3.4.4 Concentrated Animal Feeding Operations – Class IA

[Editor's Note: At the date of publication, all links in this section to Standard Operating Procedure documents direct only department staff to material on the department's Intranet site. Users outside the department's computer network who click those links will reach an error message.]

Overview
The inspector will use this document as a guide for conducting inspections at Class IA Concentrated Animal Feeding Operations (CAFOs). The procedures will aid in the completion, consistency, and thoroughness of inspections and reports. It will also improve sampling protocol to support the compliance and enforcement efforts of the department, the Attorney General's office, and other agencies such as EPA.

A quarterly inspection, based upon the calendar year, of each Class IA facility which uses a flush system is required by Section 640.750 RSMo. The inspection conducted during January, February or March will focus primarily on a record review of the facility's annual report from the previous calendar year. In addition, the inspector shall conduct a physical evaluation of the facility's compliance with permit requirements. The quarterly inspections conducted during the remainder of the year will focus primarily on observations of the production facilities, waste storage structures and land application activities. Class IA facilities without flush systems are not required to be inspected quarterly.

Types of Systems
The two general types of waste management at CAFOs are the dry litter system and the wet handling system. In a dry litter system animals are confined on a floor covered with wood chips, rice hulls or similar materials. The resulting litter/manure mixture has at least fifty percent dry matter and is not exposed during storage to precipitation or storm water runoff. In a wet handling system the manure contains less than fifty percent dry matter or, has free draining liquids. Most Class 1A operations operating in Missouri are classified as wet handling systems.

Pre-inspection Procedures
The inspector shall prepare by conducting a thorough file review prior to the inspection. Past inspection reports, incident reports, and environmental concerns and investigations are reviewed to determine historical violations or to identify other areas of potential non-compliance. The inspector will review the current operating permit and be familiar with the specific requirements for the facility. The inspector will be familiar with the procedures listed in the facility's Operation and Maintenance Manual. Any current construction or land disturbance permits are to be reviewed. The inspector will take a copy of the current operating permit, to be used as a reference, at the time of the inspection.

Inspection Equipment
Be certain to check for the successful operation and calibration of field analysis equipment prior to leaving the office.

In addition to the usual inspection equipment the following items are also to be taken on the inspection:

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- Site map
- CAFO inspection checklist
- Appropriate technical bulletins and guide sheets
- Compass
- Inclinometer
- Reel tape or measuring wheel
- Disinfectant bottle
- Sampling equipment and supplies

A sampling kit should, at a minimum, include a distilled water bottle for the rinsing of equipment, personal protective gear suitable for the sampling event, sample transport cooler(s), ice, appropriate sample containers, correct preservatives, and numbered and blank sample tags. The most common sampling parameter for CAFOs is ammonia, which requires the addition of sulfuric acid preservative until the resulting pH is less than 2. Use the Standard Operating Procedures MDNR-ESP-001 and the Chain-of-Custody sheet MDNR-ESP-002 during the inspection.

Additional equipment may be necessary depending on the facility or other conditions. An orange safety vest should be worn during deer firearm hunting season if the facility is located in a hunting area. In cold weather an axe or hatchet may be helpful to break ice when collecting samples.

Site Entry

The inspector must be certain to comply with the facility's bio-security policy. Many facilities will require visitors and their vehicles to have a three-night down time between visits. Some facilities may require that you ride in a designated vehicle while on-site. In some cases, it may be necessary to contact the facility prior to the inspection to gain access and discuss the current bio-security procedures. Provide only enough notice for a successful site entry and inspection.

As general guidance on bio-security you may refer to the Department Compliance Manual and EPA's bio-security guidance document.

Records Review

The inspector will thoroughly review the quarterly and annual reports during the first quarter inspection. The Water Pollution Control Branch is responsible for reviewing the land application records contained in the facility's annual report.

Records reviews during the remaining calendar quarters will focus on inspections, rainfall, storage structure levels, and land application records. Be certain to review rainfall records and monthly storage structure levels back to the date of the previous inspection. Facilities with flush systems are required to visually inspect their animal waste wet handling systems, including holding basins, every 12 hours, with a deviation not to exceed three hours. The inspector will review the records of the inspections maintained on-site by facility personnel. If records are not readily available the inspector will request that copies be sent to the regional office. The inspector will also review a sampling of closed land application

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work orders, checking to be certain that records have been completed. The inspector shall also review a sampling of records required by the facility's Operation and Maintenance Manual. Be certain to determine animal inventory numbers for compliance with the 12-month rolling averages specified in the permit.

After the records review the inspector will meet with facility representatives to discuss the deficiencies. Additional information can be requested such as sampling records, work orders, internal inspection records, and other records as are required by the facility's Operation and Maintenance Manual.

Facility Tour
Bio-security issues may mandate the order in which the inspector may visit production sites, waste storage structures, mortality management areas, and water monitoring sites. The inspector shall inform the facility representative of all sites that they intend to visit and ensure they are conducted in a sequence that will not violate the facility's bio-security policy.

The inspector must use the CAFO inspection checklist during the inspection. The inspector will evaluate the exterior of production buildings for evidence of leaks or releases of process wastes, such as cracks in foundations or stressed vegetation. Note any areas of erosion around the buildings. Vegetation is to be maintained at a reasonable height. No excessive feed or bedding spills shall be present. Any clean-out risers will have a secured cap.

The inspector does not normally have a business need to enter the inside of production buildings, particularly at swine or poultry operations. However, milking parlors are to be entered to evaluate the management of wastewaters. At facilities with large numbers of production buildings, it may be more practical to use a vehicle to drive around the buildings. The inspector should randomly stop and walk around several of the buildings as part of the inspection.

Waste Storage Structures and Secondary Containment
Adequate freeboard in storage structures must be maintained. If waste storage structure markers are required, ensure they accurately depict the level. Concrete containment structures are to be inspected for cracks or other evidence of structural deficiencies or releases. Inspect pumps and return lines for evidence of leaks. Check lagoon berms for wet areas or seeps which might indicate signs of compromised structural integrity.

Class IA sites with flush systems are also required to have secondary containment structures or earthen dams. These structures must be capable of containing a minimum volume equal to the maximum capacity of flushing, in any 24-hour period, from all gravity outfall lines, recycle pump stations and recycle force mains. Check to be certain that valves are closed and discharge pipes are not leaking. Check the berms for seeps, erosion rills, gullies or deeply rooted vegetation. Be aware that erosion in structures may lower acceptable storage volumes. The basins are to be free of deep-rooted vegetation such as cattails. Observe for evidence of wastewater effluent within the containment structures such as stressed vegetation. The inspector

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shall conduct water monitoring below the containment structure if there is evidence of a possible release(s).

Bio-solid Storage Areas
The inspector shall inspect bio-solid storage areas. Temporary stockpiles of bio-solids may be stored for up to two weeks during land application periods. All stockpiles must be located at least 300 feet from drainage ways. Proper runoff controls must be provided by the facility. Inspect the stack houses for proper maintenance. No run-off or leachate is allowed to enter or threaten waters of the state.

Managing Mortalities
Inspect the mortality management areas. Mortalities must be managed within 24 hours of discovery. Inspect the compost piles for proper operation. Mortalities are to be adequately covered. Leachate must be actively managed and not threatening discharge to waters of the state. The finished compost material must be land applied at the proper agronomic rates.

If mortalities are transported off-site for rendering, also inspect any mortality storage areas or transfer stations.

A facility does not need a permit from the Air Pollution Program to operate a mortality incinerator unless they accept mortalities from off-site. Incinerator ash must be land applied at agronomic rates or disposed of as solid waste.

Land Application Sites
Inspect the land application areas. Evaluate the separation distances and determine acceptable values. The inspector shall interview the land application crew and verify the appropriate level of operator certification.

The inspector shall evaluate the work order, start up, and shut down records. Verify the application rates. In some instances, the use of a rain gauge may be appropriate. Evaluate the slope of the field and determine if any applicable required reduction in the application rate is required or, has been implemented by the crew. Ensure that adequate monitoring of the pumps, lines and hoses is being conducted. Observe the soil and weather conditions. Ensure the land application is being conducted in compliance with requirements of the facility's Operation and Maintenance Manual and the operating permit.

Sampling
The inspector shall conduct water quality monitoring during a CAFO compliance inspection. Water will be monitored for ammonia with a field kit, temperature, conductivity, pH, and dissolved oxygen. General observations of water appearance and other conditions are to be recorded. If elevated ammonia levels are found with the field test kit that indicate a possible permit or water quality violation, a sample will be taken for laboratory analysis. Likely sample locations include any receiving streams or storm water drainage that receives run-off from the site. If land application is being conducted, drainage below the land application is an ideal monitoring location. If a release has occurred into a secondary containment structure, the inspector shall conduct water monitoring below the containment.

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Documentation
Documentation is an important part of the inspection process. The inspector shall record all observations in a clear and concise manner in a notebook or notepad as the tour is conducted. Accurate and complete field notes are required in order to prepare a detailed inspection report. Field notes are subject to records requests under the Missouri Sunshine Law. Ensure that only relevant and appropriate material and comments are entered into the notes. Photographs will be taken of any violations or items of concern.

Exit Interview
The inspector shall review with facility personnel any unsatisfactory features observed during the inspection. Be sure to explain any required actions and options for compliance. The inspector will provide the facility with any relevant technical bulletins or guide sheets.

Report Preparation
The inspector shall prepare required reports in accordance with Chapter 3.1, General Inspection Procedures.

CHECKLISTS

- CAFO inspection checklist

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