



Senator John Stinner
District 5
Nebraska Legislature
State Capitol Building
Lincoln, NE 68509

Dear Senator Stinner,

Each year the Nebraska Department of Environmental Quality is required to submit a report to the Legislature in sufficient detail to document all direct and indirect costs incurred in the previous fiscal year in carrying out the Livestock Waste Management Act. The Department implements the Livestock Waste Management Act through our Livestock Waste Control Program. The Department is pleased to provide the Appropriations Committee a report on the activities of the agency's Livestock Waste Control Program during fiscal year 2017.

Large concentrated animal feeding operations (CAFOs) holding state permits and CAFOs with coverage under a National Pollutant Discharge Elimination System permit pay an annual permit fee based on the number animals permitted. By law, fees are required to meet 20% of the Department's program costs for the previous fiscal year. The rate of the annual permit fee can be adjusted annually. The Department does not propose any permit fee changes for fiscal year 2018. The Department also collects inspection fees and permit application fees, the rates of which are established in regulation.

The Department is happy to answer any questions or provide additional information concerning activities under the Livestock Waste Management Act if that would be helpful to the Appropriations Committee. Please contact me at 402-471-3585.

Sincerely

A handwritten signature in blue ink, appearing to read "Jim Macy".

Jim Macy
Director

Enclosure



**FY2017 ANNUAL REPORT TO THE LEGISLATURE
LIVESTOCK WASTE CONTROL PROGRAM
Nebraska Department of Environmental Quality**

December 2017

Introduction

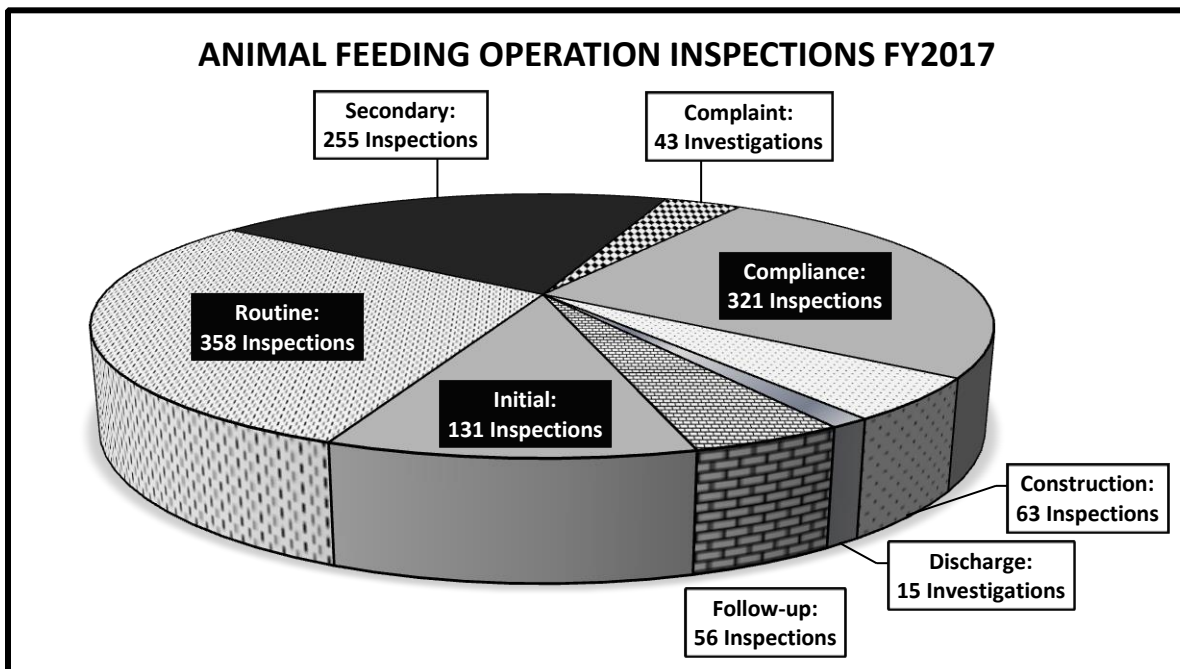
Each year, the Nebraska Department of Environmental Quality submits a report to the Legislature, pursuant to Neb. Rev. Stat. §54-2428(5), in sufficient detail to document all direct and indirect costs incurred in the previous fiscal year in carrying out the Livestock Waste Management Act (Neb. Rev. Stat. §54-2416 to 54-2438). The Department implements the Livestock Waste Management Act through our Livestock Waste Control Program (LWC). The Department is pleased to provide the Appropriations Committee a report on the activities of the agency's Livestock Waste Control Program during fiscal year 2017.

Overview

The Livestock Waste Control Program is charged with the overall responsibility to protect Nebraska's surface water and groundwater from discharge of livestock waste from any of the thousands of Animal Feeding Operations (AFOs) in Nebraska.

To accomplish this responsibility, the program administers *Title 130 - Livestock Waste Control Regulations*. The LWC program primarily focuses on the 749 active large Concentrated Animal Feeding Operations (CAFOs) required to have permits, but also works with approximately 2,000 Medium AFOs. The LWC Program uses inspections, permitting, and periodic monitoring to fulfill this responsibility. The permitting program includes administering the federal National Pollutant Discharge Elimination System (NPDES) program for CAFOs.

Inspections



Livestock Waste Control Program staff conducted a total of 1,242 livestock waste control inspections and investigations in FY2017 (including complaint and discharge investigations). The chart above illustrates the breakdown by type of inspection or investigation. A concerted effort was made during the fiscal year to revisit many medium-sized operations to ensure that they were in compliance with state and federal rules.

A short description of each type of inspection and investigation follows:

Initial Inspection. Before constructing a new operation or expanding an existing operation, all medium and large AFOs – whether or not the operation currently is permitted -- must request an initial inspection by LWC Program staff. The reason for this inspection is to determine if livestock waste control facilities (LWCF) must be constructed, expanded, or modified to prevent a discharge and to properly manage the livestock waste generated by the operation.

Post Construction Inspection. Upon completion of any required construction of a LWCF, program staff conduct a post-construction inspection to verify the LWCF was constructed as approved by the Department.

Routine Inspections. Once a CAFO or an AFO has received a permit, and the Department has approved operation of the LWCF, program staff will conduct periodic, routine inspections to monitor operation of the livestock waste control facilities, management of the operation's livestock waste, and the records these CAFOs and AFOs are required to maintain. Routine inspections are regularly scheduled inspections of an AFO, involving a detailed, extensive inspection of the LWCF, recordkeeping, and waste management at the operation.

Follow-up Inspections. These are conducted in response to some specific activity, situation, or request by the operation. Follow-up inspections could be prompted by an operation's request for a "second opinion" on a requirement; or to monitor the AFO's progress on completing a construction or repair project; or to follow up after a complaint inspection or enforcement action, for example.

Compliance Status Inspections. Generally conducted to verify the AFO's operating status or level of compliance with a specific requirement; these inspections are usually less urgent, non-emergency situations.

Discharge Investigations. Discharge investigations are conducted when discharges of livestock waste from livestock waste control facilities are reported. Sometimes these discharges are not recorded as complaints because the AFO does self-reporting, as required by the regulations.

Complaint Investigations. When a complaint is received, LWC Program staff will investigate the complaint and may conduct an on-site complaint investigation.

Secondary Inspections. Secondary Inspections are primarily conducted for training purposes and to assist the primary inspector in evaluating unusual or atypical AFOs.

State Permitting

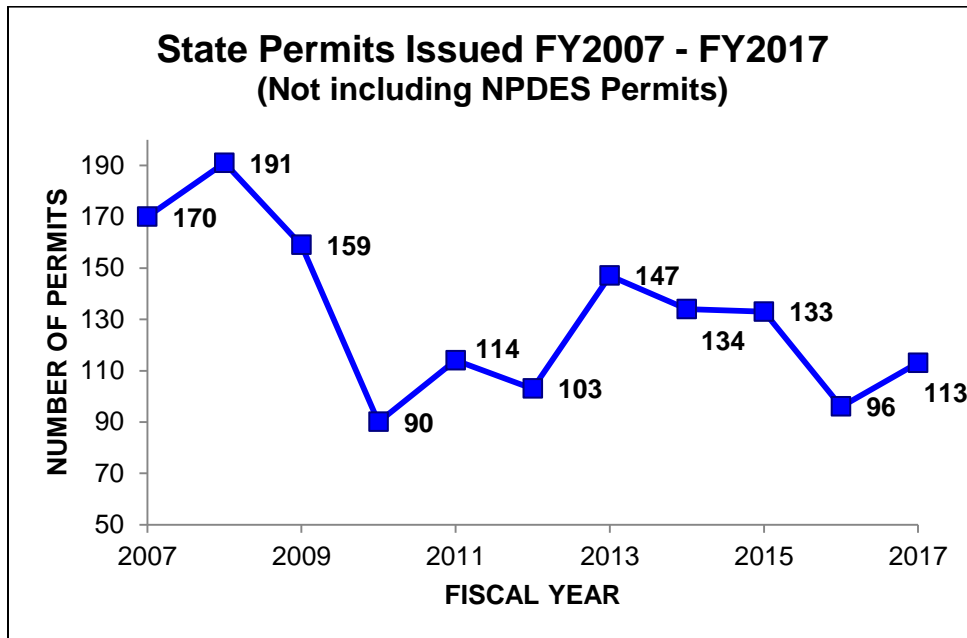
After conducting an initial inspection, the Department may require the AFO to submit an application for a Construction and Operating Permit – the state permitting process for livestock waste control facilities – prior to construction of livestock waste control facilities.

The Department received a total of 117 permit applications and issued 113 permits during FY2017, as shown in the table to the right. The totals do not include applications received or permits issued for any NPDES permits.

The chart below shows the total number of state permits issued annually for livestock waste control facilities since FY2007. The Department updated some existing Construction Permits, Construction Approvals and Operating Permits to Construction and Operating Permits if the AFOs updated their nutrient management plans (NMP) to current Title 130 standards. The NMP updates were mainly in conjunction with NPDES Permit renewals or transferred permits.

Construction and Operating Permits – FY2017		
Type of Application or Permit	Applications Received	Permits Issued
New permits	44	34
Modified permits	58	62 *
Transfer permits	15	17 *
TOTAL	117	113

* Permits may be issued for applications received in the previous fiscal year.



Once a permitted AFO has completed its construction project, the Department conducts a post-construction inspection. If the post-construction inspection shows the construction was completed as approved, the Department notifies the AFO that operation of the new livestock waste control facility is approved. In FY2017, the Department gave approval to 65 AFOs for operation of their new or expanded LWC facilities.

National Pollutant Discharge Elimination System (NPDES) Permit

The program also oversees the NPDES permitting process for livestock, issuing coverage under individual NPDES permits to CAFOs, as well as coverage under a NPDES General Permit for Concentrated Animal Feeding Operations Confining Cattle. These permits expire every five years, and permittees are required to submit a reissuance application to continue NPDES permit coverage.

The table below summarizes the number of NPDES applications received and permits issued for livestock waste control facilities in FY2017.

NPDES PERMITS – FY2017		
Type of NPDES Application/Permit	Applications Received	Permits Issued
GENERAL PERMIT FOR CAFOS CONFINING CATTLE		
New Coverage	9	11
Modified or Transferred	17	18 *
Reissued	102	59
SUBTOTAL GENERAL PERMIT:	128	88
INDIVIDUAL PERMITS		
New Coverage	1	3
Modified or Transferred	0	0
Reissued	8	3
SUBTOTAL INDIVIDUAL PERMIT:	9	6
NPDES TOTALS:	137	94

* Permits may be issued for applications received in the previous fiscal year.

Fees

The annual fee is assessed on all permitted Large CAFOs and all CAFOs covered under an NPDES permit. The fee is determined based upon the number of head of livestock for which the operation has a permit. The fees provide 20% of the Department's costs to administer the livestock waste control program, as required by statute. The Department received \$252,641 in annual permit fees from 749 permitted large AFOs. In addition, the Department received \$44,900 in initial inspection fees (132 inspections), \$40,650 in permit application fees (140 applications), and \$21,700 in late payment fees (14 operations), for a total of \$359,891 in fees.

The chart below lists the size categories for AFOs, as well as the rate, by species, of the annual permit fee for FY2017. The fee amount is based on the operation's permitted capacity. The program seldom works with operations in the Small AFO category (those with less than the minimum number of head listed for a Medium AFO) because these operations usually are exempt from the inspection and permitting requirements by statute.

**Animal Feeding Operations (AFO)
Categories and Annual Permit Fee Rates**

SPECIES	LARGE	MEDIUM	ANNUAL PERMIT FEE RATE
Cattle/Calves/ Heifers	≥ 1,000	300 - 999	\$0.05 per head
Dairy Cows	≥ 700	200 - 699	\$0.075 per head
Swine – 55 lbs. or more	≥ 2,500	750 - 2,499	\$2.00 per 100 *
Swine – Weaned or Nursery Pigs	≥ 10,000	3,000 - 9,999	\$0.50 per 100 *
Chickens – Laying Hens, Broilers: Liquid Manure System	≥ 30,000	9,000 - 29,999	\$1.50 per 1,000 *
Chickens – Laying Hens: Dry Manure System	≥ 82,000	25,000 - 81,999	\$0.50 per 1,000 *
Chickens – except Laying Hens: Dry Manure System	≥ 125,000	37,500 - 124,999	\$0.50 per 1,000 *
Turkeys	≥ 55,000	16,500 - 54,999	\$1.00 per 1,000 *
Horses	≥ 500	150 - 499	\$0.10 per head
Sheep/Lambs	≥ 10,000	3,000 - 9,999	\$0.50 per 100 *

***NOTE:** Or any fraction of the Unit of calculation

General information about the Livestock Waste Control Program, including applications, fact sheets, forms, guidance documents, copies of each of the NPDES General Permits, Title 130 regulations, and public notices of permit issuance or denial, can all be found on the Department's website at: <http://deq.ne.gov>.

Online Applications

In February 2017, the Agriculture Section held a team building event intended to identify areas where additional effort would improve overall operations. A key outcome of the event was moving toward the online submittal of permit applications. Section personnel have been working with information technology professionals designing an online portal for the submittal of construction and operating permit applications. The intent is to allow for a more streamlined processing of applications for businesses while still protecting water quality. The new system is expected to be launched in early FY18.

Water Quality Monitoring – Surface Water

The Surface Water Unit of the Water Quality Assessment Section receives reports of fish kills, complaints and questions concerning the quality and possible pollution of Nebraska's rivers, streams, lakes, and ponds. Occasionally the reported fish kills and complaints that the Surface Water Unit receives are related to animal feeding operations and livestock waste control facilities.

During FY2017, the Surface Water Unit received reports on 7 fish kills, down from the previous year's 17 fish kills reported. Of these 7 reported fish kills, none were attributed to livestock waste. There was one livestock waste-related fish kill in FY2016.

The Surface Water Unit received a total of 47 complaints about Nebraska's surface waters during FY2017, down slightly from last year's 50 complaints received. Five of the 47 complaints received this year involved livestock waste, which was comparable to the six livestock related complaints received during FY2016. While many of these cases were referred to other Department programs that more closely relate to the problem, sometimes the Surface Water Unit provides assistance through investigations and/or collecting samples to help document conditions.

Upon receiving a complaint or a report of a fish kill, Surface Water Unit staff, Livestock Waste Control Program staff or other Department inspectors investigate the report or complaint. The investigators verify the complaint or report, attempt to identify the source of the problem, and gather samples for analysis, if appropriate.

If the source of the problem is determined to be livestock-waste related, Livestock Waste Control Program staff work to identify a responsible party and correct any problems caused by improper livestock waste management, including cooperation with other Department programs if appropriate. If a responsible party is identified, the Department may seek additional compliance or enforcement actions, as necessary.

Water samples taken by the Surface Water Unit – whether at the site of a problem or as part of the extensive routine sampling done by the unit's staff – are analyzed to detect the presence of pollutant sources, including livestock waste. The analysis looks for ammonia, chlorides, bacteria, nutrients, and organic matter present in the sample. Even though livestock waste is not the only source of these pollutants, elevated concentrations of these parameters can indicate its presence. These pollutants are of special concern because they can significantly lower water quality if they reach rivers, streams, and lakes. These pollutants may impair the biological communities in the water, kill fish, result in water unfit for swimming because of bacterial pollution, increase algae blooms in the water body, and raise the potential for the growth of toxic algae.

For additional information on surface water quality data or monitoring programs, please refer to the 2016 Nebraska Water Monitoring Programs Report and the 2016 Surface Water Quality Integrated Report, which are available on the Department's web site, <http://deq.ne.gov>.

Water Quality Monitoring - Groundwater

The Groundwater Unit of the Water Quality Assessment Section has been reviewing plans for livestock waste control facilities since October 1997 to determine the need for groundwater monitoring. Groundwater Unit staff prepare a review for each animal feeding operation using site-specific information to determine the potential for groundwater pollution by the livestock waste control facility. The review considers numerous factors, including:

1. Distance between groundwater and the bottom of the livestock waste control facility;
2. Direction of groundwater flow;
3. Type of soils and sediments in the unsaturated zone; and
4. Whether the groundwater is used as drinking water near the livestock waste control facility.

If the Department determines that groundwater monitoring is needed, the operation is required to prepare a groundwater monitoring plan, with details on monitoring well placement, construction, and groundwater sampling techniques. The plan must be approved by the Department before being implemented. Groundwater is tested for nitrate as nitrogen, ammonia as nitrogen, and

chloride, as well as measurement of the depth to groundwater. Samples are required to be collected twice a year – spring and fall -- with results submitted to the Department within 45 days of sampling.

Since October 1997, Groundwater Unit staff have reviewed permit applications for 1,280 separate animal feeding operations, and re-evaluated livestock waste control facilities at another 577 operations due to expansion or design changes. Slightly more than one-third (35%) of the 1,280 permit applications reviewed, or 450 AFOs, have been recommended for groundwater monitoring.

During FY2017, the Department required 15 operations to submit groundwater monitoring plans, approved 17 groundwater monitoring plans, and reviewed 538 sets of groundwater monitoring results. To date, the Department has approved a total of 431 groundwater monitoring plans and received at least one set of groundwater monitoring results from 327 operations.

The Department is tracking and evaluating the groundwater sampling results received. Once an animal feeding operation has submitted at least three sampling events, Groundwater Unit staff evaluate the operation's livestock waste control facility to determine if groundwater quality is being impacted. Currently, 318 AFOs have submitted at least three sets of sampling results. Of these 318 AFOs, 22 operations now sample and submit results once, rather than twice, each year, based on the quality and consistency of their groundwater results. On the other hand, several operations have been required to do additional work due to the inconsistent results from their groundwater sampling.

LIVESTOCK PROGRAM STATISTICS FOR FY2017

Inspections – FY2017

Total Initial Inspection Requests Received144

Large 58
Medium..... 71
Small 15

Total Number of Inspections/Investigations Performed1242

Total Initial Inspections..... 131

Large 51
Medium..... 66
Small 14

Total Post-Construction Inspections 63

Large 45
Medium..... 18
Small 0

Total Routine (Scheduled) Inspections..... 358

Large290
Medium..... 59
Small 9

Total Number of Compliance Status Inspections..... 321

Large145
Medium.....134
Small 42

Total Number of Follow-Up Inspections 56

Large 17
Medium..... 33
Small 6

Total Number of Discharge Investigations 15

Large 14
Medium..... 1
Small 0

Total Number of Complaint Investigations 43

Total Number of Secondary Inspections 255

Permits – FY2017

Total Number of New Permit Applications Received (excluding NPDES) **44**

Large 34

Medium..... 10

Small 0

Total Number of Applications for Modified/Transferred State Permits **73**

New Construction & Operating Permits Issued **34**

Large 20

Medium..... 14

Small 0

Modified/Transferred State Permits Issued **79**

Large61

Medium.....18

Small 0

NPDES General Permits

New Coverage Applications Received..... 9

Modification/Transfer Requests Received 17

Reissuance of Coverage Applications Received 102

Permit Coverage Issued/Reissued/Modified/Transferred 88

NPDES Individual Permits

New Applications Received..... 1

Modification/Transfer Requests Received 0

Reissuance Applications Received 8

Permit Coverage Issued/Reissued to CAFOs..... 3

Livestock Program Costs and Fees Received – FY2017

Total Program Costs..... **\$ 1,613,340**

Inspection Fees Received.....\$ 66,600

Inspection Fees Received \$ 44,900

Late Fees Received..... \$ 21,700

Permit Application Fees Received.....\$ 40,650

Total Annual Permit Fees Received.....\$ 252,641

Total Program Fees Received..... **\$ 359,891**