

## Appendix Q - Glossary

Acronym/Term	Definition	Description
ACTP 51	Wisconsin's Livestock Siting Law	The Livestock Facility Siting Law consists of a state statute (s. 93.90) and rule (ATCP 51) that change how local governments regulate the siting of new and expanded livestock operations. It establishes procedures local governments must follow if they decide to issue conditional use or other local permits for siting livestock facilities. The statute limits the exclusion of livestock facilities from agricultural zoning districts. It also created the Livestock Facility Siting Review Board to hear appeals concerning local permit decisions. (DATCP)
Aeration		The process of bringing air into contact with a liquid by one or more of the following methods: (1) spraying the liquid into the air, (2) bubbling air through the liquid, (3) agitating the liquid to promote absorption through the air liquid interface (US EPA)
Aerobic		Having or occurring in the absence of oxygen (US EPA)
Aerobic lagoon		A holding and/or treatment pond that speeds up the natural process of biological decomposition of organic waste by stimulating the growth and activity of bacteria that degrade organic waste in an oxygen-rich environment (US EPA)
AFO	Animal Feeding Operation	Means a lot or facility, other than a pasture or grazing area, where animals have been, are or will be stabled or confined, and will be fed or maintained for a total of 45 days or more in any 12-month period. Two or more animal feeding operations under common ownership or common management are a single operation if at least one of the following is true: (a) The operations are adjacent. (b) The operations utilize common systems for the landspreading of manure or other wastes, including nutrient management plan or landspreading acreage. (c) Manure, barnyard runoff or other wastes are commingled in a common storage facility prior to landspreading. (ch. NR 243)
Agricultural Waste		"Agricultural waste" means livestock manure, wastewater contaminated with livestock manure, animal waste byproducts and litter and bedding material contaminated, derived or mixed with livestock manure.
Agitation		Through mixing of liquid or slurry manure at a storage structure to provide a more consistent fertilizer material and allow the producer to empty as much of the storage as possible.
Agronomic Rates		The rate at which fertilizers, organic wastes or other

		amendments can be added to soils for optimum plant growth. (USDA-NRCS National Agronomy Manual)
Air Emissions-		Release of any pollutant to the atmosphere (US EPA)
Ammonia Volatilization		The loss of ammonia gas to the atmosphere (US EPA)
Anaerobic		The absence of molecular oxygen, or capable of living and growing in the absence of oxygen, such as anaerobic bacteria (US EPA)
Anaerobic Lagoon		A holding and/or treatment pond that speeds up the natural process of biological decomposition of organic waste by stimulating the growth and activity of bacteria that degrade organic waste in an oxygen-depleted environment (US EPA)
ARS	Agriculture Research Service	The Agricultural Research Service (ARS) is the US. Department of Agriculture's chief scientific research agency. (ARS)
AU	Animal Unit	"Animal unit" means a unit of measure used to determine the total number of single animal types or combination of animal types, as specified in s. NR 243.11, that are at an animal feeding operation. (WDNR; NR 243)
BACT	Best available control technology	"Best available control technology" or "BACT" means an emission limit for a hazardous air contaminant based on the maximum degree of reduction practically achievable as specified by the department on an individual case-by-case basis taking into account energy, economic and environmental impacts and other costs related to the source. (US EPA)
BMP	Beneficial Management Practice	The term best management practice was redefined by the Animal Waste Advisory Group as <i>beneficial</i> management practice, not best management practice; because what may be best for one farm may not be best for another. The term "beneficial management practice" also acknowledges that future practices and technologies may provide greater benefits than practices or technologies we describe today as "best."
BOD	Biological Oxygen Demand	Bioassay technique used to assess the relative strength of a waste (i.e. the amount of oxygen required to stabilize it if discharged to a surface water)
Large CAFO	Concentrated Animal Feeding Operation	"Large CAFO" means an animal feeding operation that has 1,000 animal units or more at any time.
CO	Carbon Monoxide	Carbon monoxide (CO) is a colorless, odorless, and tasteless gas. It may temporarily accumulate at harmful levels, especially in calm weather during winter and early spring, when fuel combustion reaches a peak and carbon monoxide is chemically most stable due to the

		low temperatures. (WDNR)
CO2	carbon dioxide	Carbon dioxide enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and also as a result of other chemical reactions (e.g., manufacture of cement). Carbon dioxide is also removed from the atmosphere (or “sequestered”) when it is absorbed by plants as part of the biological carbon cycle. (US EPA)
Criteria Pollutant		Six very common air pollutants regulated by the EPA on the basis of certain criteria (namely, information on public health and/or environmental effects of pollution). These pollutants are carbon monoxide (CO), lead (Pb), ozone (O3), particulate matter (PM), sulfur dioxide (SO2), and nitrogen oxides (NOx). (WDNR)
FR	Federal Register	The official daily publication for Rules, Proposed Rules, and Notices of US Federal agencies and organizations, as well as Executive Orders and other Presidential Documents
GHGs	Greenhouse Gases	Gases that trap heat in the atmosphere are often called greenhouse gases. Some greenhouse gases such as carbon dioxide occur naturally and are emitted to the atmosphere through natural processes and human activities. Other greenhouse gases (e.g., fluorinated gases) are created and emitted solely through human activities.
HAC	Hazardous Air Contaminant	“Hazardous air contaminant” means any air contaminant for which no ambient air quality standard is set in ch. NR 404 and which the department determines may cause or significantly contribute to an increase in mortality or an increase in serious irreversible or incapacitating reversible illness, or may pose a significant threat to human health or the environment.
HAP	Hazardous Air Pollutant	Hazardous or toxic air pollutants are regulated both for their short term (acute) and long term (chronic) effects. People exposed to toxic air pollutants at sufficient concentrations and durations may have an increased chance of getting cancer or experiencing other serious health effects. These health effects can include damage to the immune system, or neurological, reproductive (e.g., reduced fertility), developmental, respiratory and other health problems. (WDNR)
LAER	Lowest achievable emission rate	“Lowest achievable emission rate” or “LAER” means the rate of emission of a hazardous air contaminant that reflects the more stringent of the following: (a) The most stringent emission limitation for the

		hazardous air contaminant which is contained in the air pollution regulatory program of any state for this class or category of source, unless an applicant for a permit demonstrates that this limitation is not achievable. (b) The most stringent emission limitation for the hazardous air contaminant which is achieved in practice by the class or category of source. (WDNR)
MOU	Memorandum of Understanding (poultry doc)	A memorandum of understanding (MOU or MoU) is a document describing a bilateral or multilateral agreement between parties. It expresses a convergence of will between the parties, indicating an intended common line of action. It is often used in cases where parties either do not imply a legal commitment or in situations where the parties cannot create a legally enforceable agreement.
MUN	Milk Urea Nitrogen	Milk Urea Nitrogen (MUN), the concentration of urea nitrogen in milk, gives a look at how cows utilize the crude protein (CP) they consumed. MUN is expressed in milligrams per deciliter (mg/dl) with 95% of all values ranging from 5.0 to 20.0 mg/dl for Holstein cows. A well-balanced diet results in MUN in the range of 10 to 12 mg/dl, but values become elevated when (a) excess Rumen Degradable Protein (RDP) is fed, or (b) excess Rumen Undegradable Protein (RUP) is fed, or (c) RDP is not balanced with dietary Non-fiber Carbohydrates (NFC). In these cases, the unutilized portion of dietary CP is converted to urea (by the liver), which ends up in the blood, urine, and milk. (UW-Extension)
NAAQS	National Ambient Air Quality Standards	The Clean Air Act, which was last amended in 1990, requires EPA to set National Ambient Air Quality Standards (NAAQS) for wide-spread pollutants from numerous and diverse sources considered harmful to public health and the environment. The Clean Air Act established two types of national air quality standards. Primary standards set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against visibility impairment, damage to animals, crops, vegetation, and buildings. (US EPA)
NAAS	National Agriculture Statistics Service	The USDA's National Agricultural Statistics Service (NASS) conducts hundreds of surveys every year and prepares reports covering virtually every aspect of U.S. agriculture. Production and supplies of food and fiber, prices paid and received by farmers, farm labor and wages, farm finances, chemical use, and changes in the demographics of U.S. producers are only a few

		examples.
NAEMS	National Air Emissions Monitoring Study	The National Air Emissions Monitoring Study (NAEMS), established in 2006 by a voluntary Air Compliance Agreement between the EPA and the pork, dairy, egg and broiler industries, will address the lack of scientific data. Livestock producers have provided the financial support for the NAEMS so that emissions data can be collected at select sites to: 1) accurately assess emissions from livestock operations and compile a database for estimation of emission rates, and 2) promote a national consensus for emissions-estimation methods/procedures from livestock operations. (Purdue University)
NAS	National Academy of Sciences	The National Academy of Sciences (NAS) is an honorific society of distinguished scholars engaged in scientific and engineering research, dedicated to the furtherance of science and technology and to their use for the general welfare.
NESHAP	National Emissions Standards for Hazardous Air Pollutants	The National Emissions Standards for Hazardous Air Pollutants (NESHAPs) are emissions standards set by the United States EPA for an air pollutant not covered by NAAQS that may cause an increase in fatalities or in serious, irreversible, or incapacitating illness. The standards for a particular source category require the maximum degree of emission reduction that the EPA determines to be achievable, which is known as the Maximum Achievable Control Technology (MACT) [1]. These standards are authorized by Section 112 of the Clean Air Act and the regulations are published in 40 CFR Parts 61 and 63.
NH3	Ammonia	"Ammonia-nitrogen" includes the ionized form (ammonium, $\text{NH}_4^+$ ) and the un-ionized form (ammonia, $\text{NH}_3$ ). Ammonium is produced when microorganisms break down organic nitrogen products such as urea and proteins in manure. This decomposition occurs in both aerobic and anaerobic environments. In solution, ammonium is in chemical equilibrium with ammonia. (US EPA)
NH4	Ammonium	The ammonium (more obscurely: aminium) cation is a positively charged polyatomic cation with the chemical formula $\text{NH}_4^+$ . It is formed by the protonation of ammonia ( $\text{NH}_3$ ). Ammonium (or aminium) is also a general name for positively charged or protonated substituted amines and quaternary ammonium cations ( $\text{N}^+\text{R}_4$ ), where one or more hydrogen atoms are replaced by organic radical groups (indicated by R). (Wikipedia)

NO2	nitrogen dioxide	The two most prevalent oxides of nitrogen are nitrogen dioxide (NO <sub>2</sub> ) and nitric oxide (NO). Both are toxic gases with NO <sub>2</sub> being a highly reactive oxidant and corrosive. The primary sources indoors are combustion processes, such as unvented combustion appliances, e.g. gas stoves, vented appliances with defective installations, welding, and tobacco smoke. (US EPA)
Non-attainment area		The Clean Air Act identifies six common air pollutants that are found all over the United States. These pollutants can injure health, harm the environment and cause property damage. EPA calls these pollutants criteria air pollutants because the agency has developed health-based criteria (science-based guidelines) as the basis for setting permissible levels in the air we breathe. PM <sub>2.5</sub> is a criteria pollutant. EPA establishes national ambient air quality standards for each of the criteria pollutants. These standards apply to the concentration of a pollutant in outdoor air. If the air quality in a geographic area meets or is cleaner than the national standard, it is called an attainment area; areas that don't meet the national standard are called nonattainment areas. In order to improve air quality in a nonattainment area, states must draft a plan known as a state implementation plan (SIP). The plan outlines the measures that the state will take in order to improve air quality. Once a nonattainment area meets the standards and additional redesignation requirements in the Clean Air Act [Section 107(d) (3) (E)], EPA will designate the area to attainment as a "maintenance area." (US EPA)
NR 406		Wisconsin's Regulation for Construction Permits
NR 407		Wisconsin's Regulation for Operation Permits
NR 429		Wisconsin's Regulation for Malodorous Emissions and Open Burning
NR 438		Wisconsin's Regulation for Air Contaminant Emissions Inventory Reporting Requirements
NR 445		Wisconsin's Regulation for Control of Hazardous Air Pollutants
NSPS	New Source Performance	New Source Performance Standards (NSPS) are pollution control standards issued by the United States

	Standards	Environmental Protection Agency (EPA). The term is used in the Clean Air Act Extension of 1970 (CAA) to refer to air pollution emission standards, and in the Clean Water Act (CWA) referring to standards for discharges of industrial wastewater to surface waters. (Wikipedia)
NSR	New Source Review	New Source Review (NSR) requires stationary sources of air pollution to get permits before they start construction. NSR is also referred to as construction permitting or preconstruction permitting. There are three types of NSR permitting requirements. A source may have to meet one or more of these permitting requirements. The three types of NSR requirements are: (1) Prevention of Significant Deterioration (PSD) permits which are required for new major sources or a major source making a major modification in an attainment area; (2) Nonattainment NSR permits which are required for new major sources or major sources making a major modification in a nonattainment area; and (3) Minor source permits. (US EPA)
PM	Particulate Matter	Any airborne finely divided solid or liquid material with an aerodynamic diameter smaller than 100 $\mu\text{m}$ (WDNR)
PM10		Particulate Matter with aerodynamic diameter less than or equal to 10 micrometers
PM2.5		Particulate Matter with aerodynamic diameter less than or equal to 2.5 micrometers
PSD		Prevention of Significant Deterioration
RACT		Reasonably Available Control Technology
SIP		State Implementation Plan Toxic Air Emissions
VOC		Volatile Organic Compounds
Injection		"Injection" means the placement of liquid manure or process wastewater 4 to 12 inches below the soil surface in the crop root zone using equipment specifically designed for that purpose and where the applied material is retained by the soil and does not concentrate or pool below the soil surface. (WDNR; NR 243)
Incorporation		"Incorporation" means mixing the manure or process wastewater with surface soil so that at least 80% of applied manure or process wastewater is covered with

		soil and the application rate is controlled to ensure that applied material stays in place and does not run off. Incorporation includes standard agricultural practices such as tillage or other practices that are the equivalent to providing 80% soil coverage. (WDNR; NR 243)
Land Application		“Land application” means surface application, injection or incorporation of manure, process wastewater or other waste generated by a CAFO on cropland using manure hauling vehicles or equipment. (WDNR; NR 243)
Liquid Manure		“Liquid manure” means manure with a solids content of less than 12%. (WDNR; NR 243)
Manure		“Manure” means a material that consists primarily of litter or excreta, treated or untreated, from livestock, poultry or other animals. Manure includes material mixed with runoff, bedding contaminated with litter or excreta, or process wastewater. (WDNR; NR 243)
Pasture or Grazing area		“Pasture or grazing area” means an area where animals graze in large open areas, that is not adjacent to, or connected to, a CAFO production area, and where stocking densities, management systems and management of feed sources ensure that sufficient vegetative cover is maintained over the entire area at all times. A pasture or grazing area is not an animal feeding operation. (WDNR; NR 243)
Surface Applied Manure		“Surface applied manure” means manure applied to the ground surface by moving vehicles that is not incorporated or injected. (WDNR; NR 243)
WPDES		“WPDES” means the Wisconsin pollutant discharge elimination system established under ch. 283, Stats. (WDNR; NR 243)