prior to December 31, 2006, or at the time of reissuance of the NPDES permit, for land under the NPDES permittee's control. Land under the NPDES permittee's control includes;

005.01A Owned areas;

005.01B Rented or leased areas including land rented or leased solely for land application area; and

005.01C Any area where the NPDES permittee stockpiles, spreads, or delivers waste to, or otherwise controls the timing, amount, or rate of land application.

005.02 Comply with the terms of the submitted Nutrient Management Plan. The terms of the nutrient management plan are the information, protocols, best management practices, and other conditions in the nutrient management plan determined by the Director to be necessary to meet the requirements of Chapter 14 of this Title. This includes, but is not limited to, protocols for land application of manure, litter, and process wastewater and shall contain all fields available for land application, field-specific rates of application, and any timing limitations of land application. Manure, litter,

and process wastewater may only be land applied at field-specific application rates, calculated using a linear or narrative rate approach, that minimize phosphorus and nitrogen transport from the field to waters of the state and comply with the technical standards established in Chapter 14;

005.03 Analyze manure, litter, and process wastewater at least once a year for nitrogen and phosphorus content. Analyze soil at each application site for nitrogen content prior to the first application of any manure, litter, or process wastewater and then at least annually thereafter when used for application. Analyze soil at each application site for phosphorus content prior to the first application of any manure, litter, or process wastewater and then at least once every 5 years thereafter if used anytime in the 5 years for land application. The results of these analyses are to be used in determining application rates for manure, litter, and other process wastewater;

005.04 Periodically inspect equipment used for land application of manure, litter, or process wastewater for leaks;

005.05 Maintain setback distances during land application practices in compliance with Chapter 9; and

005.06 Maintain the records onsite as specified in Chapter 12.

006 For NPDES permitted horse and sheep large concentrated animal feeding operations that land apply manure, litter, or process wastewater, discharges from the land application areas under control of the NPDES permittee are subject to conditions developed by the Department, on a case-by-case basis, using its best professional judgment.

007 For small and medium concentrated animal feeding operations, there shall be no discharge of manure, litter, or process wastewater pollutants into waters of the state from the production area or land application area except under conditions developed by the Department, on a case-by-case basis, using its best professional judgment.

Enabling Legislation: Neb. Rev. Stat. § 81-1504(10)(11)(12)(13)(20)(21); § 81-1505(10)(11); § 54-2416 to § 54-2438

Legal Citation: Title 130, Ch. 7, Nebraska Department of Water, Energy, and Environment

TITLE 130 - NEBRASKA DEPARTMENT OF WATER, ENERGY, AND ENVIRONMENT

Chapter 8 - WASTE CONTROL METHODS: DESIGN CRITERIA AND CONSTRUCTION REQUIREMENTS

001 Livestock waste control facilities shall be designed and constructed to allow application or utilization of livestock wastes at those times compatible with crop management and available waste handling equipment. Factors to account for include, but are not limited to, the maximum length of time anticipated between emptying events, the frequency of emptying events or dewatering, the hydraulic limitations of the land application areas, the nutrient content and concentration in the storage structure, and the appropriate timing of land application as specified in the applicable technical standards for nutrient management.

002 The minimum design storage capacity for construction or modification of a livestock waste control facility for any concentrated animal feeding operation shall provide adequate storage capacity for all manure, litter, and process wastewater (process wastewater includes runoff which has come into contact with animal waste) generated during the storage period; all runoff or the runoff from a 25-year, 24-hour rainfall event (whichever criterion is applicable as identified in Chapter 7); any net positive amount from normal precipitation less evaporation during the storage period; and any additional storage needed to meet management goals or other regulatory requirements. The storage period shall be no less than the maximum length of time between planned land application or disposal events. Specific minimums apply for certain types of operations as follows:

002.01 For open lot animal feeding operations, the minimum storage period capacity shall be no less than the calculated average runoff for the month of June, runoff from a 25-year, 24-hour rainfall event, and any manure, litter, and process wastewater produced for the month of June.

002.02 The minimum storage period for totally housed operations shall be no less than 180 days. Except, the applicant may request the Director to establish a substantially equivalent alternative storage period which is less than 180 days based upon a satisfactory demonstration that the proposed alternative time period will achieve overall environmental performance which is at least equal to that achieved by providing adequate storage for the specified 180 days. The Director may require any additional supporting information deemed necessary to support such a request.

003 Freeboard is required for all storage structures and is a separate requirement from the minimum design storage capacity above. Freeboard is no less than the required vertical separation from the elevation at which liquid will flow out of the facility down to the required minimum storage capacity. Freeboard varies for different types of facilities as follows:

003.01 For earthen structures such as holding ponds whether using an earthen liner or synthetic liner, 1.5 feet;

003.02 For uncovered vertical walled structures such as concrete or steel tanks, twelve inches; and

003.03 For covered vertical wall structures such as underfloor pits, six inches.

004 For small and medium animal feeding operations, the applicant may propose a substantially equivalent alternative storage period or design subject to the Department's approval.

005 Surface drainage shall be diverted around the production area and livestock waste control facility to the maximum extent possible by diversion terrace, berm, ditch, or similar diversion, subject to Department approval. Any such diversion shall be designed and constructed to convey all runoff or at least the runoff and the direct precipitation from the peak discharge of a 25-year, 24-hour rainfall event (whichever criterion is applicable as identified in Chapter 7). Any open diversion will not be less than 1.5 feet in channel depth.

006 Percolation for existing livestock waste control facilities, as defined in these regulations, and for those facilities permitted prior to February 20, 2000, shall not exceed 0.25 inches per day (7.35 x 10-6 cm/sec), except that facilities that are subsequently modified in capacity or structure shall meet the percolation requirements for new construction. The Department may request that the applicant or permittee provide an engineering evaluation or assessment as outlined in Chapter 2.

007 Any new livestock waste control facilities or any expansion of a livestock waste control facility shall be constructed in a location and with soils that are structurally capable of supporting the liner and meeting the percolation limits as applicable. Earthen liners shall be constructed of materials and with construction methods so that percolation does not exceed 0.13 inches per day (3.82 x 10-6 cm/sec). The design shall specify liner thickness. Where a flexible membrane liner is used, a properly compacted soil sub-base shall be constructed below the liner with a minimum thickness of six inches. Structural determinations are required for earthen structures that are steeper than 2 horizontal to 1 vertical for proposed facilities. Verification of the percolation rate is required, in a manner approved by the Department, for all earthen liners. Seam testing for flexible membrane liners is required to verify watertight seams.

008 A method for measuring accumulations of manure, litter, and process wastewater is required. For underfloor pits, tanks, and similar storage devices or structures with limited access, the applicant may propose a method of measuring manure, litter, or process wastewater accumulations, subject to the Department's approval. A permanent depth marker is required for all other storage or treatment structures, including runoff holding ponds, liquid manure storage pits, and treatment lagoons. The marker shall be made of a durable material, permanently fixed, referenced to a permanently fixed bench mark or fixed elevation reference point adjacent to and outside of the waste containment area, located where the depth marks can be easily and safely viewed for facility management and inspections, clearly marked in at least one-

foot increments, with a reference number or numbers, and with the following clearly marked:

008.01 The freeboard level;

008.02 The level indicating the volume needed to contain all runoff and direct precipitation, or the runoff and direct precipitation of the 25-year, 24-hour rainfall event, as appropriate. Pumping shall begin as soon as possible anytime this storage level is exceeded. This can be identified as the “must pump level”;

008.03 The level indicating the volume needed for the minimum design storage capacity. The capacity required for the storage period volume shall be available prior to the start of the storage period. In no case shall the minimum storage period be less than needed to provide adequate storage through the winter months. This can be identified as the “winter pumpdown level”; and

008.04 For lagoons, the level needed for the minimum treatment volume, marked on the depth marker or clearly posted on a sign adjacent to the lagoon. The minimum treatment volume is the amount of liquid needed to maintain proper lagoon function to be considered a lagoon for land application purposes and this volume shall be maintained above any sludge accumulations.

009 Security devices and methods are required to prevent tampering with drain valves, where such valves are used on irrigation distribution systems or equipment loading areas.

Enabling Legislation: Neb. Rev. Stat. § 81-1504(10)(11)(12)(13)(20)(21); § 81-1505(10)(11); § 54-2416 to § 54-2438

Legal Citation: Title 130, Ch. 8, Nebraska Department of Water, Energy, and Environment

TITLE 130 - NEBRASKA DEPARTMENT OF WATER, ENERGY, AND ENVIRONMENT

Chapter 9 - LOCATION RESTRICTIONS AND SETBACKS: WELLS, GROUND WATER, COLD WATER CLASS A STREAM WATERSHEDS

001 A livestock waste control facility shall not be constructed:

001.01 Within 100 feet of any well used for domestic purposes. For the purposes of these regulations, domestic water well means a water well providing water to any water supply system furnishing water for human consumption other than a public water supply system; for the watering of livestock, poultry, farm, and domestic animals; or for the irrigation of lands not exceeding an area of two acres;

001.02 Within 1000 feet of a public drinking water supply well, unless the applicant furnishes the Department with field-derived data giving estimates of the depth, velocity and flow direction of ground water which support the contention that the facility will not result in ground water contamination and after review, the Department concurs;

001.03 In an area or in such a manner that, in the Department's judgment, there is a substantial threat of beneficial use impairment to surface waters of the State as defined in Title 117 (Nebraska Administrative Code) – Nebraska Surface Water Quality Standards;

001.04 Where the Department determines that ground water may be contaminated; or

001.05 Less than four feet above the seasonal high ground water level. Except, that a facility for an existing animal feeding operation may, with Department approval, be located less than four feet above the seasonal high ground water level, if the design provides for structural stability, a maximum operating depth of six feet, and provisions are made to maintain the facility. In addition, for a facility located at or below the seasonal high ground water level a low permeability liner with saturated hydraulic conductivity of 1x10-7 cm/sec., or less, and at least one foot in thickness or equivalent shall be utilized.

002 The Department will not accept an application or issue a permit for an animal feeding operation with an existing livestock waste control facility if the facility is located within 100 feet of a domestic water well not owned by the operation. The Department may permit an existing livestock waste control facility, located within 100 feet of a well owned by the operation, based upon an evaluation of the following conditions:

002.01 Depth to ground water;

002.02 Known flow direction of ground water;

002.03 Structural integrity of the facility and, if known, the well; and

002.04 Any other circumstance that may adversely affect ground water quality.

003 No new animal feeding operation shall be issued a National Pollutant Discharge Elimination System permit or a construction and operating permit in any part of a watershed that feeds directly or indirectly into a cold water class A stream, delineated pursuant to Neb. Rev. Stat. § 54-2421.

004 An existing animal feeding operation may not expand if its livestock waste control facility is located within one mile of a designated cold water class A stream segment delineated pursuant to Neb. Rev. Stat. § 54-2421, and in the same cold water class A stream watershed as the animal feeding operation, except that an existing animal feeding operation used for research sponsored by the University of Nebraska at a facility owned by the University of Nebraska may expand if the Department determines, based on scientific information provided in the application or other available scientific information, that the proposed expansion does not pose a potential threat to the stream.

005 Existing animal feeding operations may receive a new or modified National Pollutant Discharge Elimination System permit, a new or modified construction and operating permit, a modified operating permit, or a modified construction approval if:

005.01 The existing animal feeding operation does not currently have a NPDES permit or a construction and operating permit, and, upon inspection by the Department, a determination is made that one is necessary;

005.02 The existing animal feeding operation modifies its operation, but does not expand its approved livestock waste control facility;

005.03 The existing animal feeding operation’s livestock waste control facility is located more than two miles from a designated cold water class A stream segment delineated pursuant to Neb. Rev. Stat. § 54-2421 and in the same cold water class A stream watershed as the animal feeding operation; or

005.04 The existing animal feeding operation or livestock waste control facility is located less than two miles, but more than one mile, from a cold water Class A stream delineated pursuant to Neb. Rev. Stat § 54-2421, and the Department determines, based on scientific information provided in the application or other available scientific information that the proposed expansion does not pose a potential threat to the stream.

006 The Department may deny or restrict an application for a transfer or major modification of an existing NPDES permit or a construction and operating permit based upon the potential degradation of a cold water class A stream.

007 For large concentrated animal feeding operations, manure, litter, and process wastewater may not be stockpiled or applied closer than 100 feet to any down-gradient surface waters, open tile line intake structures, well heads, or other conduits to surface or ground water, except that one of the following

two compliance alternatives may be substituted for the application setback requirement:

007.01 A 35-foot-wide vegetated buffer where the application of manure, litter, or process wastewater is prohibited. For the purposes of these regulations vegetated buffer means a permanent strip of dense perennial vegetation established parallel to the contours of and perpendicular to the dominant slope of the field for the purposes of slowing water runoff, enhancing water infiltration, and minimizing the risk of any potential nutrients or pollutants from leaving the field and reaching waters of the state; or

007.02 A satisfactory demonstration that a setback or buffer is not necessary because implementation of alternative conservation practices will provide pollutant reductions equal to or better than reductions that would be achieved by the 100-foot setback.

008 For small and medium concentrated animal feeding operations and animal feeding operations not required to seek permit coverage, manure, litter, and process wastewater may not be stockpiled or applied closer than 30 feet of any streams, lakes and impounded waters identified in Chapter 6 and Chapter 7 of Title 117 (Nebraska Administrative Code) – Nebraska Surface Water Quality Standards, unless in accordance with a Department approved nutrient management plan.

Enabling Legislation: Neb. Rev. Stat. § 81-1504(10)(11)(12)(13)(20)(21); § 81-1505(1)(2)(10)(11); §§ 54-2416 to 54-2438

Legal Citation: Title 130, Ch. 9, Nebraska Department of Water, Energy, and Environment

TITLE 130 - NEBRASKA DEPARTMENT OF WATER, ENERGY, AND ENVIRONMENT

Chapter 10 - DISPOSAL THROUGH AN IRRIGATION DISTRIBUTION SYSTEM; EQUIPMENT REQUIREMENTS

001 An animal feeding operation proposing to use an irrigation distribution system for disposal shall submit a plan to the Department for its approval detailing the type and location of mechanical devices to be installed. The plan shall clearly indicate whether or not there are any water source connections (such as well heads or surface water diversions), show the location of the water source, indicate whether or not the system will be completely disconnected from the water source when the irrigation system is used for land application, and detail the type and location of all piping and mechanical devices.

002 Any irrigation distribution system through which livestock wastes are distributed shall be equipped with the mechanical devices specified in Section 004 below. These devices are not required for systems not connected to a source of ground or surface water; or for open discharge systems, if livestock waste is introduced at a point in the system where the force of gravity cannot cause water and waste to flow back to the point from which the water was pumped or diverted. The equipment shall be installed in accordance with the manufacturer's specifications and at the location specified in Section 004 below.

003 The Department may rely on inspections conducted by the Natural Resources Districts, pursuant to Title 195 (Nebraska Administrative Code) – Rules and Regulations Pertaining to Chemigation, to help verify compliance with the requirements of this Chapter.

004 The irrigation distribution system mechanical devices shall consist of an irrigation pipeline check valve, vacuum relief valve, inspection port and low pressure drain.

004.01 The irrigation pipeline check valve shall be located in the pipeline between the irrigation pump and the point of livestock waste injection into the irrigation pipeline and provide a watertight seal. An irrigation distribution system not equipped with a check valve or with a check valve that provides a watertight seal against reverse flow shall be equipped with a check valve model certified to the Director as meeting the leakage test requirements in Appendix I of Title 195 (Nebraska Administrative Code) – Rules and Regulations Pertaining to Chemigation.

004.02 The vacuum relief valve shall be located on the pipeline between the irrigation pump and the irrigation pipeline check valve. Its purpose is to prevent creation of a vacuum when the water flow stops.

004.03 The inspection port or other viewing device shall be located on the pipeline between the irrigation pump and the irrigation pipeline check valve. In many cases the vacuum relief valve connection can serve as the inspection port.

004.03A The inspection port or viewing device shall be situated in such a manner that the inlet to the low pressure drain can be observed.

004.03B A minimum four-inch diameter orifice or viewing area is required.

004.04 The low-pressure drain shall be located on the bottom of the horizontal pipe between the irrigation pump and the irrigation pipeline check valve. Its purpose is to drain any mixture of water and livestock waste away from the irrigation water source.

004.04A The drain shall be constructed of corrosion resistant material or otherwise coated or protected to prevent corrosion.

004.04B The drain shall have an orifice of at least three-quarter inch diameter and shall not extend into the horizontal pipe beyond the inside surface of the bottom of the pipe; and

004.04C When the pipeline water flow stops, the drain shall automatically open. A tube, pipe or similar conduit shall be used to discharge the solution at least 20 feet from the irrigation water source.

Enabling Legislation: Neb. Rev. Stat. § 81-1504(10)(11)(12)(13)(20)(21); § 81-1505(10)(11); §§ 54-2416 to 54-2438

Legal Citation: Title 130, Ch. 10, Nebraska Department of Water, Energy, and Environment

TITLE 130 - NEBRASKA DEPARTMENT OF WATER, ENERGY, AND ENVIRONMENT

Chapter 11 - BEST MANAGEMENT PRACTICES

001 Animal feeding operations and livestock waste control facilities shall be operated and maintained to prevent water pollution and to protect the environment of the State. Best management practices shall be implemented using the most effective methods based on the best available technology achievable for specific sites to prevent or reduce the discharge of pollutants to waters of the State and control odor where appropriate.

002 Livestock wastes collected in the facilities for totally housed animal feeding operations shall be land applied onto application areas on dewatering days at a rate to prevent a discharge from the facilities. A minimum of 180 days of storage shall be provided prior to the winter months, except as provided for in Chapter 8.

003 Any time the waste storage volume in the livestock waste control facility exceeds the level identified in 008.02 in Chapter 8 (i.e. the “must pump level”), livestock wastes shall be land applied on all available dewatering days until adequate storage is restored.

004 Appropriate waste handling equipment for emptying and cleaning facilities shall be available as needed to operate and maintain the facility to meet the capacity and storage requirements. Adequate application area shall be available at all times when land application is necessary.

005 All livestock wastes removed from the facility and the animal feeding operation itself shall be land applied or stockpiled in a manner which will not contribute to water pollution. The owner or authorized representative shall remain responsible for wastes removed from the operation to land under his or her control.

006 Stockpiles of livestock waste shall be located to prevent a discharge to waters of the state. Stockpiles shall be managed as necessary by use of cover material, diking, or other means to prevent discharge until the stockpile material is utilized.

007 Sludge accumulation levels shall not exceed the maximum sludge depth identified in the facility design. When sludge, sediment, or other solid or liquid accumulations are removed from the facilities, the equipment used for the removal shall not be allowed to impact the integrity of the liner or compromise the structure of the facility. Sludge or solids shall not be allowed to accumulate such that it cannot be disposed of agronomically as provided for in Chapter 14. Any removed accumulations shall not be stockpiled where it is likely to reach waters of the State.

008 Minimum treatment volumes shall be maintained for lagoons. On initial startup, fresh water shall be added to a depth of at least four feet prior to adding any wastes. Additional water shall be added as needed for the minimum treatment volume to be attained within six months. Slug loading shall be

avoided and the level needed for the minimum treatment volume shall be maintained.

009 In the event of an accident or emergency, such as a spill, release or discharge of animal waste due to such events as power failures, large storms, leaks or breaks in water supply systems, component failure of the waste control facilities and any releases during land application due to equipment failure or accidents or irrigation equipment failure, the owner or authorized representative will take actions as needed to stop the cause, contain and control any release, and cleanup any affected areas. Any discharge of waste shall be reported to the Department within 24 hours of the event. A written report is also required to be submitted to the Department within five days of the event. The Department may require additional actions or additional information.

010 Livestock waste control facilities shall be maintained in proper operating condition. Weed growth that prevents or limits facility inspections shall be routinely removed. Animals shall not be allowed access to livestock waste control facility liners or allowed to otherwise compromise liner integrity. Animal contact with facility structures, including berms and diversions, shall be prevented or minimized to avoid damage to these structures. Structures subject to animal contact shall be included in routine inspections. Structures shall be maintained to prevent the growth of trees and shrubs and any such growth routinely removed.

011 The owner of an animal feeding operation shall maintain the production area for periods of time when it is not in operation. If the operation has been discontinued and ceased operation, the following minimum closure requirements shall also be followed:

011.01 Remove all accumulated manure, litter, and process wastewater, including any sludge and sediment; follow agronomic practices including the sampling and testing of any wastes removed; and dispose in an agronomic manner; and

011.02 Continue ground water monitoring, as required, unless the Department has vacated the monitoring requirement. If the ground water monitoring requirement has been vacated, monitoring wells shall be properly decommissioned.

012 Chemicals and chemical rinsates shall be properly used and disposed of according to label directions and any applicable regulations. Livestock waste control facilities shall not be used for the disposal of chemicals except for trace amounts normally found in process wastewater, such as spent foot bath water.

013 For a field or field segment with a high or very high phosphorus risk assessment rating, there shall be no application of manure, litter, or process wastewater when the soil is frozen, or snow or ice covered.

Enabling Legislation: Neb. Rev. Stat. § 81-1504(10)(11)(12)(13)(20)(21); § 81-1505(10)(11); §§ 54-2416 to 54-2438

Legal Citation: Title 130, Ch. 11, Nebraska Department of Water, Energy, and Environment

TITLE 130 - NEBRASKA DEPARTMENT OF WATER, ENERGY, AND ENVIRONMENT

Chapter 12 - INSPECTION, MAINTENANCE, AND RECORD KEEPING REQUIREMENTS

001 All permittees and all recipients of construction approvals are required to have routine inspections conducted of the production area, irrigation distribution system, and land application areas as follows:

001.01 Weekly inspections at the production area of all storm water diversion devices, runoff diversion structures, and devices channeling contaminated storm water to the facilities;

001.02 Daily inspection at the production area of water lines, including drinking water or cooling water lines;

001.03 Daily monitoring and recording of any precipitation events;

001.04 Weekly inspections at the production area of the manure, litter, and process wastewater impoundments. An inspection record shall note the level in liquid impoundments as indicated by the depth marker;

001.05 Inspection prior to each operation of the irrigation distribution system and the water source protection equipment identified in Chapter 10 to ensure that the system and equipment operate as intended. The system shall be monitored while in use to insure the system operates as intended; and

001.06 Inspection at least once a year to determine the sludge and sediment accumulation level in liquid impoundments.

001.07 Maintain records of the above described inspections at the operation for a period of five years.

002 The owner or operator shall maintain all facilities and equipment in proper working condition. Any deficiencies found shall be corrected as soon as possible. The deficiencies and corrective actions shall be documented and an explanation of the factors preventing immediate correction shall be included for deficiencies not corrected within 30 days.

003 Animal mortalities shall not be disposed of in any liquid manure or process wastewater system, and shall be handled in such a way as to prevent the discharge of pollutants to surface water in accordance with animal mortality regulations developed by the Nebraska Department of Agriculture.

004 The NPDES permittee or the owner or operator of a large concentrated animal feeding operation with a livestock waste control facility, shall maintain production area and land application area records at the concentrated animal feeding operation for a period of five years from the date they are created. A complete copy of the following information is required:

004.01 Weekly records of the depth of the manure and process wastewater in the liquid impoundment as indicated by the depth marker;

004.02 Records to document any actions taken to correct deficiencies found as a result of required inspections. For any deficiencies not corrected within 30 days, the record shall include an explanation of the factors preventing immediate correction;

004.03 Records of mortalities management, chemical management, and related practices used by the operation;

004.04 Any records documenting the current design of any manure or litter storage structures, total design capacity for liquids and solids, all sampling and test results related to the design and construction of the facility, and approximate number of days of storage capacity, which demonstrates the facility capacity is adequate to meet the design storage requirements;

004.05 The nutrient management plan, which also includes the test methods used to sample and analyze manure, litter, process wastewater, and soil;

004.06 The date, time, and estimated volume of any overflow or discharge;

004.07 Expected crop yields for the land application areas;

004.08 The date(s) manure, litter, or process wastewater was applied to each field;

004.09 Weather conditions at the time of application and for 24 hours prior to and following application;

004.10 Results from manure, litter, process wastewater, irrigation water, and soil sampling and testing;

004.11 Explanation of the basis for determining manure, litter, and process wastewater application rates, as required by the Department;

004.12 Results of the most recent phosphorus risk assessment for each field or field segment including the legal description, date assessed, name of the person who completed the assessment, and the level of risk assessed;

004.13 Calculations that show the total nitrogen and phosphorus to be applied to each field;

004.14 Total amount of nitrogen and phosphorus actually applied to each field, including documentation;

004.15 The method used to apply the manure, litter, or process wastewater;

004.16 For manure, litter, or process wastewater transferred to other persons the nutrient analysis results and the date, recipient name and

address, and approximate amount transferred;

004.17 Dates of inspections of equipment used to apply manure, litter, or process wastewater; and

004.18 Any other records required by any permit or approved application.

Enabling Legislation: Neb. Rev. Stat. § 81-1504(10)(11)(12)(13)(20)(21); § 81-1505(10)(11); §§ 54-2416 to 54_2438

Legal Citation: Title 130, Ch. 12, Nebraska Department of Water, Energy, and Environment

TITLE 130 - NEBRASKA DEPARTMENT OF WATER, ENERGY, AND ENVIRONMENT

Chapter 13 - GROUND WATER MONITORING

001 Ground water monitoring may be required for any large concentrated animal feeding operation based on a site-specific review by the Department. The following information will be used in determining the need for ground water monitoring:

001.01 The materials and methods used in the construction of the facility;

001.02 The size of the animal feeding operation;

001.03 Depth to ground water;

001.04 Type of soils;

001.05 Type of consolidated or unconsolidated sediments above and below the water table;

001.06 Local and regional use of ground water for drinking water and other beneficial uses; and

001.07 Other criteria, including, but not limited to, location of nearest public water supply wells, use of local Rural Water District, and location of on-site wells.

002 Ground water monitoring may be required for any small or medium animal feeding operation, if any one of the following has occurred:

002.01 A spill or non-permitted release from the facility;

002.02 The Department determines that percolation from the facility exceeds the allowable percolation rate; or

002.03 Any other circumstance that the Department determines may impact ground water quality.

003 An applicant may supply additional information to the Department for reconsideration of the ground water monitoring requirement. The information shall be specific to the site and may include, but is not limited to, the following:

003.01 Geologic log of on-site test hole or water well, extending at least to ground water, with adequate detail concerning the sediments and/or rocks drilled through; and

003.02 Static water level in an existing on-site water well or in a new on-site test hole or water well, measured after water level has had time to stabilize, usually at least 24 hours after drilling.

004 Facilities where ground water monitoring has been required shall have a minimum of three monitoring wells, one up-gradient and two down-gradient. All wells shall be constructed according to Nebraska Health and Human Services, Regulation and Licensure Title 178 (Nebraska Administrative Code), Chapter 12. As an alternative, the Department may approve other means of monitoring the ground water, sediments, and rocks above or below the water table. This includes, but is not limited to, direct push techniques for monitoring of ground water or sediments, lysimeter installation and sampling, or other approved techniques.

005 Sampling shall occur as set out in the sampling and analysis plan approved by the Department, and the results reported to the Department within 45 days of the sampling event. The following information shall be obtained:

005.01 Depth to water prior to purging and sampling; and

005.02 Sample and lab analyses for nitrate, chloride, and ammonia, at a minimum, using accepted lab methods and sampling techniques.

005.02A Sampling shall be conducted by a qualified person, as defined by the Nebraska Health and Human Services System.

005.02B A sampling and analysis plan, or some other standardized plan for sampling and analysis of the ground water samples, shall be submitted and approved as part of the ground water monitoring plan.

006 The Department may require water level measurements at a frequency adequate to establish seasonal ground water flow directions.

007 The permittee or authorized representative may request that the Department reconsider the ground water monitoring requirement. The request shall include supporting documentation. In the event monitoring wells will no longer be used, the wells shall be properly decommissioned according to state regulations.

008 Further ground water monitoring or investigation may be required if one or more of the following occurs. Such investigations and any subsequent actions related to ground water quality shall follow procedures in Title 118 (Nebraska Administrative Code) – Ground Water Quality Standards and Use Classification:

008.01 Contaminant concentrations in the monitoring wells are above the background concentrations;

008.02 There has been a discharge from the facility;

008.03 The Department determines that percolation from the facility exceeds the allowable percolation rate; or

008.04 Any other circumstance that the Department determines may impact ground water quality.

009 Any permittee or recipient of a construction approval that is required to conduct ground water monitoring in accordance with this Chapter shall maintain all documents pertaining to such monitoring for five years.

Enabling Legislation: Neb. Rev. Stat. § 81-1504(10)(11)(12)(13)(20)(21); § 81-1505(10); §§ 54-2416 to 54-2438

Legal Citation: Title 130, Ch. 13, Nebraska Department of Water, Energy, and Environment

TITLE 130 - NEBRASKA DEPARTMENT OF WATER, ENERGY, AND ENVIRONMENT

Chapter 14 – NUTRIENT MANAGEMENT PLAN REQUIREMENTS, FIELD ASSESSMENTS, AND PERFORMANCE STANDARDS

001 Each applicant for a permit under these regulations shall submit a nutrient management plan that includes at a minimum the following information as applicable:

001.01 Scaled drawings, topographic maps, or equivalent. Each drawing or map shall be easily readable and include a visual scale, a north directional arrow, a fixed geographic reference point, a permanent bench mark or fixed elevation reference point, the date the drawing or map was completed, and show:

001.01A The spatial location and extent of the animal feeding operation and livestock waste control facilities, including the various components of the facility such as areas designated for stockpiling, composting, or for temporary holding of dead animals, and the area immediately adjacent;

001.01B The location and entire extent of any drainage area controlled or diverted by the operation including the area immediately adjacent to such area with the runoff flow directions indicated;

001.01C The source of the animal feeding operation's water supply, all other wells, and the location of any wetlands or surface water within the boundaries or immediately adjacent to the facility;

001.01D The topography or clearly defined runoff flow direction in and around the operation and facilities, except in the case of small or medium animal feeding operations, consisting of confined buildings with underfloor pits or nearby storage structures that are on or above grade. Cross-sectional drawings may substitute, at the Department’s discretion, for detailed topographic drawings or maps;

001.01E Details (such as size, dimensions, capacities, elevations, and materials) for all conveyance structures, for pipe inlets and outlets, pipe penetrations into or out of containment or conveyance structures, lift or pumping stations, liners, and for concrete (including expansion joint construction, reinforcement and joint construction, sealing details, and concrete specifications) and all other non-soil construction materials. A detailed table or figure with the capacities shown at the staff gauge levels specified in Chapter 8, which include capacities at one-foot increments, and critical pumpdown or lagoon treatment levels as appropriate; and

001.01F United States Geological Survey Quadrangle Map(s), or equivalent scaled topographic maps, showing the geographic location of the animal feeding operation and the area extending 2,000 feet from the operation, including the location of all known wells, surface water

bodies, homesteads, and businesses that at the time of application lie within 2,000 feet of the facility;

001.02 Estimates of the amounts of manure, litter and process wastewater produced;

001.03 A narrative description of the livestock waste control facilities and how they will function and operate;

001.04 Types of animals, the maximum animal capacity and the average animal weight for each animal type;

001.05 Design calculations for sizing of conveyances and storage facilities and diversion of clean water from the production area;

001.06 Depth and volume tables on at least one-foot increments for all storage facilities, with operating depths clearly identified as needed to maintain facilities to comply with effluent limitations; to maintain minimum treatment volumes in lagoons; and to maintain sludge and sediment accumulations at reasonably manageable levels;

001.07 Procedures for the proper handling and disposal of dead animals;

001.08 Procedures for the proper handling and disposal of chemicals;

001.09 A protocol using either a narrative rate approach or a linear approach as described in section 003 below to land apply manure, litter or process wastewater for the appropriate agricultural utilization of nitrogen from all sources, as well as the expected removal of nitrogen in the harvested plant biomass, and include a nutrient budget for nitrogen and phosphorus that:

001.09A Accounts for all sources of nutrients including, but not limited to, manure, litter, and process wastewater; commercial fertilizer; crop residues and previous legume crops; soil organic matter; available nutrients in the soil; and irrigation water;

001.09B Specifies the form, source, amount, timing, and method of land application of nutrients on each field; and

001.09C Minimizes the movement of nitrogen to ground water and minimizes the movement of nitrogen and phosphorus to surface water;

001.10 For each field or field segment used for land application area:

001.10A The legal description and maps of planned waste application areas to be utilized by the operation;

001.10B A description of the field areas to be used including the number of useable acres, dominant soil type, cropping practices, historic yields with supporting documentation or published county average yields, a description of any setbacks or buffers, and use of the land by other

animal feeding operations;

001.10C Maps or aerial photos which clearly show the location and extent of any surface water or wetlands within the boundaries of the field, as well as the location and extent of any surface water within 200 feet of the field;

001.10D For any areas not owned by the permittee or an owner or authorized representative of the operation, the landowner's name, address, legal description, number of acres and an agreement, signed by the landowner, that clearly identifies the area (legal description and field acres) and allows for the agronomic application of manure, litter, or process wastewater to the land;

001.10E Waste sampling and analytic methods, land application area soil sampling procedures including sampling depths, soil analytic methods, land application methods to be used, and procedures and assumptions used to determine appropriate application rates and frequencies, which comply with these regulations; and

001.10F Record keeping of locations and quantities of livestock wastes and other sources of nutrients land applied, and soil and waste sampling and testing results; and for manure, litter or process wastewater transferred to other persons, the nutrient analysis results and the date, recipient name and address, and approximate amount transferred;

001.11 Sampling and laboratory testing as follows:

001.11A Manure, litter, and process wastewater at least annually for nitrogen and phosphorus content;

001.11B Application site soils for nitrogen content before the initial application of manure, litter, or process wastewater, and then sample and analyze at least annually thereafter if used for application;

001.11C Application site soils for phosphorus content before the initial application of manure, litter, or process wastewater and then at least once every five years thereafter if used for application;

001.11D Irrigation water prior to initial use and at least once every five years thereafter for nitrogen; and

001.11E University of Nebraska guidelines for sampling and analysis may be used. The Department may approve alternate methods as appropriate;

001.12 An application rate of liquid containing manure, litter, or process wastewater that shall not exceed the intake rate of the soil such that runoff of the manure, litter, or process wastewater occurs. Total liquid application shall not exceed the field capacity of the soil;

001.13 Site-specific conservation practices to be implemented, including as appropriate buffers or equivalent practices, to control runoff of pollutants; and

001.14 A field phosphorus risk assessment conducted prior to initial land application of manure, litter, or process wastewater and then prior to subsequent applications if the risk value of any site category listed in Table 3 of Field Phosphorus Risk Assessment (Appendix E) has changed, but in no case less than once every five years. The assessment evaluates such factors as soil type, slope, crop residue, soil fertility, potential for erosion, and planned cropping practices for each field or field segment used for land application, to determine the potential for phosphorus transport from the field or field segment. The assessment shall be completed for each field or field segment using the form provided in Field Phosphorus Risk Assessment (Appendix E), which is based on a method developed by the United States Department of Agriculture Natural Resources Conservation Service, or by using a comparable field phosphorus risk assessment method and forms approved for use by the Department. The plan shall identify the phosphorus risk assessment used for each field or field segment. The planned application rates for manure, litter, or process wastewater shall be consistent with the risk assessment for each field, or field segment, as follows:

001.14A For a field or field segment where there is a low or medium risk of phosphorus movement from the field, a single year's application of manure, litter, or process wastewater may be based on the expected annual available nitrogen from the waste and other sources;

001.14B For a field or field segment where there is a high risk of phosphorus movement from the field, the application of manure, litter, or process wastewater shall be kept at a rate equal to, or less than, the expected phosphorus removal in harvested plant biomass in a single crop year, or for a planned crop sequence of five years or less, that is equal to or less than the expected phosphorus removal in harvested plant biomass for the crop sequence. The application and other sources shall not exceed the expected annual available nitrogen use of the crop; and

001.14C For a field or field segment with a very high risk of phosphorus movement from the field, manure, litter, or process wastewater shall not be applied.

002 Any permit issued pursuant to these regulations shall include terms requiring implementation of a nutrient management plan that, at a minimum, contains best management practices necessary to meet the requirements of this chapter and applicable effluent limitations and standards. The permit terms for the nutrient management plan are the information, protocols, procedures, best management practices, and other conditions in the nutrient management plan determined by the Director to be necessary to meet the following elements:

002.01 Ensure adequate storage of manure, litter, and process wastewater, including procedures to ensure proper operation and maintenance of the storage facilities;

002.02 Ensure proper management of mortalities (i.e., dead animals) to ensure that they are not disposed of in a liquid manure, storm water, or process wastewater storage or treatment system that is not specifically designed to treat animal mortalities;

002.03 Ensure that clean water is diverted, as appropriate, from the production area;

002.04 Prevent direct contact of confined animals with waters of the State;

002.05 Ensure that chemicals and other contaminants handled on-site are not disposed of in any manure, litter, process wastewater, or storm water storage or treatment system unless specifically designed to treat such chemicals and other contaminants;

002.06 Identify appropriate site specific conservation practices to be implemented, including as appropriate buffers or equivalent practices, to control runoff of pollutants to waters of the State;

002.07 Identify protocols for appropriate testing of manure, litter, process wastewater, and soil;

002.08 Establish protocols to land apply manure, litter or process wastewater in accordance with site specific nutrient management practices that ensure appropriate agricultural utilization of the nutrients in the manure, litter or process wastewater using either a narrative rate approach or a linear approach described in section 003 below; and

002.09 Identify specific records that will be maintained to document the implementation and management of the minimum elements described in this section.

003 Permit terms with respect to protocols for land application of manure, litter, or process wastewater shall include the fields available for land application, field-specific rates of application properly developed using either the narrative rate or linear approach, and any timing limitations concerning land application on available fields. Rates of land application shall use one of the following two approaches:

003.01 Linear approach. An approach that expresses rates of application as pounds of nitrogen and phosphorus, including the following specifications:

003.01A Permit terms for the linear approach shall include:

003.01A1 The form and source of manure, litter, and process wastewater to be land-applied;

003.01A2 The timing and method of land application;

003.01A3 The methodology by which the nutrient management plan accounts for the amount of nitrogen and phosphorus in the manure, litter, and process wastewater to be applied; and

003.01A4 Maximum application rates from manure, litter, and process wastewater for each crop identified in the nutrient management plan, in chemical forms determined to be acceptable to the Director, in pounds per acre, per year, for each field to be used for land application as well as factors necessary to determine the rate. Those factors which shall be terms shall include at least:

003.01A4(a) The outcome of the field-specific assessment of the potential for nitrogen and phosphorus transport from each field;

003.01A4(b) The crops to be planted in each field or any other uses of a field such as pasture or fallow fields;

003.01A4(c) The realistic yield goal for each crop or use identified for each field;

003.01A4(d) The nitrogen and phosphorus recommendations from sources specified by the University of Nebraska or other sources approved by the Director for each crop or use identified for each field;

003.01A4(e) Credits for all nitrogen in the field that will be plant available;

003.01A4(f) Consideration of multi-year phosphorus application; and

003.01A4(g) Accounting for all other additions of plant available nitrogen and phosphorus to the field.

003.01A5 For large CAFOs, the maximum amount of manure, litter, and process wastewater to be land applied, calculated at least once each year using the results of the most recent representative manure, litter, and process wastewater tests for nitrogen and phosphorus taken within 12 months of the date of land application.

003.02 Narrative rate approach. An approach that expresses rates of application as a narrative rate of application that results in the amount, in tons or gallons, of manure, litter, and process wastewater to be land applied, including the following permit terms:

003.02A Maximum amounts of nitrogen or phosphorus derived from all sources of nutrients, for each crop identified in the nutrient management plan, in chemical forms determined to be acceptable to the Director, in pounds per acre, for each field, and certain factors

necessary to determine those amounts. Those factors which shall be terms shall include at least:

003.02A1 The outcome of the field-specific assessment of the potential for nitrogen and phosphorus transport from each field;

003.02A2 The crops to be planted in each field or any other uses such as pasture or fallow fields (including alternative crops identified in the nutrient management plan);

003.02A3 The realistic yield goal for each crop or use identified for each field; and

003.02A4 The nitrogen and phosphorus recommendations from sources specified by the University of Nebraska or other sources approved by the Director for each crop or use identified for each field.

003.02B The methodology by which the nutrient management plan accounts for the following factors when calculating the amounts of manure, litter, and process wastewater to be land applied:

003.02B1 Results of soil tests conducted in accordance with protocols identified in the nutrient management plan;

003.02B2 Credits for all nitrogen in the field that will be plant available;

003.02B3 The amount of nitrogen and phosphorus in the manure, litter, and process wastewater to be applied;

003.02B4 Consideration of multi-year phosphorus application;

003.02B5 Accounting for all other additions of plant available nitrogen and phosphorus to the field;

003.02B6 The form and source of manure, litter, and process wastewater;

003.02B7 The timing and method of land application; and

003.02B8 Volatilization of nitrogen and mineralization of organic nitrogen.

003.02C Alternative crops identified in the nutrient management plan that are not in the planned crop rotation, listed by field, in addition to the crops identified in the planned crop rotation for that field, and the nutrient management plan shall include realistic crop yield goals and the nitrogen and phosphorus recommendations from sources specified by the University of Nebraska or other sources approved by Director for each crop. Maximum amounts of nitrogen or phosphorus from all sources of nutrients and the amounts of manure, litter, and process

wastewater to be applied shall be determined in accordance with the methodology described this section.

004 Concentrated Animal Feeding Operations using the narrative rate approach shall perform the following requirements, which are not terms of the nutrient management plan:

004.01 Include the following projections in the nutrient management plan submitted to the Director:

004.01A The CAFO's planned crop rotations for each field for the period of permit coverage;

004.01B The projected amount of manure, litter, or process wastewater to be applied;

004.01C Projected credits for all nitrogen in the field that will be plant available;

004.01D Consideration of multi-year phosphorus application;

004.01E Accounting for all other additions of plant available nitrogen and phosphorus to the field;

004.01F The predicted form, source, and method of application of manure, litter, and process wastewater for each crop; and

004.01G Timing of application for each field, insofar as it concerns the calculation of rates of application.

004.02 Calculate maximum amounts of manure, litter, and process wastewater to be land applied at least once each year using the methodology required in Section 003.02 before land applying manure, litter, and process wastewater, relying on the following data:

004.02A A field-specific determination of soil levels of nitrogen and phosphorus, including, for nitrogen, a concurrent determination of nitrogen that will be plant available consistent with the methodology required by this section, and for phosphorus, the results of the most recent soil test conducted in accordance with soil testing requirements approved by the Director; and

004.02B The results of most recent representative manure, litter, and process wastewater tests for nitrogen and phosphorus taken within 12 months of the date of land application, in order to determine the amount of nitrogen and phosphorus in the manure, litter, and process wastewater to be applied.

005 If a permittee makes any modifications to a nutrient management plan previously submitted to the Director, the permittee shall notify the Director of the changes. If the changes to the nutrient management plan qualify as a major modification of a construction and operating permit, as defined in Chapter 1

028, the permittee shall submit an application in accordance with Chapter 4 of this Title. When the changes do not constitute a major modification, the following procedures apply:

005.01 The CAFO owner or operator shall provide the Director, if requested, with the most current version of the CAFO's nutrient management plan and identify changes from the previous version, except that the results of calculations made in accordance with the requirements of paragraphs 003.01A5 and 004.02 of this Chapter are not considered changes to the nutrient management plan.

005.02 The Director shall review the revised nutrient management plan to ensure that it meets the requirements of this Chapter and applicable effluent limitations and standards and shall determine whether the changes to the nutrient management plan necessitate revision to the permit terms of the nutrient management plan incorporated into the permit issued to the CAFO. If revision to the permit terms for the nutrient management plan is not necessary, the Director shall notify the CAFO owner or operator and upon such notification the CAFO may implement the revised nutrient management plan. If revision to the permit terms for the nutrient management plan is necessary, the Director shall determine whether such changes are substantial changes as described in paragraph 005.03 below.

005.02A If the Director determines that the changes to the permit terms for the nutrient management plan are not substantial, the Director shall make the revised nutrient management plan publicly available and include it in the permit record, revise the permit terms for the nutrient management plan incorporated into the permit, and notify the owner or operator and inform the public of any changes to the permit terms of the nutrient management plan that are incorporated into the permit.

005.02B If the Director determines that the changes to the permit terms for the nutrient management plan are substantial, the Director shall notify the public and make the proposed changes and the information submitted by the CAFO owner or operator available for public review and comment. The process for public comments, hearing requests, and the hearing process if a hearing is held shall follow the procedures applicable to draft permits set forth in Title 119. The Director may establish, in the CAFO's permit, an appropriate period of time for the public to comment and request a hearing on the proposed changes that differs from the time period specified in Title 119. The Director shall respond to all significant comments received during the comment period and require the CAFO owner or operator to further revise the nutrient management plan if necessary, in order to approve the revision to the permit terms of the nutrient management plan incorporated into the CAFO's permit. Once the Director incorporates the revised permit terms of the nutrient management plan into the permit, the Director shall notify the owner or operator and inform the public of the final decision concerning revisions to the terms and conditions of the permit.

005.03 Substantial changes to the terms of a nutrient management plan incorporated as terms and conditions of a permit include, but are not limited

to:

005.03A Addition of new land application areas not previously included in the CAFO's nutrient management plan. Except that if the land application area that is being added to the nutrient management plan is covered by terms of a nutrient management plan incorporated into an existing NPDES permit in accordance with the requirements of section 003 of this Chapter, and the CAFO owner or operator applies manure, litter, or process wastewater on the newly added land application area in accordance with the existing field-specific permit terms applicable to the newly added land application area, such addition of new land would be a change to the new CAFO owner or operator's nutrient management plan but not a substantial change for purposes of this section;

005.03B Any changes to the field-specific maximum annual rates for land application, as set forth in section 003.01 of this Chapter, and to the maximum amounts of nitrogen or phosphorus derived from all sources for each crop, as set forth in section 003.02 of this Chapter;

005.03C Addition of any crop or other uses not included in the terms of the CAFO's nutrient management plan and corresponding field-specific rates of application expressed in accordance with section 003 of this Chapter; and

005.03D Changes to site-specific components of the CAFO's nutrient management plan, where such changes are likely to increase the risk of nitrogen and phosphorus transport to waters of the State.

Enabling Legislation: Neb. Rev. Stat. § 81-504(10)(11),(12),(13),(20), (21); § 81-1505(10)(11); §§ 54-2416 to 54-2438

Legal Citation: Title 130, Ch. 14, Nebraska Department of Water, Energy, and Environment

TITLE 130 - NEBRASKA DEPARTMENT OF WATER, ENERGY, AND ENVIRONMENT

Chapter 15 - GENERAL PROVISIONS

001 Rules and regulations adopted and promulgated within Title 130 by the Council may be based upon the size of the animal feeding operation and the form of waste management and may include more stringent requirements for larger animal feeding operations and waste control technologies that are more likely to cause adverse impacts.

002 Failure to comply with the requirements of these regulations may be grounds for enforcement proceedings or injunctive relief by the county attorney or Attorney General.

003 Permits issued under these regulations are exempt from financial responsibility requirements contemplated in Neb. Rev. Stat. § 81-1505(21)(a).

004 If any clause, paragraph, subsection or section of these regulations shall be held invalid, it shall be conclusively presumed that the Council would have enacted the remainder of these regulations not directly related to such clause, paragraph, subsection or section.

Enabling Legislation: Neb. Rev. Stat. § 81-1504(22); § 81-1505(17); § 81-1505(21)(a); § 81-1508(3); § 81-1509; § 84-901 et seq.; §§ 54-2434 and 54-2435

Legal Citation: Title 130, Ch. 15, Nebraska Department of Water, Energy, and Environment

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Appendix A

F

P

Site characteristics/factors impacting phosphorus (P) loss have been placed in categories and assigned a weight factor based on relative impact on P movement from the site. Instructions are provided for each category, and only categories that apply to the manure application site are to be used. Each category's weight factor is multiplied by its risk value to get a weighted risk factor for each category. All categories are rated and the overall risk rating for

the site is the sum of all values (refer to Table 3).

(Refer to individual category instructions).

- Soil Erosion (1.5)
- Furrow Irrigation Erosion (1.5)
- Sprinkler Erosion/Runoff (0.5)
- Runoff class (based on slope and soils) (1.5)
- Soil test (surface) Bray P1 or Olson Soil P test (1.0)
- Commercial P fertilizer application rate (0.5)
- Commercial P fertilizer application method (0.5)
- Manure/organic P application rate (1.0)
- Manure/organic P application method (1.0)
- Distance to concentrated surface water flow (1.0)

- 0 = None (Not applicable = NA)
- 1 = Low
- 2 = Medium
- 4 = High
- 8 = Very High

GENERAL PROVISIONS 2

Individual sections from Table 3 are included at the beginning of instructions for each category to assist in determining the weighted risk factor for each category. After reviewing instructions for each category, up to three sites can be rated for Phosphorus loss risk utilizing Table 3.

Soil Erosion Category

Site Category	None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Risk Value (0, 1, 2,4, 8)	Weight Factor	Weighte Risk Factor
Soil Erosion	N/A	<5 tons/ac/yr	5-8 tons/ac/yr	9-12 tons/ac/yr	>12 tons/ac/yr		X 1.5	

Soil erosion is the movement of soil from the site due to runoff. This category is given in (ton/ac/yr). Soil erosion can be predicted using the Revised Universal Soil Loss Equation found in the Natural Resources Conservation Service (NRCS) Field Office Tech Guide. Erosion estimates are based on rainfall intensity, soil characteristics, percent and length of slope, crop rotation, tillage system (no-till, mulch till, etc.), and other practices such as terraces and contouring. If erosion estimates from NRCS are available use them. If not, use Table 1 to estimate annual water erosion.

Table 1. SOIL EROSION CATEGORIES (CROPLAND ONLY)

*BMP Category	None/NA	Low	Medium	High	Very High
**With BMPs	Non-sandy soils on 0-3% slope, sandy soils 0-5% slope	Non-sandy soils on 3-5% slope, sandy soils 5-8% slope	Non-sandy soils on 5-8% slope, sandy soils >15% slope	Non-sandy soils on of 8-15% slope	
Without BMPs		Non-sandy soils on 0-3% slope, sandy soils on 3-8% slope	Non-sandy soils on 3-5% slope, sandy soils 8-15% slope	Non-sandy soils on 5-8% slope, sandy soils on >15% slope	Non-sandy soils on >8% slope
Regardless of BMPs	Sandy soils on 0-5% slope				Non-sandy soils on >15% slope

* BMP – Best Management Practices

** "With BMPs" means all crops are no-till planted, or the site/field is terraced with 20% or more ground cover at planting, or greater than 50% of the crop rotation is perennial grasses and/or legumes, or a combination of these practices. Sandy soils are coarse textured soils that include fine and very fine sandy loam, loamy fine sand, loam and very fine sand textures, and non-sandy soils include silt, silt loam, silty clay, clay and clay loam textured soils.

Furrow Irrigation Erosion Category

Site Category	None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Risk Value (0, 1, 2, 4, 8)	Weight Factor	Weighted Risk Factor
Furrow Irrigation Erosion	N/A	Tailwater recovery, very erodible soils and QS<6, or other soils with QS <10	QS >10 for erosion resistant soils	QS >10 for erodible soils	QS >6 for very erodible soils		X 1.5	

QS is an erosion factor based on furrow slope (S) and flow rate (Q) as noted below.

Sediment-borne P and other nutrients are lost due to erosive flows within the furrow. Q equals furrow flow rate (in gallons per minute "gpm"), soil texture (categories listed below), and S equals furrow slope in feet of drop per 100 feet of furrow. Tailwater recovery means that irrigation runoff is captured in a tailwater recovery pit and is re-used for irrigation. Furrow flow rate and slope are accounted for as follows:

QS Value	=	Furrow Flow Rate (Q in gpm)	X	Furrow Slope (S = feet of drop per 100 feet or percent slope)		
Example		20 gpm	X	0.5	=	10

Soils are broken down into three surface texture categories, based on susceptibility to erosion due to furrow irrigation. Refer to the County Soil Survey Manual if you don't know the soil texture.

Very Erodible Soils: Soils with silt, fine and very fine sandy loam, loamy fine sand, loam and very fine sand textures.

Erodible Soils: Silt loam soils.

Erosion-Resistant Soils: Soils with silty clay, clay, and clay loam textures.

Sprinkler Irrigation Erosion Category

Site Category	None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Risk Value (0, 1, 2, 4, 8)	Weight Factor	Wei R Fa
Sprinkler Erosion	All sites 0-3% slope, all sandy sites or site evaluation indicates little or no runoff, or large spray on silts 3-8%	Medium spray on silty soils 3-15% slopes, large sprays on silty soils 8-15% slope,	Medium spray on clay soils 3-8% slopes, large spray clay soils >15% slope, medium spray on silt	Medium spray on clay soils >8% slope, low spray on clay soils 3-8%, low spray on silty soils >15% slope	Low spray on clay soils >8% slope		X 0.5	

		low spray on silt soils 3-8%, large spray on clay soils 3-15% slopes	soils >15% slope					

This category rates the potential for erosion due to irrigation runoff from sprinklers. Spray type, soil texture and percent of slope impact erosion due to sprinkler irrigation runoff. When a comprehensive evaluation of irrigation runoff potential indicates little or no runoff will occur, this category is not applicable (NA) and is given a rating of “None” or 0.

Spray Type

- Large spray = nozzle wetted diameter is >50 feet
- Medium spray = nozzle wetted diameter is 20-50 feet
- Low spray = nozzle wetted diameter is <20 feet

Slope

- Percent of slope on the application site being evaluated

Texture

- Sandy textured (fine and very fine sandy loam, loamy fine sand, loam and very find sand)
- Silt (silt, silt loam, loam)
- Clay (silty clay, silty clay loam, clay, and clay loam textures).

Runoff Class Category

Site Category	None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Risk Value (0,1, 2, 4, 8)	Weight Factor	Weighted Risk Factor
Runoff Class	Negligible	Very Low or Low	Medium	High	Very High		X 1.5	

The runoff class of a site is based on the least permeable soil layer in the top three feet. Permeability classes for specific soils can be found in the soil series description in your County Soil Survey Manual. Slope and soil permeability class must be determined, then runoff class can be determined **(Refer to Table 2 below)**.

Table 2. RUNOFF CLASS

Slope %	**Soil Permeability Class**				
	Very Rapid (>20.00 in/hr)	Moderately Rapid (6.00-20 in/hr)and Rapid (2.00-6.00 in/hr)	Moderate (0.60-2.00 in/hr) and Moderately Slow (0.20-0.60 in/hr)	Slow (0.06-0.20 in/hr)	Very Slow (<0.06 in/hr)
	Runoff Class*				
Depressions	Negligible	Negligible	Negligible	Negligible	Negligible
0-1%	Negligible	Negligible	Negligible	Low	Low
1-5%	Negligible	Very Low	Low	Medium	High
5-10%	Very Low	Low	Medium	High	Very High
10-20%	Very Low	Low	Medium	High	Very High
>20%	Low	Medium	High	Very High	Very High

Soil Phosphorus Tests Category *(Use only one soil test category)*

Site Category	**None (0)**	**Low (1)**	**Medium (2)**	**High (4)**	**Very High (8)**	**Risk Value (0, 1, 2, 4, 8)**	**Weight Factor**	**Weighted Risk Factor**
Bray P1 Soil P Test	---	<30 ppm	30-60 ppm	60-120 ppm	>120 ppm		X 1.0	
Olson Soil P Test	---	<20 ppm	20-40 ppm	40-80 ppm	>80 ppm		X 1.0	

Bray P1 soil tests are typically used on soils with a pH of 7.0 or less, while Olson (sodium bicarbonate) soil tests are utilized on soils with a pH greater than 7.0 and contain calcium carbonate. Phosphorus soil tests should be taken from the top 2-3” for continuous no-till cropland, hay land and pastures, and from the top 8” or less for tilled cropland.

Commercial Phosphorus Fertilizer Application Method Category

Site Category	None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Risk Value (0, 1, 2, 4, 8)	Weigh Facto
Commercial P fertilizer Application Method	None Applied	Placed with planter or injected deeper than 2 inches	Incorporated < 3 months prior to planting or surface applied during the growing season	Incorporated >3 months before crop or surface applied <3 months before crop	Surface applied >3 months before crop		X 0.5

The manner in which Phosphorus fertilizer is applied to the soil and the time that fertilizer is exposed on the soil surface impacts the potential Phosphorus loss. Incorporation implies that fertilizer Phosphorus is incorporated into the soil a minimum of two inches. The categories of increasing severity, LOW to VERY HIGH, depict the longer surface exposure time between fertilizer application, incorporation, and crop utilization.

Commercial Phosphorus Fertilizer Application Rate Category

Site Category	None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Risk Value (0, 1, 2, 4, 8)	Weight Factor	Weighted Risk Factor
Commercial P Fertilizer Application Rate	None Applied	<30 P_2O_5 lbs/ac	31-90 P_2O_5 lbs/ac	91-150 P_2O_5 lbs/ac	>150 P_2O_5 lbs/ac		X 0.5	

Commercial Phosphorus Fertilizer Application Rate is the amount, in pounds per acre (lbs/ac), of phosphate fertilizer (P_2O_5) that is applied. This does not include phosphorus from organic sources (manure).

Manure/Organic Phosphorus Source Application Method Category

Site Category	None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Risk Value (0, 1, 2, 4, 8)	Weight Factor	W
Organic P Source Application Method	None Applied	Injected deeper than 2 inches	Incorporated < 3 months prior to planting or surface	Incorporated >3 months before crop or surface applied < 3 months before	Surface applied to pasture or >3		X 1.0	

			applied during the growing season	planting	months before crop			

The manner in which manure is applied to the soil and the time it is exposed on the soil surface impacts potential Phosphorus loss. Incorporation implies that manure is incorporated into the soil a minimum of two inches. The categories of increasing severity, LOW to VERY HIGH, depict the longer surface exposure time between manure application, incorporation, and crop utilization.

Manure/Organic Phosphorus Source Application Rate Category

Site Category	None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Risk Value (0, 1, 2, 4, 8)	Weight Factor	Weighted Risk Factor
Organic P application Rate	None Applied	<30 P_2O_5 lbs/ac	31-90 P_2O_5 lbs/ac	91-150 P_2O_5 lbs/ac	>150 P_2O_5 lbs/ac		X 1.0	

The organic Phosphorus source application rate is the amount, in pounds per acre (lbs/ac), of phosphate (P_2O_5) contained in manure, litter, or process wastewater that is applied. The amount of phosphate applied is based on tons/acre or gallons/acre applied and nutrient content can be estimated from manure, litter, and process wastewater tests or book values.

Distance to Concentrated Surface Water Flow Category

Site Category	None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Risk Value (0, 1, 2, 4, 8)	Weight Factor	W
Distance to concentrated surface water flow	Runoff and sediment cannot exit the site.	>200 feet, or functioning grassed waterways, or tile outlet terraces or sediment basins in concentrated surface	100-200 feet or function-ing grass filter strips that are at least 35 feet wide	<100 feet	0 feet or applications directly into concentrated surface water flow areas that occur within the application site		X 1.0	

		water flow areas or functioning grassed filter strips that are at least 100 feet wide						

This category is an estimate of distance between the application site, and the point where runoff water concentrates, which includes natural and made conveyances within the application site that direct runoff into intermittent or perennial streams, lakes or other water bodies. Use zero for distance, if manure, litter, process wastewater, or fertilizer Phosphorus is applied directly in concentrated flow areas that direct runoff directly into intermittent or perennial streams, lakes or other water bodies. If concentrated flow areas do not deliver runoff directly into a stream or other water body (concentrated flow spreads prior to entering the stream or other water body), use the distance from where runoff exits the application site to the point where it enters a stream or other water body. Installation of grassed waterways, tile outlet terraces, or sediment basins within concentrated flow areas that occur within the application site will reduce the risk of sediment-Phosphorus loss due to concentrated water flow. Application setbacks from concentrated flow areas will reduce the risk of total Phosphorus loss due to sheet flow. Grass filter strips are effective at reducing risk of sediment-Phosphorus from sheet flow but do not effectively reduce the risk of loss of sediment-Phosphorus in concentrated runoff.

Each category-weighting factor in Table 3 is multiplied by the site risk rating to get a weighted value. All categories are rated (according to individual category instructions), and the overall risk rating is the sum of all values. After individual manure application sites/fields are rated (up to three sites), record the sites in the appropriate vulnerability-rating category in **Table 4**.

Table 3. PHOSPHORUS INDEX FOR ASSESSING VULNERABILITY OF THE SITE

Site Category	None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Ri (0
Manure application Site/Field	----	----	----	----	----	
Soil Erosion	N/A	<5 tons/ac/yr	5-8 tons/ac/yr	9-12 tons/ac/yr	>12 tons/ac/yr	
Furrow Irrigation	N/A	Tailwater recovery,	QS >10 for erosion resistant soils	QS >10 for erodible soils	QS >6 for very	

Erosion		QS <6 very erodible soils, or QS <10 other soils			erodible soils	
Sprinkler Erosion	All sites 0-3% slope, all sandy sites or site evaluation indicates little or no runoff, or large spray on silts 3-8%	Medium spray on silty soils 3-15% slopes, large sprays on silty soils 8-15% slope, low spray on silt soils 3-8%, large spray on clay soils 3-15% slopes	Medium spray on clay soils 3-8% slopes, large spray clay soils >15% slope, medium spray on silt soils >15% slope	Medium spray on clay soils >8 slope, low spray on clay soils 3-8% , low spray on silty soils >15% slope	Low spray on clay soils >8% slope	
Runoff Class	Negligible	Very Low or Low	Medium	High	Very High	
Bray P1 Soil P Test Olson Soil P Test	---	<30 ppm Bray <20 ppm Olson	30-60 ppm Bray 20-40 ppm Olson	60-120 ppm Bray 40-80 ppm Olson	>120 ppm Bray >80 ppm Olson	
Commercial P fertilizer Application Method	None Applied	Placed with planter or injected deeper than 2 inches	Incorporated < 3 months prior to planting or surface applied during the growing season	Incorporated >3 months before crop or surface applied <3 months before crop	Surface applied >3 months before crop	
Commercial P fertilizer Application Rate	None Applied	<30 P_2O_5 lbs/ac	31-90 P_2O_5 lbs/ac	91-150 P_2O_5 lbs/ac	>150 P_2O_5 lbs/ac	

Organic P Source Application Method	None Applied	Injected Deeper Than 2 inches	Incorporated < 3 months prior to planting or surface applied during the growing season	Incorporated >3 months before crop or surface applied <3 months before planting	Surface applied to pasture or >3 months before crop	
Organic P application Rate	None Applied	<30 P_2O_5 lbs/ac	31-90 P_2O_5 lbs/ac	91-150 P_2O_5 lbs/ac	>150_P_2O_5 lbs/ac	
Distance to concentrated surface water flow	Runoff and sediment can not exit the site	>200 feet or functioning grassed waterways, or tile outlet terraces or sediment basins in concentrated surface water flow areas, or functioning grassed filter strips that are at least 100 feet wide	100-200 feet or functioning grass filter strips that are at least 35 feet wide that filter runoff from the field	<100 feet	0 feet (occurs on-site)	
Site/Field Total	----	----	----	----	----	

After multiplying the weighting factor by the risk factor for each site category and totaling all values in Table 3, record the manure application sites in the appropriate vulnerability-rating category in Table 4.

Table 4. SITE/FIELD VULNERABILITY TO PHOSPHORUS LOSS

Total of Weighted Values	Site Vulnerability	Site/Field Number(s)
<14	LOW	

14 - 27.5	MEDIUM	
28 - 55.5	HIGH	
>55.5	VERY HIGH	

- **LOW** – This site has a LOW potential for Phosphorus movement from the site.
- **MEDIUM** – This site has a MEDIUM potential for Phosphorus movement from the site. There is a greater probability for an adverse impact to surface water resources than from a LOW rated site
- **HIGH** – This site has a HIGH potential for Phosphorus movement from the site. There is a higher probability of an adverse impact to surface water than MEDIUM sites unless remedial action is taken.
- **VERY HIGH** – This site has a VERY HIGH potential for Phosphorus movement from the site. There is a very high probability for an adverse impact to surface water.